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Towards a low energy building stock…

how to achieve a major decrease in energy consumption

Workshop organised by Enper Exist with the support of EURIMA

Brussels, June 27th 2007

Supported by the European Commission under the Intelligent Energy - Europe Programme

Applying the EPBD to improve the **EN**ergy **PER**formance requirements to **EXIST**ing buildings

ENPER-EXIST

www.enper-exist.org

Number of Grant Agreement : EIE/04/096/S07.38645
Duration : January 2005 – June 2007 (30 months)
Project supported by the « Intelligent Energy-Europe » programme of the European community

Dissemination within Enper Exist

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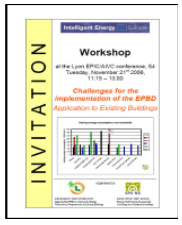
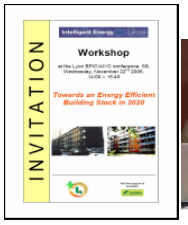
- 12 news letter

- 1 web site : www.enper-exist.org

- 5 Workshops :





Workshop program

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- 2:30 PM Introduction of the workshop; JC Visier – H. David
- 2:45 - 3:15 A global vision of the Enper Exist project JC Visier – K E Thomsen
- 3:15 - 3:30 A road map for existing buildings Presentation by Ecofys and/or EURIMA of recent ECOFYS papers
- 3:50 - 4:30 Presentation of the report: Roadmap for energy efficiency within the Enper Exist project P Wouters, X Loncour BBRI
- 4:30 Discussion
- 5:30 Drinks and informal exchanges

ENPER EXIST

A Global vision of the project

June 2006

Disclaimer:
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- France (CO): Centre Scientifique et Technique du Bâtiment (CSTB)
  - Jean-Christophe Visier
  - Rofaïda Lahrech
  - Ahmad Husaunndee
  - www.cstb.fr
- Belgium: Belgian Building Research Institute (BBRI)
  - Peter Wouters
  - Xavier Loncour
  - Dirk van Orshoven
  - www.bbri.be
- Denmark: Statens Byggeforskningsinstitut (SBi)
  - Kirsten Engelund Thomsen
  - Søren Aggerholm
  - www.sbi.dk
- Germany: Fraunhofer Institute for Building Physics (FhG-IBP)
  - Hans Erhorn
  - Heike Erhorn-Kluttig
  - www.ibp.fhg.de
- Greece: National and Kapodistrian University of Athens (NKUA)
  - Mat Santamouris
  - grbes.phys.uoa.gr/
- The Netherlands: Netherlands Organisation for Applied Scientific Research (TNO)
  - Dick van Dijk
  - Marleen Spiekman
  - www.tno.nl
- The Netherlands: EBM-consult
  - Bart Poel
  - Gerelle van Cruchten
  - www.ebm-consult.nl
- United Kingdom: Energy for Sustainable Development Ltd. (ESD)
  - Robert Cohen
  - www.esd.co.uk

Enper Exist, Why ?

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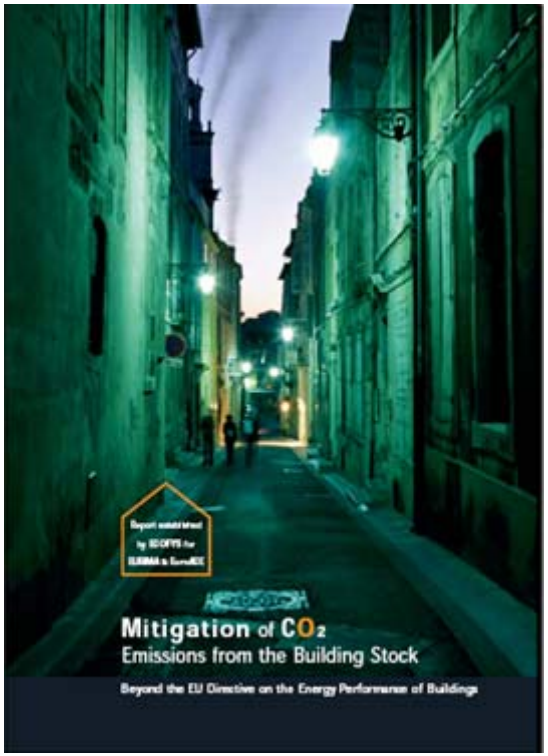
The challenge is to divide by a factor 4 the CO2 emissions of the building sector by 2050



A roadmap is needed

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We need to make a major change in the retrofit of existing buildings

