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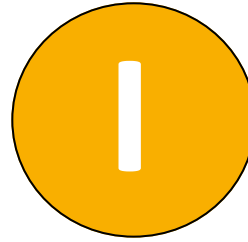
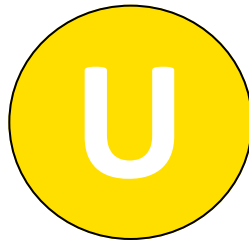
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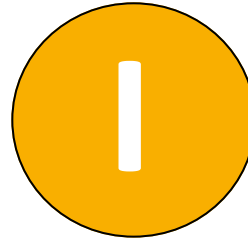
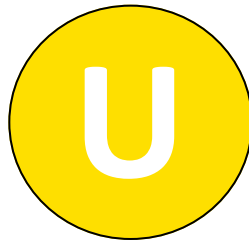
# How to make Energy Efficient Buildings more Visible and Attractive?

**Introductory Remarks:** *Susanne Dyrbøl*, President of EuroACE

**Moderator:** *Geoff MEADE*, Meade Davis Communications

- **Quiz Session 1: The Commission Buildings - Are they in line with EU Directives?**  
*Gabor Toth*, Head of Sector at the Unit 'Technical services, Building management' – Office des Infrastructures et Logistique à Bruxelles, European Commission
- **Quiz Session 2: Energy Performance Certificates—What role, challenges, future?**  
*Bogdan Atanasiu*, Head of Research, Buildings Performance Institute Europe
- **Quiz Session 3: Energy Efficient Buildings— Multiple benefits and need for ambition**  
*James Drinkwater*, World Green Building Council-European Regional Network  
*Ingrid Reumert*, Vice-President, Public Affairs & Sustainability, Velux

**Conclusions:** *Adrian Joyce*, Secretary General of EuroACE

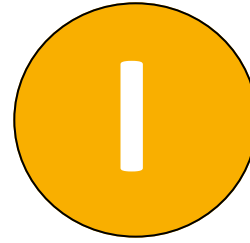
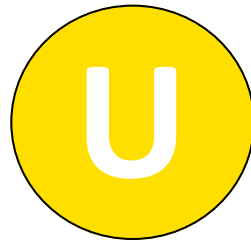


GE  
Lighting



## “Quizzing the Stakeholders”

How to make Energy Efficient Buildings  
more Visible and Attractive?

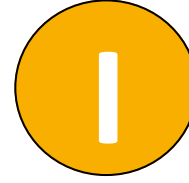


## **Introductory Remarks:**

Susanne DYRBØL, President, EuroACE

**“Quizzing the Stakeholders”**

**How to make Energy Efficient Buildings  
more Visible and Attractive?**



“Quizzing the Stakeholders”

# Session 1

## The Commission Buildings – Are they in line with EU Directives?

Gabor TOTH,

Head of Sector at the Unit *Technical services, Building management* in the Office for Infrastructure and Logistics in Brussels (OIB)

European Commission





# The Commission buildings

*ARE THEY IN LINE WITH EU DIRECTIVES*

**TÓTH Gábor**

head of sector

Technical services, Building management



**Are the Commission buildings in line with EU Directives?**

**YES**



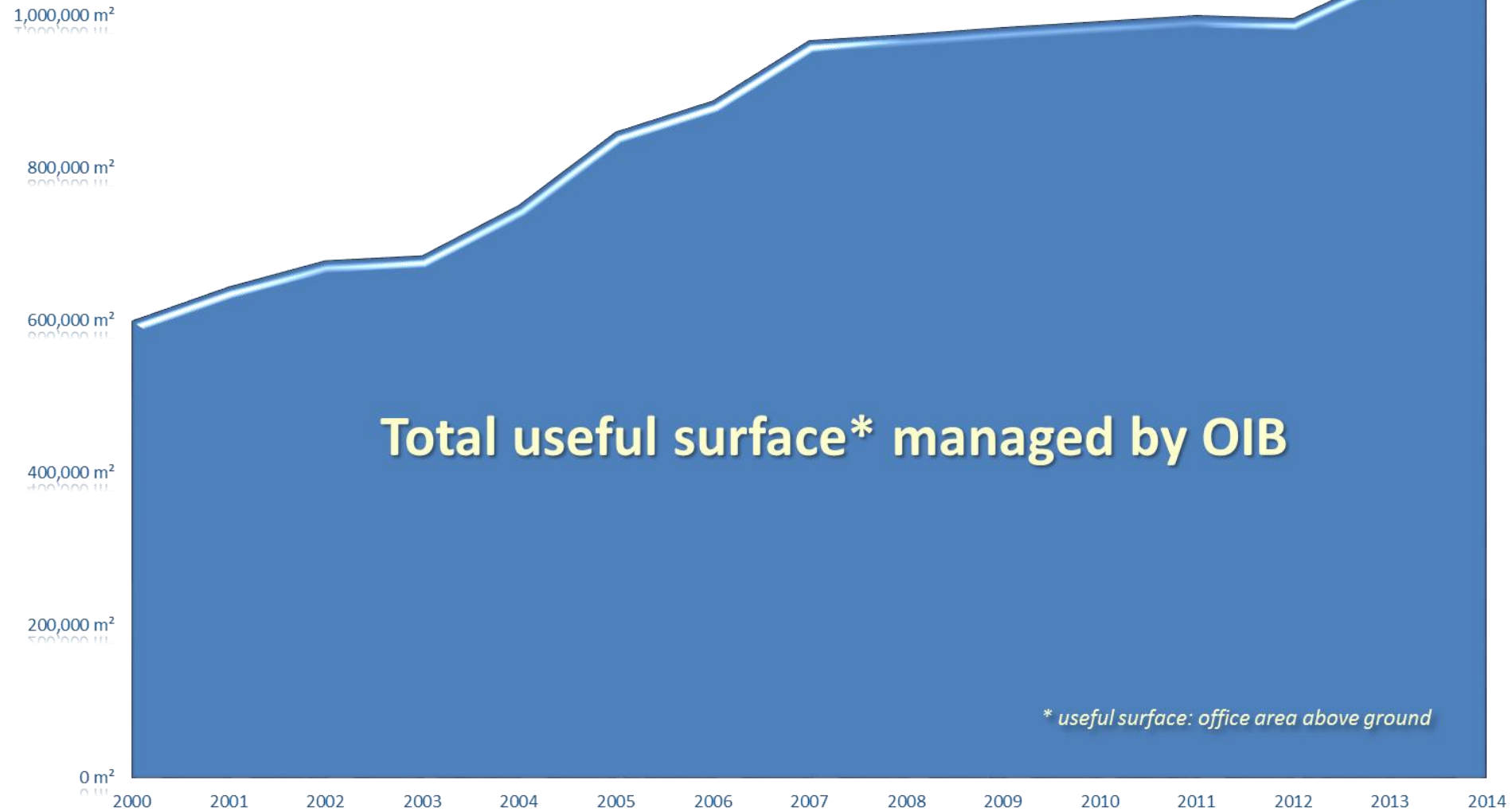


# Commission building park

- 73 buildings (67 to 75)
- 1,000,000 m<sup>2</sup> useful area (above ground)
- mixed ownership structure
  - 10 buildings owned
  - 5 can be considered as owned
  - rest under more or less more exotic constructions
- 2 buildings in Flanders, rest in Brussels Region
- 370 GWh primary energy consumption
- 15 M€ annual energy cost

