Sustainable and Energy policy in Brussels

Zagreb, May 2014

Aurore BRUNSON

Dept. Air, Climate and Energy

Brussels Environment

BRUSSELS SITUATION

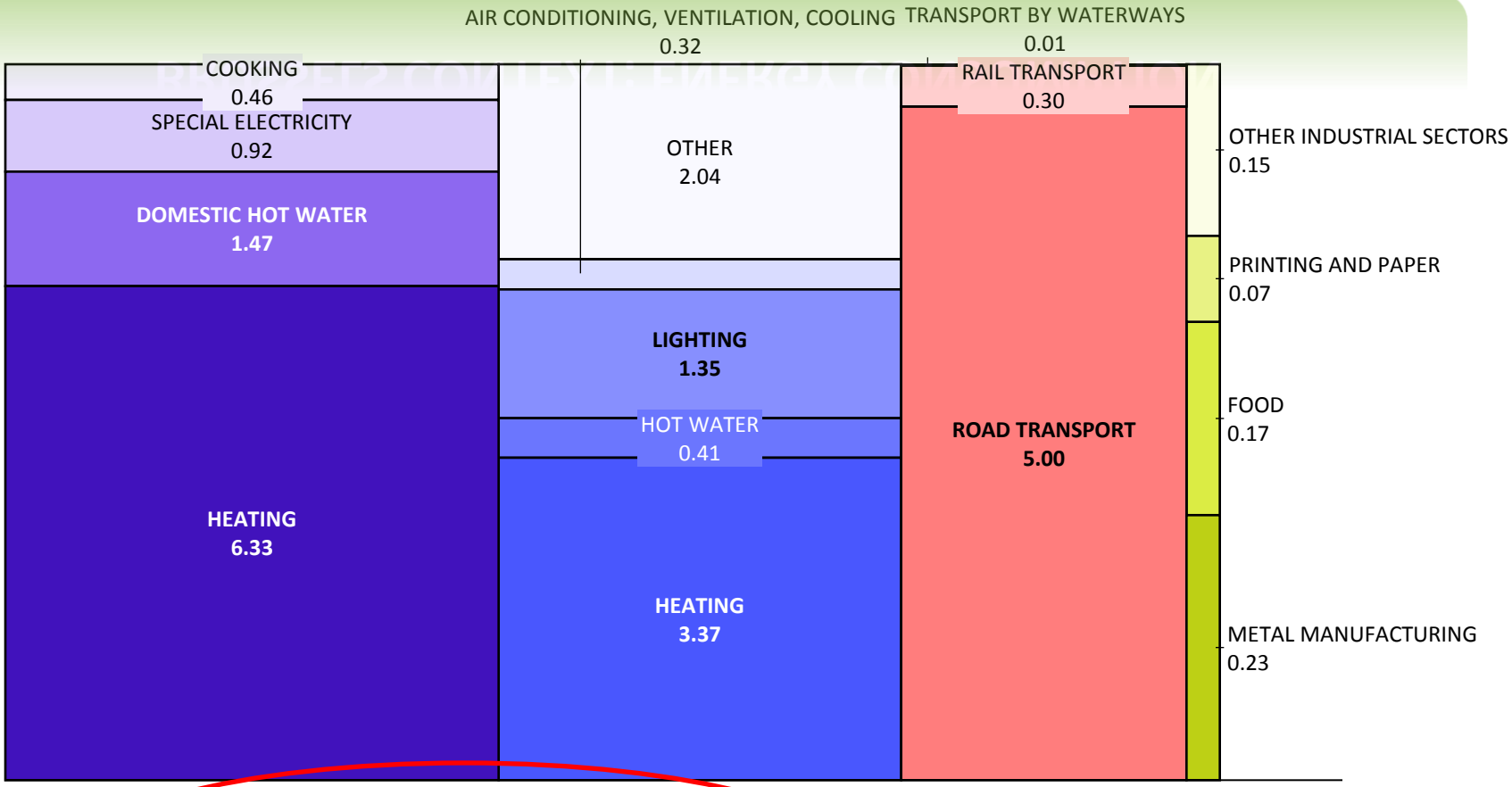
- 162 km²
- 1,1 million
  expected +
- 630.000 v
- Old buildi
- 75% of er
- Large reg
  mobility, urbanism,

I·C·L·E·I Local Governments for Sustainability

be .brussels

energycities
WHERE ACTION & VISION MEET

BRUSSELS CONTEXT: ENERGY CONSUMPTION



RESIDENTIAL	TERTIARY	TRANSPORT	INDUSTRY
9.2 TWh	7.5 TWh	5.3 TWh	0.6 TWh
40.6%	33.1%	23.5%	2.8%

Data source: 2009 Energy assessment of the BCR – Brussels Environment

BRUSSELS AMBITIONS

→ Since 2004 Brussels region has an ambitious energy policy:

