

Trial phase for Positive Energy and Low Carbon Construction (E+C-) To the French environmental regulation



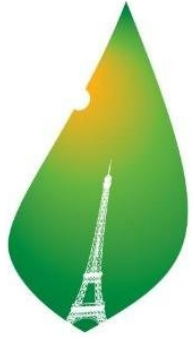
**French-Japanese conference
8 – 10 May 2019**

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Development in Construction - DHUP



A worldwide challenge



PARIS2015
CONFÉRENCE DES NATIONS UNIES
SUR LES CHANGEMENTS CLIMATIQUES
COP21•CMP11

Paris Agreement

1.5°C

Efforts to limit global warming

Cutting EU greenhouse gas emissions

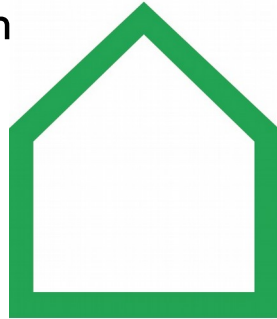
by at least

40% by 2030

How buildings contribute to climate change ?

44%

consumed energy in
France



25%

French GHG emission from energy
consumption of buildings in use phase

Ambitious national goals



LA TRANSITION ÉNERGÉTIQUE pour la
CROISSANCE VERTE



#LoiElan

Environmental Regulation for new Constructions

3 French Laws

2010 - Loi Grenelle

2015 - Transition Énergétique pour la Croissance Verte

2018 - Évolution du Logement, de l'Aménagement et du Numérique



In 2020

Environmental Regulation for new Constructions

- Requirements on building carbon footprint
- Footprint based on whole life-cycle & carbon storage during building life

+

Energy Regulation towards net Zero Energy Buildings

Use of materials from **renewable resources or recycling**

+

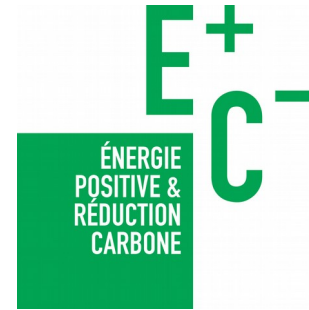
Carbon storage during the building life

Building **indoor air quality**

Environmental Regulation for new Constructions

To prepare future Environmental Regulation 2020 :

- In **2016**, launch of **National Trial Phase for new Constructions (E+C-)**



- **Autumn 2018**, setup of **complementary technical works**
- **2019** : **consultation of stakeholders**



Trial phase E+C-

TEST

a calculation method
and requirement levels
on real buildings

ADAPT

the calculation method
and the requirement
levels with the reality on
the ground

DEVELOP

the stakeholders skills

To build, with the stakeholders together,
the **NEW ENVIRONMENTAL REGULATION**,
on a shared basis

2016

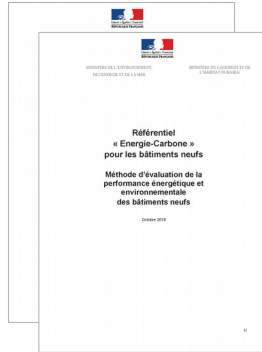


2020

Trial phase based on 3 tools

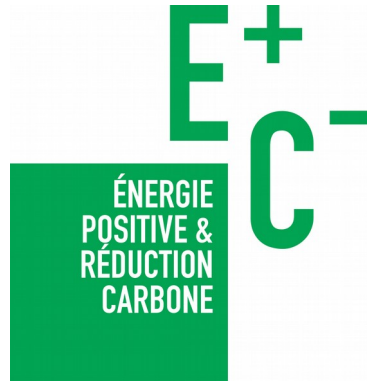
Assessment framework

Technical baseline
« Energie - Carbone »
(Calculation method + levels)



