Towards environmental performance of new buildings

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Agence de l'Environnement et de la Maîtrise de l'Energie

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José Caire – December, 11th 2017

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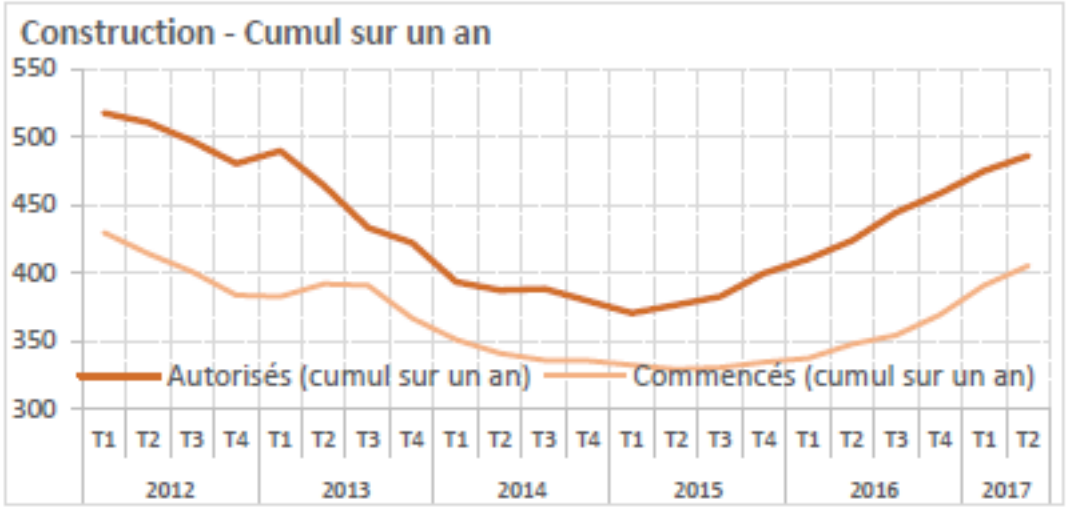
Summary

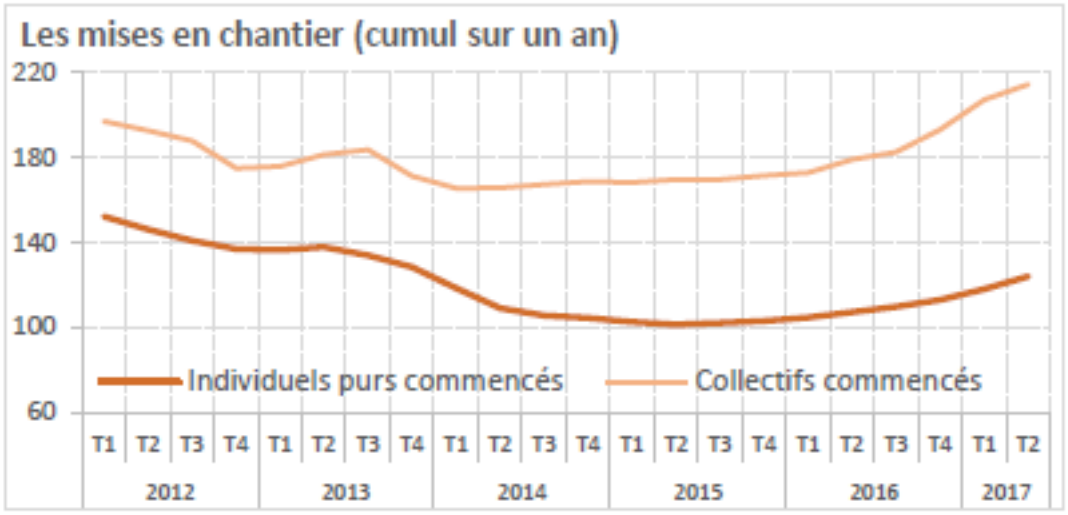
1. Some figures of the new building market in France
2. Typical scheme of new building regulation process
3. From thermal to environmental regulation
4. Conclusions

