

Prospects of Climate Change Policy and Green Finance

Low Carbon Strategies, Energy Plans and Implementation of the Paris Agreement

31st August 2017

Initiatives for Energy Efficiency and Planning in Cities

Case: Municipality of Elsinore, Denmark

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**HELSINGØR
KOMMUNE**

Denmark

- Population: 5,8 mio.
- Area: 43.000 km² (16,500 sq. m)
- Welfare state, equality
- Democracy, consensus
- GDP/citizen (PPP): 46.602 \$
- Digitalization - communication
- Domestic production of oil and gas



Energy Efficiency (EE) in Denmark at the national level

- EE building tradition... Ambitious/strict building codes
- Energy labeling has improved transparency
- Electricity saving trust – procurement policy ...

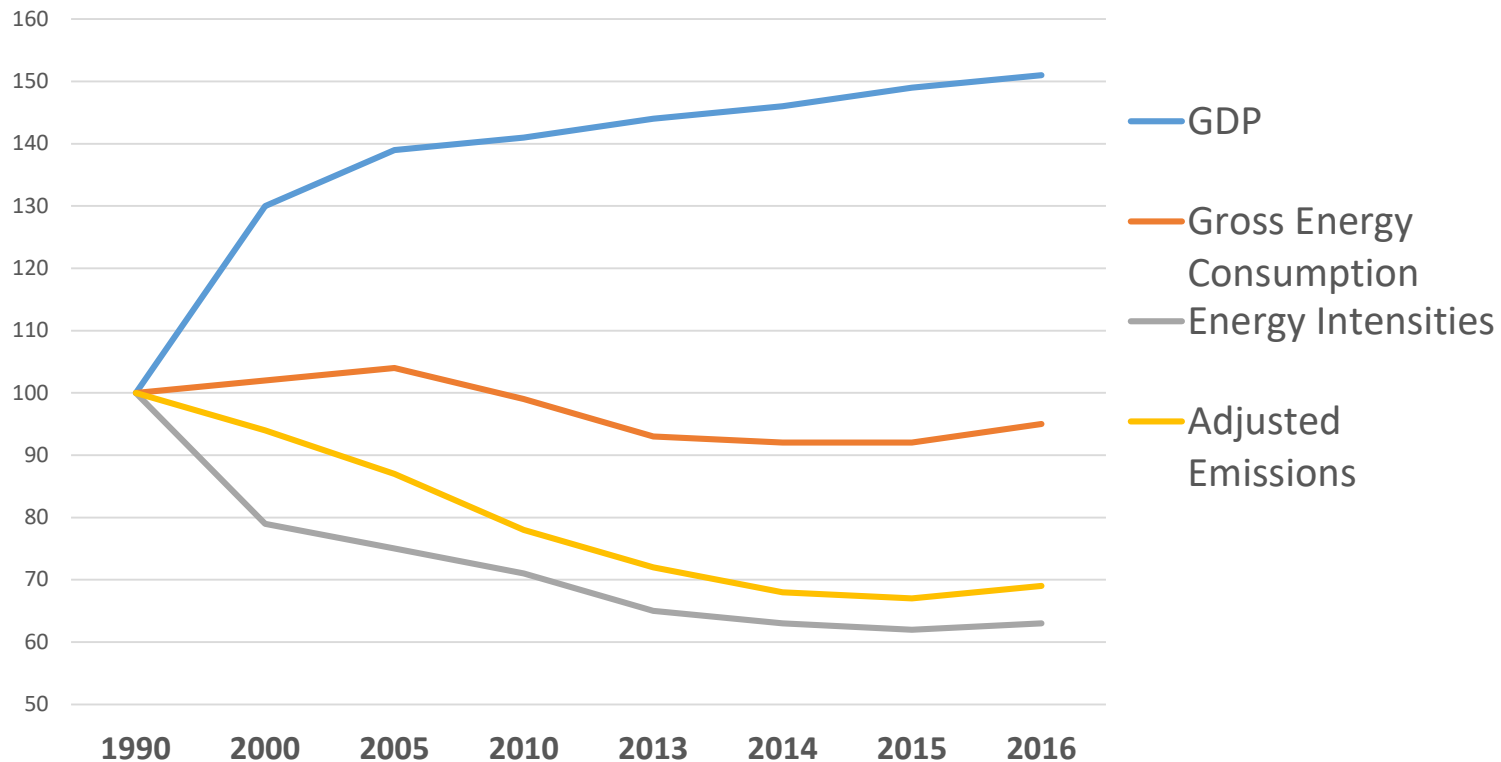
Facts (2016)

