COPENHAGEN CLEANTECH CLUSTER

5 AVRIL 2011
IHEDATE VOYAGE D’ETYDES

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HEAD OF SECRETARIAT
AGENDA

1. Some numbers and trends

2. What is a cluster and why use the cluster approach?

3. Copenhagen Cleantech Cluster
   - Background
   - what we do
   - what the goals are
   - and some of the results so far?

4. Discussion
Climate change threatens our existence.

Climate change threatens our economy.
IT ALL BEGAN IN 2008...
NORDICS USED TO BE NO 1 (A FEW DANISH EXAMPLES)

World leading in offshore wind

World leading in biomass to energy

World leading in district heating

World leading in energy efficiency

World leading in recycling

World’s first electric car nation?
CLEANTECH IS A GLOBAL REVOLUTION
CLEANTECH EXPORT COMPARED BY GDP

Cleantech sales\(^1\) compared by % of GDP (2008)

The global cleantech market

KAIDE: Roland Berger Strategy Consultants, 2009

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1) Cleantech består her af vedvarende energi teknologi og energieffektiviserings teknologi.
• 60,000 employees in the Danish cleantech sector
• 720 Danish cleantech companies (app. 50% in the capital region)
• 46 knowledge institutions focusing on R&D within cleantech
**CPH CARBON NEUTRAL BY 2025**

**GOAL:**
CO₂ EMISSIONS REDUCED BY 20% FROM 2005 TO 2015.

**VISION:**
COPENHAGEN IS CARBON NEUTRAL BY 2025.

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**Copenhagen Carbon Neutral by 2025**

**MEASURES FOR 2025**

<table>
<thead>
<tr>
<th>Measures</th>
<th>Reduction Potential, Tonnes CO₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY SAVINGS</td>
<td>230,000</td>
</tr>
<tr>
<td>ENERGY SAVINGS IN THE MUNICIPALITY’S OWN OPERATIONS</td>
<td>19,000</td>
</tr>
<tr>
<td>CONVERSION OF BIOMASS</td>
<td>300,000</td>
</tr>
<tr>
<td>GEOTHERMAL POWER</td>
<td>25,000</td>
</tr>
<tr>
<td>SOLAR HEATING</td>
<td>1,000</td>
</tr>
<tr>
<td>HEAT PUMPS AND ELECTRICAL ELEMENTS</td>
<td>65,000</td>
</tr>
<tr>
<td>IMPROVED WASTE SEPARATION</td>
<td>9,000</td>
</tr>
<tr>
<td>INCREASED WINDMILL CAPACITY</td>
<td>925,000</td>
</tr>
<tr>
<td>URBAN DEVELOPMENT</td>
<td>30,000</td>
</tr>
<tr>
<td>REDUCED ROAD TRAFFIC</td>
<td>150,000</td>
</tr>
</tbody>
</table>

*This is how Copenhagen can become carbon neutral by 2025. A scenario for Copenhagen as a carbon neutral city. The potential of these measures are calculated using 2005 CO₂ emissions as the baseline. The combined effect of all measures is smaller than the sum of the individual contributions.*

Source: Copenhagen Municipality: *Copenhagen Climate Plan*
TOUGH REGULATION CREATES GREEN JOBS

<table>
<thead>
<tr>
<th>Table 1 Jobprognose for cleantechfeltet, for 2012 og 2020, fordelt på scenerier for hhv. Østdanmark og Skåne</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Østdanmark</td>
</tr>
<tr>
<td>Skåne</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Med de nuværende rammevilkår (scenarie 1) forventer cleantechvirksomhederne en årlig vækst på 3,18% frem mod 2020, svarende til 10.000 nye grønne job.

Såfremt energi- og klimamålsætningerne om et fossilfrit samfund udmøntes i lovgivning (scenarie 2), forventer cleantechvirksomhederne en årlig vækst på 8,80% frem mod 2020 svarende til 35.000 nye grønne job.

Kilde: Job og kompetencer i Øresundsregionen 2012 – Øresund som Low Carbon Region
### Clusters in Theory: Different Perspectives

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</tr>
</thead>
<tbody>
<tr>
<td><strong>Teoretisk tilgang</strong></td>
<td>Ressourcer</td>
<td>Sociale netværk</td>
<td>Institutioner og systemer</td>
<td>Systemer</td>
</tr>
<tr>
<td>Klassisk, neoklassisk</td>
<td>Social og sociologi</td>
<td>Institutionel og systemisk</td>
<td>Strategic management</td>
<td></td>
</tr>
<tr>
<td>Stedet</td>
<td>Modelleret, teoretisk koncept</td>
<td>Relationel analyseenhed</td>
<td>Institutionelt indlejret system</td>
<td>Manipulerbare rammevilkår</td>
</tr>
<tr>
<td>Metode</td>
<td>Statistisk modellering</td>
<td>Case studier</td>
<td>Teoribygning</td>
<td>Teoribygning</td>
</tr>
</tbody>
</table>

Source: Michael Johansen 2009: *Climate, Cluster and Conflict* (Master’s Thesis)
By strengthening cross-sector collaboration, CCC aims to enhance the competitiveness of the cluster companies to the mutual benefit of all cluster stakeholders.

Source: Sölvell 2008: *Clusters Balancing Evolutionary and Constructive Forces*
CROSS-SECTOR COLLABORATION

500+ companies in the cluster

Capital & Zealand regions Municipalities

VC, CVC Public funding

Techn. Uni. of Denmark
Uni. of Copenhagen
Risø-DTU
Scion-DTU
CPH Business School

CCC
Conf. of Danish Industry
Copenhagen Capacity
Frederikssund Erhverv

Source: Sölvell 2008: Clusters Balancing Evolutionary and Constructive Forces
Cluster initiatives can have different objectives.

