IT’S QUIZ TIME
Renovating buildings to meet Energy Union goals – maximising the Multiple Benefits for EU Citizens

Introductory Remarks: Susanne Dyrboel, President of EuroACE

Moderator: James Crisp, Journalist, Euractiv

- Quiz Session 1: The Cost of Non-Renovation in the EU - on energy security, on consumers, on the economy
  Thomas Boermans, Managing Consultant Energy Efficiency, Ecofys

- Quiz Session 2: Financing Building Renovations - increasing the roll-out of existing financing schemes
  Adrien Bullier, Project Advisor, European Commission, EASME

- Quiz Session 3: Reasons to renovate - the multiple benefits driving citizen and consumer action
  Kurt Emil Eriksen, Senior Political Advisor, VELUX Group

Conclusions: Adrian Joyce, Secretary General of EuroACE
Renovating buildings to meet Energy Union goals – maximising the Multiple Benefits for EU Citizens
Introductory Remarks
Susanne DYRBØL, President, EuroACE

“Quizzing the Stakeholders”
Renovating buildings to meet Energy Union goals – maximising the Multiple Benefits for EU Citizens
The Cost of Non-Renovation in the EU – on energy security, on consumers, on the economy
Thomas BOERMANS

Managing Consultant
Energy Efficiency
Ecofys
The Cost of Non-Renovation in the EU

17/06/2015
Thomas Boermans
Development of final energy demand in the building sector by 2050

Source: Renovation Tracks for Europe up to 2050 [Ecofys 2012]
Effect of deep renovation in the building sector of EU’s gas imports

Source: Deep renovation of buildings. An effective way to decrease Europe’s energy import dependency [Ecofys 2014]
### Annual added value of the building sector on EU economy

<table>
<thead>
<tr>
<th>2011/ EU 28</th>
<th>Value added (EUR billion)</th>
<th>Number of persons employed (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction of buildings</td>
<td>144</td>
<td>3.7</td>
</tr>
<tr>
<td>Specialised construction activities</td>
<td>283</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>Total building sector</strong></td>
<td><strong>427</strong></td>
<td><strong>11.5</strong></td>
</tr>
</tbody>
</table>

Source: Energy Renovation: The trump card for the new start of Europe [JRC 2015]
Average employment generated in 2011-2050

Source: Europe’s buildings under the microscope [BPIE 2011]
Financing Building Renovations
Increasing the roll-out of existing financing schemes
Adrien BULLIER

Project Advisor
EASME
European Commission
Financing energy renovation of buildings

Adrien BULLIER
Project Advisor, Intelligent Energy Europe and Horizon 2020 programmes
European Commission, Executive Agency for Small and Medium-Sized Enterprises (EASME)
Investing in buildings energy renovation…
It's not only about energy savings!

- The more savings, the longer the payback or the lower the return on investment – all things equal
- But does anyone ask about the payback of a new bathroom?
- Energy efficient buildings are also:
  - More comfortable
  - More healthy
  - More productive
  - More trendy!
- This makes energy efficiency much more attractive… also financially:
  - Increased property value ('green value') after renovation
  - For rental properties: higher rents, lower risks of vacancy, lower turnover rate
Finance and energy efficiency: trying to match squares and circles?

We’ve got money, but... we’re looking for projects!

EUR 38 bn until 2020 for low carbon economy

We’ve got projects, but... we’re looking for money!

USD 12 trillion under SRI asset management in the EU

Financial sector

Dedicated credit lines
Risk-sharing schemes
Equity provision

IEE & Horizon 2020

EU structural and investment funds

National funding

Benchmark investments
Awareness of investors
Organise dialogue
Capacity building

Project dvpt assistance
EPC facilitation
Local financing schemes

‘Innovative financing’? ‘ESCO’?

“Investment project” for many project developers:
- technical design tailored to physical constraints
- state-of-the-art technology
- energy payback times
- “no financing” = “no subsidy”?