- DH: supply 64 % of all homes in DK
- RES
 - 30 % of energy consumption
 - Wind power: 42 % of electricity consumption



Energi	
Mærke Model	Logo ABC 123
Lavt forbrug A B C D E F G	A
Højt forbrug Energiforbrug kWh/år På grundlag af standardtest	XYZ
Det faktiske energiforbrug afhænger af, hvorledes apparatet benyttes, og hvor det anbringes Rumfang af kølerum liter Rumfang af frostrum liter	xyz xyz ☼
Lydeffektniveau dB(A) (Støj)	XZ
Brochure om produktet indeholder yderligere oplysninger	
<small>Standard: EN 153 af maj 1999 Direktiv om energimerking af køleskabe nr. 2002/96/EF</small>	

Energy Efficiency - Denmark



The sky, the fields, and the wind turbines, West Jutland. *Image credit: andjohan*

GDP, Gross Energy Consumption, Energy Intensities & Total Greenhouse Gases

UNIT: Index 1990=100	1990	2000	2005	2010	2013	2014	2015	2016
GDP	100	130	139	141	144	146	149	151
Gross Energy Consumption	100	102	104	99	93	92	92	95
Energy Intensities	100	79	75	71	65	63	62	63
Adjusted Emissions	100	94	87	78	72	68	67	69

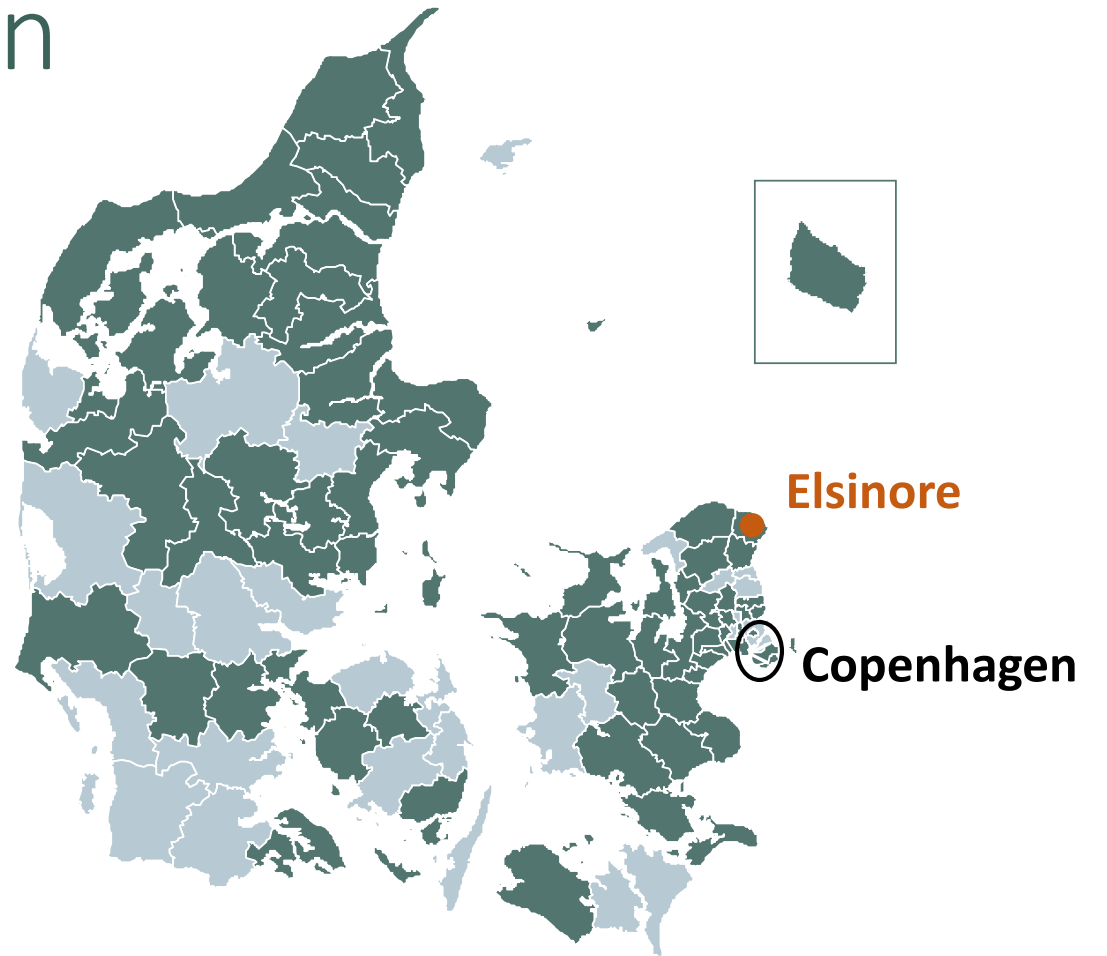
Administrative organization of Denmark

- 5 regions
- 98 Municipalities

Climate Municipalities

Voluntary agreements

- A partnership by The Danish Society for Nature Conservation
- Members of the partnership are obliged to reduce CO₂ emission by at least 2% per year up to 2025
- 70 out of 98 municipalities are members
- Follow up and CO₂ mapping every year