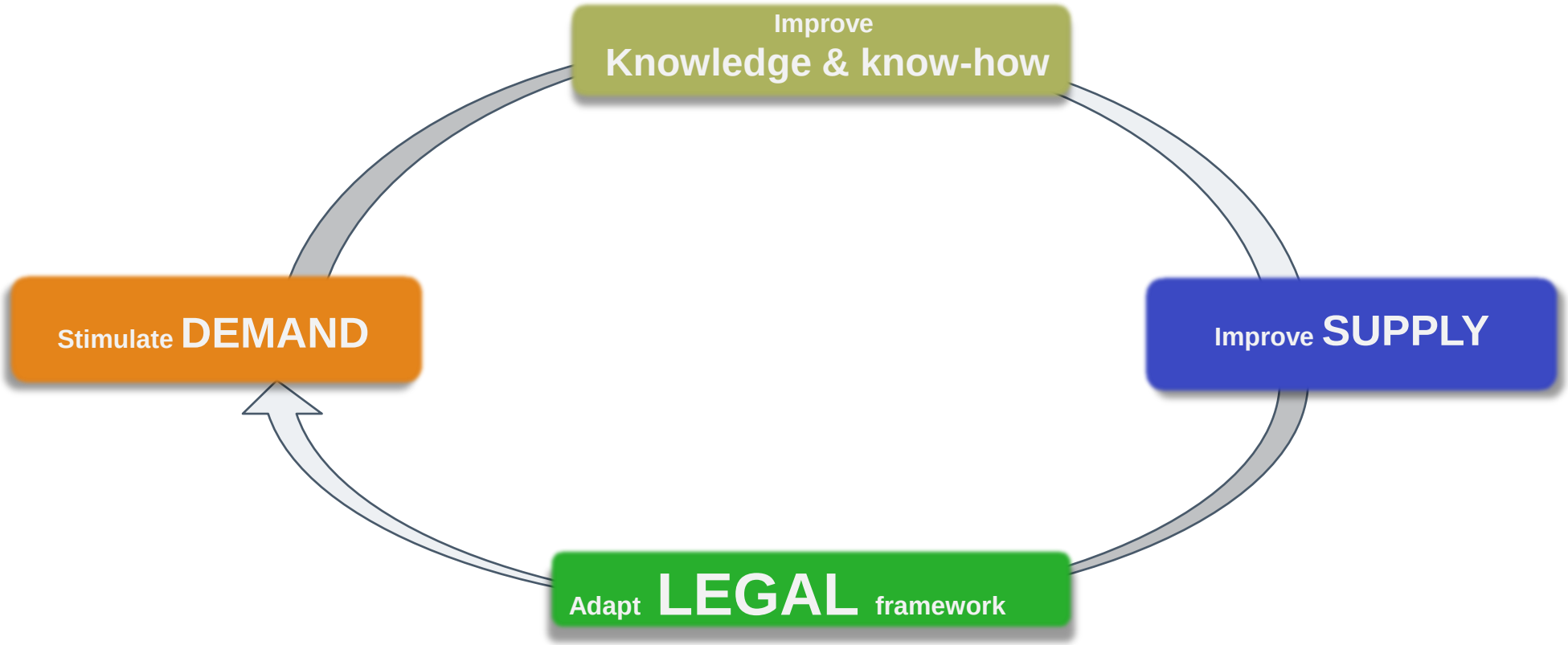
- stimulation of demand in sustainable buildings
- control of good conception of buildings
- experiences on life-size scale

→ Sign up in a long term perspective: undertake realistic actions today that will still be valid in a «sustainable tomorrow »

Brussels' objective : resilience

→ Ambitious policy (government agreement 2009) : Reduce 30% of GHG emissions by 2025

BRUSSELS POLICY



BRUSSELS POLICY

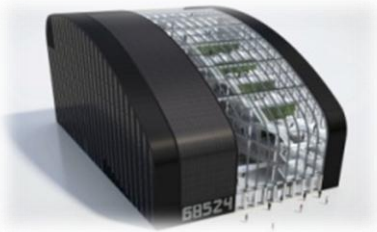
PLAGE

Plan Local d'Action pour la Gestion Énergétique

Plan voor Lokale Actie voor het Gebruik van Energie

Stimulate

DEMAND



MAISON ENERGIE HUIS

Improve Knowledge & know-how

Improve SUPPLY

Adapt LEGAL framework

Stimulate
DEMAND

FINANCIAL SUPPORT : ENERGY GRANTS

Since 2004

Insulation: roof, windows, walls, floor & ventilation
Heating: boiler replacement & regulation
Renewable energy: Solar T & PV, biomass, Wind, HeatPumps & geothermal
Audits and feasibility studies

98% requests from households

Top 5 (in €) – 77% of budget:

- Super-Insulating glazing
- Roof Insulation
- Wall Insulation
- Heating boiler replacement
- Solar thermal boiler

Budget 2013: 19 million €
Budget 2012:18,500 grants - 17,5 mio €

Stimulate
DEMAND

FINANCIAL SUPPORT : BRUSSELS ENERGY LOAN

- Partnership with the CREDAL alternative credit cooperative
- Available to all Brussels households
- Zero-rate energy loan

Stimulate
DEMAND

GUIDE : ENERGY HOUSES

Stimulate
DEMAND

GUIDE : PLAGE

Local **A**ction **P**lan for **E**nergy **M**anagement

PLAGE
Plan Local d'Action pour la Gestion Énergétique
Plan voor Lokale Actie voor het Gebruik van Energie

* GOAL :

- Energy management of large building stocks
- Reduce consumption and infuse the energy reflexes

*METHODOLOGY:

STEP 1 : to appoint an energy manager

STEP 2 : to make an energy cadastre

STEP 3 : to establish an action Plan

STEP 4 : to implement the action program

STEP 5 : to monitor the actions and communicate the results

* WHO:

- municipalities
- hospitals
- schools
- social housing agencies

*BUDGET :

2006-2014 :

- 6 millions € - support to partners
- 2 millions € - High level Energy Advisor

80.000 €/year – Annual Energy Manager Training

Stimulate
DEMAND

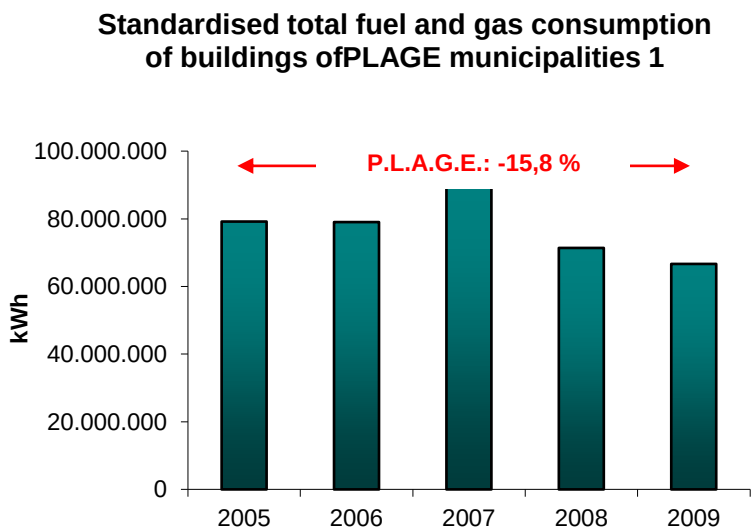
GUIDE : PLAGE

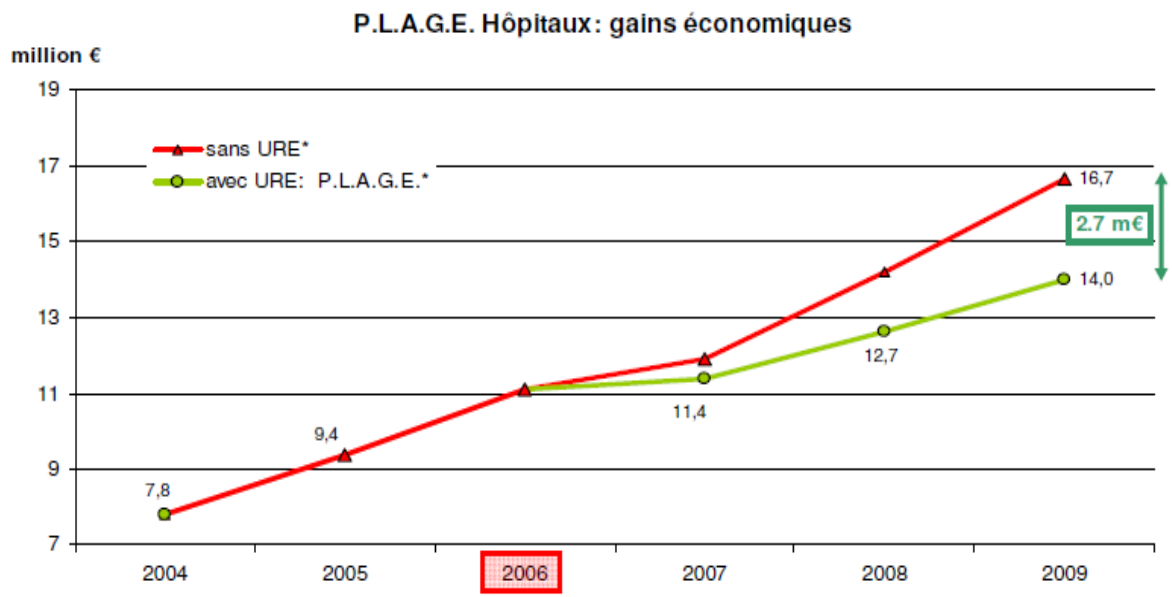
Local Action Plan for Energy Management

PLAGE
Plan Local d'Action pour la Gestion Énergétique
Plan voor Lokale Actie voor het Gebruik van Energie

