

ProSTO - “Setting up the right incentives to boost solar thermal in Europe”

Thermal regulations and energy performance
of buildings – RT2012

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Thermal regulations and energy performance – RT 2012

Objectives:

- Wide spreading of low consumption buildings
- Significant industrial & technological evolutions

Means:

- Average primary energy consumption below 50 kWh/sqm/yr
- Adjustments depending on geographical location, buildings specificities & uses, greenhouse gas emissions...
- Ambitious maximal buildings energy needs

Thermal regulations and energy performance – RT 2012

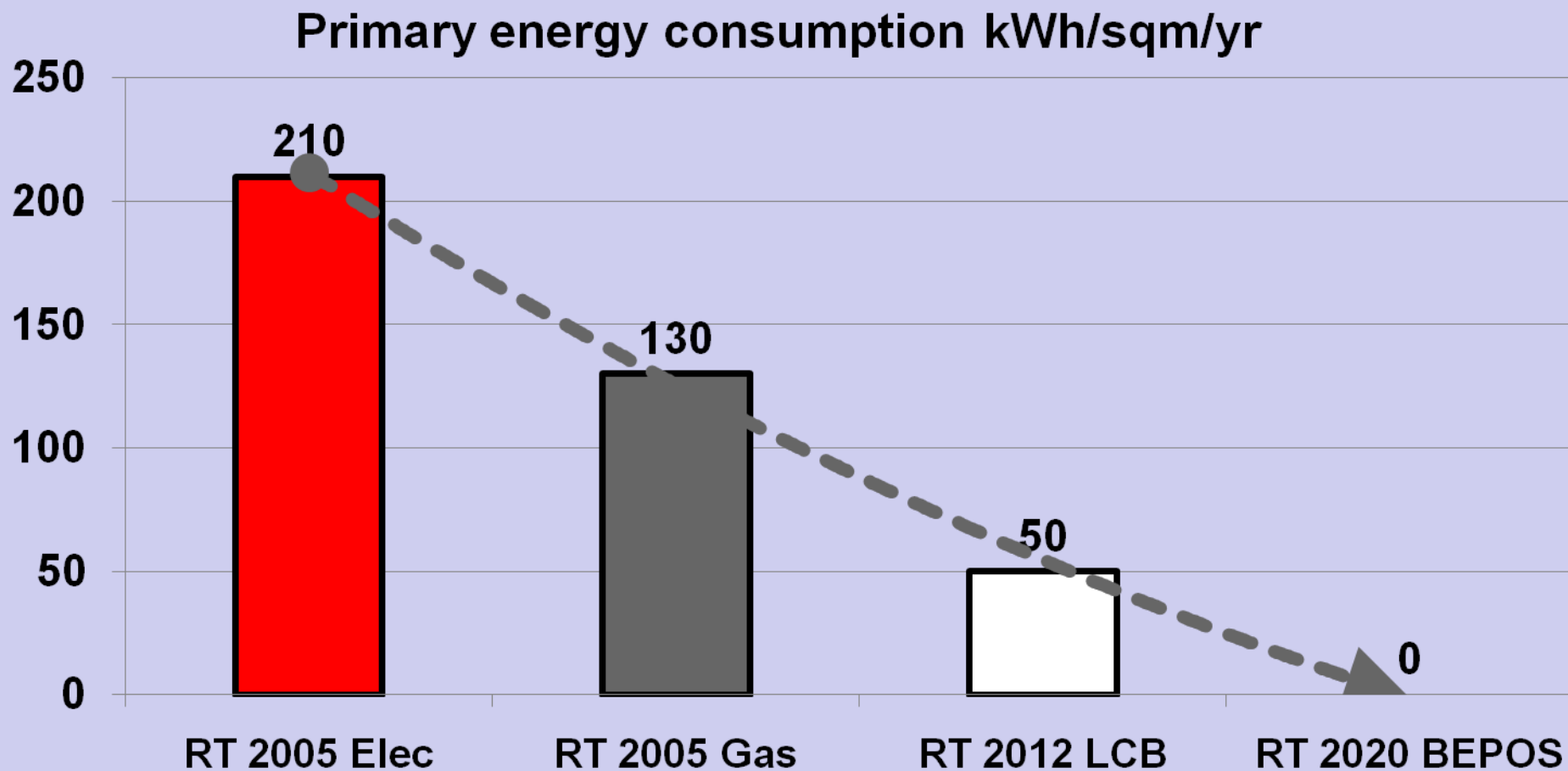
This regulation will be applied to:

- Offices & tertiary building in November 2011
- House & apartments buildings in January 2013

A specific thermal regulation is already in force for existing building

Final aim is energy zero or positive buildings as standard for new buildings in 2020

History and future



RT 2012: Bioclimatic criteria

- Bioclimatic report is based on:
 - Hourly climatic conditions
 - Standard confort datas (temperature, ventilation, lighting...)
 - Technical datas of the building structure (insulation, waterproofing, inertia)
 - Solar & thermal protection are included, specially concerning picture windows
 - Standard systems of ventilation, lighting, heating & cooling

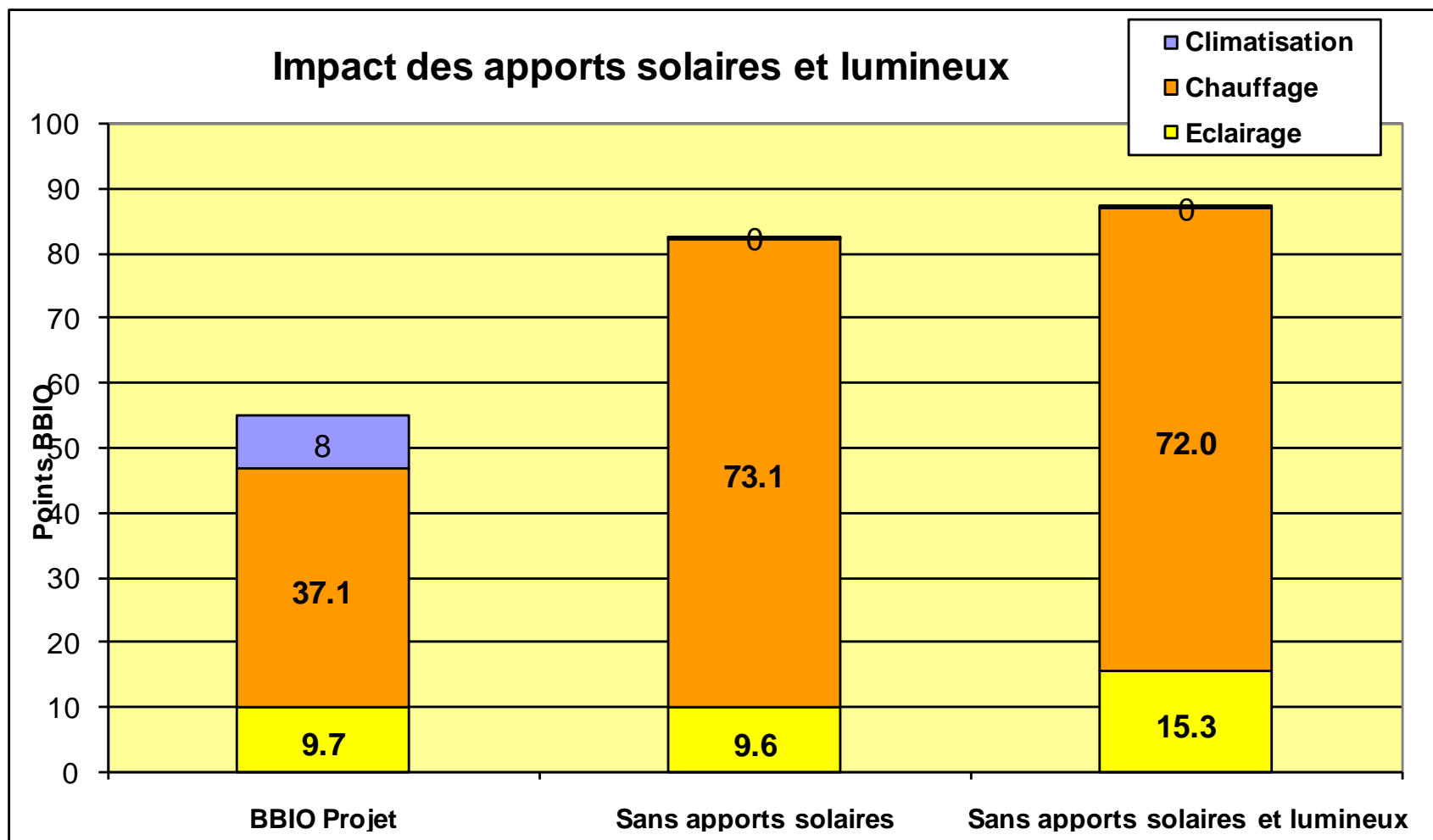
RT 2012: bioclimatic report (Bbio)