The EPBD is making a first step, …. But is far from being sufficient

We need a roadmap for actions going beyond the EPBD

A roadmap is needed

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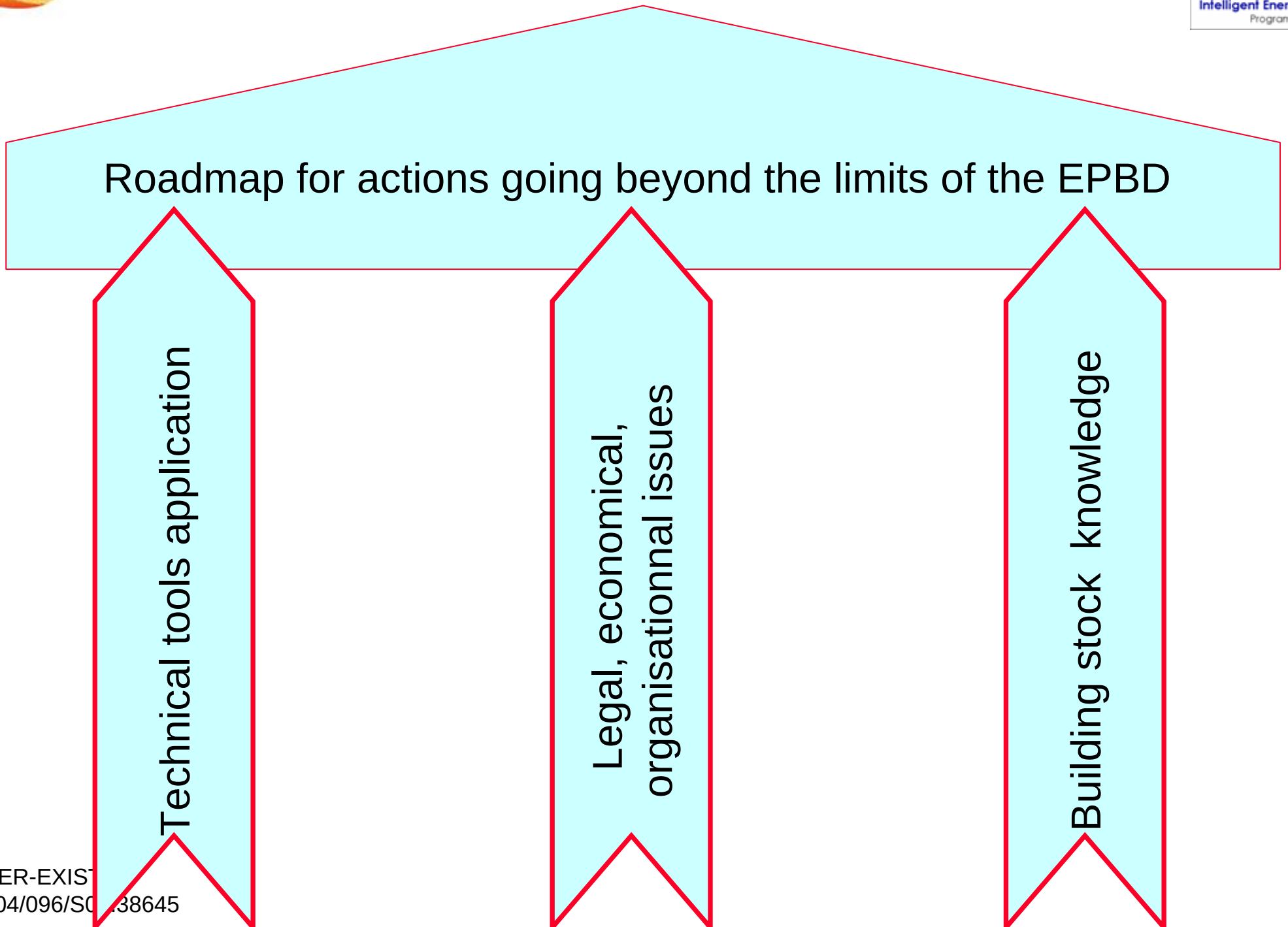
- If we want to reach a factor 4 decrease
  - We need synergetic actions from all the stake holders
  - The roadmap shall be a common development of the decision makers

One of the goal of Enper Exist is to support Brain Storming regarding future actions for existing buildings

Enper exist focus



Technical Tools Application

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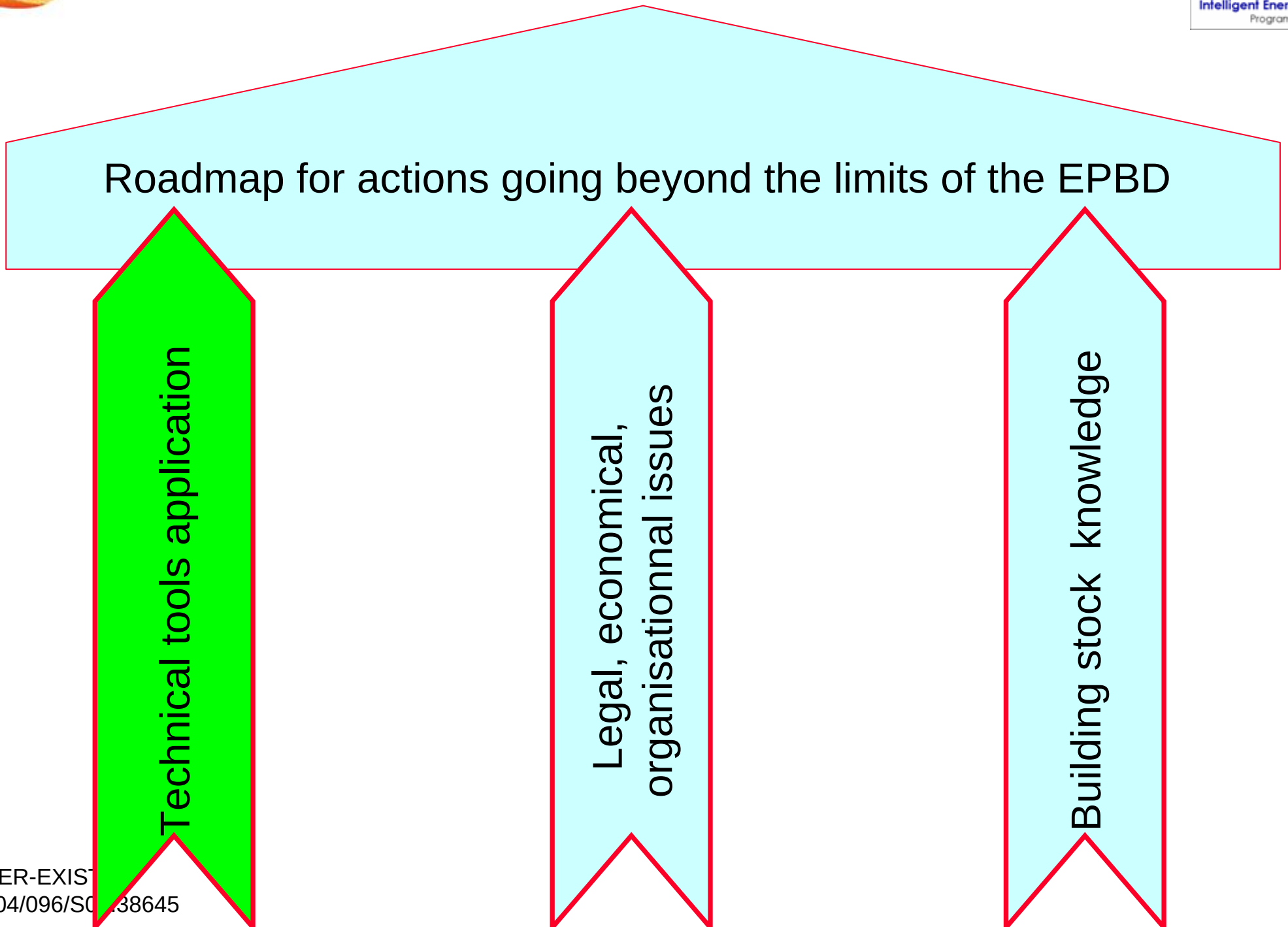

