Municipality of Middelfart

Public entrepreneurs – What do they expect from suppliers regarding sustainability?

Head of climate change
Morten Mejsen Westergaard

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Agenda – Towards sustainability as local government

- Expectations and demands from a public client in connection with the energy efficiency of buildings – via case story
- Experience gained during the Green Business Growth – case story
- Advice to SMEs who want to start solving problems in energy-efficient building

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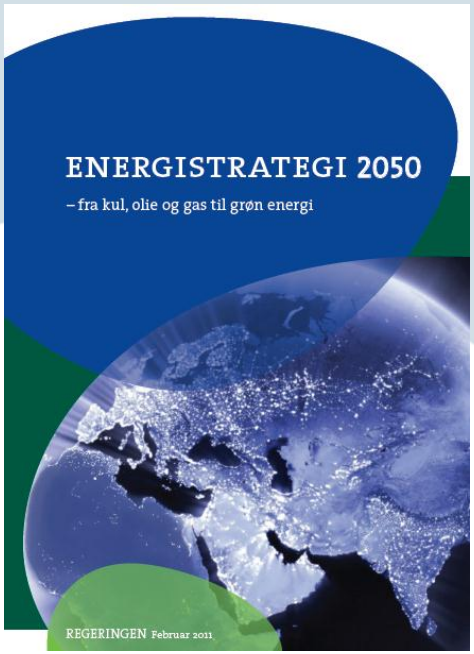
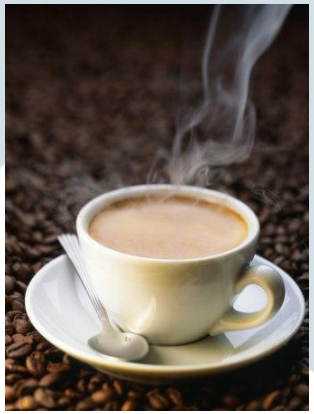
In short

- Transition to a society that is independent of coal, oil and gas in 2050 !





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Consequences for building sector

- It means very little energy consumption and focus on renewables in buildings

- New buildings: Low energy class or passiv standard. Better than 30 kw/h pr. m2
- This is standard **demand** for the municipality buildings and new private buildings. It’s a trend in many countries: Germany, Sweden and others.

Point – believe in ambitious concepts such as cradle-to-cradle

Demand is there, technologies' are there, the word I spreading

New buildings in the future buildings are sustainable

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However

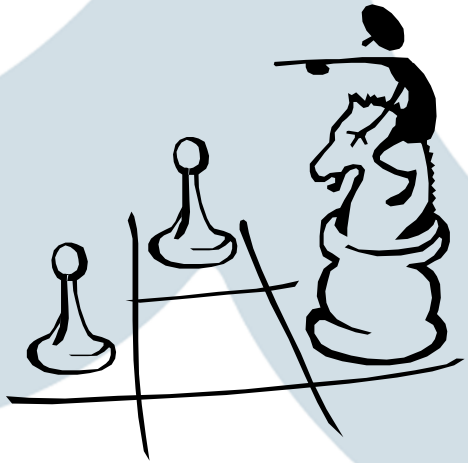
- Buildings for the future – are already here! Because
- Only about 1 % of the building mass is renewed.

- So the big challenge is dealing with existing buildings

What is the general strategy in existing buildings ?

The Trias Energetica concept:
the most sustainable energy is saved energy.

1. Reduce the demand for energy by avoiding waste and implementing energy-saving measures.
2. Use sustainable sources of energy instead of finite fossil fuels.
3. Produce- and use fossil energy as efficiently possible.