New buildings market

About 400 000 new dwellings per year

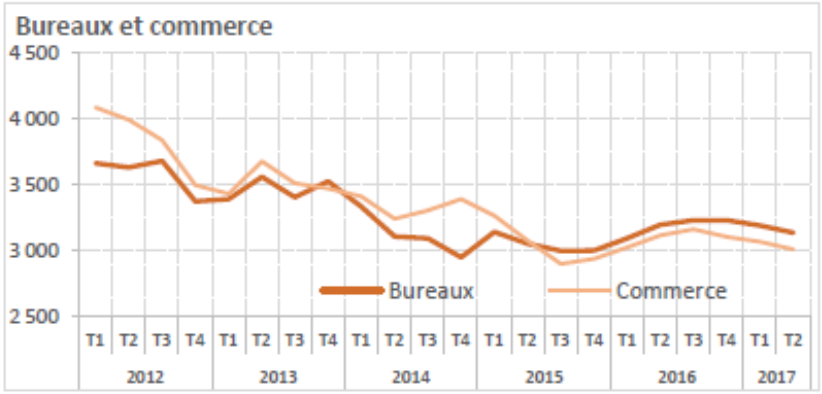
1/3 multi family dwellings
2/3 single family dwellings

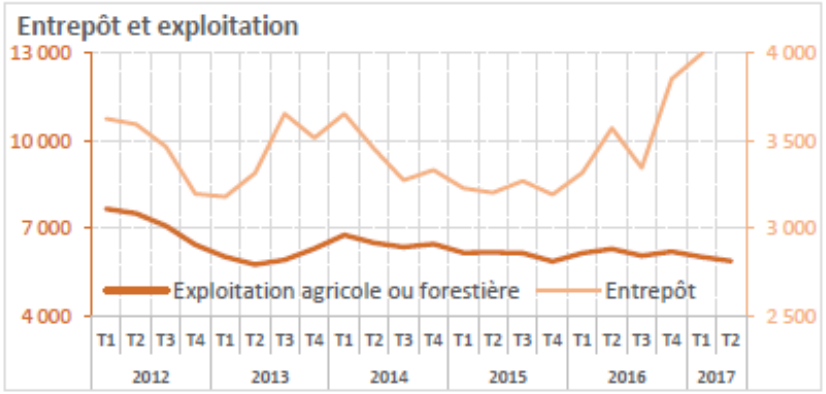


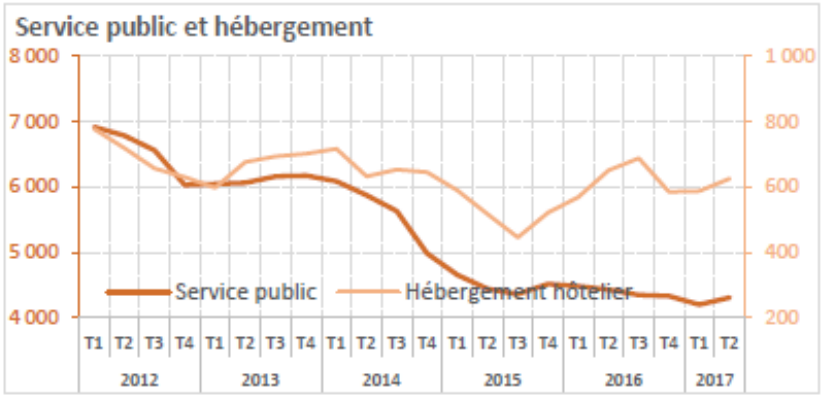


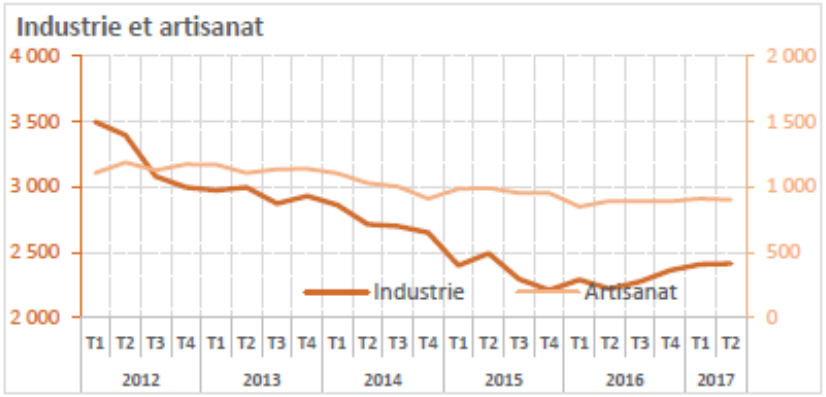
New buildings market (2017)

Office and commercial buildings : **6,1 Mm²**
Storage buildings : **10 Mm²**
accomodation : **4,8 Mm²**
Industry : **3,3 Mm²**