* MAIN OUTCOMES :

- 1380 buildings – 4,5 millions m²
- 14% (-10 to -18%) for fuel consumption and CO_2
- Stabilisation (-4% to +1%) for electricity consumption
- 35 Energy Managers engaged





Stimulate
DEMAND

INCREASE, PROMOTE EXAMPLES : BATEX

Exemplary Buildings

BÂTIMENT EXEMPLAIRE
énergie & éco-construction
VOORBEELDGEBOUW
energie & ecoconstructie

* GOAL :

Call for projects to stimulate construction, refurbishment and extension of “sustainable” buildings in Brussels

*METHODOLOGY:

Evaluation on 4 criteria :

- Energy
- Environment
- Profitability +reproducibility
- Architecture and urban integration

* WHO:

- New construction & refurbishment
- ALL purposes of use (housing, school, hospital, office, commercial or industrial facility,…)
- ALL contracting authorities (private individuals, public bodies, semi-state bodies, private enterprises,…)

*BUDGET :

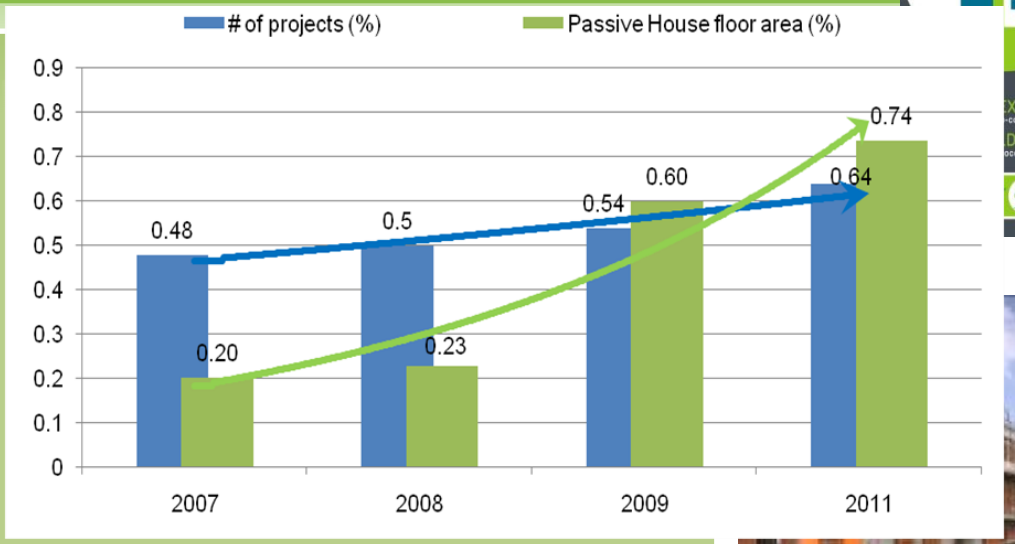
- 33 millions € /5years (Investment budget : 815 Mio €)

- Subside : 100€/m²

Stimulate
DEMAND

INCREASE, PROMOTE EXAMPLES : BATEX

Exemplary Buildings



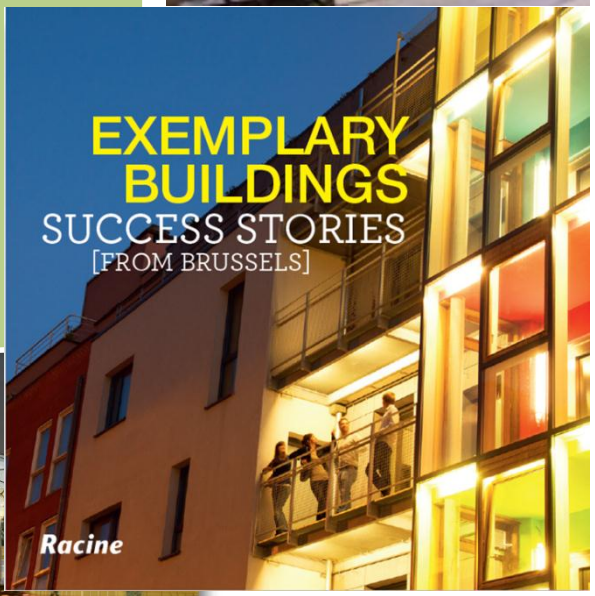
*** MAIN OUTCOMES :**

- 6 editions : 2007, 2008, 2009, 2011,
- 243 buildings
  - 620 000m²
  - > 350 000m² Passif (new)

