DANISH INDUSTRY SESSION
Thursday 22 April
13-14:30 PM CEST

Enabling Energy Efficiency by Addressing Behaviour in Technological Solutions Towards Investors and Users

SPEAKERS:
Ingrid Reumert, Vice President, VELUX
Anders Kruse, Vice President, Floor Heating & Electronic Controls, Danfoss
Carsten Rudkjøbing Larsen, Energy Manager, Brunata
Niels Nicolai Andersen, CSO, Energy Solution

Moderator: Hans Peter Slente, Senior Advisor, Confederation of Danish Industry

UNEP DTU Partnership | Copenhagen Centre on Energy Efficiency
European Energy Network
ENABLING ENERGY EFFICIENCY BY ADDRESSING BEHAVIOUR

TESTIMONIALS FROM BUSINESS

Hans Peter Slente
Senior Advisor
22 April 2021
AGENDA

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- Anders Kruse, VP, Floor Heating & Electronic Controls, Danfoss
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HEALTHY BUILDINGS, BEHAVIOUR AND CLIMATE ACTION

Ingrid Reumert

VP, Global External Relations & Sustainability

The VELUX Group
EU CLIMATE NEUTRALITY BY 2050
of the total energy consumption in Europe is used in buildings

40%

of Europe’s total CO$_2$ emissions are emitted by homes and buildings

36%
THE PROBLEM IS ENORMOUS... BUT SO IS THE POTENTIAL
HEALTH AND QUALITY OF LIFE ARE TRIGGER POINTS

Figure 25: Drivers for consumers

<table>
<thead>
<tr>
<th>Skill</th>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I believe I am skilled in craftsmanship and can do installations on my own</td>
<td>43%</td>
</tr>
<tr>
<td></td>
<td>I believe I found installers who I trust to handle it</td>
<td>82%</td>
</tr>
<tr>
<td></td>
<td>I believe I personally or my family have sufficient knowledge to handle it</td>
<td>63%</td>
</tr>
<tr>
<td>Environment</td>
<td>I believe I should contribute to protect the local environment</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>I should contribute to protect us from global warming</td>
<td>83%</td>
</tr>
<tr>
<td>Personal benefits</td>
<td>I believe it makes living in the residence healthier</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>I believe I need to secure my living when I’m old</td>
<td>82%</td>
</tr>
<tr>
<td></td>
<td>I believe you should always strive to improve your home/property</td>
<td>92%</td>
</tr>
<tr>
<td></td>
<td>I believe my family and friends appreciate it</td>
<td>79%</td>
</tr>
<tr>
<td>Financial</td>
<td>I believe it increases the market value of the residence</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>I believe it enables me to increase the rent (landlords only)</td>
<td>58%</td>
</tr>
<tr>
<td></td>
<td>I believe it reduces energy cost</td>
<td>89%</td>
</tr>
</tbody>
</table>
HAVING A HEALTHY HOME MUST BE WITHIN REACH
VELUX ACTIVE WITH NETATMO IS THE EASY WAY TO A HEALTHIER INDOOR CLIMATE

INDOOR CLIMATE SENSOR
Measures CO₂, humidity and temperature and sends data to the gateway

WEATHER
Online weather forecasts are sent to the gateway

ROOF WINDOW
The gateway automatically opens roof windows when indoor climate can be improved

GATEWAY

DEPARTURE SWITCH
Makes it quick and easy to close all windows when leaving home

MOBILE DEVICE
The app keeps you in control of the automatic operations

80 MILLION PEOPLE LIVE IN DAMP AND UNHEALTHY BUILDINGS

MANY PEOPLE DO NOT REALISE THEY ARE LIVING WITH HIGH CO₂ LEVELS
There will be a complete generation change by 2035. Our familiar customer group “baby boomers” will retire. Generation X, Y, Z will fill the gap with different living habits, financial freedom, spending attitudes, and new interpretations of what value means to them.

**Generation Y and Z:**

- **Digital natives and techaholics**
- **Sustainability as a key driver**
- **More Gen Y, Z living with parents unable to afford own home**
- **Gen X and especially Y & Z don’t expect to live in the same place as long as previous generations had done**
- **Spending more on things that are “important to me” and often significantly less on things that are not**
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Introduction to
Danfoss Climate Solutions

Anders Kruse
Vice President Floor Heating & Electronic Controls
Customers are served within a variety of key segments

Our offering is based on advanced solutions delivering comfort and energy efficiency

- Multi-Family Houses
  - Single-Family Houses
- Industrial Process Industry
  - Food Retail
  - District Energy Sub stations
  - Heat Pumps
  - Roof Top Units
  - Chillers
  - Condensing Units
- Commercial Buildings
  - Industrial Cold Rooms
  - Chillers
  - Condensing Units
  - Heat Pumps
  - Roof Top Units
Danfoss Climate Solutions and the Global Megatrends
Energy efficiency at the core of Danfoss offerings – has been since 1933