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Good news – the market is here – and concepts are developing

- Even if DK is 3 most energy efficient country in the world …
- Its possible to conduct energy savings that are feasible, for 200 billion kroner – aprox. 27 billion euro
- Climate, Cash & Competition
- Pick up the money? How? Is it real? Do we need a guarantee?
- The energysaving market will be doubled In 2015 (Danish building society)

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Case of strategy and concept
FULL SCALE ESCO – a energysaving package

A small municipality – local political government

We have a vision: Building bridges to the future – **in cooperation**

EU Sustainable Energy Week 2010
22–26 March

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For a short video introduction:

- **Please visit**

www.youtube.com/watch?v=1ucMDiL08Yo&feature=PlayList&p=476BBA076D8ADD73&playnext=1&playnext_from=PL&index=4

A project with national political focus:

Former Minister of climate and energy,
now European commissioner on climate,
Connie Hedegaard
&
Minister of Economic and Business Affairs, Lene Espersen, both

Have encouraged other municipalities to follow the "Middelfart concept"


Connie Hedegaard dukkede uventet op

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Project idea and challenge

Challenges for the municipality
Need of improving buildings

- In general we use too much energy and energy prices are rising
- We want to reduce energy consumption and raise the quality of the buildings standards
- Limited internal resources (manpower) to the project of raising the quality of the buildings

Project idea

To make a partnership with the purpose of implementing a project regarding building improvements and energy saving in the municipality's buildings. The energy savings must guarantee a partial or total payment of the building improvements

Goal:

- Get better buildings
- Reduce lack of maintenance
- Achieve major energy savings / cut back co2 emissions

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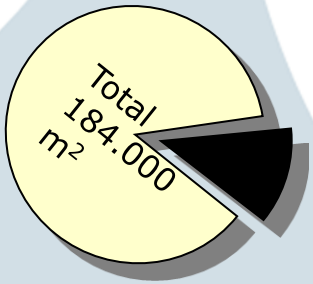
Preliminary study – an 8 building pilot

Investigated 8 buildings : 29.161 m²



Preliminary study
29.161 m² 16%

Conditions of study

Energy prices (fixed)

District heating:	350 kr. /MWh
Oil:	650 kr./MWh
Gas:	620 kr./MWh
Electricity:	1250 kr./MWh

Method

- Analyses of energy statistics, gathered by the municipality
- Investigation of the buildings (field study)
- Comparison of field observations with energy statistics