→ Monitoring on building site by expert

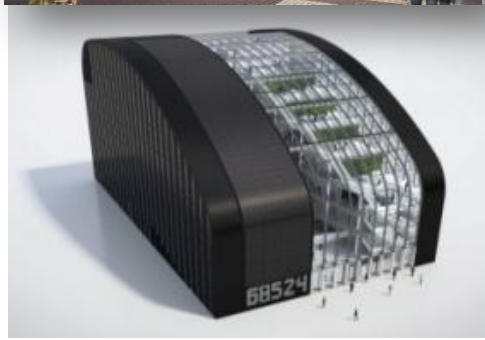
Monitoring of consumptions during 5 years

Promotion of winning projects



Stimulate
DEMAND

Commitment of the public authorities



Since 2010:

Sustainable Neighborhood Contracts(Contrats Quartiers Durables)

- 12.000m²/an – 120 dwellings
- 8 collective facilities

SDRB

- 54.000m² + 25.000m² after 2014
- 26.500m² urban industry (economic expansion)

SLRB

- 231.000 m²

Bruxelles Environnement : 17 000 m²

MRBC - 45.000m²

Stimulating effect for local authorities (communes, CPAS, etc.)

BRUSSELS POLICY

REFERENTIEL B

Improve

Knowledge & know-how

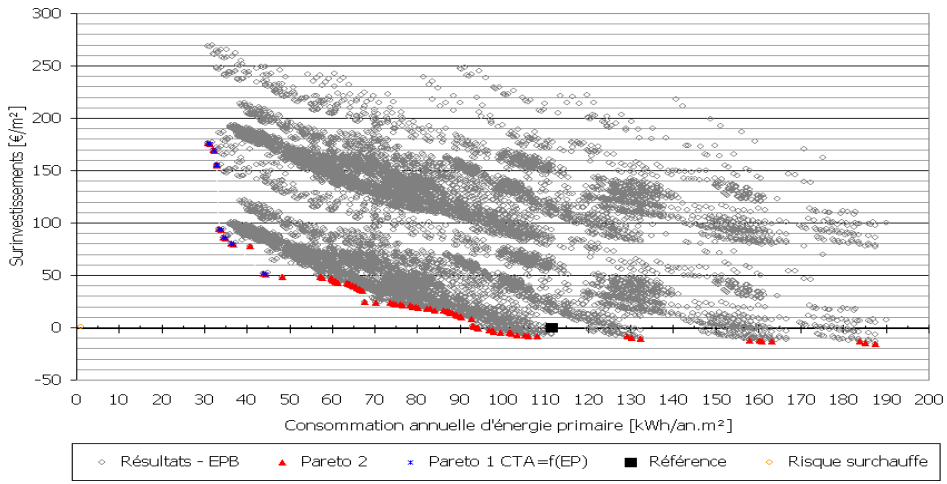
CDR Construction BRC Bouw

INNOV IRIS
EMPOWERING RESEARCH

Improve
Knowledge & know-how

MAJOR STUDIES TO GET NECESSARY KNOW-HOW

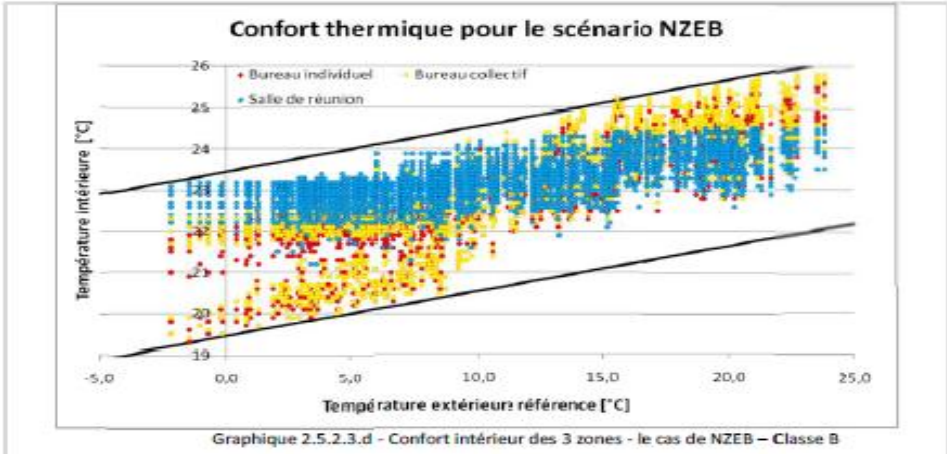
2007 (2009) (2013) – Pareto based analysis of profitability of energy saving investments



2008 – applicability of passive concept in the brussels' context

2011 – definition of passive criteria for tertiary sector

2012 – Sucessful passivehouse skyscrapers



TOOLS FOR PROFESSIONALS

* SUSTAINABLE BUILDING QUALITY LABELLING

Evaluate the environmental and energy performance of Belgian buildings with a view to international recognition