Evaluating buildings
on same basis

Label



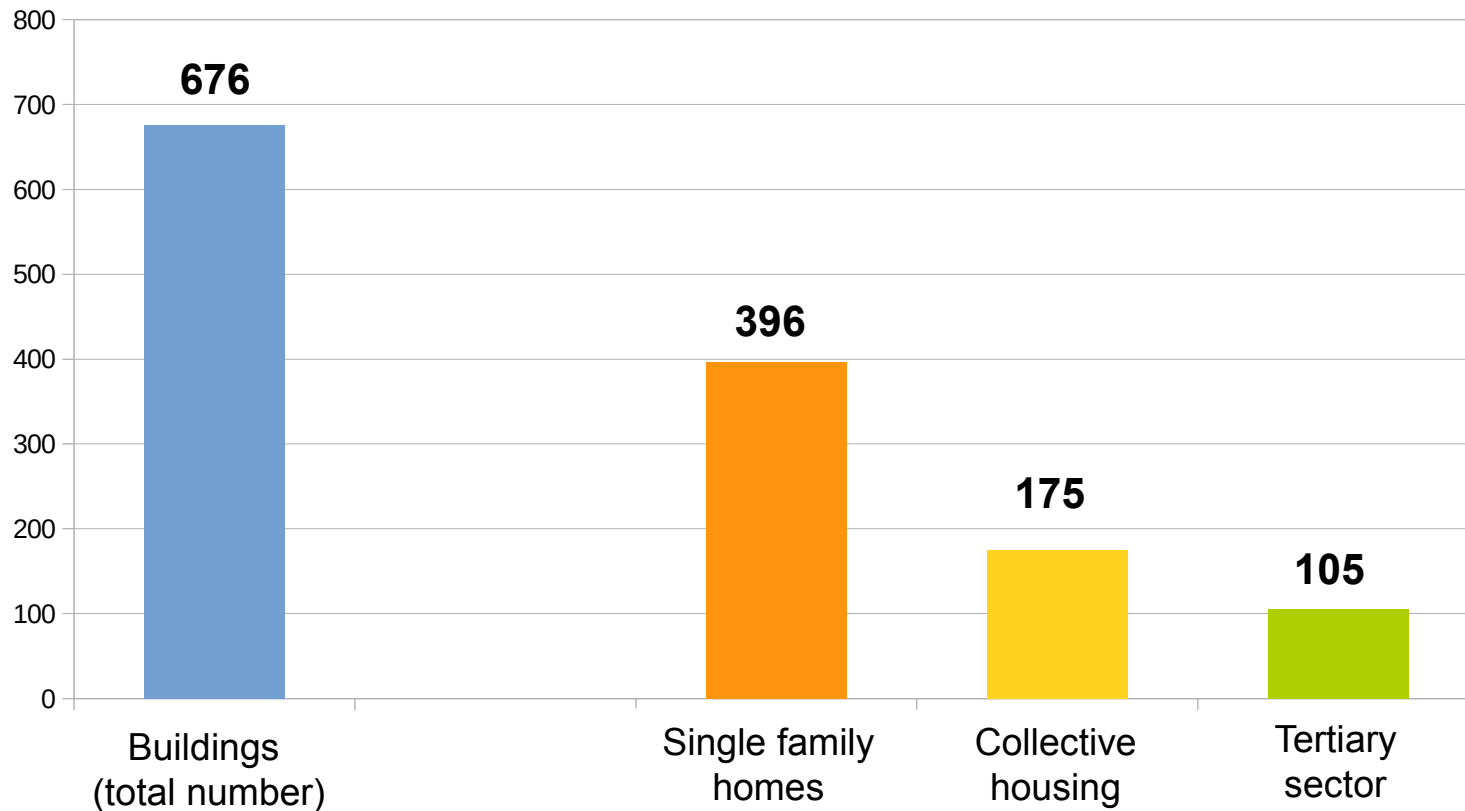
Valuing remarkable
buildings

Database + stakeholders community



Capitalizing
buildings data

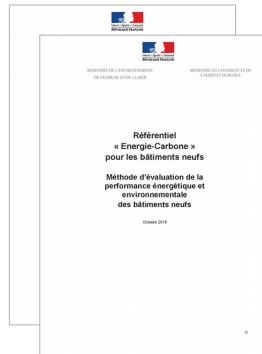
Trial phase : number of participants – April 2019



Trial phase : the assessment framework

Assessment Framework

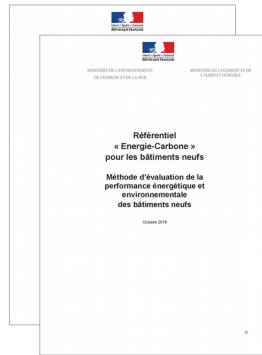
Technical baseline
« Energie - Carbone »
(Calculation method + levels)



Trial phase : the assessment framework

Assessment Framework

Technical baseline
« Energie - Carbone »
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Energy assessment of the building