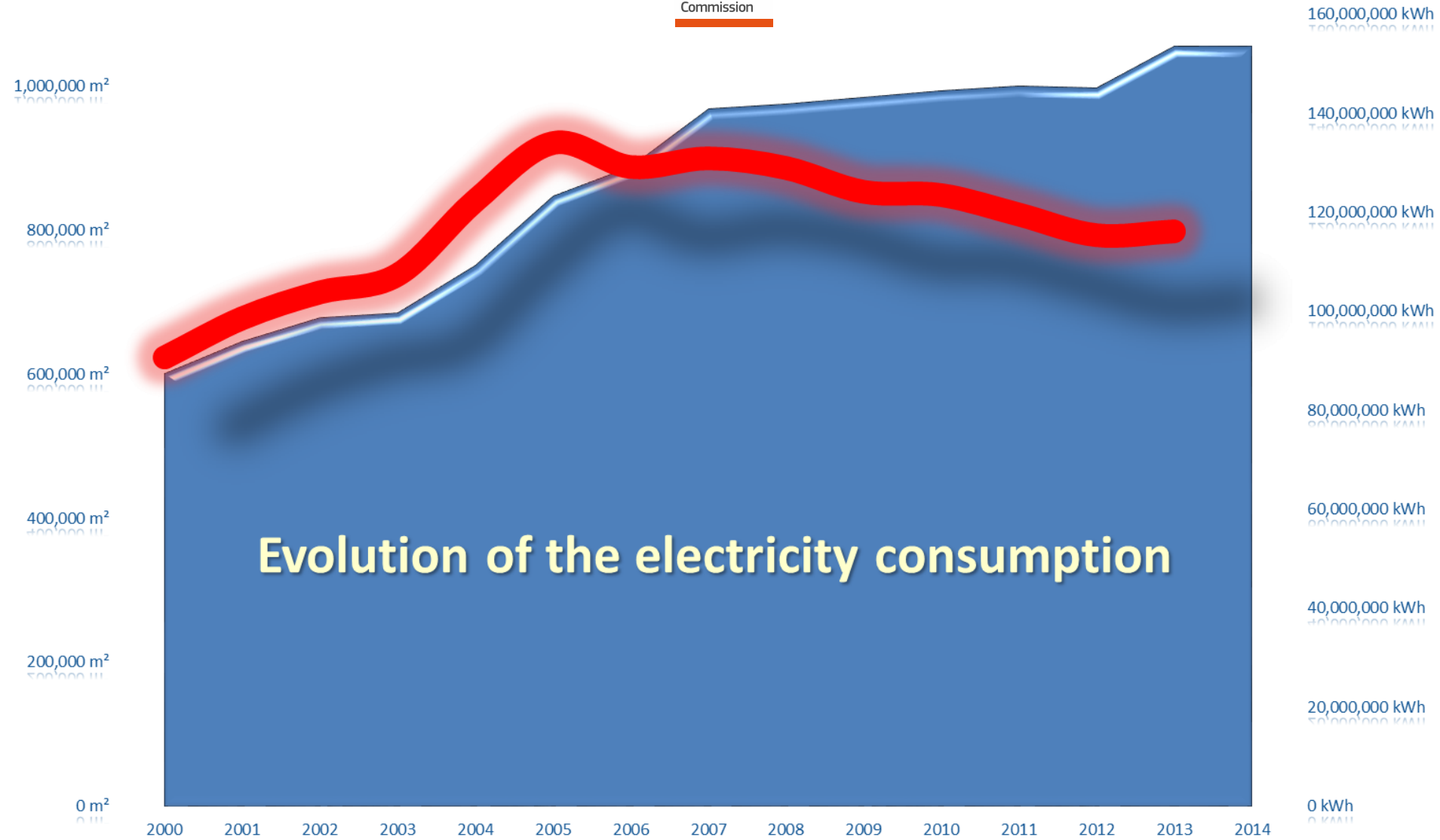


European  
Commission



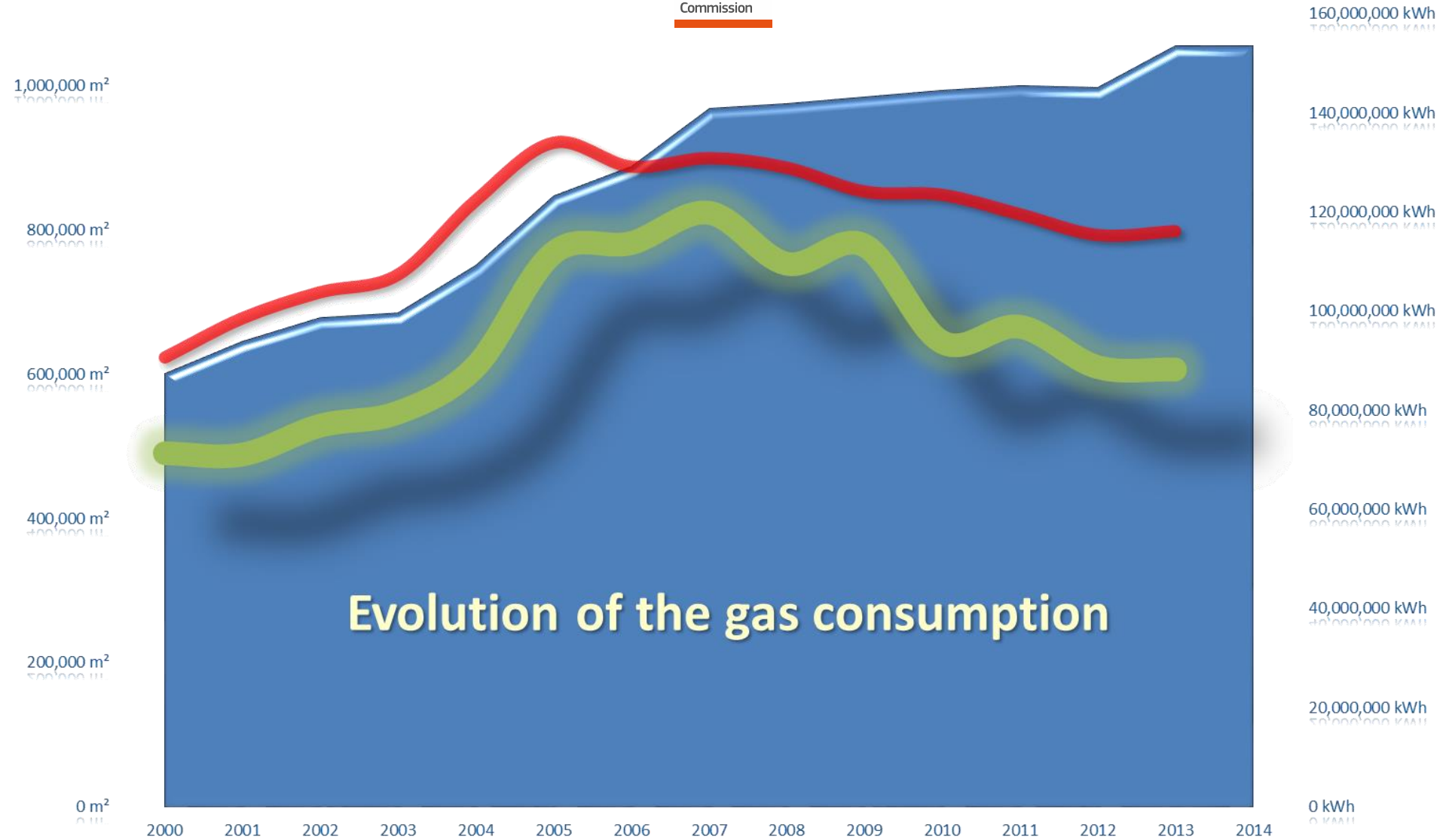


European  
Commission



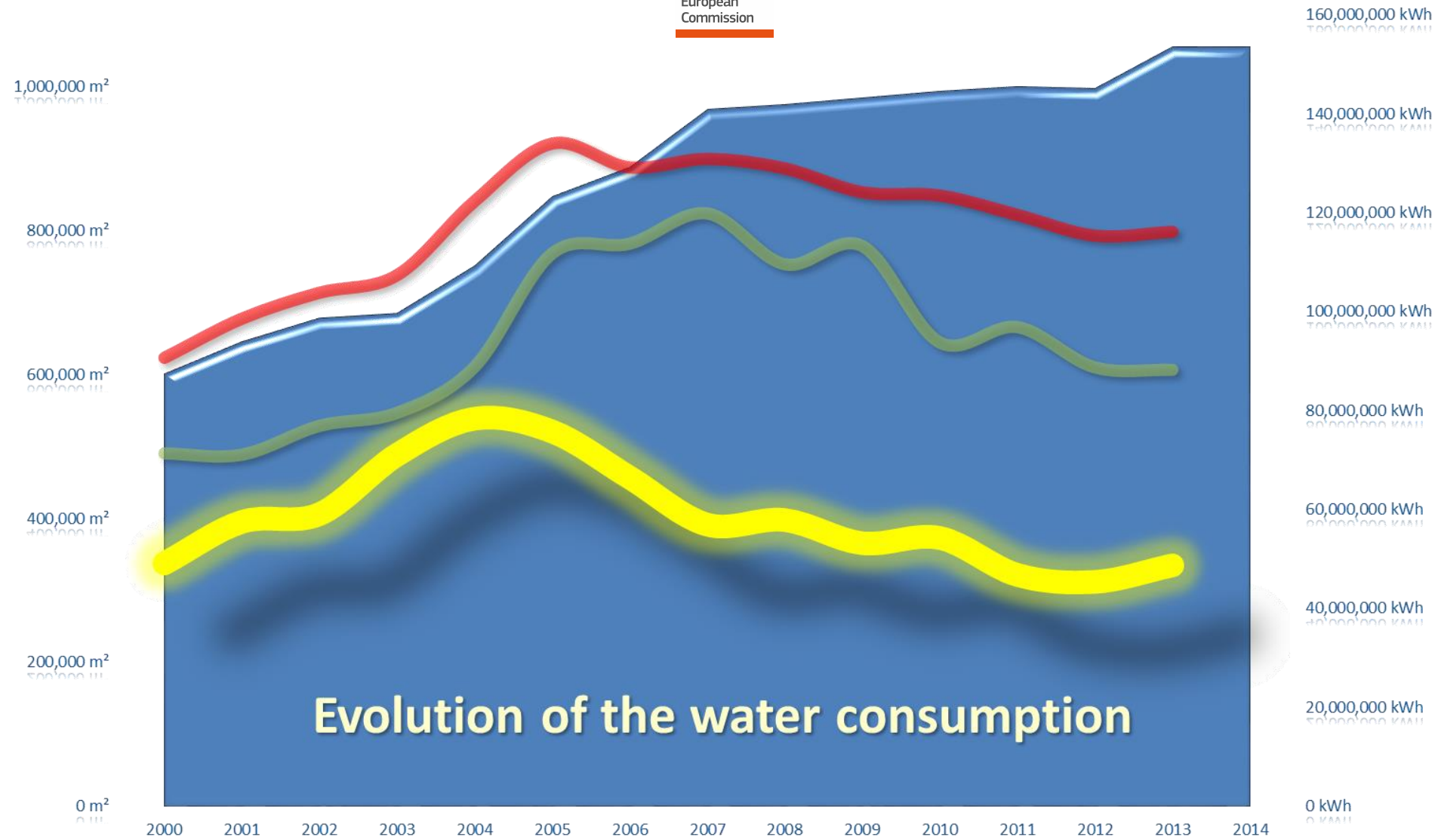


European  
Commission



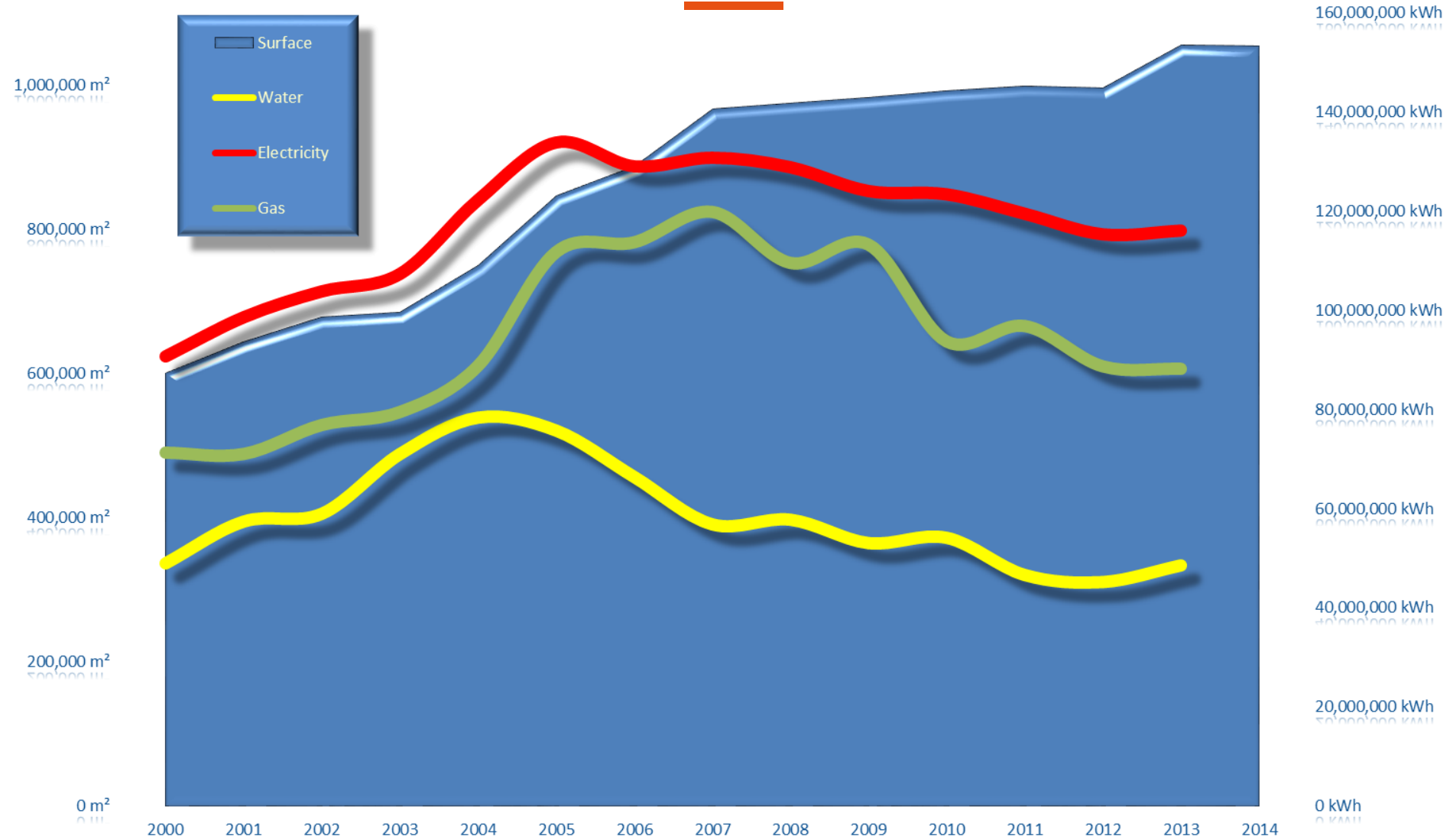


European  
Commission





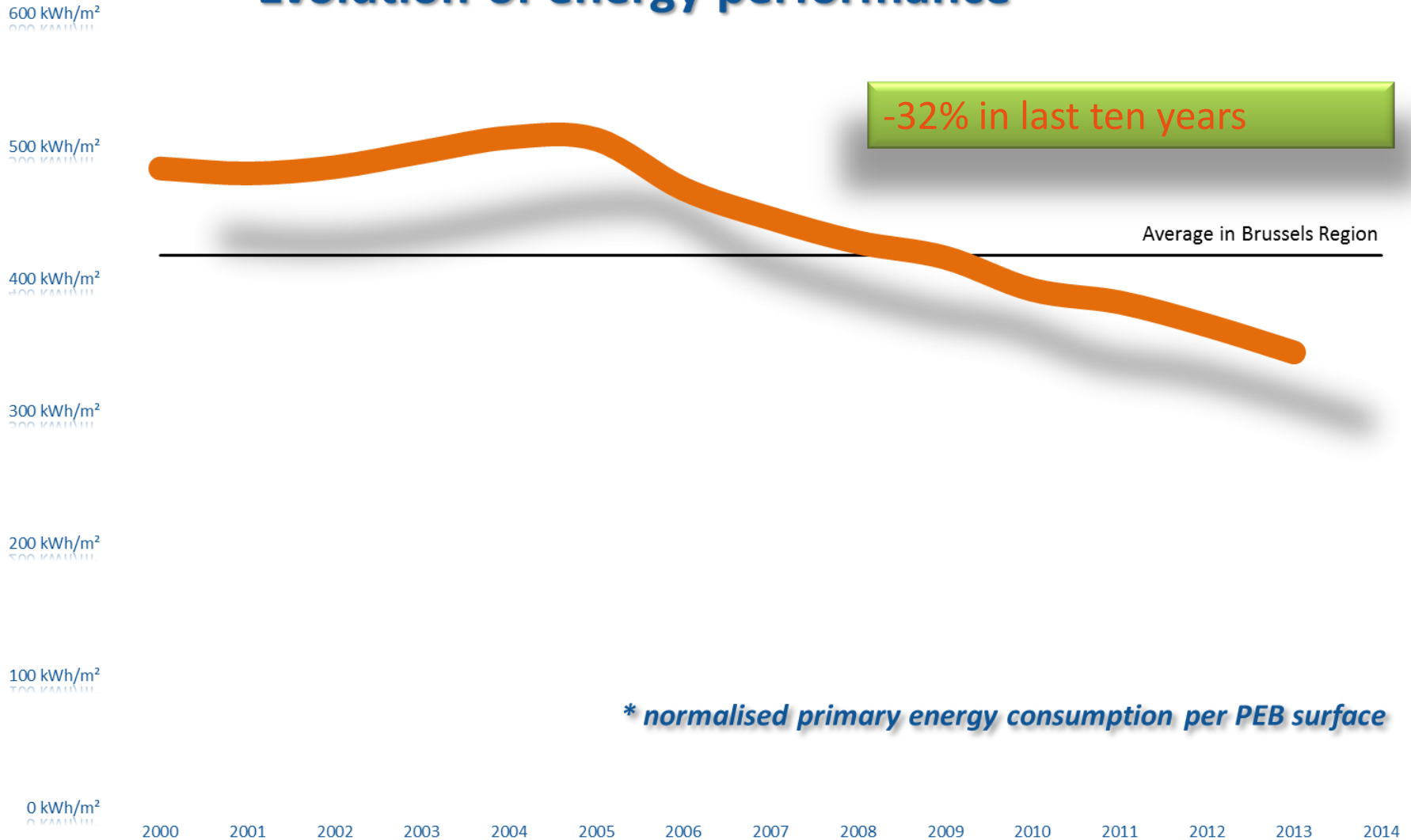
European  