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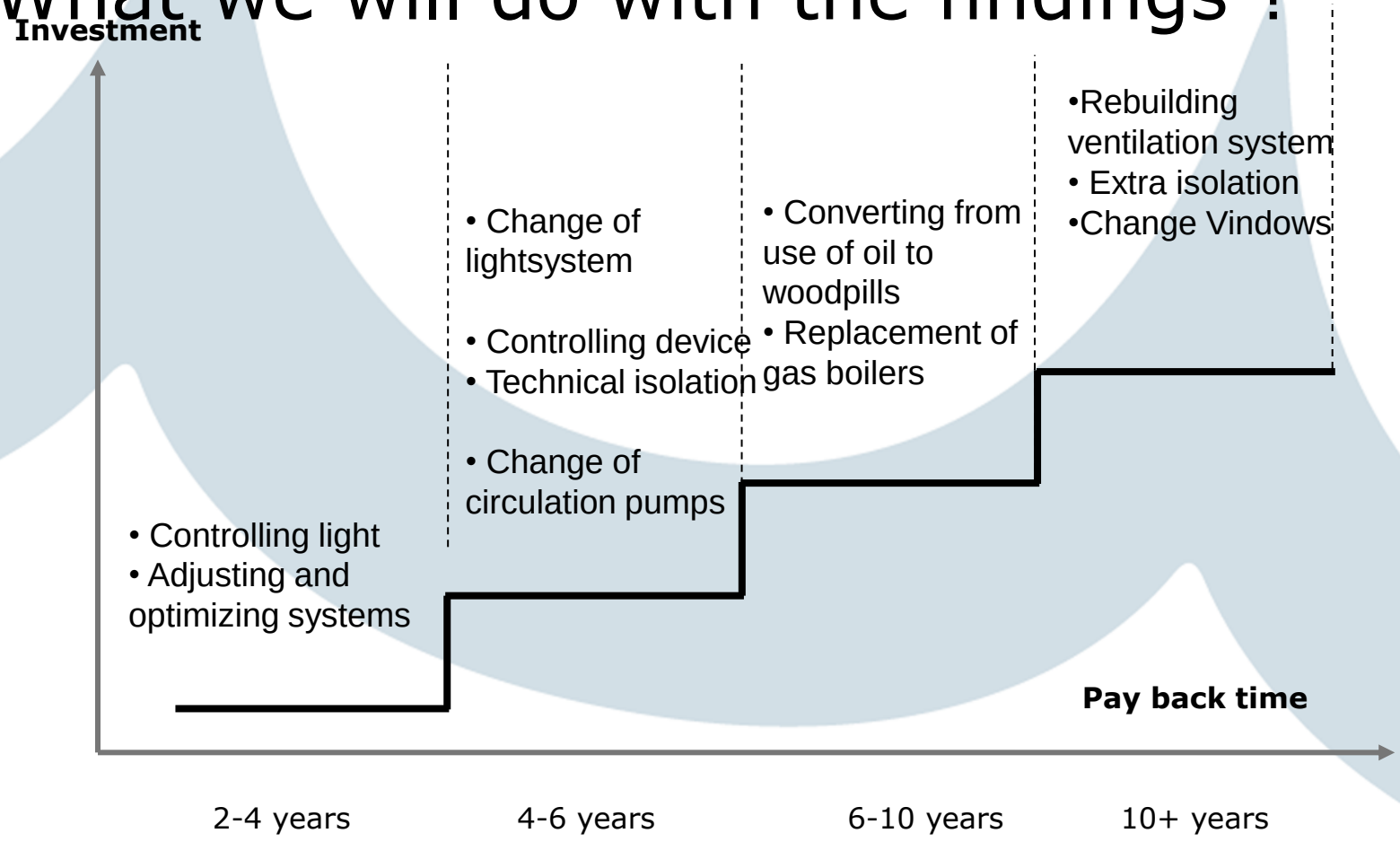
3. Preliminary Study and payback time

What we will do with the findings ?



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After the priliminary study – what happend next?

- Make a preliminary study
- EU tender
- 5 companies qualified – 2 made proposals
- Proposal for energy analyses, registration work on asbestos, energy standard and energy saving
- Estimate of 21 % saving
- Project was started with own staff
- Time Schedule for study and first meeting 16. januar 2008.
- Energy "brand" is a part of the deal. An energy service company is participating.
- Finance model e.t.c. was agreed upon during spring 2008
- All buildings "delivered" marts. 2010
- Staff education
- Project will go on to 2014– monitoring of performance every month.