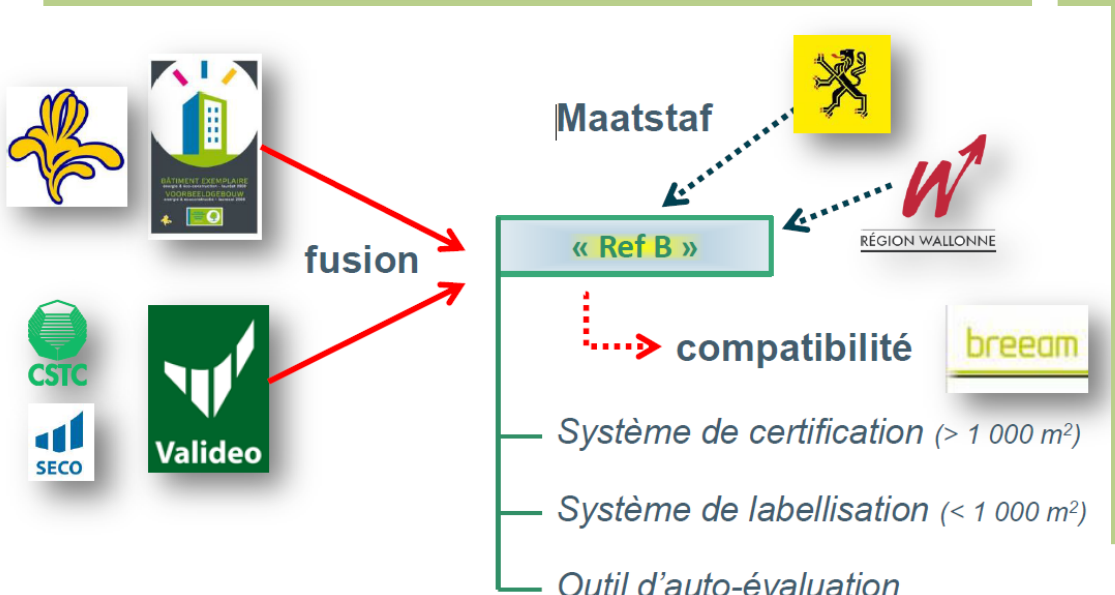
REFERENTIEL B

ACCUEIL
LE RÉFÉRENTIEL «BÂTIMENTS DURABLES»

* TECHNICAL GUIDE FOR SUSTAINABLE BUILDINGS

Guide for good practice and technical solutions for sustainable construction and refurbishment

http://guidebatimentdurable.bruxellesenvironnement.be



TRAINING FOR EXCELLENCE

Energy management

Passive and low energy concept

Acoustics

Eco-materials

Water

Waste

Territory and environment

→ Nearly 15 000 hours of training to professionals in 2012

FORMATIONS BÂTIMENT DURABLE 2013

BRUXELLES ENVIRONNEMENT

VILLE DURABLE BRU

››› CYCLES DE FORMATIONS POUR PROFESSIONNELS ‹‹‹

Architectes, bureaux d'étude, ingénieurs, maîtres d'ouvrage professionnels, promoteurs, gestionnaires d'immeubles, syndics d'immeubles, entrepreneurs.

SOYEZ PRÊTS POUR LES MARCHÉS DE DEMAIN

AVRIL ›› JUIN 2013

Territoire/environnement	Opportunités d'échanges sociaux, mobilité douce, paysage urbain et biodiversité.	5 demi-journées - 125€
Eau	Gestion intégrée de l'eau : utilisation judicieuse, dépollution et gestion des eaux pluviales sur la parcelle.	5 demi-journées - 125€
Matériaux	Actions à mener depuis le choix écologique des matériaux jusqu'à la gestion des déchets.	4 jours - 200€
Déchets de construction	Gestion des déchets de construction du point de vue de leur prévention, leur valorisation et leur élimination.	3 jours - 150€
Acoustique	Principes de correction acoustique et d'isolation acoustique avec des matériaux à écobilan favorable.	3 jours - 150€

SEPTEMBRE ›› DÉCEMBRE 2013

Energie	Bâtiment à faible consommation énergétique, impliquant la maîtrise des besoins ainsi que le choix des systèmes et des sources énergétiques. Formation avec spécialisations Responsable Energie/ Conseiller Energie.	6 à 12 jours - 300€ à 600€
Passif et (très) basse énergie	Objectif de faible consommation énergétique à un niveau d'ambition précis : les techniques en neuf et en rénovation pour atteindre les standards passif et (très) basse énergie.	7 jours - 350€