> 6,100 signatories of Covenant of Mayors + all other stakeholders committed to climate and energy goals

Adapted from C. MILIN, ECEEE 2013
EEFIG's top 5 drivers of demand and supply of energy efficiency finance

<table>
<thead>
<tr>
<th>Demand of EE finance</th>
<th>Supply of EE finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Standardization</td>
<td>1 Standardization</td>
</tr>
<tr>
<td>2 Clear Business Case</td>
<td>2 Regulatory Stability</td>
</tr>
<tr>
<td>3 Effective enforcement of regulation</td>
<td>3 Increased Investor Confidence &amp; Change in Risk Perception</td>
</tr>
<tr>
<td>4 Awareness at Key Decision Maker Level</td>
<td>4 Transaction costs / simplicity</td>
</tr>
<tr>
<td>5 Buildings Regulation, Labeling and Energy Performance Certificates</td>
<td>5 Measurement, Reporting &amp; Verification (MRV) and Quality Assurance</td>
</tr>
</tbody>
</table>
EEFIG assessment of financing schemes for different market segments

Table 4: Results of the EEFIG survey on Financial Instruments for energy efficiency investments in buildings

<table>
<thead>
<tr>
<th>Mature Financial Instruments</th>
<th>Commercial</th>
<th>Public</th>
<th>Public Rental</th>
<th>Private Rental</th>
<th>Owner Occupied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedicated Credit Lines</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Energy Performance Contracting (Undertaken by Private Sector)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Risk-Sharing Facilities</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Direct and Equity Investments in Real Estate and Infrastructure Funds</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Subordinated Loan</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Covered Bonds</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Leasing</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emerging Financial Instruments</th>
<th>Commercial</th>
<th>Public</th>
<th>Public Rental</th>
<th>Private Rental</th>
<th>Owner Occupied</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Bill Repayment</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>On-Tax Finance (PACE)</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Energy Efficiency Investment Funds</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Energy Services Agreement</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Public ESCOS for Deep Renovation of Housing</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Factoring Fund for Energy Performance Contracts</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Public ESCOS for Deep Renovation of Public Buildings</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Green Bonds</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Citizens Financing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Thanks for your attention

For more information:

- Workshop on innovative financing for energy efficiency and renewables, 28 April 2015, Brussels: http://bit.ly/1F3TQX4

This presentation requires oral explanations
Reasons to Renovate
Multiple benefits driving citizens and consumer action
Kurt Emil ERIKSEN

Senior Political Advisor
VELUX Group
Reasons to renovate – the multiple benefits driving citizen and consumer action

Kurt Emil Eriksen
Senior Political Advisor, Public Affairs & Sustainability
The VELUX Group

#HealthyBuildings
@kurte Emil
About the VELUX Group

- 40 national sales companies throughout the world
- 23 production sites in 11 countries
- 10,000 employees globally

Buildings of tomorrow - today
Consumer confidence improving - but recessionary sentiment still strong

• 53% of consumers worldwide believed they were in recession in Q4 2014*
• However, consumer confidence has increased in 22 out of 32 European markets in Q1 2015**
• Household saving rate stable in Europe in Q4 2014**

In 2050
9 out of 10 of the existing buildings in Europe will still be in use

---

** Nielsen Global Consumer Confidence Survey, Q1, 2015.
*** Eurostat, Household Saving Rate Q4 2014.
Multiple Benefits energy efficiency in buildings sector*

**International**
- Energy price reduction
- Greenhouse gas emissions reduction

**National**
- Reduced energy demand and local price reduction
- Reduced public health spending
- Energy security
- Potential net increase in employment

**Sectoral**
- Increase in re-sale value of home
- Improved bill payments for energy providers
- Jobs in installation and production of insulation materials

**Individual**
- Lower energy bills (discretionary)
- Increased disposable income
- Warmer, drier, more comfortable home
- Improved health and well-being potential

*IEA Study ‘Capturing the Multiple Benefits of Energy Efficiency’ 2014
Multiple Benefits energy efficiency in buildings sector
Indoor environments in European homes and schools have a significant impact on public health and learning*

1. Dampness and mould
2. Low ventilation rates
3. Lack of Daylight
4. High room temperatures

*White Paper ‘Towards an identification of European indoor environments’ impact on health and performance’ Fraunhofer Institute
Research shows: Health must be prioritized in combination with energy

- **80 million** Europeans live in damp and unhealthy homes
- **40%** of society’s total energy consumption is accounted for by buildings
- **37%** of the needs of the buildings sector rely on energy imports
- **61%** of all imported gas goes to buildings
- **90%** of our time is spent indoor
- **1/3** Of European households are affected by asthma or allergies

*White Paper ‘Towards an identification of European indoor environments’ impact on health and performance’ Fraunhofer Institute*
Healthy Homes Barometer – what drives European citizens?