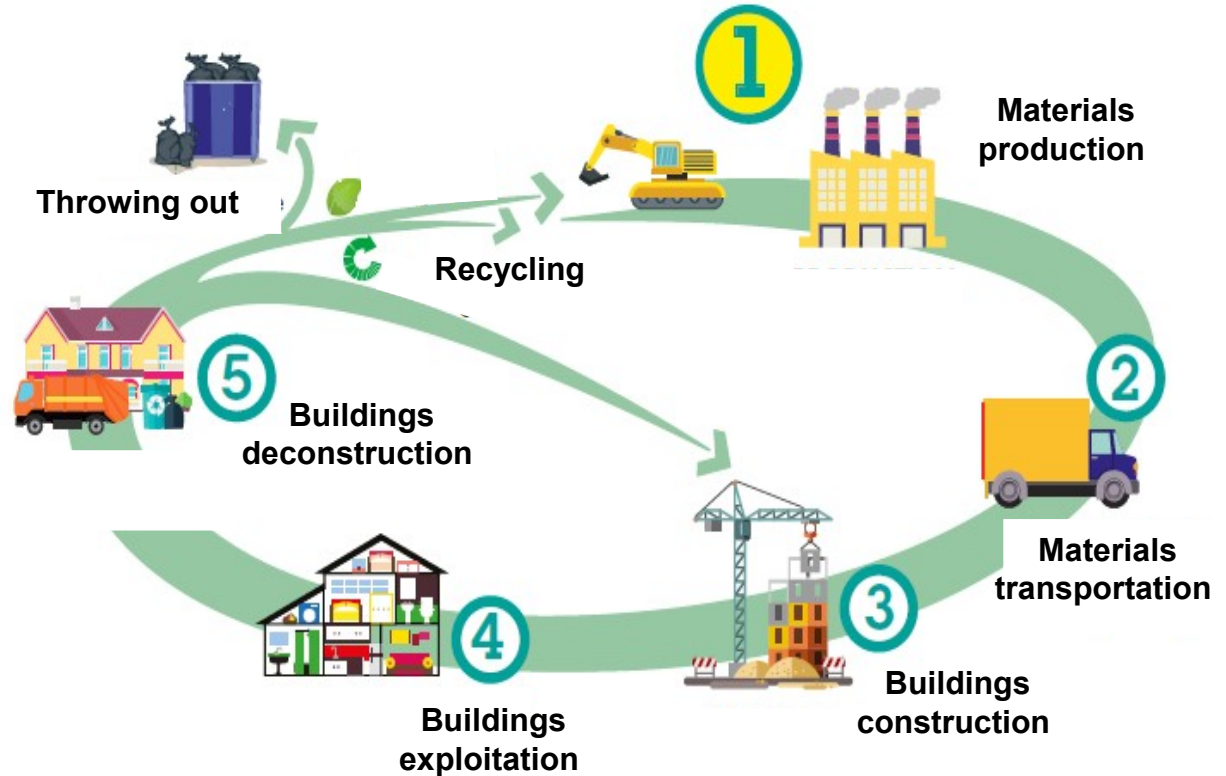
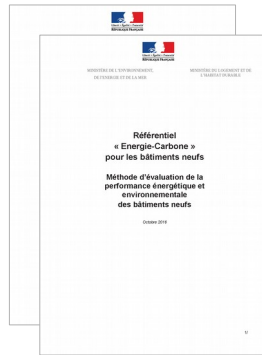
BEPOS Balance =

$$= \sum \text{Non-renewable energy consumption} - \sum \text{Exported renewable energy in the network}$$

Environmental assessment of the building

Assessment Framework

Technical baseline
« Energie - Carbone »
(Calculation method + levels)

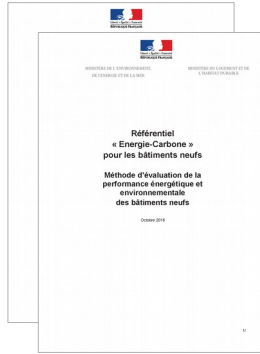


based on an LCA assessment

Data for the environmental assessment

Assessment Framework

Technical baseline
« Energie - Carbone »
(Calculation method + levels)



**Environmental and Health
reference data for building**

More than 2000 EPD :