Case studies have shown that cluster initiatives are very diverse in their strategic aims and actual activities.
SERVICES OR DEVELOPMENT?

Framework conditions

High impact, in demand by companies (development oriented)

Starting point: must-do services

Source: RegLab 2007: Policyguide til klyngedevikling
WHY CCC? NEED FOR A COORDINATING BODY

- Cleantech revolution: The next big industrial adventure
- Focus on Copenhagen: COP15
- Up to COP15: More than 250 initiatives
- Overview needed
ORGANISATIONAL SETUP

Research & Education

Copenhagen Cleantech Cluster

Private companies & Organizations

Public authorities
LARGEST REGIONAL INITIATIVE IN DANISH HISTORY

• Backup from all significant stakeholders (companies, universities, organisations, municipalities)

• Political - and financial support from the Regions of Copenhagen and Zealand

• Development of initiative (including stakeholder dialogue)

• Application for EU’s Structural Funds April 2009

• 30 mio. Euro over five years (February 2010)
ACTIVITIES AND PARTNERS

- MATCHMAKING: Partnerships & Networks
- INTERNATIONAL OUTREACH: Knowledge transfer & Collaboration
- FACILITATION: Communication & Coordination
- INNOVATION & ENTREPRENEURSHIP: Support for start-ups
- TEST & DEMONSTRATION: Proof of Concept

- COPENHAGEN CAPACITY
- DI
- Risø DTU: National Laboratory for Sustainable Energy
- SCION DTU
- Symbion
- DHI
- Københavns Universitet
- Frederikssund Erhverv
- energyMAP: Your webguide to climate solutions

THE EUROPEAN UNION: Investing in your future

COPENHAGEN CLEANTECH CLUSTER

09.04.2011
SIDE 19
75 PARTNERS AND NETWORK PARTICIPANTS

• **9 executive partners** (Copenhagen Capacity, DI, Scion DTU, Risø DTU, Copenhagen University, Frederikssunds Erhverv, Symbion, DHI, EnergyMap.dk)

• **16 contributing partners** (Dong Energy A/S, Novozymes A/S, Haldor Topsøe A/S, Better Place, Vestas, Øland A/S, Seas-NVE, Deliotte, Copenhagen Resource Institute, Roskilde Municipality, Kalundborg Municipality, Ernst & Young, Væksthus Hovedstadsregionen, Væksthus Sjælland, Region Hovedstaden, Region Sjælland)

• **50 network participants** (Lolland Municipality, Albertslund Municipality, Invest in Skåne, Cluster Biofuel Denmark, CBS, Seed Capital, Wonderful Copenhagen, Copenhagen Goodwill Ambassador Corps, Connect Denmark, Cleanfield ApS, Vækstfonden etc.)

TO DAY: 195 MEMBERS
Global outlook is critical
GOALS

OVERALL GOALS

• Increase attraction of int. companies, investments and competences.
• More new Danish cleantech companies.
• Growth for existing cleantech companies in the region

OBJECTIVES FOR THE NEXT 5 YEARS

- Creation of 1,000 new jobs
- Attraction of 25 foreign companies to the cluster
- Creation of 30 new research- and innovation collaborations
- Establishment of collaborations with 15 int. cleantech clusters
- Create value for at least 200 members
- Securing the growth and momentum of 25 entrepreneurs
- Hosting a minimum of 200 events
Top 10 cleantech cluster organizations for 2010

Shawn Lesser of Sustainable World Capital scoured the world looking for leading cleantech economic development regions. Here’s his list of top clusters to watch.

What’s a cleantech cluster?

Indeed, many people may have not heard the term, although it could quickly gain currency as people increasingly realize the tremendous opportunities offered by the cleantech sector.

Copenhagen Cleantech Cluster, Copenhagen Denmark - Copenhagen has a stated goal of becoming the world’s first CO2 neutral capital. Danish cleantech solutions are world famous, and Denmark is one of world’s largest exporters of cleantech as measured by GDP. The Copenhagen Cleantech Cluster operates under a $30 million budget financed by the EU, Region Zealand and the Danish Capital Region. It also has a unique set of partners, including Copenhagen Capacity, Scion DTU, Confederation of Danish Industries (DI), Risø DTU, University of Copenhagen as well as a number of municipalities and huge companies including Dong Energy, Vestas, Haldor Topsøe, Novozymes, Siemens and Better Place Denmark. Specific goals include the creation of 1,000 new jobs and 10 public-private sector partnerships, the staging of 200 events, the involvement of more than 200 players as well as collaboration with 15 international Cleantech clusters. Cluster success stories include: Stirling DK, Photosolar, EcoXpac and Better Place Denmark.
Offentlige indkøb kan skabe grøn vækst

Dansk cleantech skal helt ud over rampen

Put pengene i hovedstaden og skab vækst i hele landet

Virksomheder vil bygge en by i Abu Dhabi
UN-AWARD: CCC ATTRACTS GREEN INVESTMENTS

“The Award was given to Copenhagen Capacity (Denmark) for its work to attract cutting-edge cleantech investors through the building of strong clusters”
“I absorb all information, so I can use it in other member countries, and there are many market opportunities in this cluster project. Not only in the EU but also in the rest of the world, and it can mean great job creation for other European countries”

- Commissioner Johannes Hahn

“I hope we will have the opportunity to continue our cooperation and use the example of the Copenhagen Cleantech Cluster as good practice on a European level”

- DG Regional Policy
THANK YOU VERY MUCH

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