CEN has produced technical tools

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- Most countries have a lot of experience with the energy assessment of new buildings
- CEN has produced a huge amount of work to produce common standards
- Due to lack of time, priority has been given to new buildings

more than 30 standards

and

2000 pages produced

Assesment of differences between certification based on measurement and certification based on calculation

- Certification based on measurement
  - + Cheap
  - + Easy to apply
  - - Difficult to assess best measures for improvement
- Certification based on calculation
  - + Generally more complex and more expensive
  - - Easy to assess impact of improvement measures
- Mix of both approach sometimes relevant
  1. Measurement of large building stock
  2. Determination of poorest buildings
  3. Calculations to define measures to apply to poorest buildings

Some differences between new and existing buildings

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- the goal of the assessment is different
  - Proving compliance to regulation for new buildings
  - Providing information on actual energy use and possible improvement
- More attention shall be paid to small energy flows in energy efficient building
  - Lot of details shall be assessed in new buildings
  - One can focus on major flows in existing ones
- Data acquisition is very different
  - Data comes from descriptions and drawings
  - Data commes from observations

Enper Exist has applied draft standards to buildings throughout Europe

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Suggestions for improvement

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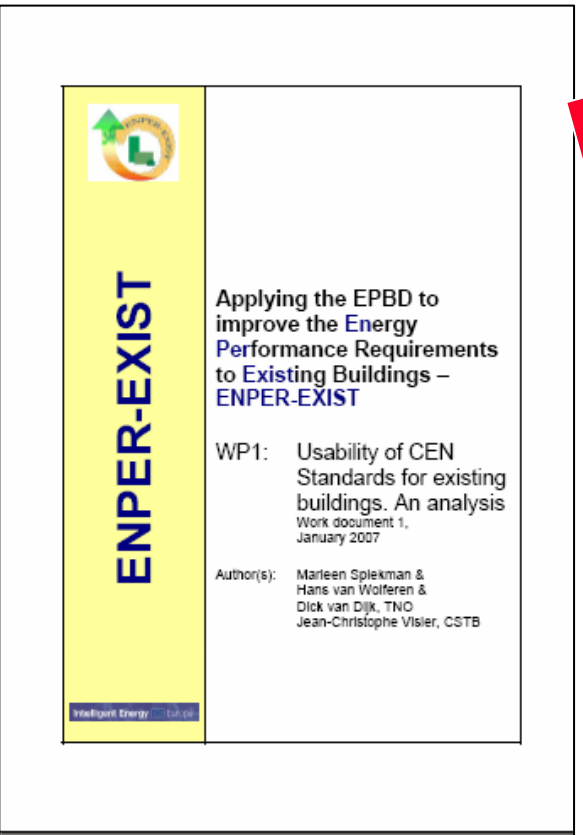
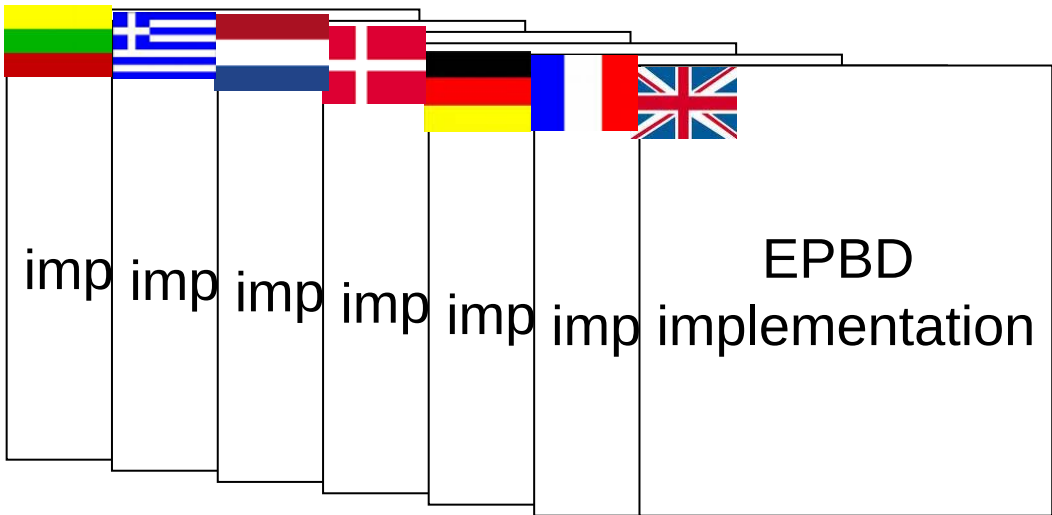
- Modifications of CEN draft standards
- Proposal of alternative methods which can be included in european standards or national guidelines