››› Chaque formation est donnée par des bureaux et orateurs spécialisés. Vous aurez accès aux bases théoriques, aux informations techniques, à des illustrations via des exemples pratiques ou des visites, ... Un expert spécialisé vous soutiendra après la formation pour mettre vos acquis en pratique. ‹‹‹

Infos et inscriptions (places limitées : inscrivez-vous dès aujourd'hui)

www.bruxellesenvironnement.be/formationsbatidurable ou 0800 85 775

BRUSSELS POLICY

ecobuild

Improve
SUPPLY

ALLIANCE
EMPLOI-ENVIRONNEMENT

impulse.brussels
never stop asking

Improve **SUPPLY**

ALLIANCE EMPLOYMENT - ENVIRONMENT

* GOAL :

- Stimulate transition of construction firms to sustainable construction
- Develop an offer of local businesses in the construction sector capable of responding to the challenge of the new energy ambitions for buildings

→ Aims to reach 30 000 hours of training, 2 500 new local jobs

* HOW :

Develop an offering of local businesses in the construction sector capable of responding to the challenge of the new energy ambitions for buildings

→Unite brussels actors that can influence supply side – over 110 participants

→ Identification of 44 actions

http://www.aee-rbc.be/

CLUSTER ECOBUILD - GREENBIZZ

CLUSTER ECOBUILD

→ Structuring and forming a network in the eco-construction sector with high potential for growth and creation of jobs

→ Synergies between the various parties in the sector

http://cluster-ecobuild.com/

GREENBIZZ: ENVIRONMENTAL INCUBATOR

→ Area that welcomes expanding green businesses and new economic actors

→Support structure (personnel and buildings) that guides businesses in terms of logistics and the search for financing

BRUSSELS POLICY

Improve
Knowledge & know-how

Stimulate
DEMAND

Improve SUPPLY

Adapt **LEGAL**
framework

CERTIFICAT PEB

COBRACE

PASSIF 2015

ENERGY PERFOMANCE OF BUILDINGS

*Energy performance requirements for buildings subject to permits (2008, 2009, 2011, passif en 2015)

* Certification of buildings subject to transaction (sale or renting)

*Posting of the performances of public buildings

* Heating et air conditioning : proper installation, maintenance and inspection

PASSIF 2015

PASSIEF 2015

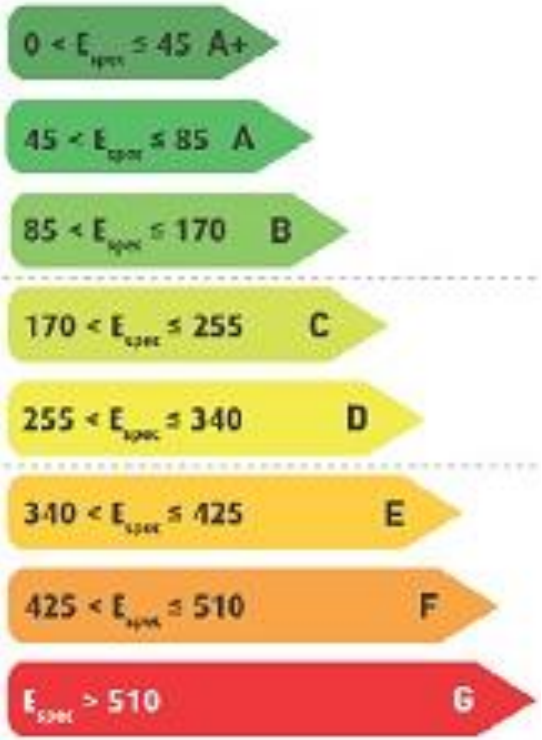
EPB Passive House requirement New Building (HOUSE, OFFICE AND SCHOOL):

* Heat demand ≤ 15 kWh/m².year

*Residential sector :
→ Primary energy ≤ 45 kWh Ep/m².year

*Tertiary sector:
→ Primary energy ≤ 90 kWh/m².year–2,5xCompacity
→ Cooling demand ≤ 15 kWh/m².year

* Airtightness building shell ≤ 0,6 vol/h (n50) (2018)
* Overheating : maximum 5% of time > 25°C



COBRACE

A single legislation, a single vision, a single plan

Merge several environmental regulations & transposes new directives

→ Minimize energy needs and energy dependence

→ Use energy from renewable sources and promote rational use of energy (RUE)