Commission





European  
Commission

## Evolution of energy performance\*

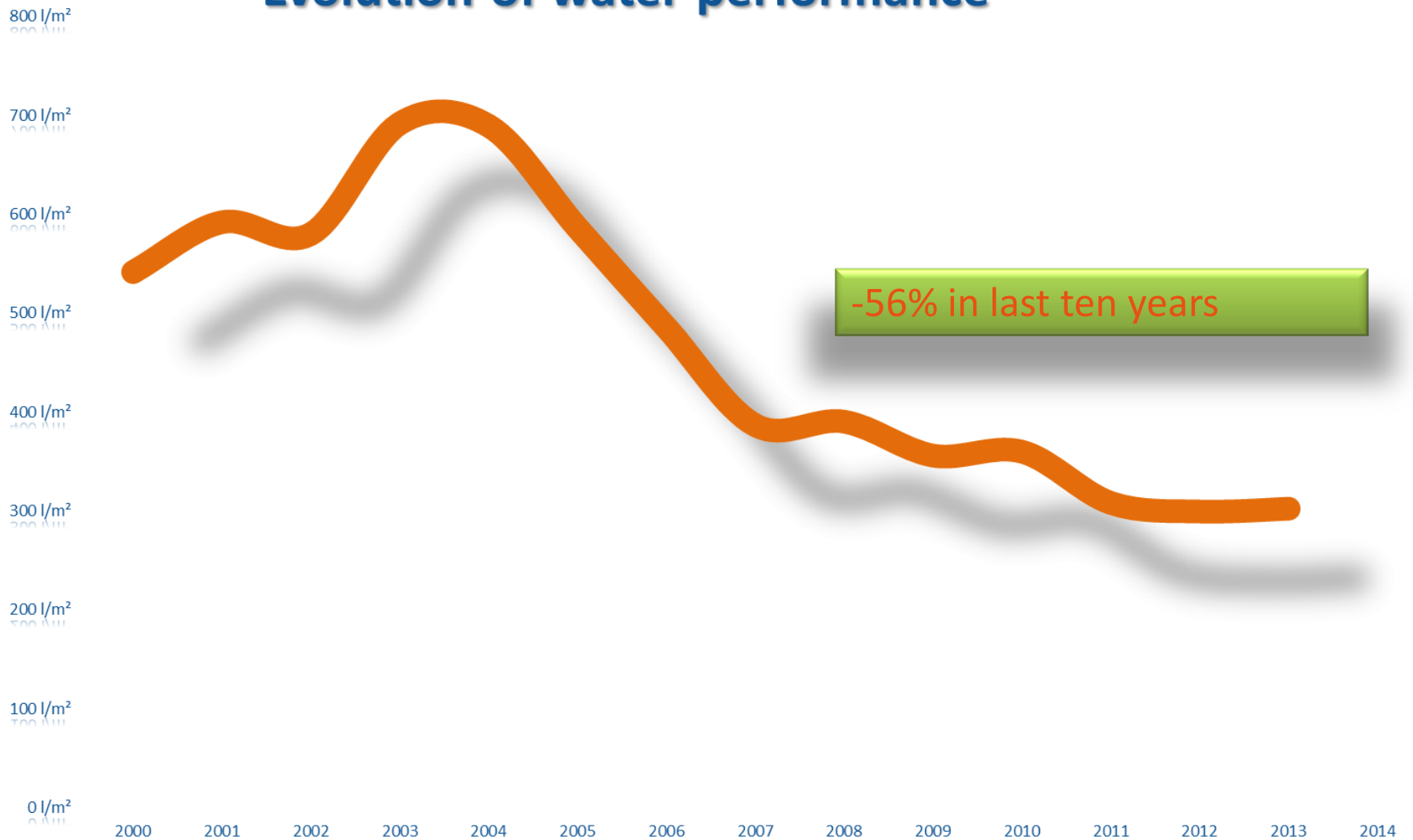


\* *normalised primary energy consumption per PEB surface*



European  
Commission

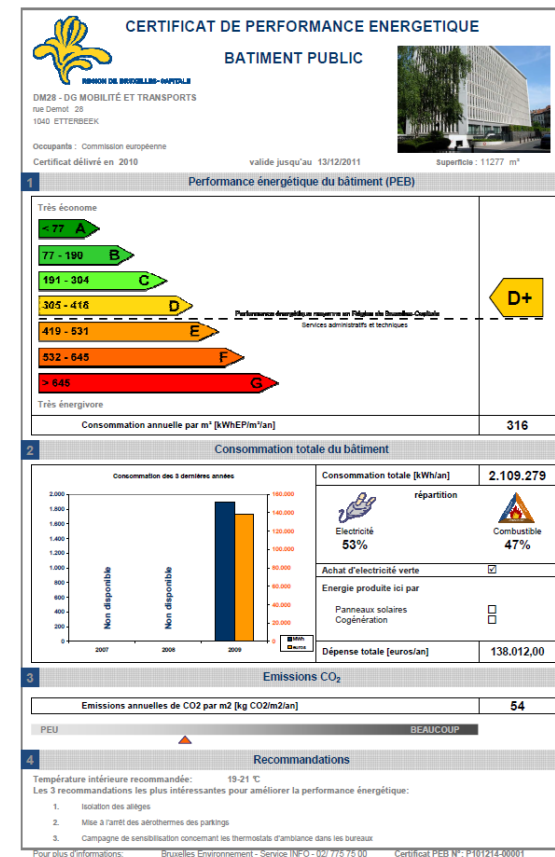
## Evolution of water performance



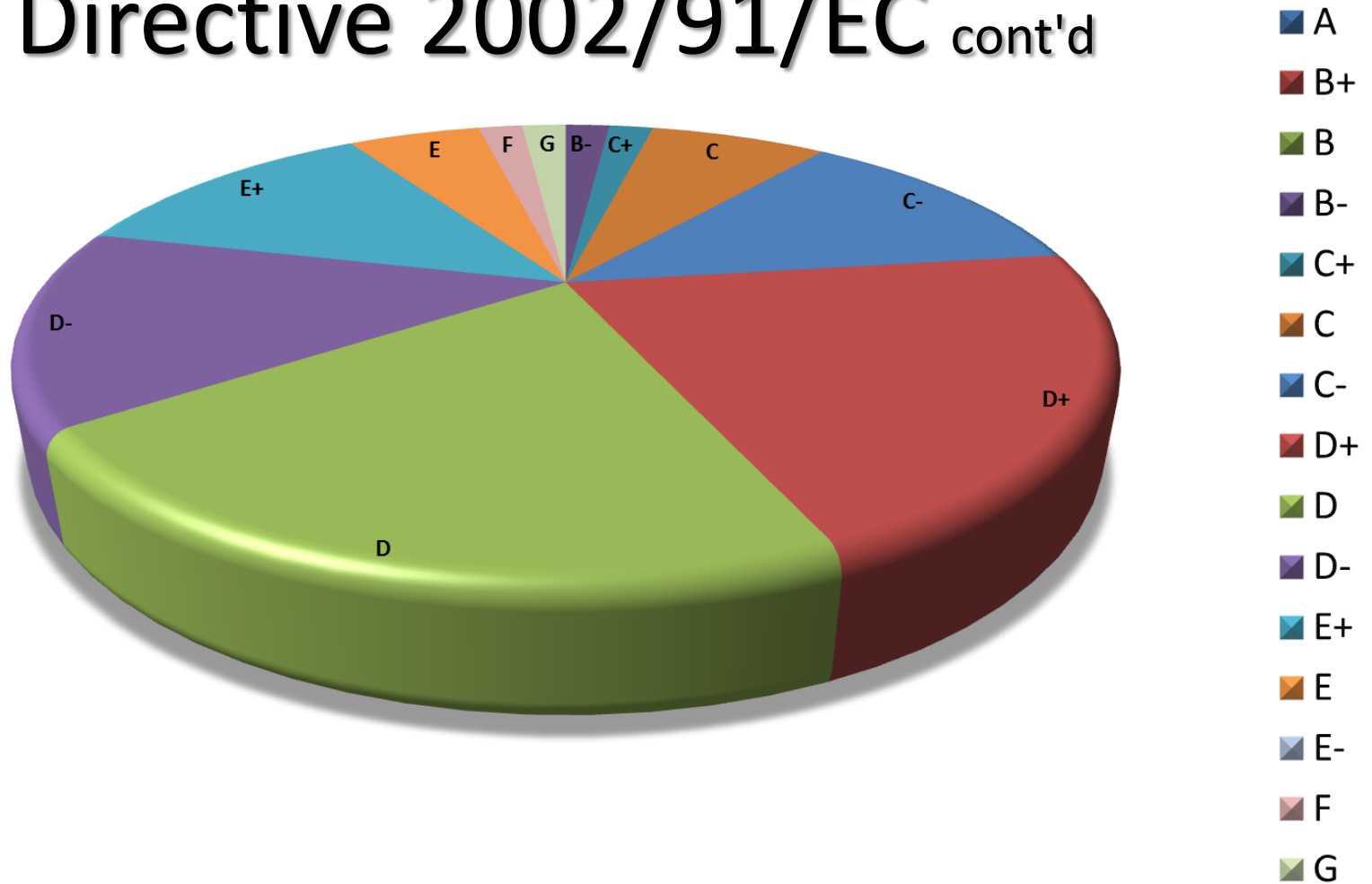


# Directive 2002/91/EC

- Energy Performance of Buildings
- transposed in Brussels: May 2010
- 1<sup>st</sup> public body to certify a building: **Commission (DM28)**
- 1<sup>st</sup> public body to submit complete building park: **Commission**



# Directive 2002/91/EC cont'd



# Directive 2012/27/EU

- Article 5 covers 15 buildings
- annual requirement for the Commission
  - 7,851 m<sup>2</sup> to renovate
  - or
  - 892,637 kWh to save (1%; *Brussels* → 0,13%)
- implementation plan submitted to EC in April
  - 4 buildings to renovate
  - 1 building to abandon without replacement
  - 3.6 GWh energy to save (plan foresees 7 GWh)