Deliverables

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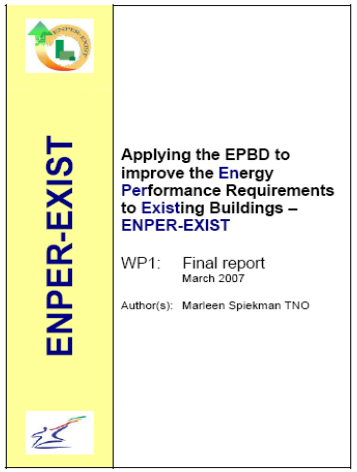
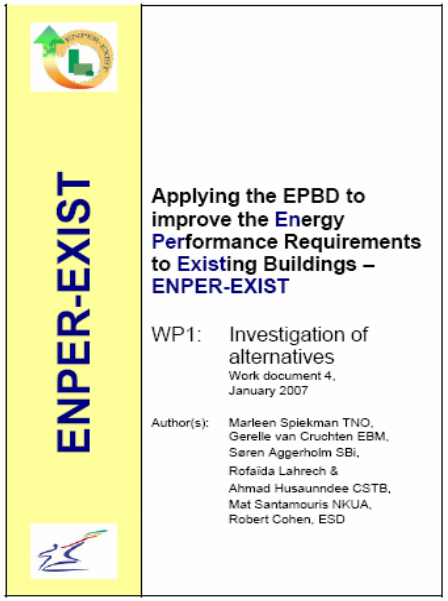
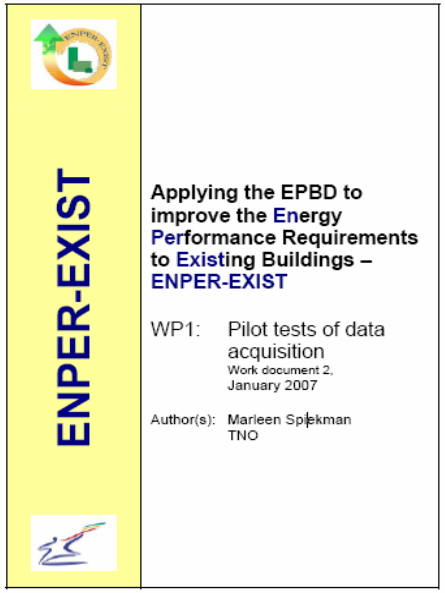
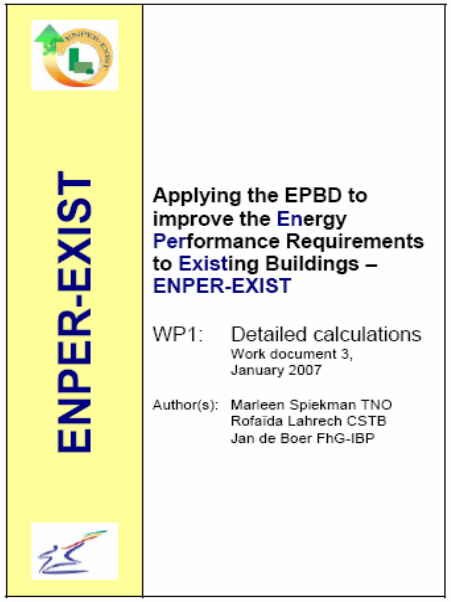
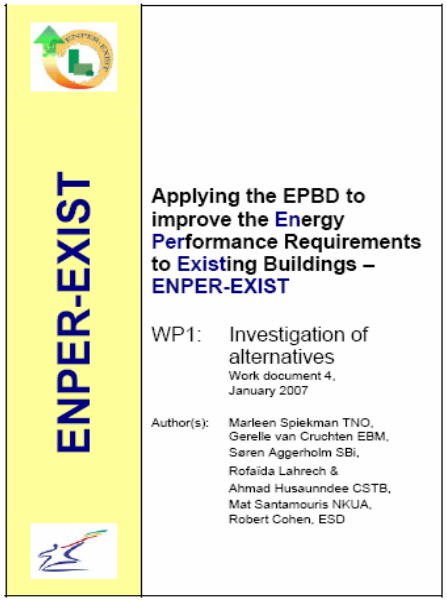
- Report :
  - WP1:
    - 1 synthetic report
    - 4 specific reports