- 12 countries
- 12,000 Europeans
- Academically accompanied by Prof. Dr. Dr. h. c. Bernd Wegener, Humboldt University Berlin.
- Operate A/S and Wilke.
European citizens:
Healthy living starts at home

- # 1 Sleeping well at night
- # 2 Ventilating my home
- # 3 Eating fruit and vegetables
- # 4 Daylight in my home

- # 5 Spending time outdoors
- # 6 Avoiding tobacco
- # 7 Regular exercise
- # 8 Avoiding chemicals
- # 9 Dietary supplements
Investments and reasons to renovate: Energy costs and Comfort

- Energy costs: 51%
- Comfort: 62%
- Attractiveness: 49%
- Functionality of rooms: 41%
- Indoor air quality: 28%
- Amount of daylight: 27%
- Size: 25%
- View to the outside: 25%
- Environmental impact from building materials: 25%
European citizens: We expect performance on energy and comfort

Hand in hand: Energy and health awareness go together

64% 23%
Air out several times a day

80% 34%
Air out several times a day

55% 22%
Air out several times a day

72% 33%
Air out several times a day

What is important when moving to a new house?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental impact from building materials</td>
<td>5.4</td>
</tr>
<tr>
<td>Attractiveness</td>
<td>5.8</td>
</tr>
<tr>
<td>The view to the outside</td>
<td>6.0</td>
</tr>
<tr>
<td>Indoor air quality</td>
<td>6.0</td>
</tr>
<tr>
<td>Size</td>
<td>6.0</td>
</tr>
<tr>
<td>Amount of daylight</td>
<td>6.1</td>
</tr>
<tr>
<td>Functionality of the rooms</td>
<td>6.2</td>
</tr>
<tr>
<td>Energy costs</td>
<td>6.2</td>
</tr>
<tr>
<td>Comfort at home</td>
<td>6.3</td>
</tr>
</tbody>
</table>
What European citizens want and how EU supports

What Europeans find important

... to their health

A healthy home is number 1

- 6.4 Sleeping well
- 6.1 Ventilation
- 5.9 Daylight

Healthy intake is number 2

- 6.0 Fruit and vegetables
- 5.7 Avoiding tobacco
- 4.1 Dietary supplements

... if moving to a new house

- 6.3 Comfort
- 6.2 Energy cost
- 5.4 Environmental impact

What EU does

... to promote health

How to have a healthy home

Sleeping well: No European initiatives.


Daylight: No requirements in Directive 2010/31/EU.

How to ensure healthy intake

Fruit and vegetables: Several EU Commission campaigns, legislation on nutrition and health claims on food (EC 1924/2006), member state tax on sugar and fat etc.

Avoiding tobacco: Top priority for the EU Commission for years, numerous anti-smoking campaigns in the EU and in member states, legislation on presentation and sale of tobacco (2014/40/EU), tax on tobacco (2010/12/EU) etc.


... if moving to a new house

Comfort: ???


Environmental impact: ???
Better regulation needed to guarantee efficient and healthy buildings*

*Indoor air quality, thermal comfort and daylight*, Buildings Performance Institute Europe, 2014
Saving energy by renovation – a 'win-win' for EU citizens*

Real life testing

“one experiment is better than a thousand expert assumptions”
- Villum Kann Rasmussen
A decade of full scale experiments – 21 Active Houses in 12 countries
Renovation & affordability
The next challenge to turn into opportunity

In 2050
9 out of 10 of the existing buildings in Europa will still be in use
Thank you

Questions?

#HealthyBuildings
@kurtemil
Conclusions
Adrian JOYCE, Secretary General, EuroACE
Quizzing the Stakeholders

Renovating buildings to meet Energy Union goals – maximising the Multiple Benefits for EU Citizens