Use	Needs kWh/sqm/yr	Ratio	Bbio project indicator	Bbio Max
Cooling	0	X 2	0	60xα
Heating	15	X 2	30	
Lighting	3	X 5	15	
Total	18		45	

Bbio Project \leq Bbio Max = 60 x α

α = ratio depending on climatic zone, altitude, use, building size...

RT 2012: Bbio indicator



RT 2012: Primary energy consumption criteria (PEC)

- Energy criteria is based on the sum of:
 - Heating
 - Cooling
 - Water-heater system
 - Lighting
 - Others

For all this item, a ratio of 2,58 is applied if primary energy is electricity. Ratio of 1 is only if RES is chosen

- PV production comes as deduction

RT 2012: Primary energy consumption criteria (PEC)

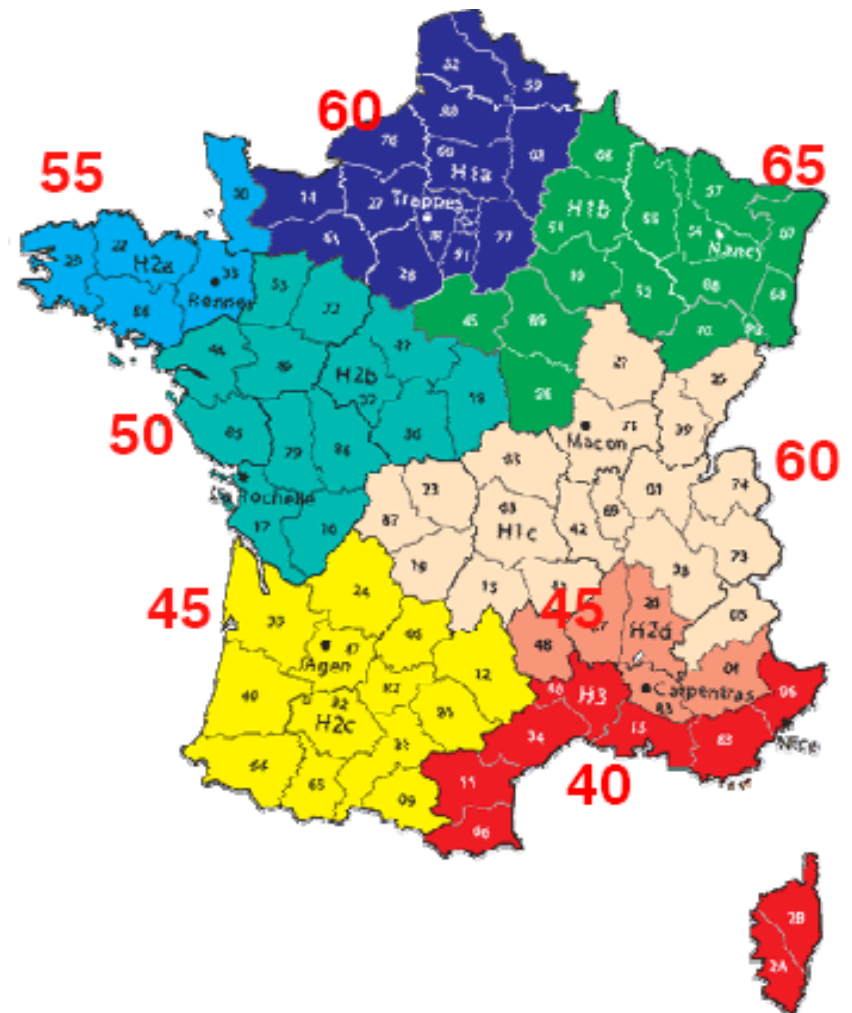
Use	Consumption kWh/sqm/yr	Ratio	PEC Project kWh/sqm/yr	PEC Max
Heating	14.5	X 1 (ou 2.58)	14.5	50xβ
Cooling	0	X 1 (ou 2.58)	0	
Water-heater system	28.6	X 1 (ou 2.58)	28.6	
Lighting	3	X 2.58	7.7	
Others	3.5	X 2.58	9.0	
PV production	-5.5	X 2.58	-14.2	
Total	44.1		45.6	

$$\text{PEC Project} \leq \text{PEC Max} = 50 \times \beta$$

β = ratio depending on climatic zone, altitude, use, building size...