MEGATRENDS

Climate Change
- Buildings account for almost 1/3 of global energy consumption and emissions
- Cooling sector accounts for 8% global green house gas emissions
- Low GWP refrigerants & energy efficiency can deliver more than 38% of the Paris Agreement

Digitalization
- Data centers consume about 2% of global electricity
- Digitalization incl. IoT enables new services in industries we serve
- Smart HVAC control solutions can lead to energy savings of up to 40%

Food Supply
- Population growth, 60% more food needed 2050
- Reliable cold chain can reduce food losses by over 20%
- Decentral and online food shopping on the rise

Electrification
- HVACR responsible for 17% of world electricity consumption
- Electricity for heat pumps expected to substitute oil and gas
- Large heat pumps could deliver 30% of district heating

Urbanization
- 1.5 billion more people to live in cities by 2030
- District energy could supply 50% of heating in Europe (today 12%)
- Number of air conditioners will triple by 2050 – with increasing focus on indoor air quality

= COVID19 accelerated
Sustainability - We insits on taking our own medicine

Headquarters carbon neutral by 2022, Global Operations decarbonized by 2030

*Photovoltaic park 2,1 MW, equivalent to 400 households yearly consumption

*District Heating utility based on bio-fuel
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1. Shortly about EnergySolution
   • Who we are and what we do

2. Industrial approach to energy efficiency in a danish context
   • What are the key drivers
   • Transition in mindset
   • How it has affected our approach

3. Driving behavior even further
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M.Sc. in Industrial Design
- 15 years in strategic planning & management
- Operational processes
- Sustainability
Our purpose is to lead transition to sustainability in the industrial sector in a sustainable financial way.

EnergySolution is a strategical and technical expert within green transition, energy, resources, and operations. We daily strive to drive the sustainability transition together with our clients.

From climate ambitions to actions
Document, communicate and report your impact
Optimize your resources and energy
Understand your company footprint
Understand your products footprint
DRIVERS IN INDUSTRY

Beside a general focus on operational cost, we experience a clear connection between companies focus on energy optimization linked to regulation and taxation/levies.

And now there is a new motivator
Legislations, global commitments and rising demands from the financial investors will push climate awareness even further.

Because it is about sustainable business, as the derived effects of climate change can have a direct impact on our way of living and on the companies' bottom lines.
TRENDS - MOVING THE BAR BEYOND ZERO

+30% of our clients are working towards a ZERO emission vision.....

.... and the bar and ambitions are moving – very fast!

• 2050 target becomes the new 2030 targets
• Climate ambitions becomes Biodiversity ambitions
• Climate statements require solid proof and documentation
• Emission focus in Scope 1+2 is viewed as Greenwashing
• Increased level of consumer boycotts are linked to lack in transparency
• Transparency is linked to relevance and materiality combined with the ability to make understandable and credible actions and communication on climate effort
CHANGE IN INTERNAL ANCHORING

From Energy to Climate

• Energy Efficiency is traditional anchored in operation and as cost optimization

• The Climate agenda moves Energy Efficiency to the Top Management level

• Driven by regulation (and expectation of)

• And the key motivator - consumer expectation of corporate responsibility.

Our business model has changed

• From Energy Consulting to Climate Consulting.

• From Operations to Top Management

• Our Value Propositions and Solutions has changed and developed – Driving even greater impact on Energy Efficiency
GUIDING CUSTOMERS TOWARDS ZERO

Different Scope requires differentiated approach; however, key is to clarify level of ambition for vision to reach ZERO emission.
VISUALIZATION OF CLIMATE FOOTPRINT -> STRATEGIC ACTIONS

TOWARDS ZERO TOGETHER
1. Energy Conversion
2. Energy Optimization
3. Stronger Planning - Together
4. From Fossil to Electrical
5. Responsibility Together
6. From Virgin to Recycle
Building the right mindset and understanding how to progress most efficient with energy optimization.

Lacking understanding of required energy needs leading to wrong investments.

**A common case:**

**CSR strategy:** Reduce CO2 by converting Fossil Fuel

**Operations action:** Convert fuel boilers to Heatpumps

**Issue:** capacity replacement often happens 1:1

**Solution:** Avoid, reduce – understand actual requirement and link systems before investing – often we see an 30-70% energy reduction
DRIVING BEHAVIOR EVEN FURTHER

Transition is moving ahead in Denmark with national and corporate ambitions and visions.

However, transition can be driven further from our point of view.

- Backing and implementation of The European Green Deal and EU Taxonomy for Sustainability
- Harmonies a common language across the industrial sector
- Establish more common classification systems for tracking and reporting
- Models for internal and external CO2 taxation
- Finances to support the green transition including more clean and affordable energy
THANK YOU
DEBATE

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THANK YOU

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