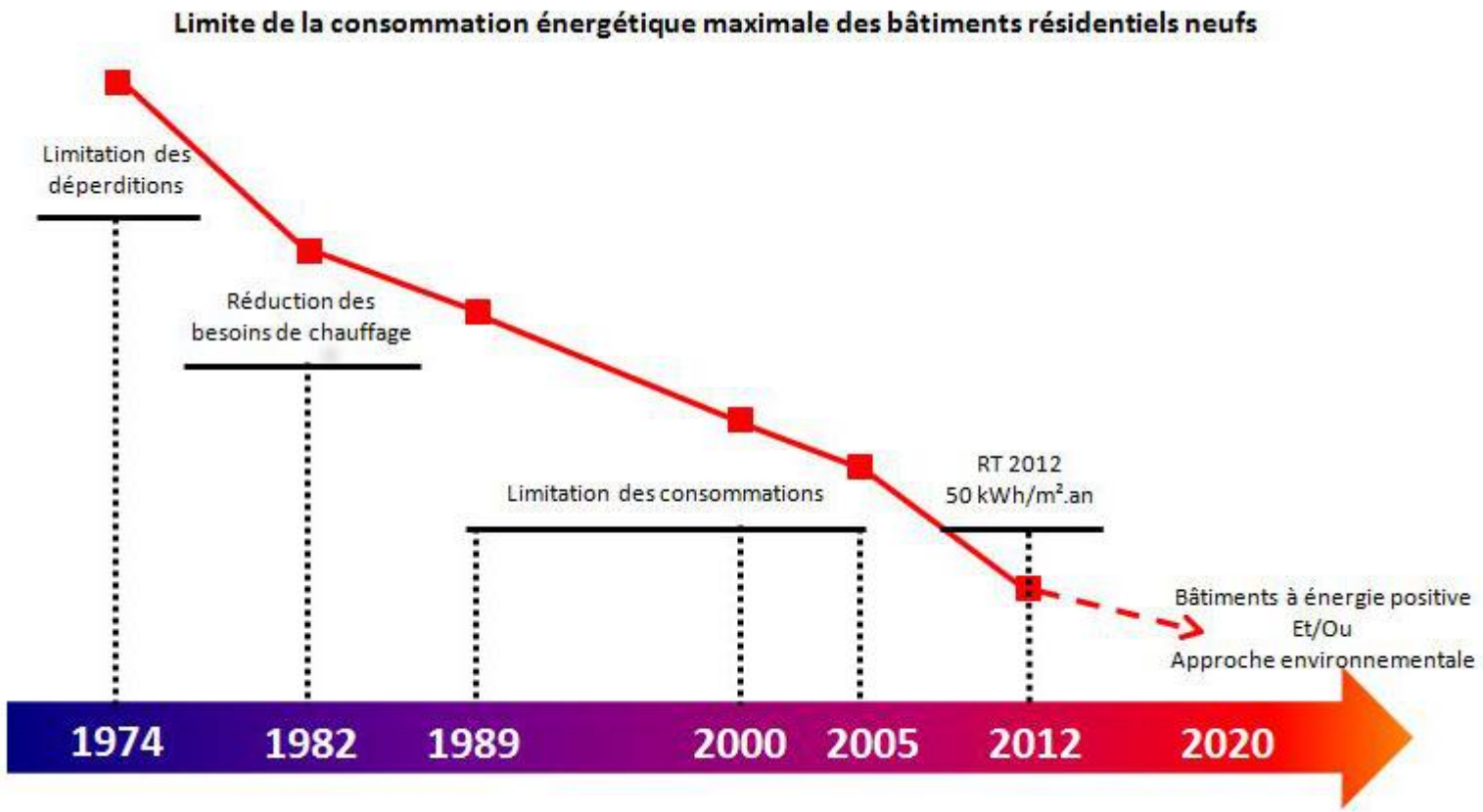








thermal regulations (2017)