RT 2012: Primary energy consumption criteria (PEC)

Different values of maximal
PEC for a house building
depending on regions
(results of $50 \times \beta$)



Specificities to house buildings

- 1 sqm of picture windows for 6 sqm of surface area
- PEC adjusted fonctions of surface area
- Verandas are taken into account
- Obligation of RES use
- Solar water-heater without specific condition, or other RES with a 5 kWh/sqm/yr production minimum
- PV production is deducted from the PEC+12 kWh/sqm/yr

This applies from 1st january 2013

Specificities to apartment buildings

- 1 sqm of picture windows for 6 sqm of surface area
- PEC adjusted functions of surface area
- Collective Solar water-heater contribution is hourly based
- PV production is deducted from the PEC+12 kWh/sqm/yr

A dispensation of 15% is allowed on maximal PEC up to january 2015 (\Rightarrow maximal PEC is set to 57,5 kWh/sqm/yr)

Specificities to offices & tertiary buildings

- Specificities are under progress
- Maximal Bbio & PEC are not finalized
- Every kinds of buildings are studied depending on use

RT 2012: Recognition of solar energy in buildings

This regulation allows 3 different contributions of solar energy into buildings:

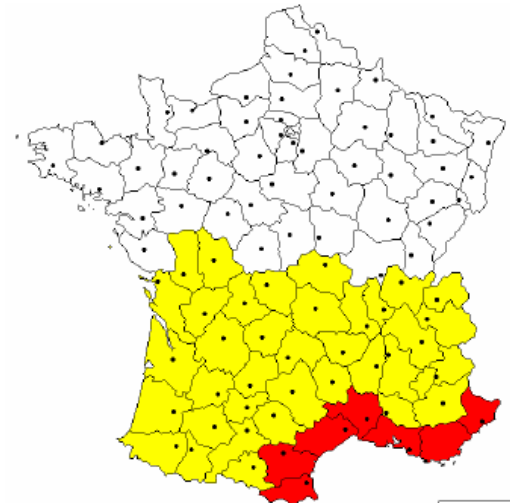
- Bioclimatic: picture windows bring solar energy passively
- Solar heating production: SWH, heating, cooling
- Solar electricity: PV is included in the PEC report, 1st step to Positive energy building

Specific support scheme to apartment building

- Despite the fact of the dispensation of 15% is allowed on maximal PEC up to january 2015 (\Rightarrow maximal PEC is set to 57,5 kWh/sqm/yr), apartment buildings can benefit of a heating fund
- This fund aim to subsidize heating from RES
- System managed by ADEME (French Environment and Energy Management Agency)
- 1 billion € budget for 2010-2011

Specific support scheme to apartment building

- Yearly production have to be report to ADEME during 10 years
- Performance criterion are depending on 3 areas (north, south and Mediterranean regions)
- Criterion for solar water heater:
 - Minimum of 25 sqm, solar certified panels only
 - Investment should be under:
 - North: 2,5 €/kWh yearly produced
 - South: 2,25 €/kWh yearly produced
 - Mediterranean: 2 €/kWh yearly produced
 - Productivity should be at least:
 - North: 350 kWh/sqm/yr
 - South : 400 kWh/sqm/yr
 - Mediterranean: 450 kWh/sqm/yr



Specific support scheme to apartment building

- Subsidies are allowed in 3 payments:
 - 50% the year of the eligibility to the scheme (year 1)
 - 30% when the installation is operating (year 2)
 - Balance when real production data's of the 1st production year are sent to ADEME (year 3 or 4)
- If production doesn't reach minimum of 350, 400 or 450 kWh/sqm/yr, no balance would be paid



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DE L'ENERGIE SOLAIRE

Thank you for your attention

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