● 70 members of the Climate Municipality Partnership

● Non-members of the partnership

The Municipality of Elsinore

- 40 km north of Copenhagen.
- 62.000 inhabitants
- 4,8 tons of CO₂-eq emissions/pers./yr.
- 29 % reduction in total emissions over the last 7 years



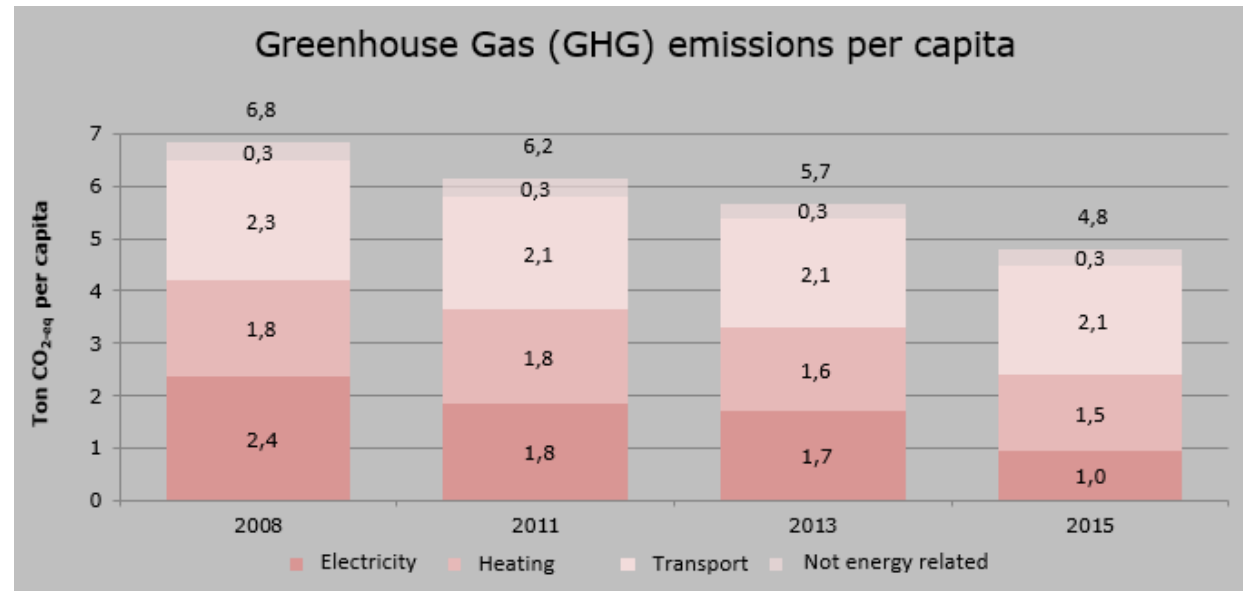
Actions Pushed by Goals & Agreements

Goals, cf. The Climate Plan (2009):

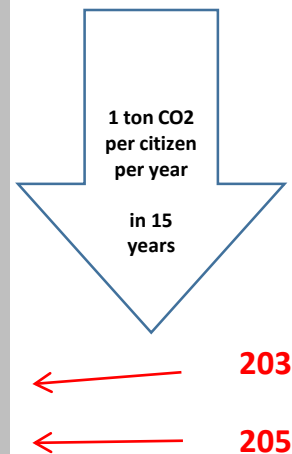
- To reduce emission of CO₂ to less than **1 ton** per inhabitant per year by **2030**.
- To be **CO₂-neutral** by **2050**

Agreements

- Danish Nature Conservation Association (NGO)
2% reduction in CO₂ emission per year until 2025
- Climate partner (DONG Energy) 2010-
- Covenant of Mayors 2011-
- Global Compact of Mayors 2015-



The challenge:

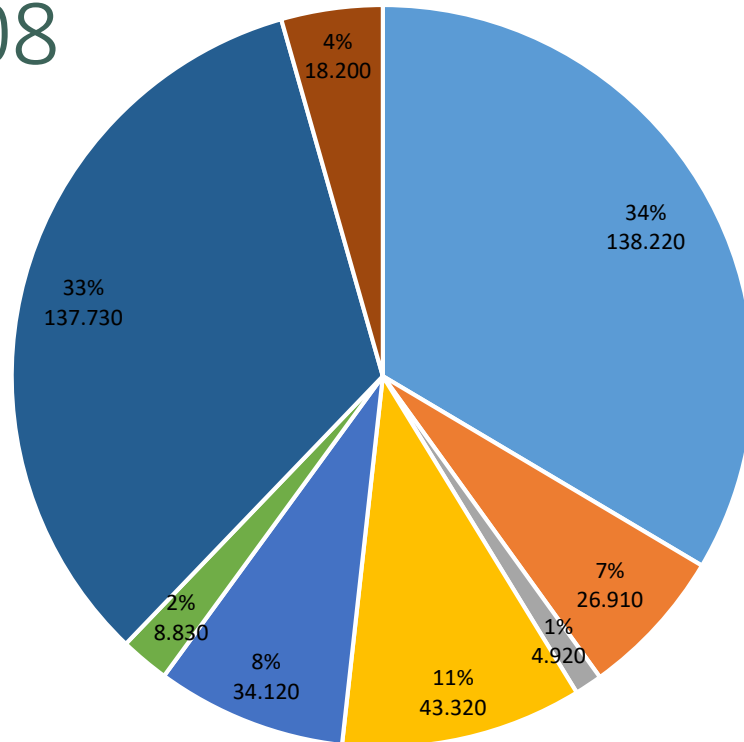


The Climate Impact in Elsinore 2008-2015

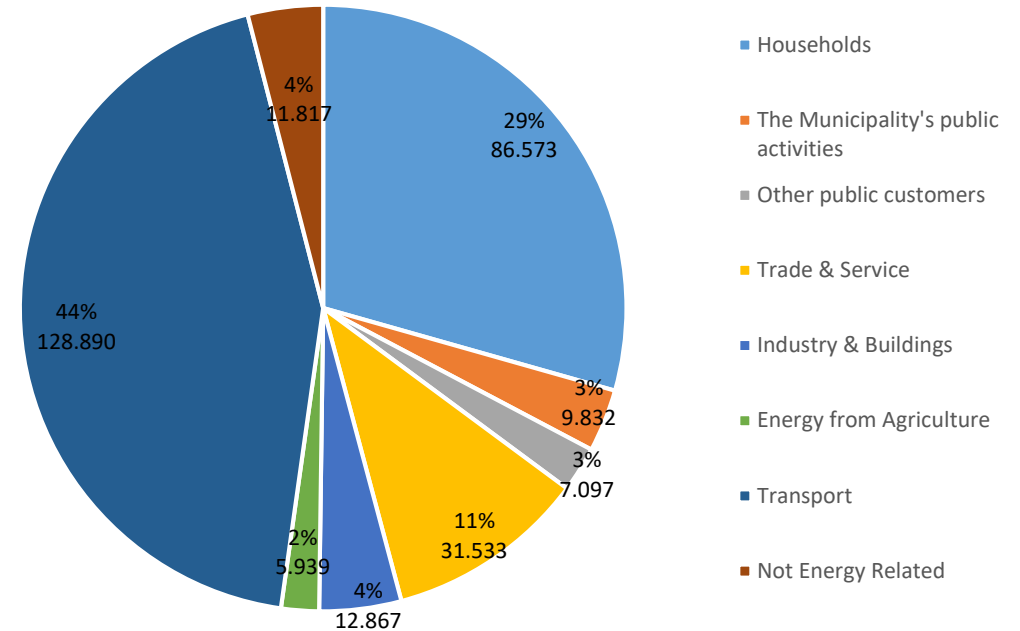
294.549 tons all together – 4,8 ton/citizen/year