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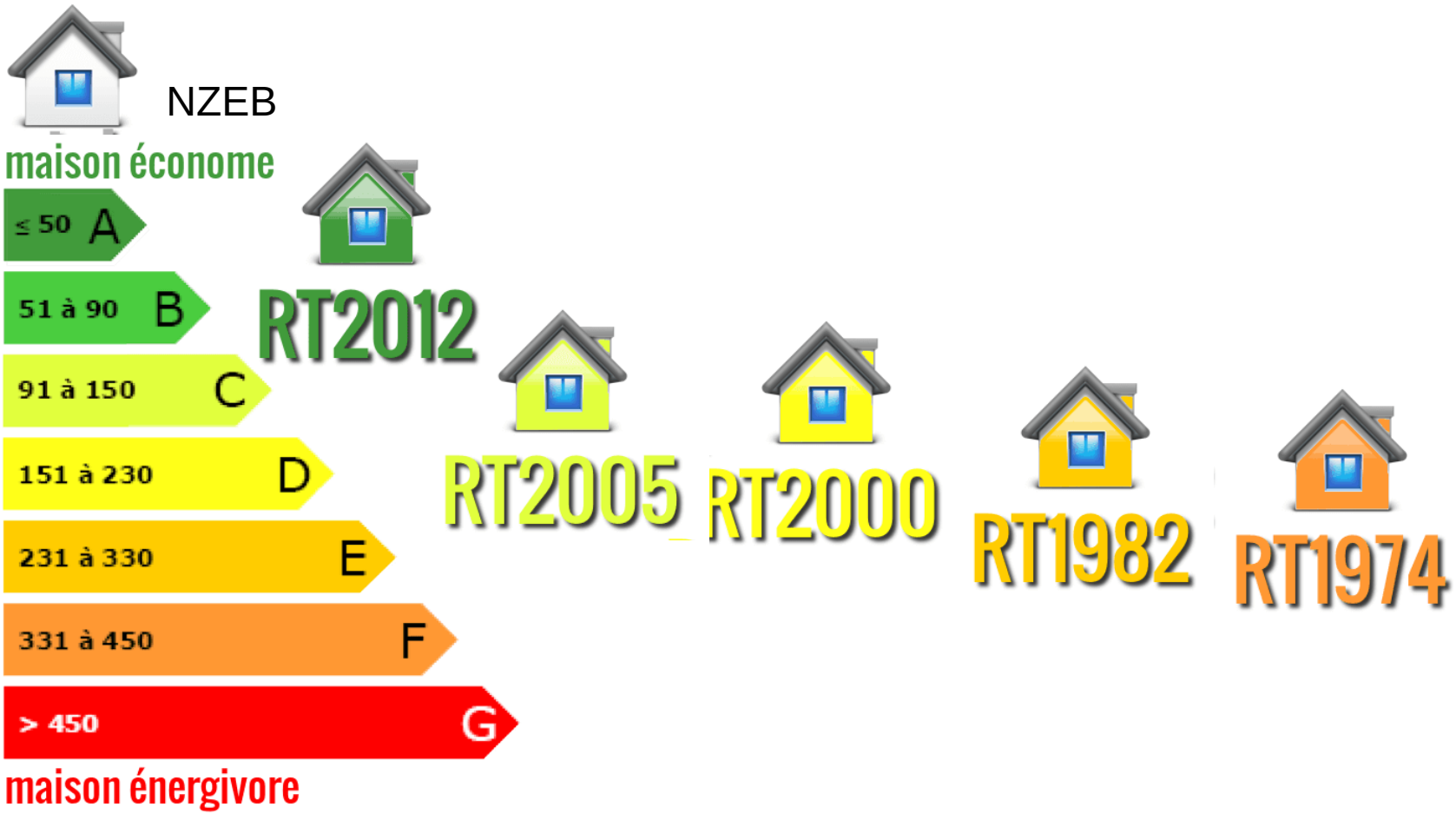
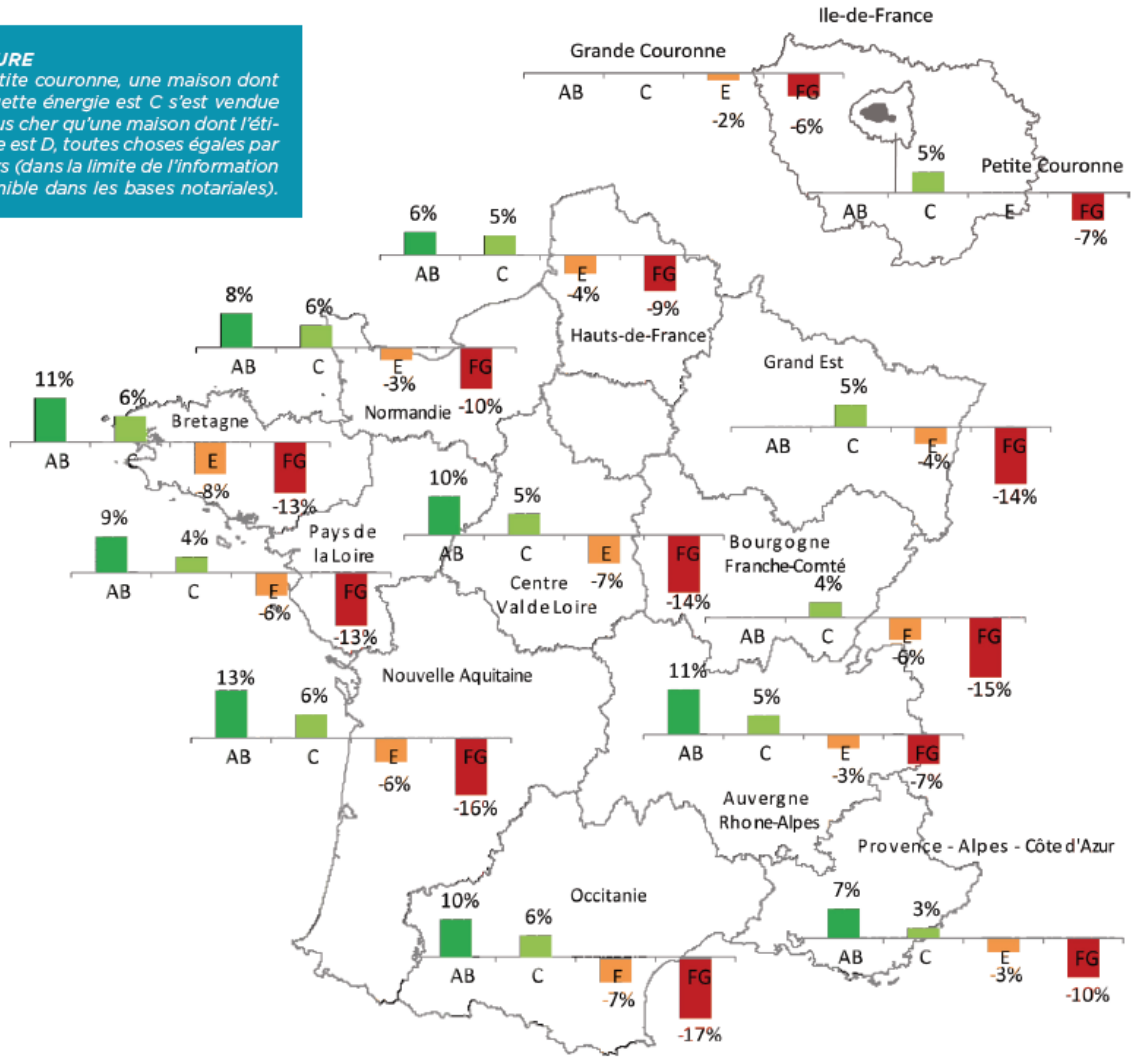


