

UNEP – SBCI 2012 AGM and Symposium
Resource Efficiency and Green Economy: Opportunities for Sustainable Buildings and Cities

French state of play report

Anne-Claire Freyd - CSTB

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Impact of the building sector

- 43% of energy consumption
- 16% water consumption
- 25% GHG emissions
- 40% waste production



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The market

- 350 000 companies, 98% SMEs
- 3.4 million jobs
- €123 billion of turnover
 - 58% residential



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The market players

Public sector

- Clusters
- Standardization
- Research and innovation
- Subsidies

Private sector

- Project owners
- Architects
- Building engineering
- Certification bodies



France
GBC



Sustainable Building Alliance



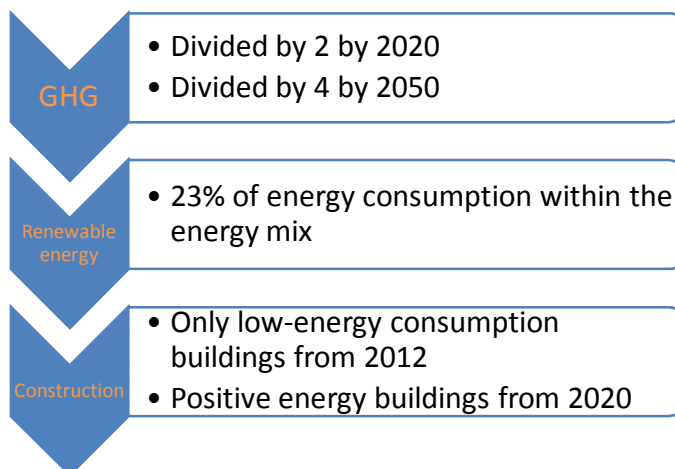
effinergie
Qualité de vie et économie d'énergie

The Grenelle momentum

- Gathering the State, local authorities, NGOs, unions and employers.
- 2 laws in 2009 and 2010
- Steering committee Grenelle Building Plan



The targets of the Grenelle



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Public policies - obligations

- Compulsory display
- Compulsory audits for collectively own flats

The diagram shows two energy performance scales. The left scale, 'Bâtiment économe', ranges from A (≤ 50 kWhPE/m²/year) to G (> 450 kWhPE/m²/year). The right scale, 'Faible émission de GES', ranges from A (≤ 5 kWhPE/m²/year) to G (> 80 kWhPE/m²/year). A comparison shows an 'Average' of 240 kWhPE/m²/year and a 'Target' of 150 kWhPE/m²/year.

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Public policies - obligations

- For the non-residential sector: renovation between 2012 and 2020
- Public buildings
 - 4 times less energy consumption by 2050
 - Full accessibility by 2015

A photograph of a glowing lightbulb with a green tree growing inside, symbolizing sustainable energy and green buildings.

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Public policies - tools

- Green Lease (200,000 signed)
- Energy Performance Contract
- Smart grid in every house by 2020




ENERGYPRIORITIES.COM

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Public policies - incentives

- Social housing (4.5 million)
 - Dedicated loans for highly inefficient dwellings (88,000)
 - National Fund for Thermal Renovation, ‘Living Better’ Programm
- Homes (32 million)
 - Zero interest loan (200,000)
 - Tax relief (5.5 million)
 - Low VAT rate for insulation works



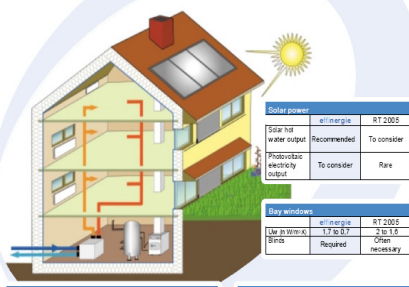
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Thermal regulation

Several common solutions and performances in effinergie projects

Architectural design		
	effinergie	RT 2005
Compactness	Recommended	Not taken into account
South exposure	Recommended	To consider
Summer comfort control	Required	Other necessary

Insulation of opaque walls		
	effinergie	RT 2005
Roof (m ² m ²)	0.9 to 1.0	4 to 6
External walls	0.2 to 0.3	2.5 to 3.2
Floor (with subfloor if not in contact)	0.4 to 0.5	1.2 to 2.0
Floor (concrete slabs in m ²)	0.4 to 0.5	2 to 4
Thermal bridges	Very low	Medium to low