(Greenhouse gases converted to CO2 equivalents) Source: Sweco, 2015

2008



2015

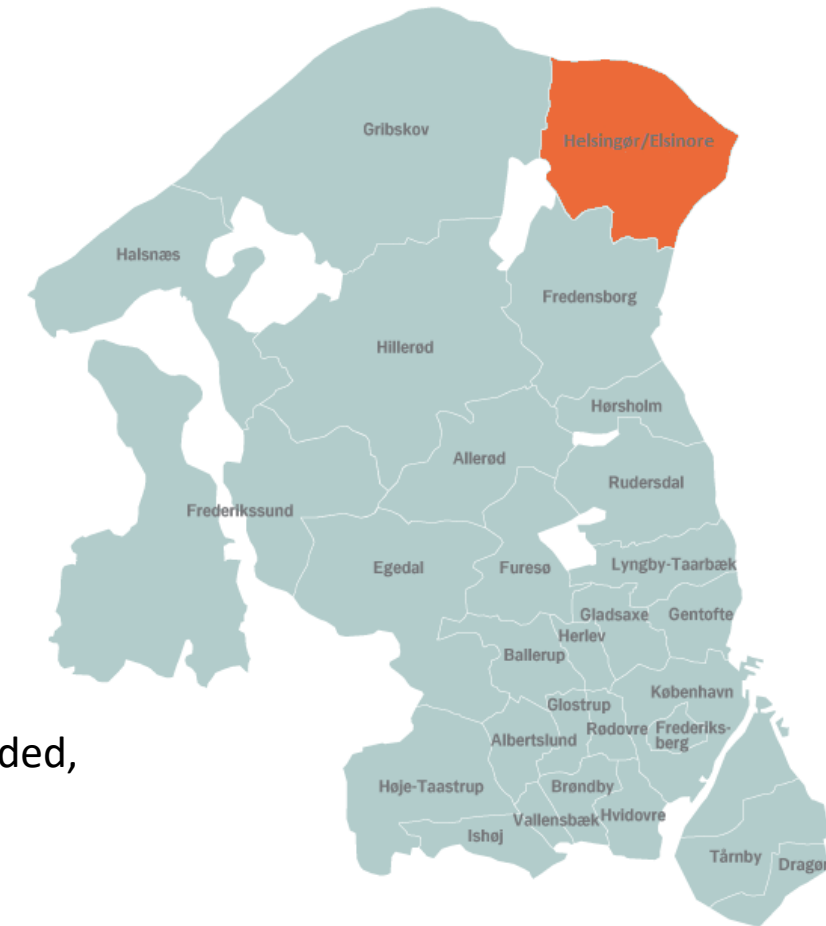
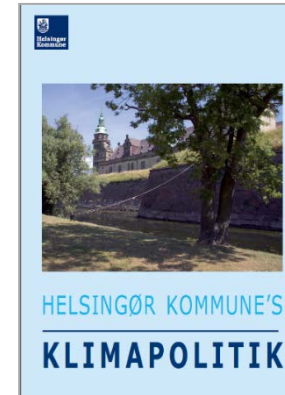


- 2 % goal is achieved (29 % reduction over 7 years)
- Total emissions are declining from 6,8 in 2008 to 4,8 ton/citizen/year in 2015

Energy planning/ Strategic Energy Planning at regional level

National Policy Focus:

- 1970' - Security of supply
- 1980' - Economy
- 1990' - Environment
- 2000 - Liberalization of energy market
- 2008- Climate/CO2 and sustainability