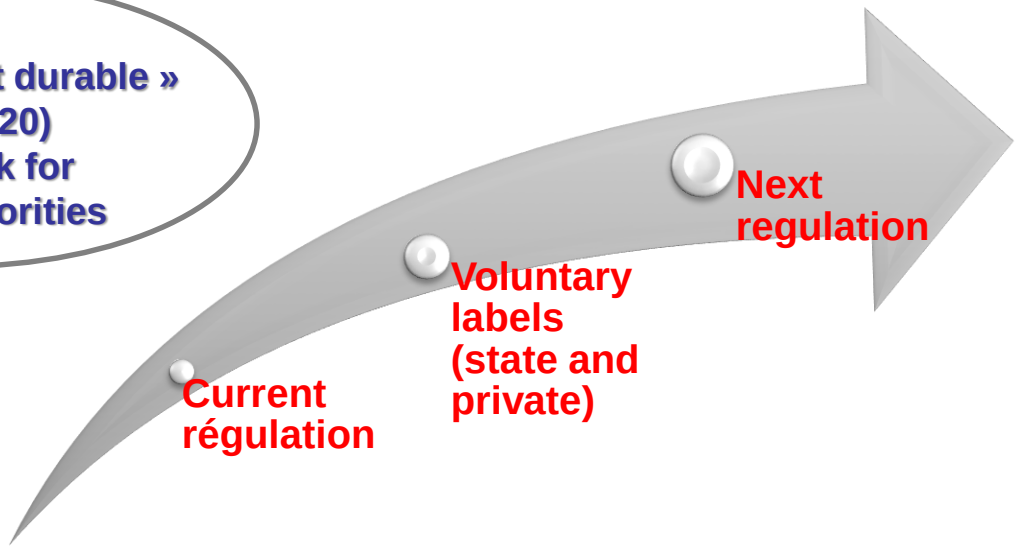
Environmental value of individual housings (2017)

LECTURE
En petite couronne, une maison dont l'étiquette énergie est C s'est vendue 5% plus cher qu'une maison dont l'étiquette est D, toutes choses égales par ailleurs (dans la limite de l'information disponible dans les bases notariales).



Typical scheme of new building regulation process

« Plan Bâtiment durable »
(RBR 2020)
Think tank for
public authorities



- **Currently : Thermal regulation « RT 2012 » ➔**
  - *Maximum consumption of 50 kWh/m²/year for heating, cooling, DHW, lighting and ventilation*
- **2020-2022 : Next regulation « RE2020-2022 » ➔**
  - *Setting criteria not only on energy, but also on carbon.*
- **To get there : Prefiguration and test ➔ E+C- label (voluntary label)**

The current road towards news regulations

From thermal to environmental regulation

- **Low energy buildings**
  - *Reduce non-renewable energy consumption*
  - *Enable development of efficient solutions (insulation, thermal systems, …)*
  - *Develop renewable energy usage and its exportation towards the network*

- **Low carbon buildings**
  - *Reduce GHG emissions on the whole life cycle of the building*
  - *Find an optimal balance between the impacts of construction products/devices and energy impacts*

A challenge for innovation and skills improvement in the building sector

E+ C- « LABEL »