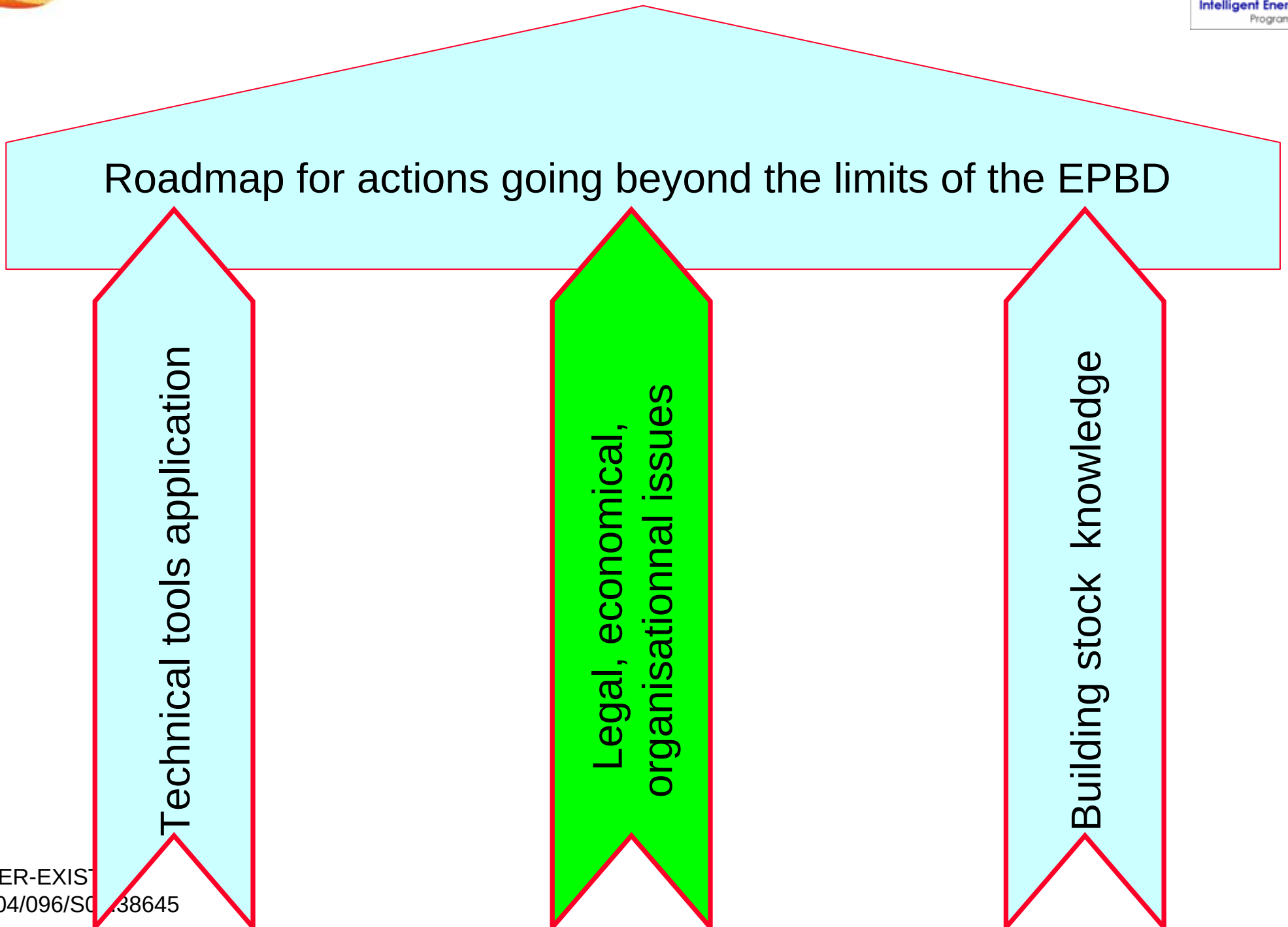








Enper exist focus



A global vision of actions to be performed

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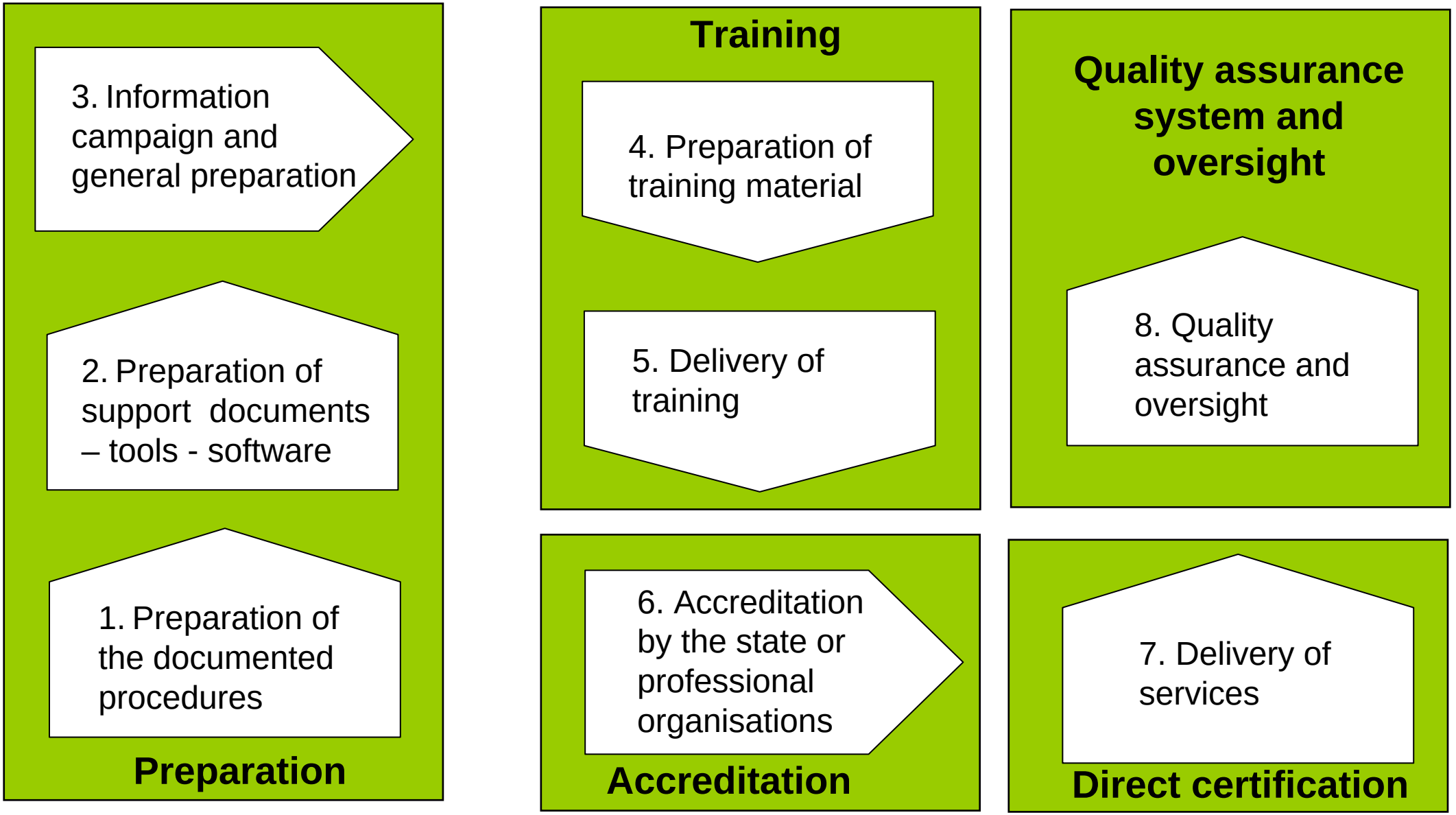

Keys for success in certification

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Help people to become interested in certification

- schemes are designed so that they **add value to users** of the information/scheme, they obtain benefits from their involvement/payment.
- the **motivation among users** is one of the most important factors for successful implementation, **avoid rigid legal enforcement** which might cause resistance
- dissemination of knowledge is important : design and contents of labels and reports, which have to target the users, i.e. be understandable but at the same time well documented and professionally presented.

Keys for success in certification

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- Get reliable certificates
  - a coherent **quality assurance system** is important : avoid the reliability of certificate to be questionned in media
  - **selection and training of consultants** including establishing of training activities ,and measures addressing the outcome of their work such as random checking of reports,
  - **Keep it stupid simple**: It has been found in Denmark that very complex methods do not raise the quality of the label, as detailed information on e.g. thermal conditions is not accessible during an inspection.

Keys for success in certification

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- Adjust the scheme to improve it
  - **Continuous adjustments** of the scheme should be expected and must be considered already at the designing phase of the scheme.
  - When setting up a labelling scheme, one should already from the beginning **plan on carrying out evaluations** which can be used in the continuous improvement of the scheme, administration, tools, dissemination, scope, etc.
  - As part of this process, it is recommended that **realistic and measurable goals and objectives are defined**, and that the set-up is designed so that the impact can be evaluated.