# Conclusion

**Are the Commission buildings  
in line with EU Directives?**

**Yes, they are.**

**The Commission  
walks in/with front.**



Thank you

**TÓTH Gábor, [gabor.toth@ec.europa.eu](mailto:gabor.toth@ec.europa.eu)**



**“Quizzing the Stakeholders”**

# **Session 2**

## **Energy Performance Certificates – What role, challenge, future?**

Bogdan ATANASIU,

Head of Research, BPIE





**“Quizzing the Stakeholders”**

# **Session 3**

## **Energy Efficient Buildings – Multiple Benefits and need for ambition**

James DRINKWATER, WGBC - ERN

Ingrid REUMERT, VELUX A/S





# Productivity Potential

## OUTSIDE VIEWS



Mental Function  
& Memory

**10-25%**  
BETTER



Call  
Processing

**6-12%**  
FASTER



Hospital  
Stays

**8.5%**  
SHORTER



## DAYLIGHT



Students achieve

**5-14%**  
HIGHER TEST SCORES

and learn **20-26%**  
FASTER

Workers are **18%**  
MORE PRODUCTIVE



**15-40%**  
INCREASE  
in Retail Sales

## SYSTEMS



Productivity Increases by



**23%**  
from better lighting



**11%**  
from better ventilation



**3%**  
from individual temperature control

THE BUSINESS  
CASE FOR GREEN  
BUILDING

# Emerging Market Trends

Table 1: Importance sustainability categories

Position	2010	2013
1	Energy	Health and Well-being
2	Health and Well-being	Energy
3	Water	Transport
4	Material	Waste
5	Waste	Pollution
6	Pollution	Water
7	Transport	Materials
8	Management	Management
9	Land use and ecology	Land use and ecology



Table 2: Top 5 most mentioned sustainability measures

Position	2013
1	Daylight access for visual comfort
2	Better internal (natural) air quality
3	Ability to measure and modify energy consumption
4	Flexible lay-out possibilities
5	Good public transport in immediate surroundings

Source: Jones Lang LaSalle, 2013

Source: Jones Lang LaSalle, 2013



# Health, wellbeing and productivity

A new WorldGBC project – measuring impact and sharing best practice



“...there is still some way to go before this kind of evidence informs investment decisions.”





**“Quizzing the Stakeholders”**

# **Session 3**

## **Energy Efficient Buildings – Multiple Benefits and need for ambition**

James DRINKWATER, WGBC - ERN

Ingrid REUMERT, VELUX A/S

# Energy Efficient Buildings

## *- From a customer perspective*

Ingrid Reumert, VP Public Affairs & Sustainability, VELUX A/S

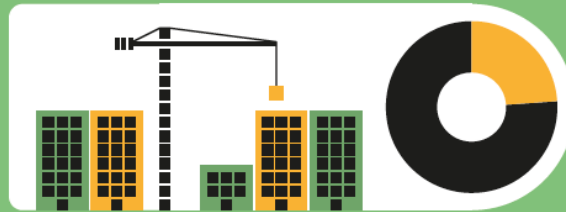
Ingrid.Reumert@velux.com  
Twitter: @Ingridreumert  
VELUX Group

# Energy consumption 2050 Buildings, globally

- Key Findings from the Intergovernmental Panel on Climate Change (IPCC) Fifth



In 2010, buildings accounted for 32% of global final energy use.



In 2010, buildings accounted for 19% of all GHG emissions.



CO<sub>2</sub> emissions in the building sector could double or triple by 2050.



# Save energy, the next holidays, new kitchen or child education?



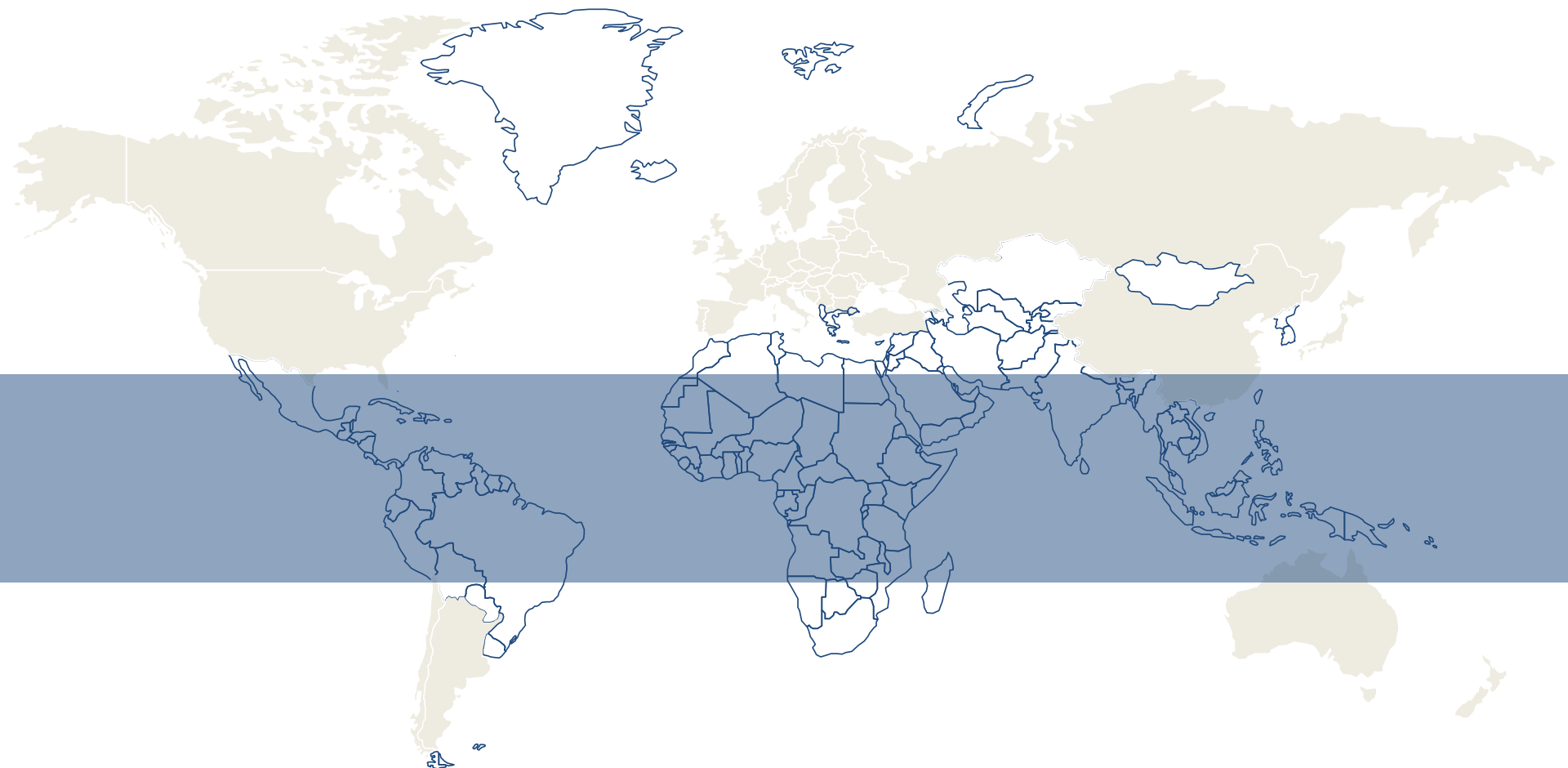


# We need a revolution

# REVOIUTION

- But where is the ignition?
- How to trigger renovation of buildings in Europe?
- Without making the mistakes of the past
  
- We need a bottom up movement
- What do the customers want?