ÉNERGIE POSITIVE & RÉDUCTION CARBONE

- **E + : 4 levels of Energy up to NZEB (energy for explotation)**
- **C - : 2 levels of GHG emissions based on life cycle analysis (LCA)**
- **http://www.batiment-energiecarbone.fr/**

- **« Inies data Base » gathers all the environnemental data of products (HVAC, insulation, materials, …)**
- **http://www.inies.fr/accueil/**

RT 1974
-25% 1950
225 kwh/m²
Logements
- déperdition

RT 1982
-20% 1974
170 kWh/m²
Logements
+ besoins chauffage

RT 1988
Logements et tertiaires
+ ECS

Référentiel HQE
1997

Certification Démarche HQE
Min HPE
2005

RT 2000
-20% Logements
130 kWh/m²
-40% Tertiaires
besoins
Performance gloable
+ Confort d'été
+ Performance equipements
Labels
-HPE -8%,
-THPE -15%,

Label Effinergie
2007

Plan Bâtiment Durable
2009

directive 2010/31/CE sur la performance énergétique des bâtiments (refonte) *fixe l'objectif nZEB au 1 janvier 2021, et rapportage plan d'action (neuf et existant)*

Accord de Paris
2015

RT 2005
-15%
90 kWh/m².an
Révision tous les 5 ans (objectif -40% 2020)
+ Consommation de référence
+ Bioclimatique + ENR min 2m² capteurs solaires
+ RT sur existant (composant et globale 2008)
Labels
-HPE -10%,
-THPE -20%,
-**BBC 50kWhep/m²**

Label « BBC effinergie Rénovation »
80kWh/m²

Protocole de Kyto
1997

Accords de Rio
Développement Durable
Convention climat
1992

directive 2002/91/CE sur la performance énergétique des bâtiments[1] ***ou DPEB*** *est en vigueur depuis le 4 janvier 2006,*

RT 2012
Niveau BBC
50 kWh/m².an
+ eclairage
+ climatisation

label Effinergie+
-20% RT2012
40 kWhep/m²

label BEPOS 2013
(nZEB) Effinergie+
+ empreinte carbone
+ < max non ENR

Réferentiel d'Etat E+ C-
Energie Positive & Réduction Carbone
4 niveaux énergie
2 niveaux carbone

Label BBCA (2016)
Batiment bas carbone
Diviser par 2 l'empreinte carbone
- Niveau E+ 1 C-2

label BEPOS+ 2017
(nZEB) Effinergie+
E4 – C1

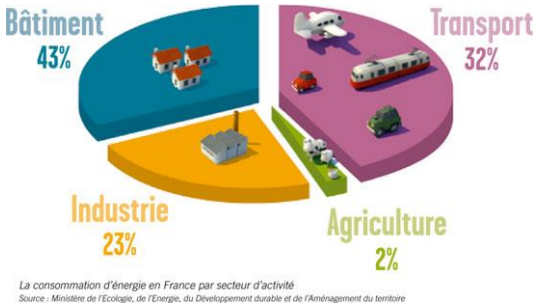
RT 2020 ou RBR
Niveau BEPOS
*(**nZEB**)*
12 kWhep/m² chauffage
100 kWh/m² tout usage *(y compris, TIC et électroménager)*

As a conclusion

- **France is a reference for its thermal regulation and is ahead in Europe on the path towards environment regulation and fully in line with european and international standards**

- **The Ecologic Transition is on its way and a global objective of France. The building sector is one of the key player, it's time to catch the train of buildings environmental performances.**

- **Performant new buildings are :**
  - ***more confortable,***
  - ***good for owner and tenants 's image,***
  - ***respectful of the wallet***



La consommation d'énergie en France par secteur d'activité
Source : Ministère de l'Ecologie, de l'Energie, du Développement durable et de l'Aménagement du territoire

- **Investment opportunities in new build market, although do not forget refurbishment market !**
  - **« Strategic renovation plan » released the 24th of november by Minister Nicolas Hulot**

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Thank you



















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