Organisation to manage certification

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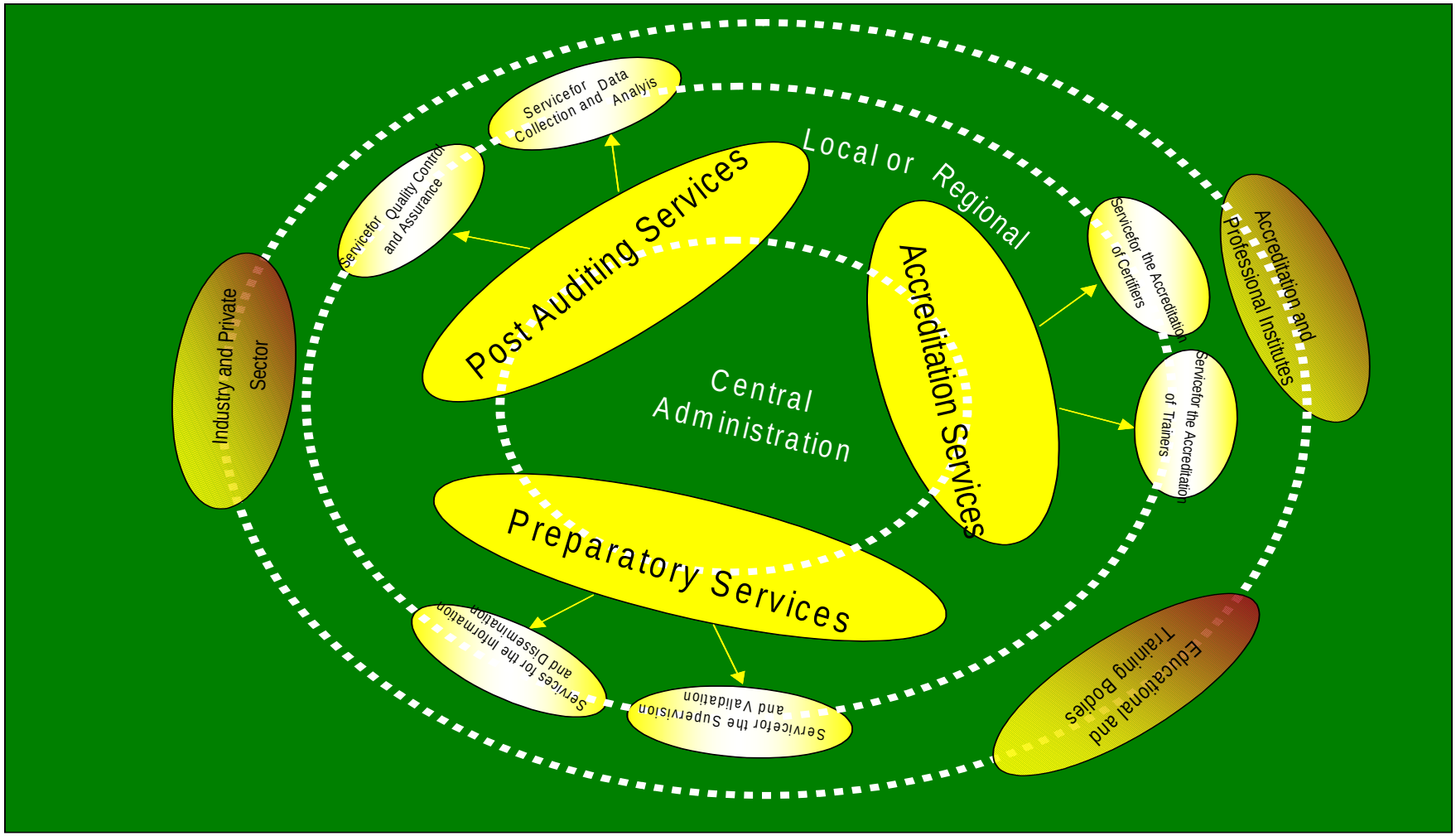

Direct / Indirect costs

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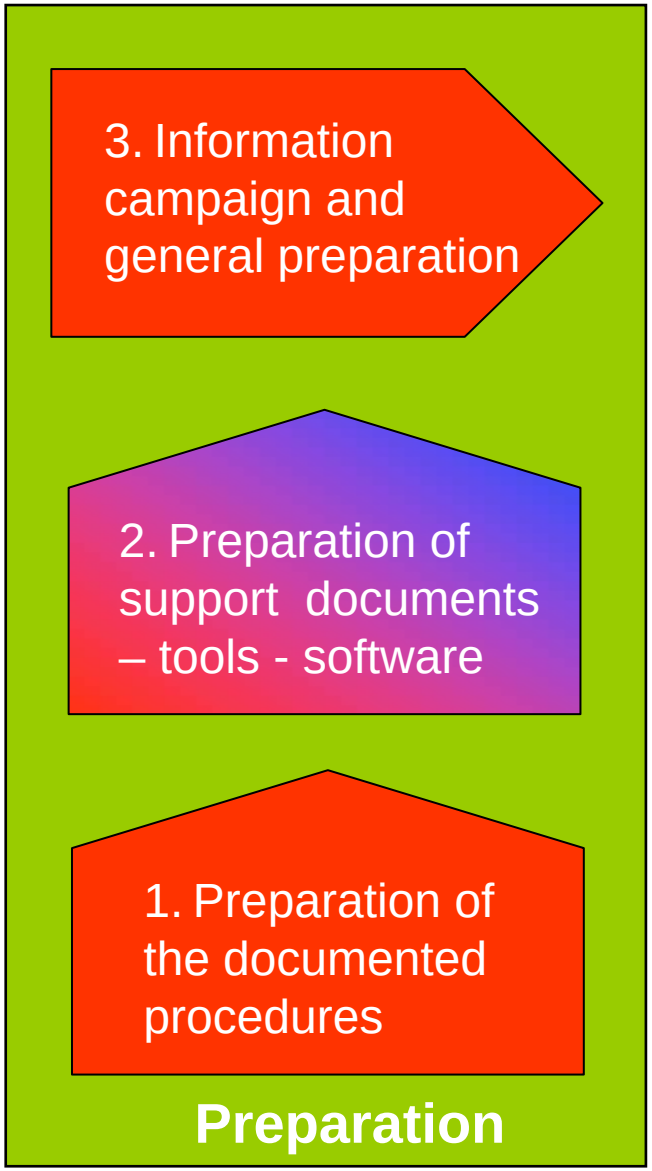