→ Improve the energy performance of buildings

→ Reduce the environmental impacts of mobility needs

→ Evaluate and improve air quality

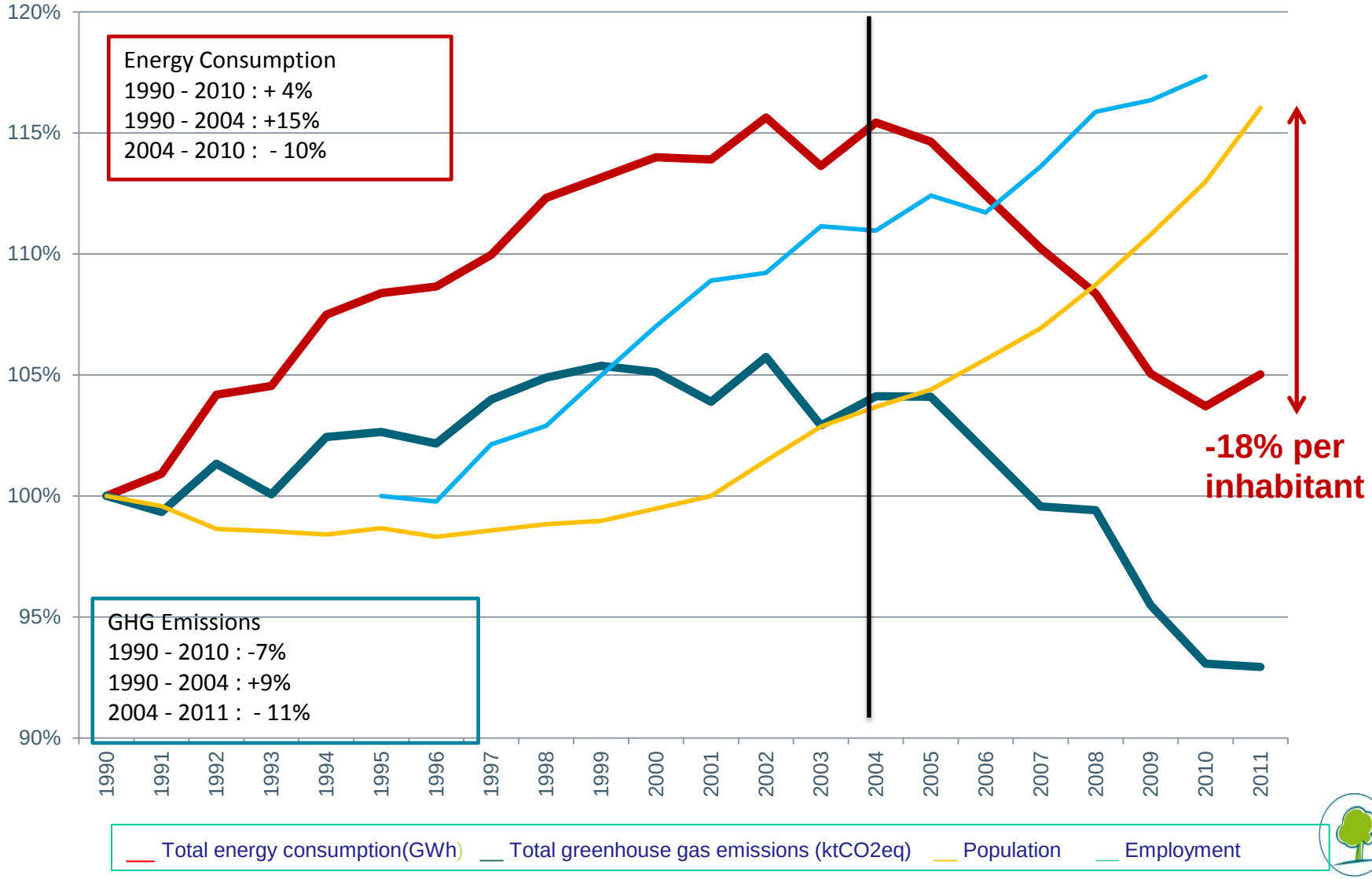
→ Reduce the emission of atmospheric pollutants

→ Highlight the exemplary role of the public authorities

→ New measures : PLAGE mandatory, etc.

FIRST RESULTS

Evolution of energy consumption and greenhouse gas emissions in Brussels – at constant climate- between 1990 and 2011



FIRST RESULTS

EUSEW Award in 2012

Belgian winner of the Earth Hours City Challenge 2014

EARTH HOUR CITY CHALLENGE

CONCLUSIONS

* Results exceeded hopes and demonstrated the capacity of the sector to achieve such standards at reasonable costs

* New requirements imposed

* The Brussels-Capital Region has paved the way for greater restraint in energy use without compromising its economic viability

* Transition from separate initiatives to a new sustainable city project

NEXT STEPS and CHALLENGES

- Follow and supervise implementation of passive ambitions (Passif 2015)
- Develop a technical and economical escort to increase renovation rate and quality
- Stimulate renovation, especially in the context of owner/tenant and co-owner
- Follow the up-grading of building professionals with
  - Trainings
  - Quality control of the implementation of the regulatory framework
- …

THANK YOU FOR YOUR ATTENTION !

Aurore BRUNSON

abrunson@environnement.irisnet.be

DEPT. OF AIR, ENERGY AND CLIMATE, ENERGY PLANNING