# Our customers are all over the world



# Mega trends influence consumers' everyday life

## Global Mega Trends



Digitalisation

Climate change



Urbanisation



Sustainability



Health & wellness



Globalisation



Ageing populations

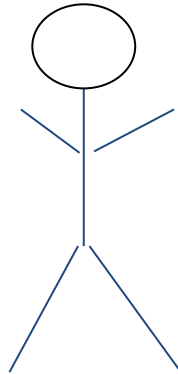


Individualisation



And the recession...

Consumers



## Impact on everyday life



Home Security  
Expanding



Protection from  
Unhealthy Air



Reducing the  
Energy Bill



Children in Focus



Baby Boomers Future  
Proofing their Homes



Do It Yourself DIY  
Health



Good enough

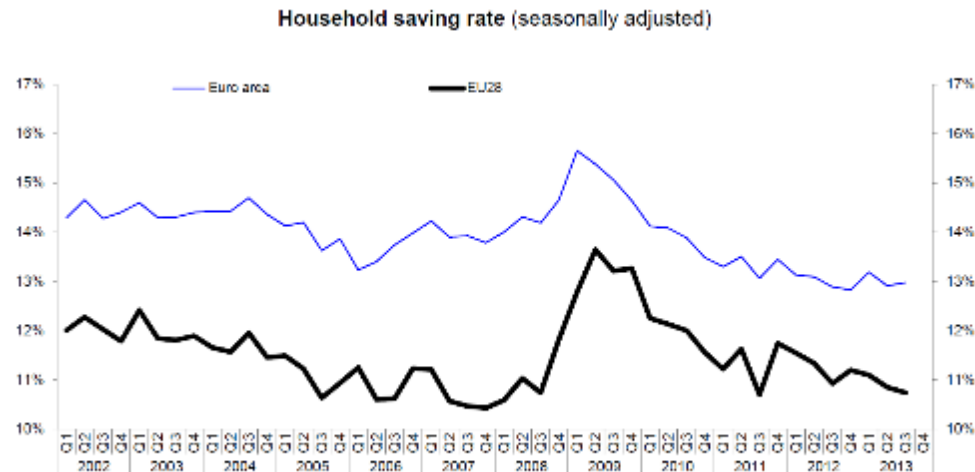
And many more areas..

# Consumers are still marked by the recession

- Recent global survey, Boston Consulting Group\*

- 59% of consumers in developed economies are anxious about the future, and nearly half do not expect economic improvement in the next few years
- 43% either do not feel financially secure or believe they are in financial trouble

- However, consumer confidence has increased in 21 out of 32 European markets in Q1 2014\*\*
- Household saving rate stable in Europe in 2013\*\*\*



\* Boston Consulting Group, October, 2013. Survey includes 23 000 respondents across Australia, Canada, France, Germany, Italy, Japan, Spain, the UK, and the US

\*\* Nielsen Global Consumer Confidence Survey, Q1, 2014

\*\*\* Eurostat newsrelease euroindicators, 14/2014, 28 January 2014

# Trends for consumers

## Trading up “my home”

EXHIBIT 5 | Consumers Reported Trading Down on Dining Out and Luxury Goods, and Trading Up on Travel and Big-Ticket Home Items

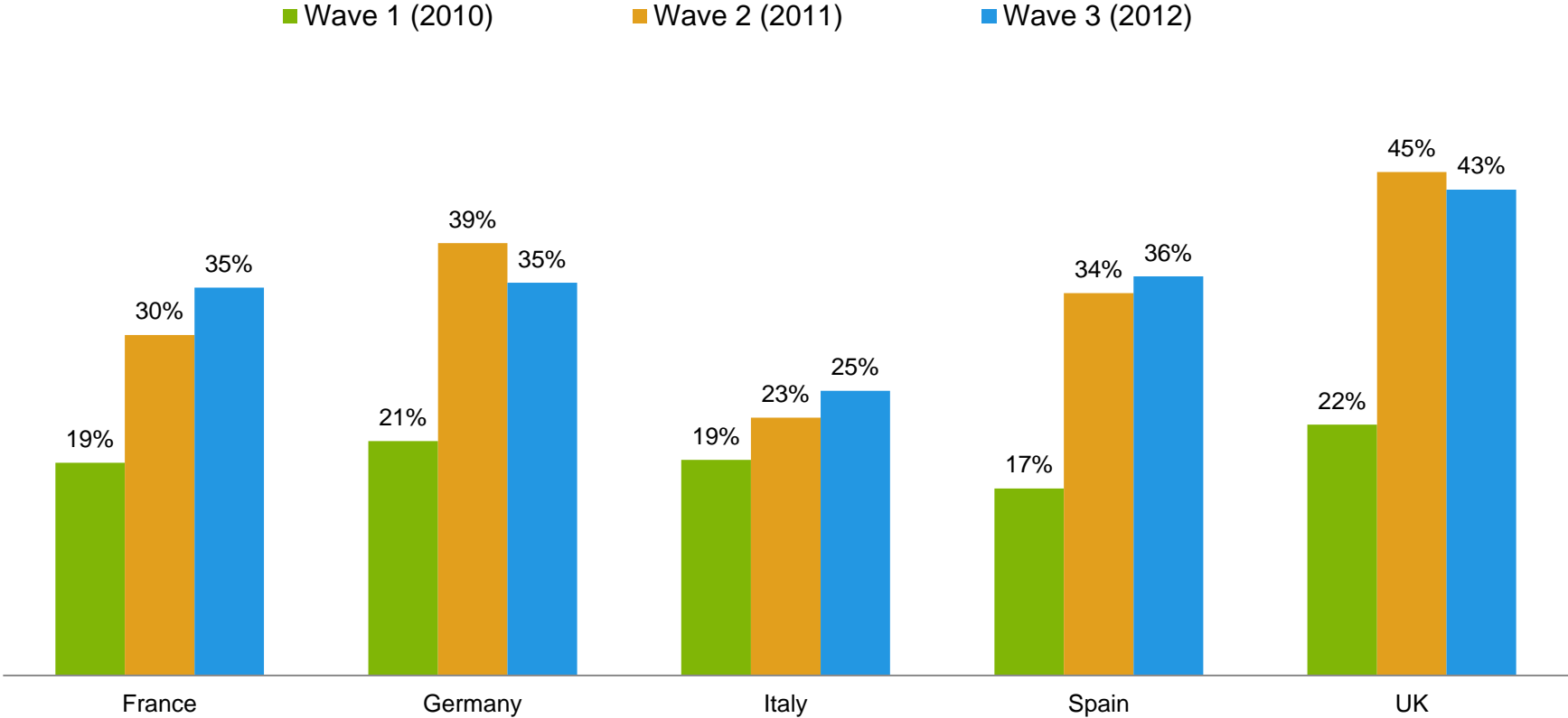


Trading up in areas related to home, family and health

Trading down on luxury and “frills”

Source: BCG 2013 Global Consumer Sentiment Survey.  
Note: N/A = not available.