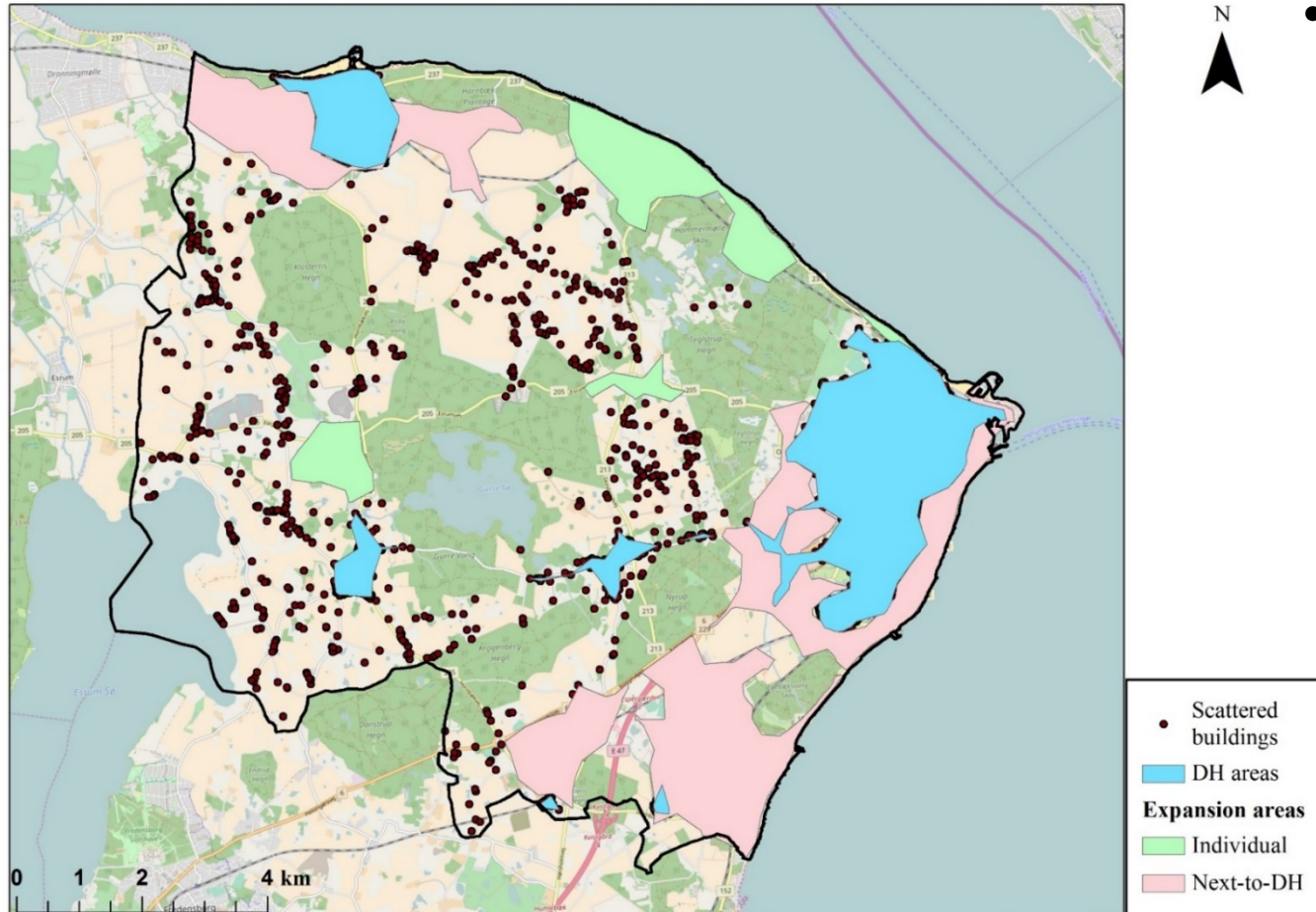
National energy - incentives

- Regulation & Directives, Green Taxes, District Heating/Natural Gas Grid

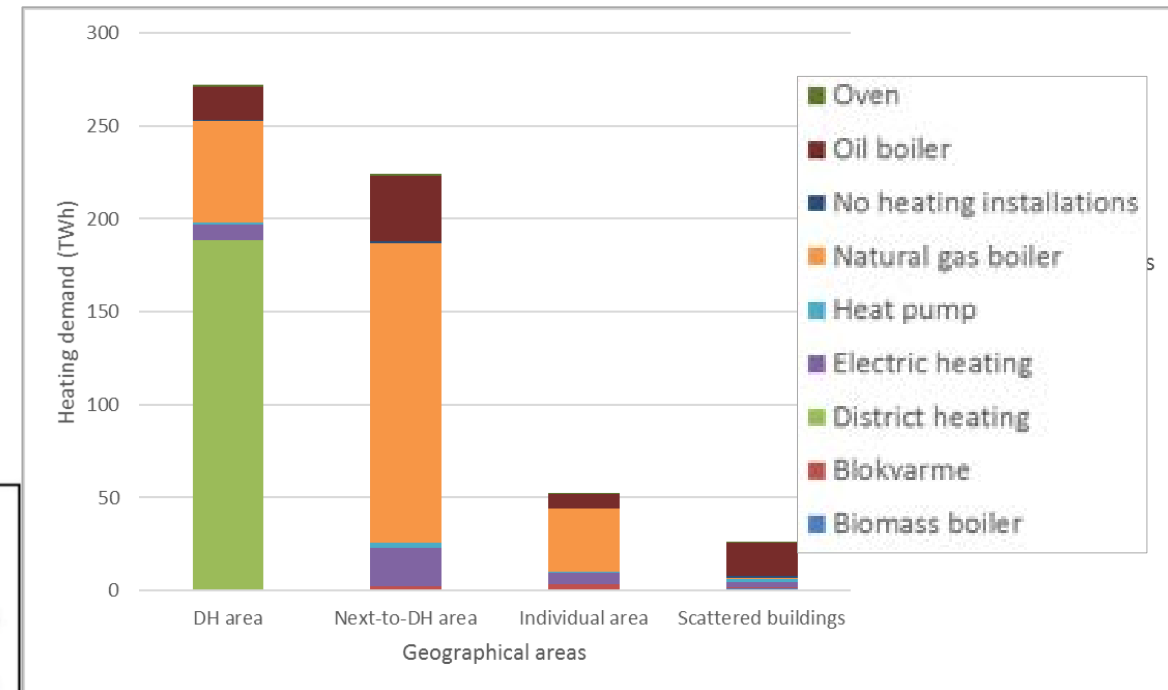
Regional cooperation on Strategic Energy Plans (long term, all sectors included, upstream-downstream, boundary crossing)

