

# Towards

# E2B

Joint Technology Initiative



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# Summary

1. Energy, A MAJOR CONCERN
2. Energy Efficient Buildings YES !
3. JTI, a tool
4. The way to E2B
5. Conclusion

# 1. Energy, A MAJOR CONCERN (1)

Known reserves\* :

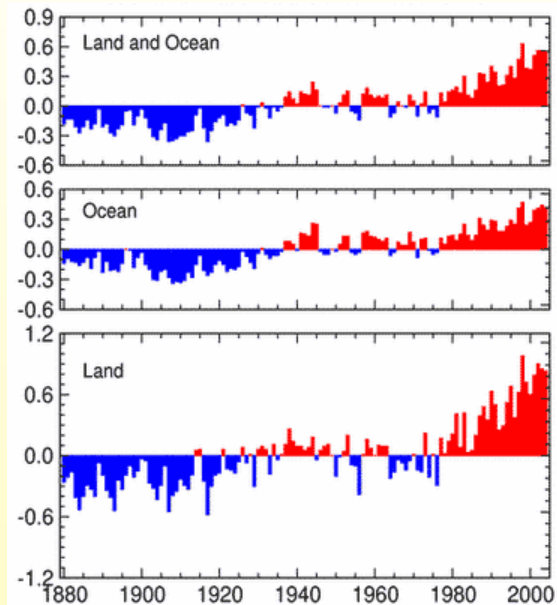
- Oil : 40 years
- Coal : 230 years
- Natural gas : 70 years
- Uranium : 80 years
- Sun and Wind: 5 Billion years

Our generation should NOW deal with the consequences  
arising from these figures.

*(\*) at the present rate of consumption*

# 1. Energy, A MAJOR CONCERN (2)

## Global warming



September 2005 was the hottest recorded since 1880 !

# 1. Energy, A MAJOR CONCERN (3)

For the Construction Industry because:

- It generates 1/3 of GHG in Europe
- Buildings use 40 % of total EU energy consumption
- 50% of savings needed to meet the Kyoto targets could be obtained by building energy efficiency
- EU imports 50 % of its energy from unstable countries

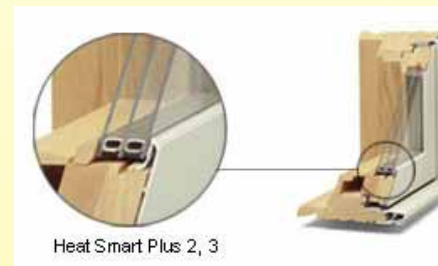
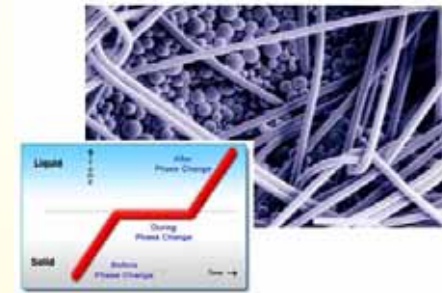
We must drastically reduce CO<sub>2</sub> emissions

And reduce our energy dependence

## 2. Energy Efficient Buildings, YES ! (1)

A more efficient envelope:

- Improved materials (insulation, glazing, energy storage through phase change)
- Bioclimatic architecture (natural ventilation, optimize solar radiation and shading, encourage use of vegetation and water...)
- Improve design with advanced modelling software



## 2. Energy Efficient Buildings, YES ! (2)

### Better equipments and systems

- New lighting technologies
- More efficient electric devices, favoring renewable energies
- Highly efficient HVAC equipment and installation design
- Adaptative Energy Management Systems
- Improved monitoring and control
- Stronger systemic approach



Energy Management  
wireless sensor networks



LED lighting



## 2. Energy Efficient Buildings, YES ! (3)

### Integration of renewable energies

- Solar thermal collectors deployment
- Solar photovoltaic
- Wind turbines
- Intelligent energy urban districts and networks
- Positive energy buildings program





## 2. Energy Efficient Buildings, YES ! (4)

### Change collective and individual behaviors

- By common European regulations
- Promotion of energy efficiency by public sector
- Disseminate a structured practice of whole-life costing, think long-term
- Improve individual behavior (ex: booklet for use)



### 3. JTI, a tool (1)

Joint Technology Initiatives (JTI) are long-term public/private partnerships combining:

- Private sector investment
- National and European public funding

JTIs are identified by :

- strategic importance of the topic
- presence of a clear deliverable
- existence of market failure
- concrete evidence of Community value added
- evidence of substantial, long-term industry commitment
- inadequacy of existing Community instruments

All these prerequisite criteria fit with E2B

### 3. JTI, a tool (2)

#### E2B expected main deliverables :

- New materials, components and systems for energy generation and saving
- Reliable simulation tools at various design levels
- European guidelines and regulations for optimum design in energy efficiency
- Assessment methods to integrate economical, social and environmental aspects
- Financial incentives for individuals and retrofitting projects.
- Clients oriented new energy services
- New business model
- Exemplary energy efficient renovated and new buildings at reasonable cost