# Rising interest in home improvements across Europe



Q: "How often do you make home improvements?"  
Chart shows percentage of respondents answering "several times a year"

# Comfort and health

## - key driver for trading up?

GERMANY*	Amount of 1st priorities	Amount of 2nd priorities	Amount of 3rd priorities
Comfort, Well being and Health	12	2	1
Energy consumption	2	12	1
Environmental concerns	1	1	13

FRANCE*	Amount of 1st priorities	Amount of 2nd priorities	Amount of 3rd priorities
Comfort, well being and Health	8	4	2
Energy consumption	5	9	0
Environment concerns	1	1	12

\*Note:  
Prioritis

# What is at stake?

## Health and indoor comfort

- **10-50 % of the indoor environments where people live, work and play in Europe are damp (estimated by WHO 2009\*)**
- **Productivity & learning abilities**
  - The learning abilities of children can be improved by up to 15%\*\*
  - Improved productivity (the productivity of adults can be improved by up to 15%\*\*\*)
- **Asthma/allergy**
  - Humid buildings are known to cause health problems such as allergies and asthma\*\*\*\*
  - 87% of Europeans think asthma and allergy are a serious problem (Eurobarometer, 2013)
- **General well-being**
  - Can be affected by dampness in buildings which among others cause \*\*\*\*\*
    - Cough, wheeze and bronchitis



\* World Health Organisation, 2009: "Damp and Mould. Health risks, prevention and remedial actions"

\*\* Wargocki, P., and Wyon, D.P. (2013) Providing better thermal and air quality conditions in school classrooms would be cost-effective, Building and Environment, 59, 581-589.

\*\*\* "A Literature Review of the Effects of Natural Light on Building Occupants", L. Edwards and P. Torcellini, National Renewable Energy Laboratory, U.S. Department of Energy, 2002.

\*\*\*\*P. Wargocki, J. Sundell, W. Bischof, et al., Dampness in Buildings and Health (NORDDAMP), Indoor Air, vol. 11, no. 2, pp. 72-86, 2001.

\*\*\*\*\* Sundell, 1999; Bornehag et al., 2001



# 21 experiments 2005-2013

## Energy, comfort & environment

# TOMORROW'S BUILDINGS TODAY

"The Future Active House project is very much in line with our purpose: to encourage initiatives with high ambitions and creative solutions."

Gry Kongst, Senior Advisor at Huszonlin, about Future Active House

"It's especially great to wake up and see the world waking up with you. Not only is the sun rising, but people are starting to move around, dogs are barking and running in the distance and the shadows are disappearing."

Asja Danneberg, Russian Active House

01  
02  
05  
07  
12  
13  
16  
15

"We can sit and relax outside as early as March because the wood absorbs the heat of the sun and releases it again."

Our site for family  
Sunighthouse blog

19 "I always say that our first impression when we moved into the house, was an excellent air environment. One of the nicest aspects about this house was the incredible amount of daylight, which we get into this house. Rarely, do we turn on lights in the house during the day."

David Smith, Smith Residence

- 01 Tarzhkovskaya Street, St. Petersburg
- 02 Solilag, Copenhagen
- 03 Atika, Bilbao
- 04 VELUXlab, Milan
- 05 VELUX House, COP15, Copenhagen
- 06 Home for Life, Århus
- 07 Green Lighthouse, Copenhagen
- 08 Sunlight house, Vienna
- 09 Licht/aktiv Haus, Hamburg
- 10 Maison Air et Lumière, Paris
- 11 CarbonLight Homes, Kettering
- 12 Osram Culture Center, Copenhagen
- 13 Guldberg School, Copenhagen
- 14 Solar Prism, Albertslund
- 15 Russian Active House, Moscow
- 16 Solhuset, Hørsholm
- 17 ISOBU aktiv, Stavanger
- 18 Future Active House, Trondheim
- 19 Smith Residence, St. Louis
- 20 De Poorters, Mentevoort
- 21 Great Gulf Active House, Toronto



# 21 experiments 2005-2013 health improvement



I have a lot of allergies. I took antihistamines all year.  
Here I didn't need to.



20 De Poorters, Muntfoort  
21 Great Gulf Active House, Toronto

D&A AUTUMN 2012 | ISSUE 20

**VELUX®**  
**MODEL HOME 2020**

# A gap to be chased

Energy Efficiency and healthy buildings to go hand in hand

Customer wishes

Buildings that support consumers health  
and comfort with low energy costs

EE and health go hand in hand  
Indoor comfort to be further included in EPBD  
Healthy buildings Green paper to come?

Existing building mass status  
High energy consumption  
Challenges with e.g. dampness &  
overheating



Legislative focus  
Lack of requirements in EU and  
national regulation that support  
energy efficiency *and* healthy  
buildings

# Read and view more

- Sustainable Living in Buildings

[www.velux.com/sustainable\\_living](http://www.velux.com/sustainable_living)



- Facts & Figures CR Report

[crreport.velux.com](http://crreport.velux.com)

- Active House newsletter & community

[www.activehouse.info](http://www.activehouse.info)

- Daylight & Architecture #20

[http://da.velux.com/current\\_issue/tomorrows-houses-today](http://da.velux.com/current_issue/tomorrows-houses-today)

- Healthy Home guidelines

<http://thedaylightsite.com/circadian-house-principles-and-guidelines-for-healthy-homes>

- Own work

<http://press.velux.com/GLO...ce00d9a-84e>



Thank you for your attention

[ingrid.reumert@velux.com](mailto:ingrid.reumert@velux.com)

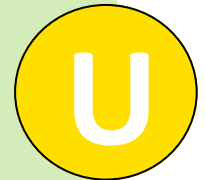
# Q & A

Gabor TOTH, European Commission

Bogdan ATANASIU, BPIE

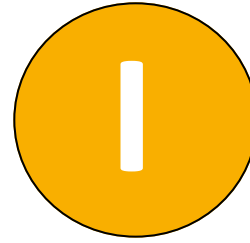
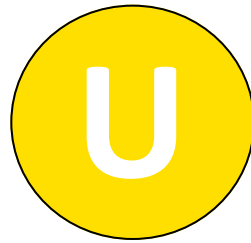
James DRINKWATER, WGBC – ERN

Ingrid REUMERT, VELUX A/S



**Session**

**1-2-3**



## Conclusions:

Adrian JOYCE, Secretary General, EuroACE



**“Quizzing the Stakeholders”**

**How to make Energy Efficient Buildings  
more Visible and Attractive?**



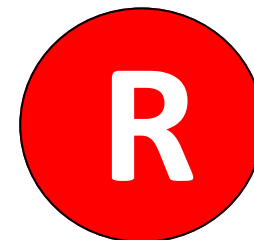
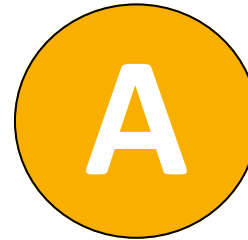
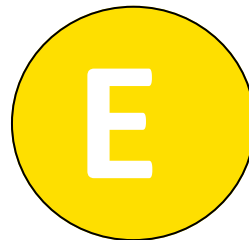
GE Lighting



PHILIPS



See you next



SUSTAINABLE ENERGY WEEK 23-27 JUNE 2014

“Quizzing the Stakeholders”

How to make Energy Efficient Buildings more Visible and Attractive?