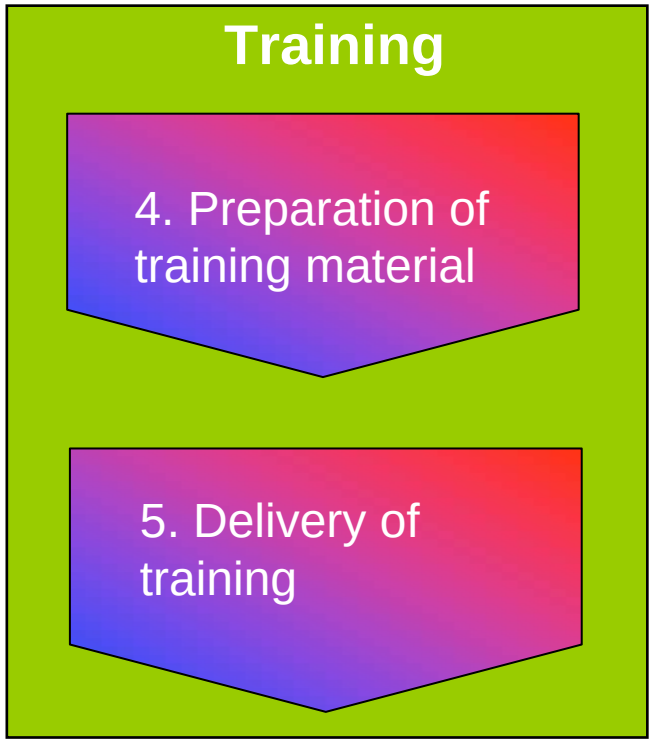

Impact of certification on the market

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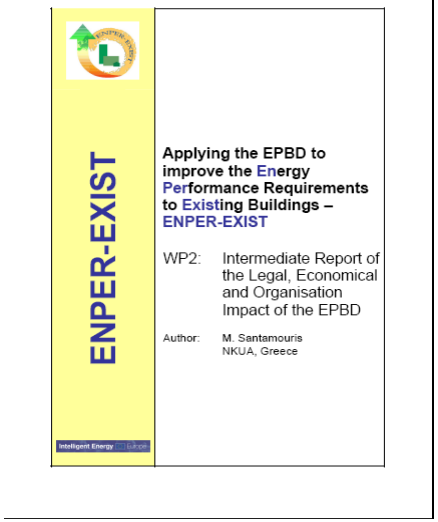
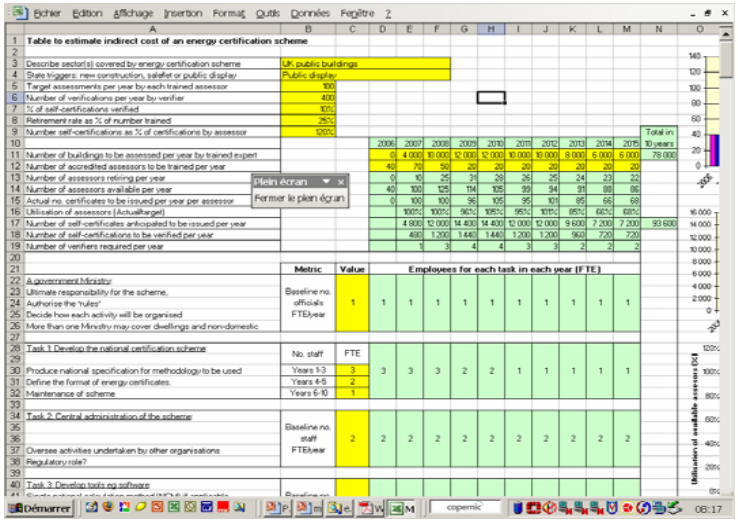
- the estimated direct cost for a certificate
  - 100 to 530 € for residential
  - 340 to 5000 € for non-residential buildings.
- The estimated indirect costs for a certificate
  - 1 to 40 € for residential
  - 15 to 40 € for commercial buildings.
- Certification cost per capita estimated
  - Between 3,5 and 10 € per person for residential buildings
  - Between 1 to 4 € per person for non residential buildings