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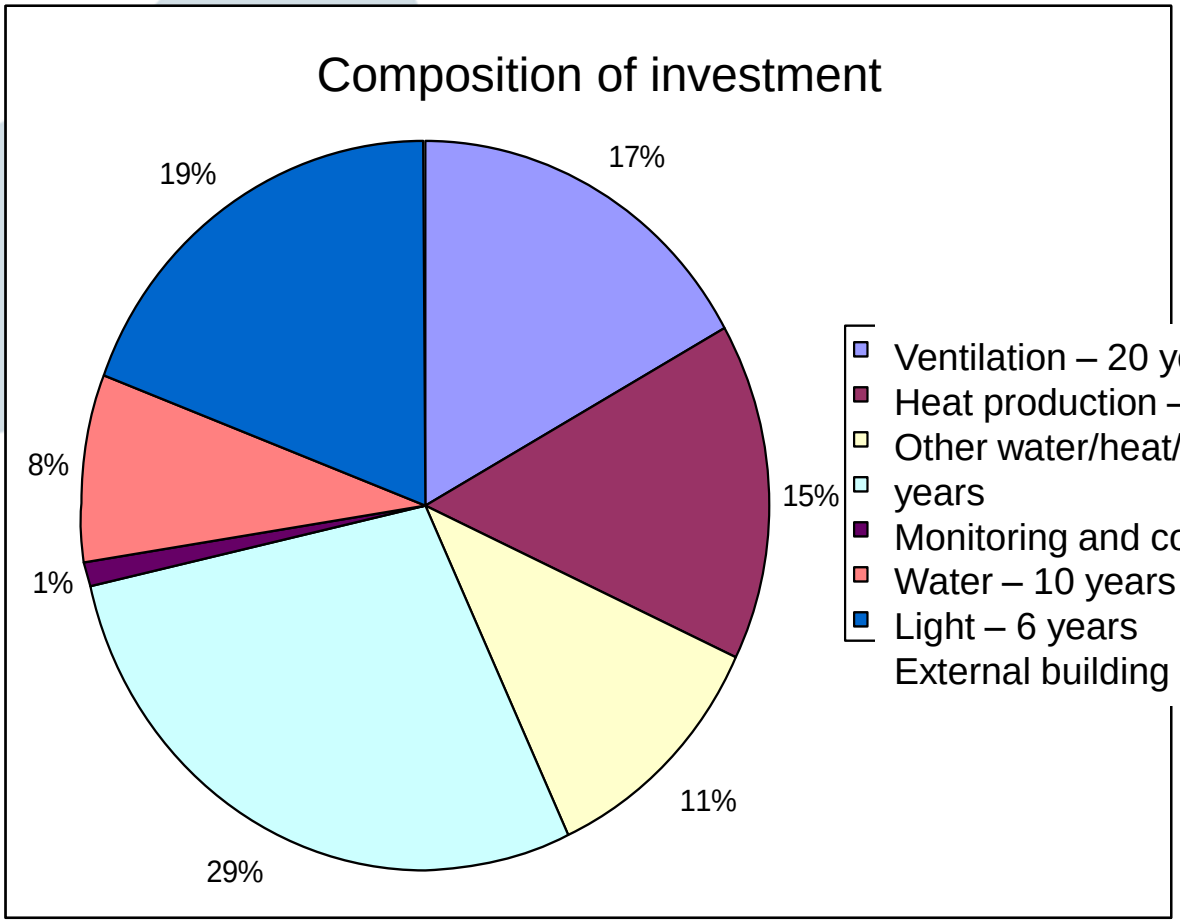
Scope and savings
Distribution of investments and expected durability in years

Total investment: approx. 44 mio kroner approx. 6 mio euro



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4. Hyllehøjskolen – a local schools new performance

Example of monthly monitoring report for the schools energy performance.

Its always possible to make a report.

The system “alarms” if a water leakage or other problems occur

Hyllehøjskolen Dato: fra 04-11-2009 til 03-12-2009

4. Besparelse i år i procent

5. Besparelse i år i alt

Total Energibesparelse:	18,1 MWh - varme 26.589 kWh - el 72 m³ - vand
Total Miljø reduktion:	16,1 ton CO_2
Besparelse i varme svarende til:	1,0 parcelhuse
Besparelse i EL svarende til:	5,3 parcelhuse
Total økonomisk besparelse:	49.053 Kr.

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4. Image

- **The project is known in Denmark as ”Middelfart modellen”, and is a variant of ESCO / EPC which the EC recommends**
- **10 mio. Danish kroner is given to the municipality and municipality of Kalundborg and Gribskov, to promote the concept by vice prime minister Lene Espersen**
- **10-15 other Danish municipalities are following in different degrees by implementing new energysaving project after the ESCO principle**
- **The Municipality gives lectures and receive visitors from other municipalities and private companies; such as MÆRSK, Grundfoss, Novo Nordisk, Lundbeck and other major players**
- **The Danish Danish Enterprise and Construction Authority is producing a film about the project in early spring 2010**

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5. Perspectivs

1. Maintaine and develope this project for municipality's buildings – make sure that we get the savings.
2. Use new tecnology – accecs control, opening/closing, monitoring, teaching
3. Starting other project for buildings – private schools, apartment house, regions buildings e.t.c.
4. Develope ESCO model as role model with Kalundborg and Gribskov Municipality.
5. Develope ESCO model in other areas – roadlightning, pumpinstallations e.t.c.