Solar power		
	effinergie	RT 2005
Solar hot water output	Recommended	To consider
Photovoltaic electricity output	To consider	Rare

Sunny windows		
	effinergie	RT 2005
Use in winter	1.7 to 0.7	2 to 1.6
Shade	Required	Other necessary

Ventilation		
	effinergie	RT 2005
Low consumption ventilation	A or B Hygro-adjustable	mechanical-ventilator

if appropriate mechanical ventilator in houses
mechanical ventilation with
recovery of energy = 80%

Heating and hot water		
	effinergie	RT 2005
Electricity	HP COP > 3.5	low effect (radiant)
Gas or fuel oil	Condensing boiler	Low temperature boiler
Wood	Automatic wood burner class 3	

- Limit of 50kwhPE/m²/year
- Heating, cooling, lighting, hot domestic water and equipments (pumps, fans)

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HQE approach

THE 14 TARGETS IN AN HQE PROCESS


<p>ECO-CONSTRUCTION</p> <ol style="list-style-type: none"> 1. Relationship of building with its immediate environment 2. Integrated choice of products and construction materials 3. Low environmental impact worksite 	<p>ECO-MANAGEMENT</p> <ol style="list-style-type: none"> 4. Energy management 5. Water management 6. Management of waste caused by activities 7. Management of servicing and maintenance 	<p>COMFORT</p> <ol style="list-style-type: none"> 8. Hygrometric comfort 9. Acoustic comfort 10. Visual comfort 11. Olfactory comfort 	<p>HEALTH</p> <ol style="list-style-type: none"> 12. Sanitary quality of areas 13. Sanitary air quality 14. Sanitary water quality
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SUSTAINABLE BUILDING AND PLANNING

PROMOTING FRENCH KNOW-HOW AND EXPERIENCE

- › COMPREHENSIVE APPROACH
- › TECHNICAL EXPERTISE
- › PERFORMANCE
- › ADAPTABILITY
- › TRANSPARENCY



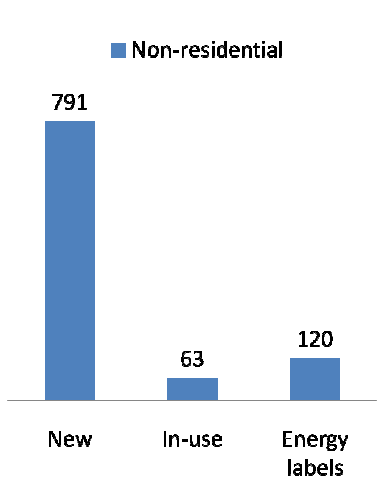
France GBC

www.francegbc.fr


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Certified buildings in France

■ Non-residential



Category	Count
New	791
In-use	63
Energy labels	120



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Certified buildings in France



Dwellings (apartments and houses)

- 350,000 registered projects
- 165,000 already certified (December 2011)
- 50% of new dwellings

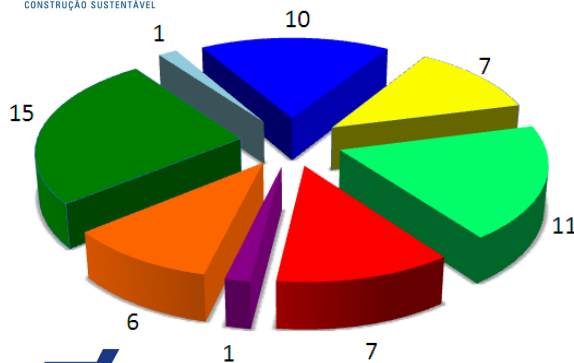
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Processo AQUA
CONSTRUÇÃO SUSTENTÁVEL

Processo AQUA



- Edifícios Comerciais
- Operação e uso
- Escolas
- Escritórios
- Renovação
- Hotel, lazer e cultura
- Habitacional
- Bairros/Loteamentos


Fundação Vanzolini

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District and cities

- Sustainable city plan



- City of tomorrow fund






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The Greater Paris

Energy	Agriculture	Industry	Transportation	Buildings	Waste
• Mutation	• Compensation	• Risk	• Slowness	• Reversibility	• Resource preservation




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Thank you for your attention