### 3. JTI, a tool (3)

E2B strategic objectives are:

- Boost integration of energy saving technologies in the construction process
- Give to all actors a wider view on building whole-life cycle
- Remove barriers to innovation in terms of contracts, financing and intellectual property rights

Supported by an ambitious program of “demonstrators”:

- Identical types of buildings built and tested all over Europe
- With strong significance: schools or retirement homes for example
- And clear goals like reaching “factor 4”
- Supported by Public Private Partnership approach, ensuring long-term commitment

### 3. JTI, a tool (4)

E2B is supported by a Core Group of Industry leaders:

- Acciona, Arcelor, Bouygues, Dragados, EDF, FCC, Hochtief, Keraben, Knauf, Maxit, Mostostal, Saint-Gobain, Vinci

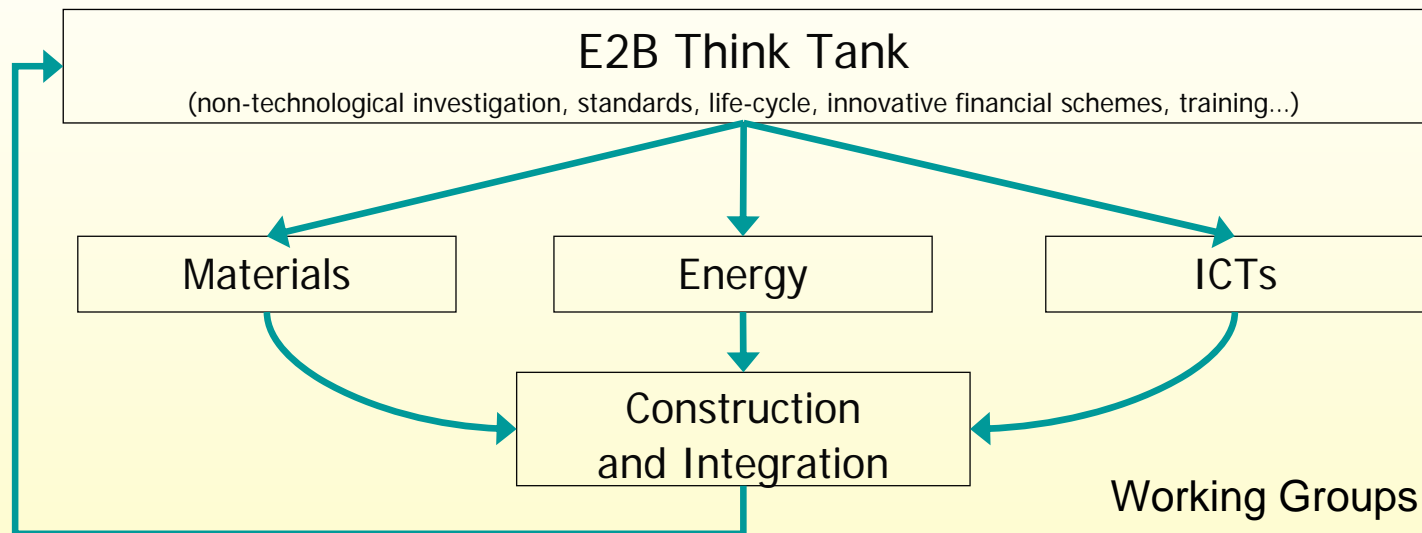
Other research and engineering organizations

- CSTB, D'Appolonia, Labein, VTT

Architects, Clients (Social Housing) and users, SMES will join

## 4. The way to E2B (1)

Today to March 2007



- Market analysis, ideas for proposals
- Define resources and organizations
- Set up confidentiality agreements and projects participations
- Finalize overall budget, proposal to EC

## 4. The way to E2B (2)

### During 7th PCRD

- 2007 : Operational start with present structure
- 2008 : Launch a first set of Demonstrators
- 2009 – 2010: Creation of a legal structure and constitution of a Public Private Partnership with EC on E2B JTI
- 2011 : First returns and launch a second set of Demonstrators



## 5. Conclusion

### GOOD NEWS

- Conceptual and technical solutions exist or are developed
- Fossil fuel declines

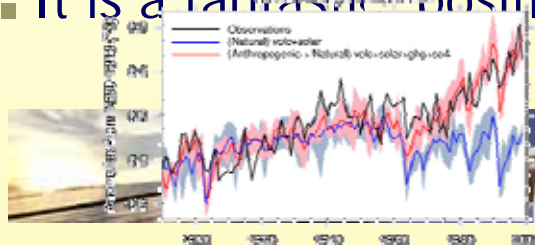


- Temperature on the globe will go on rising for a certain time
- Member States and Industry
- To a certain extent our economies will suffer

- A new business model is feasible
- Buildings have their share of responsibility
- The construction industry is able to react fast



- It is a fantastic positive business opportunity





# E2B

« We need to start working on changes on the scale of the problems we face »

(Bill McKibben, environmentalist)