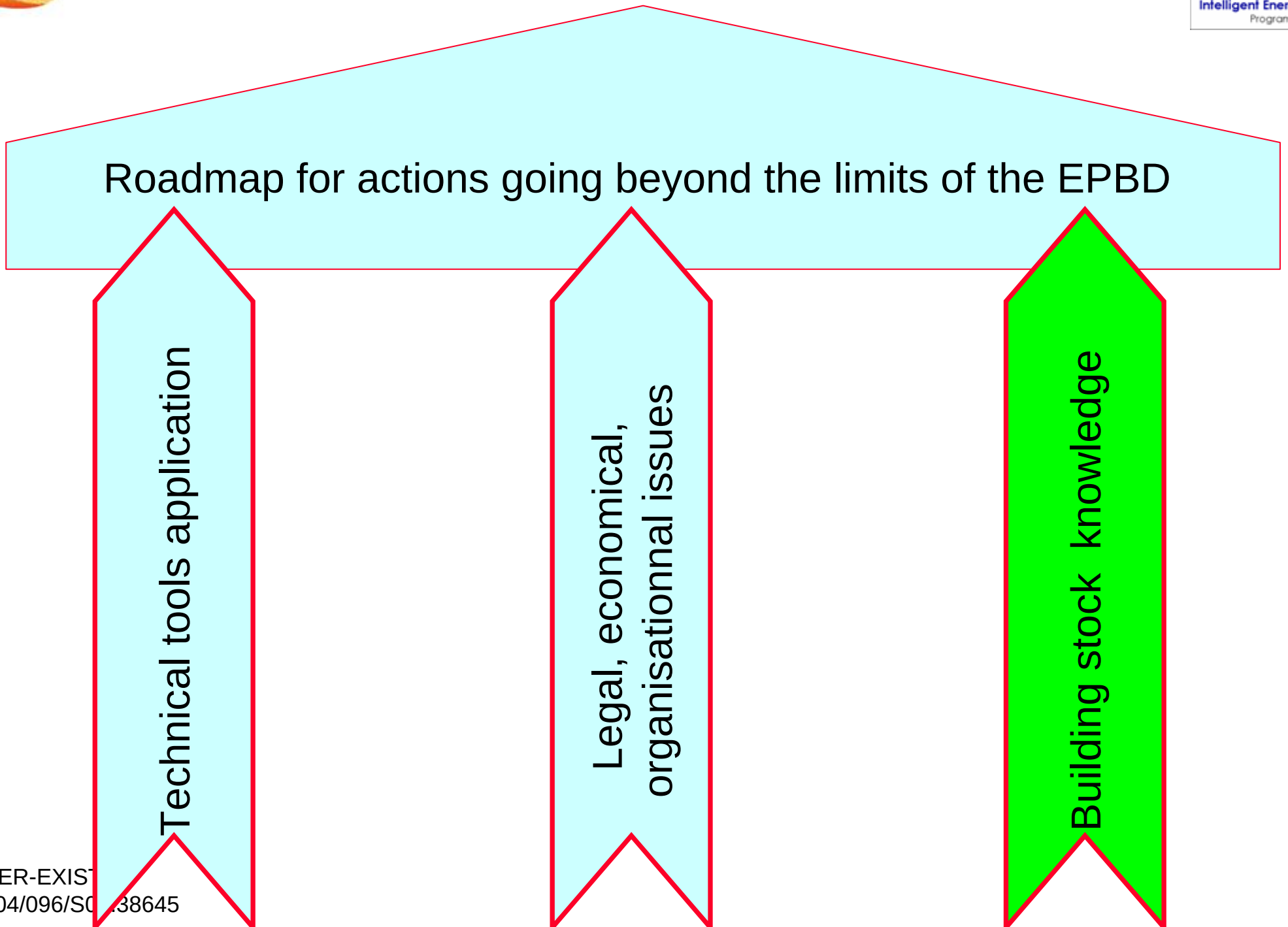
Deliverables

- 1 report
- 1 excel tool

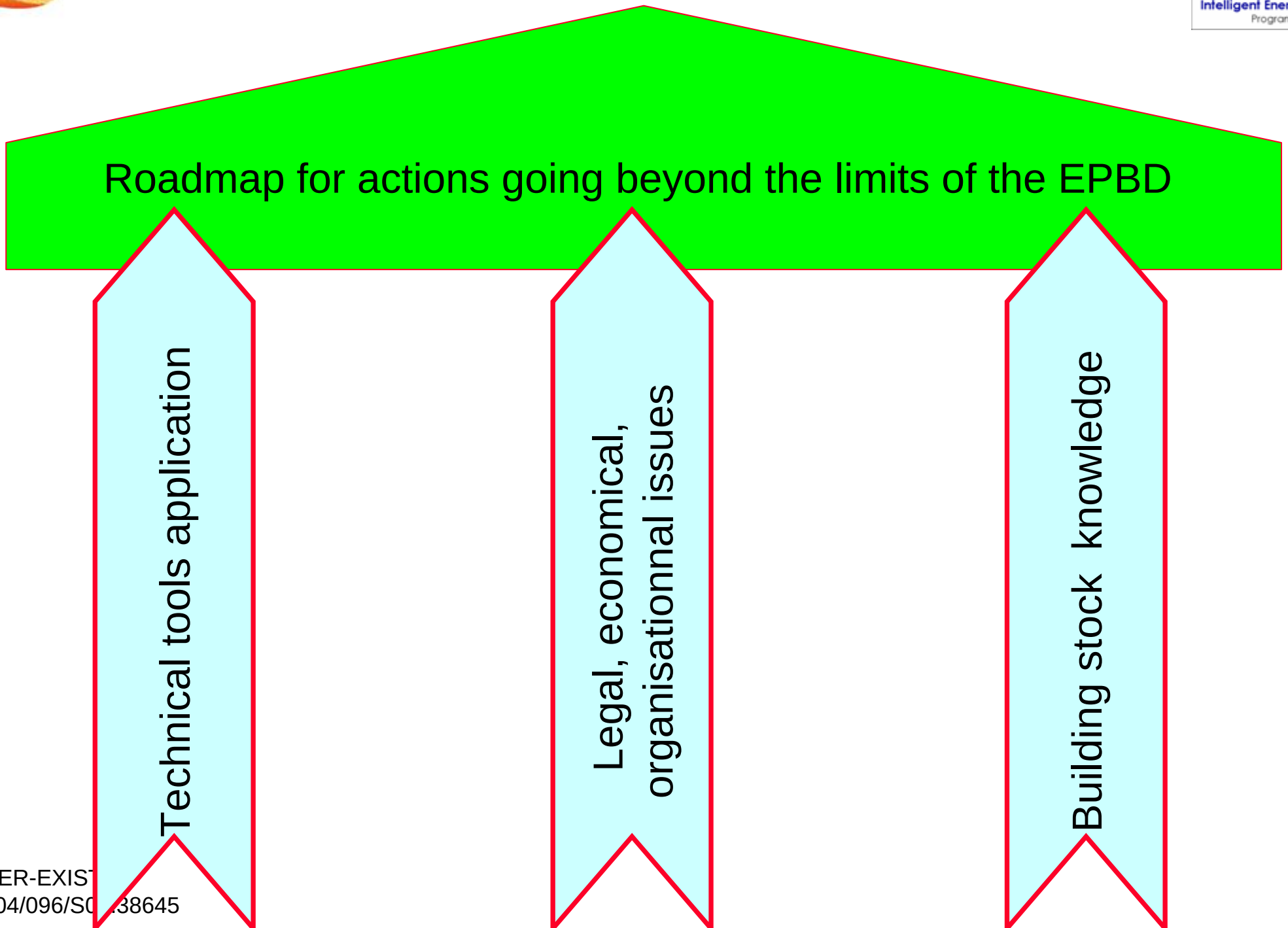




Enper exist focus



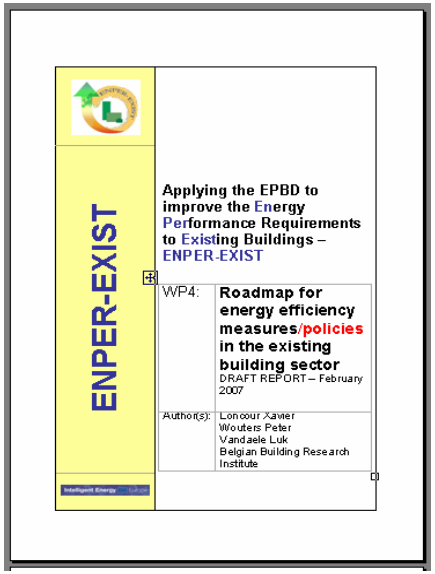
Enper exist focus



Deliverables

WP4

- 1 report (draft)



- 1 toolbox