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”Green Business Growth”

Energy efficiency in buildings

- 40 % of all energy consumption is used in buildings
- Buildings can be energy improved by 30-70% - and its feasible
  - Market size approx. 30 billion Euro in Denmark (DK is already top 3 energy efficient country in the world, imagine Europe as your market)

- Combine that knowledge with *thesis* how to get from ”From Academic theory to invoice”

- You have a ”Green Business Growth” project

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What was the thesis on how to get from ”From Academic theory to invoice” ?

§1

Its a good idea to save energy – easy savings

§2

Investments in energy savings are financed by savings

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The 4 main project tracks

1. Local conditions

   Re-making spatial plans, area-brands, improve local procedures, etc. – a “pull-effekt”

2. Research and development

   Financial solutions, promotion of green solutions, etc.

3. Education of craftsmen in building sector

   Different models and blended learning, ESCO-Light

4. Evaluation and sharing of knowledge

   Matchmaking between sectors in general, and ”compressing chains of value”

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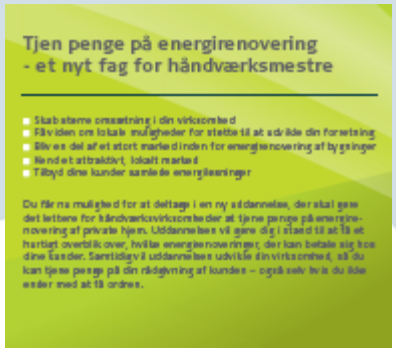
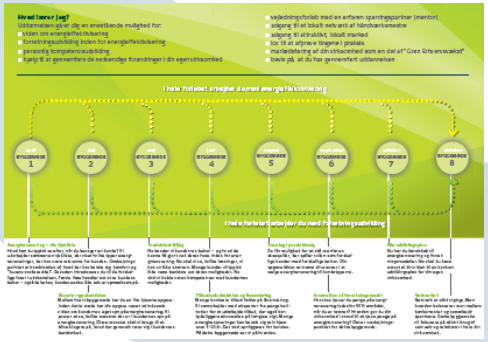
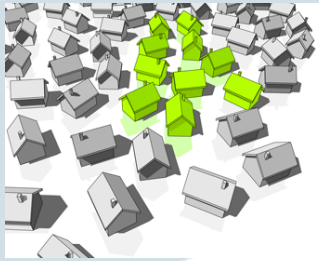
Examples

Politisk Byggemøde





Setup of education for craftsmen



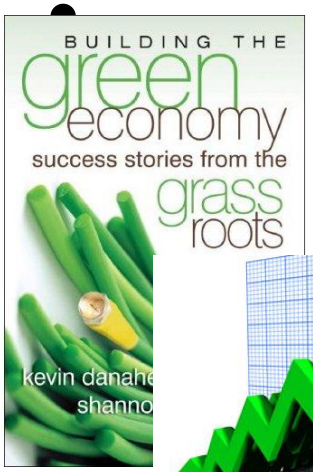
Energy Clusters in private buildings

Local conditions: Energy class 1 in all new buildings

Efterskoler

And plenty of projects on the way

- Local ESCO – business dealing and making energy savings in building
- Spatial planning
- Redefining financial solutions
- .
- …..etc.
-



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Findings…of strategic importance

- The combination of
  - Public
  - Private
  - Citizens
- *Are a major driver in entrepreneurship*

- Entrepreneurship is based upon:
  - *Common interests and needs regarding energy, climate and comfortable buildings*

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Towards sustainability – new plans

Push & Pull
Supply & demand
When does develoment and sustainability pay back

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