> 1285 for construction products

> 790 for equipment

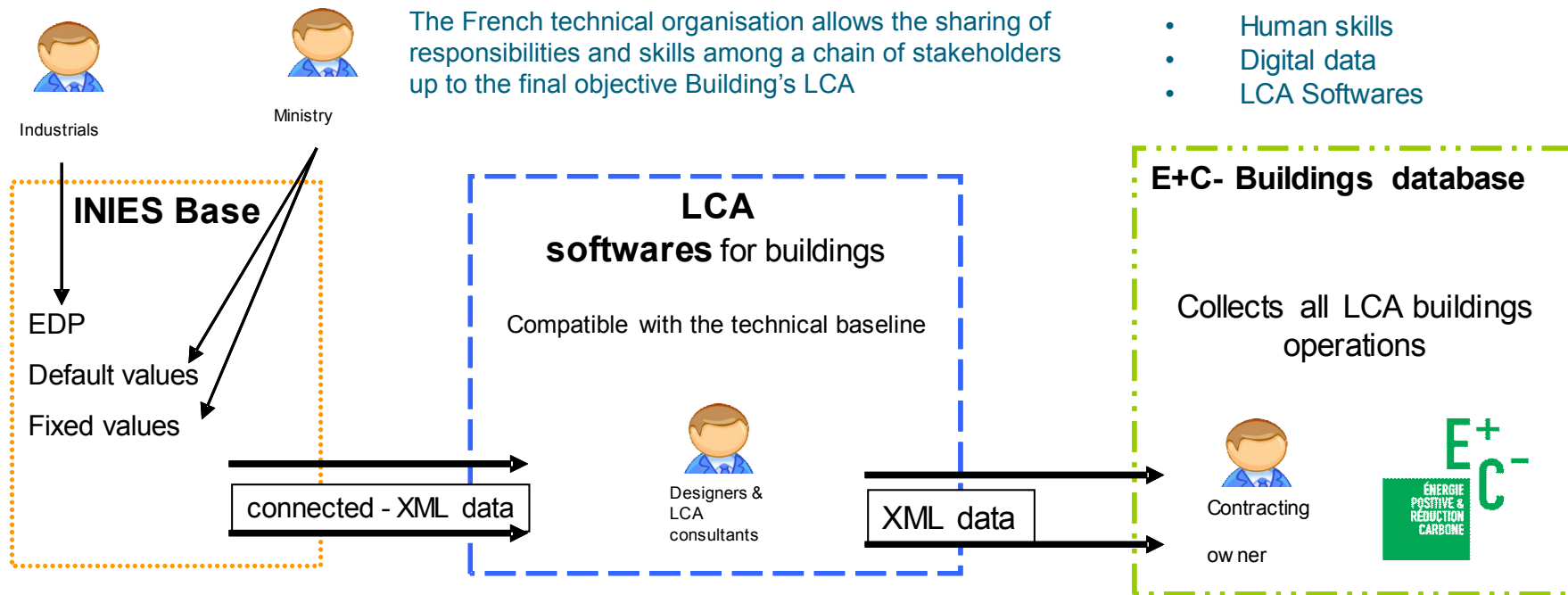
**EPD are verified by independent
third party reviewers**

**Default values as substitutes
of accurate EPD**

> 500 products and equipments

**Fixed values for the footprint
of energy consumption**

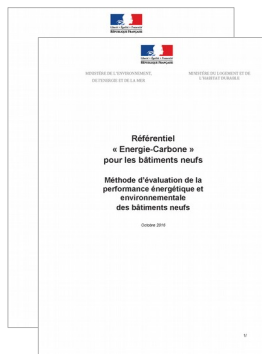
Trial phase : tools for calculation and capitalisation



Trial phase : levels to reach on 2 indicators

Assessment Framework

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ENERGY

Energy level 1
Energy level 2

Energy level 3

Energy level 4
= zero energy

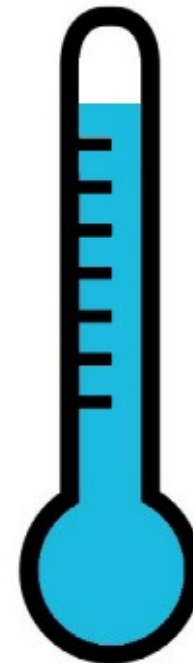


Energy balance

CARBON

Carbon level 1

Carbon level 2
=optimising choices
related both to the
use phase and the
building process



GHG emission

Technical works to build the new Regulation 2020

Started in Autumn 2018 - 15 subjects to be studied

- Building LCA perimeter
- Temporary carbon storage
- Summer thermal comfort
- Requirements of renewable energy production
- Technical innovations, etc.

Strong involvement of stakeholders

- ➔ Consultation on the outcomes of these works & analysis of trial phase results

Regulation 2020 to be written on this basis

- Definition of the regulatory calculation method : Spring 2019
- Definition of the regulatory requirements for energy and carbon : Autumn 2019
- Publication of the new regulation : Beginning of 2020





For further information, please visit our website at
<http://www.batiment-energiecarbhone.fr/fr/>

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