- Goal: CO2 neutral by 2050 – steppingstones in 2030 and 2035
- How: mapping, cooperation between utilities and municipalities, follow up

Local Energy planning – ProgRESsHEAT Project/Horizon 2020

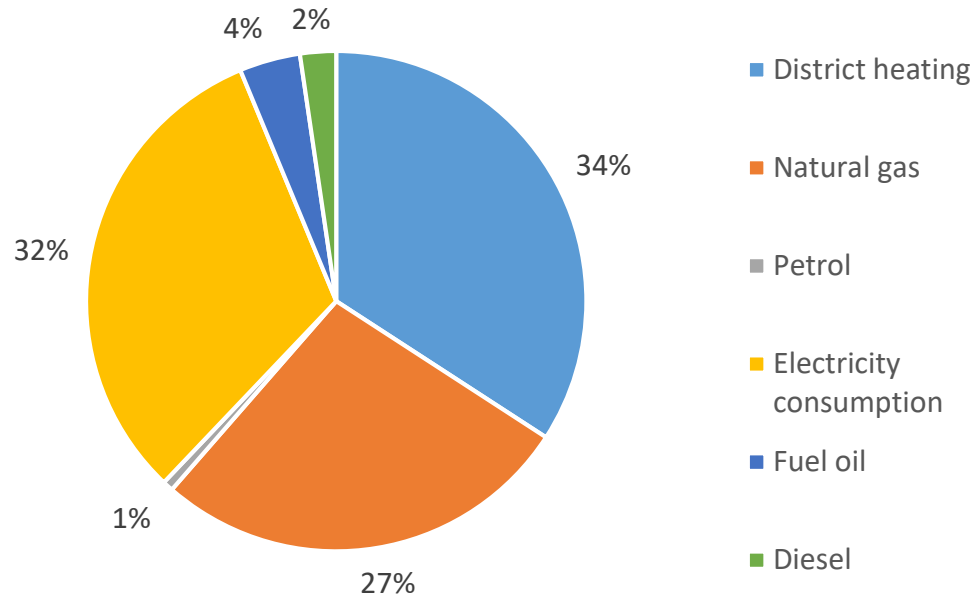


- Heat supply and geographical area, Municipality of Elsinore

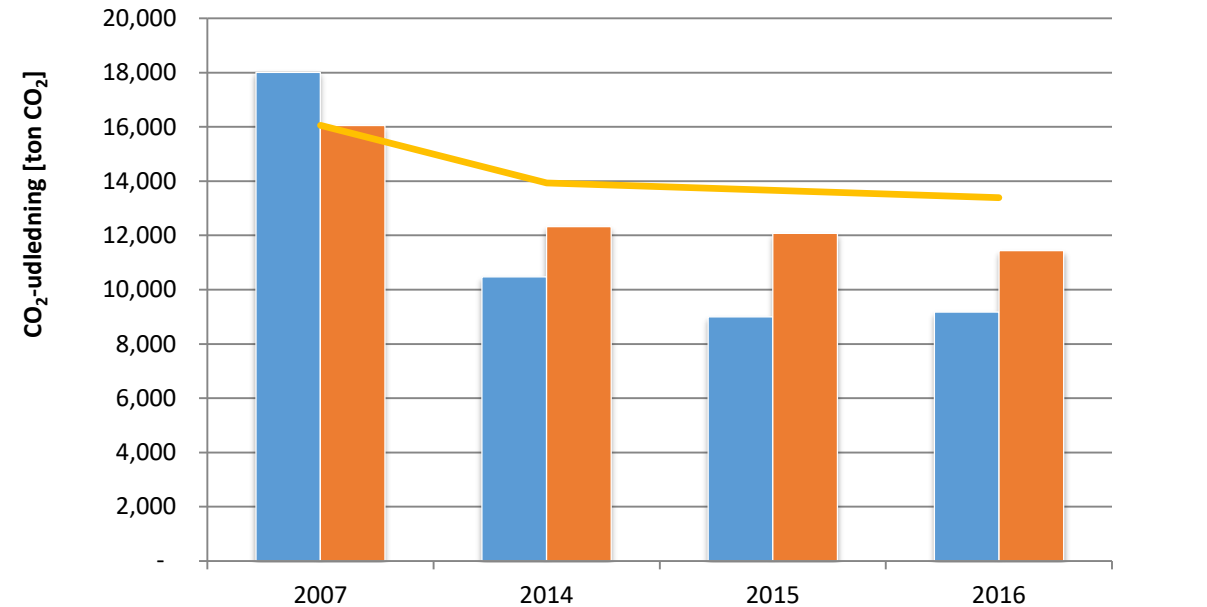


Climate Impact - Elsinore as a Company

CO₂-emissions 2016



Trends in CO₂-emissions



How?

- Building Renovation
- Green transport
- District Heating Expansion
- Renewable energy

■ Total real emission factor
■ Total fixed emission factor
— Goal according to partnership with Danish Nature Conservative Association - 2% reduction pa. compared to 2007

Climate initiatives in Elsinore (as a company): - examples



ESCO – 15 mio. EUR
for renovation



School campaigns



Training of
institution-managers
and janitors



Folding bikes for
commuters



Climate
Ambassadors



Transport

Climate initiatives in Elsinore geographically: - examples



Climate education
of craftsmen
/business



Free energy check for
private houses



Mobility Planning
focus on climate



Communication



Online energy
house



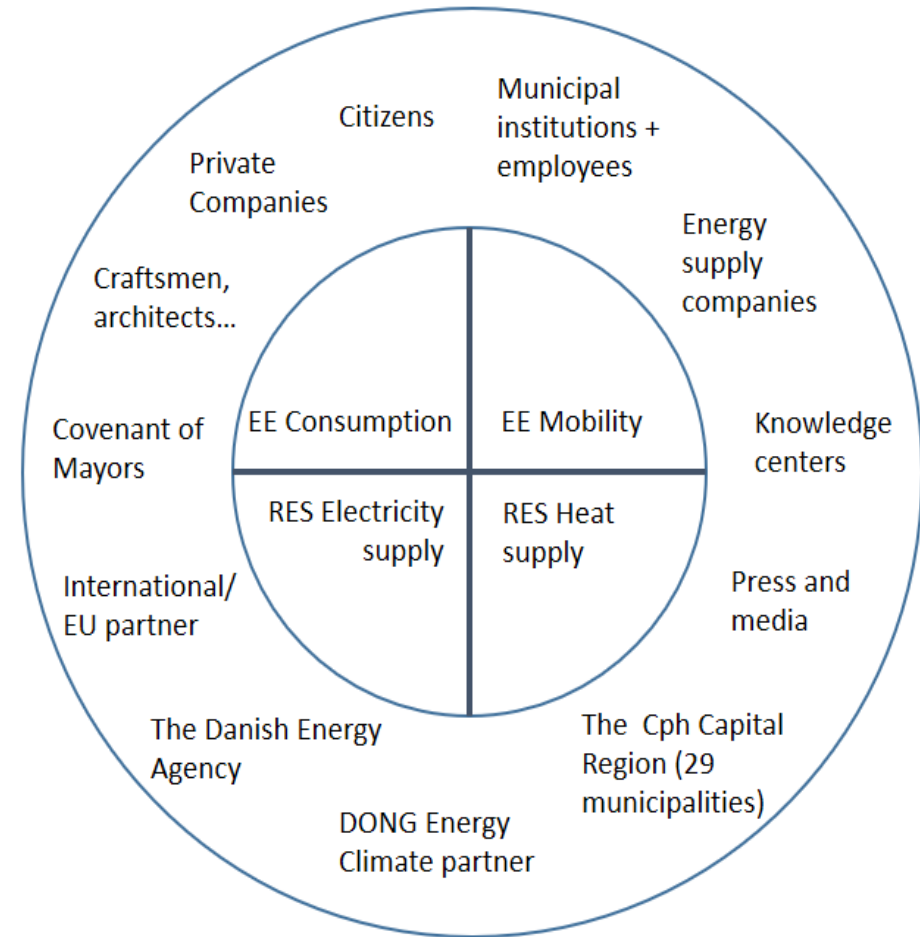
Free energy checks
for industries

Conclusions

Municipalities play a key role in EE in DK

- Although the national policy frame is important

- Commitment through plans /ambitious targets
- Responsible for coordinating Strategic Energy Plans
 - Supply, consumption, all sectors, long term
- SEP based on calculations, follow up and adjustments
- Strive to involve and activate all actors
 - Citizens, private companies, municipal institutions
- The municipality itself shows the way
- “One ton takes a thousand activities”



Comments/questions?

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