



CONCERTO is co-funded by the European Commission



**Evaluation methodology to assess the theoretical energy impact and the actual energy performance for the 27 communities of the European CONCERTO initiative**

Olivier Pol, arsenal research

ECEEE 2007 summer study (4,088)



## What is CONCERTO? - the CONCERTO projects

- **CONCERTO is an initiative of the European Commission** to prepare a more sustainable future to cover energy needs in the building sector in Europe
- **CONCERTO supports local communities** to develop and implement concrete strategies and actions for a sustainable future at a local level



**New eco-buildings** integrating energy efficient (EE) building design and management with onsite available renewable energy sources (RES)



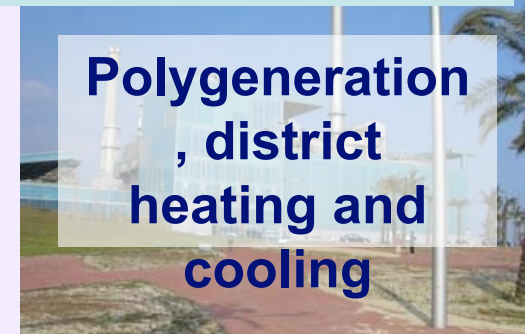
**Research on technical aspects of RES and EE, socio-economic issues, demand-side management and intelligent energy supply**



**Energy supply based on RES**



**Thermal refurbishment of existing buildings**



**Polygeneration, district heating and cooling**



# What is CONCERTO? - the CONCERTO projects



thermal  
refurbishment



display  
of  
energy  
use



energy  
check

## CONCERTO

- act2**
  - Hannover
  - Nantes
- cRRescendo**
  - Ajaccio
  - Almere
  - Milton Keynes
  - Viladecans
- ECO-City**
  - Helsingborg
  - Helsingør
  - Trondheim
  - Tudela
- ECOSTILER**
  - Amsterdam
  - London
  - Måbjerg
- energy in minds!**
  - Falkenberg
  - Neokarsulin
  - Weiz Gleisdorf
  - Zlín
- POLYCITY**
  - Cerdanyola del Vallès
  - Gentildem
  - Torino
- RENAISSANCE**
  - Bracknell
  - Lyon
  - Zaragoza
- sesac**
  - Grenoble
  - Delft
  - Vaxjö
- TetraEner**
  - Geneva
  - San Sebastian



for instance  
the  
integration  
of...



absorption  
cooling



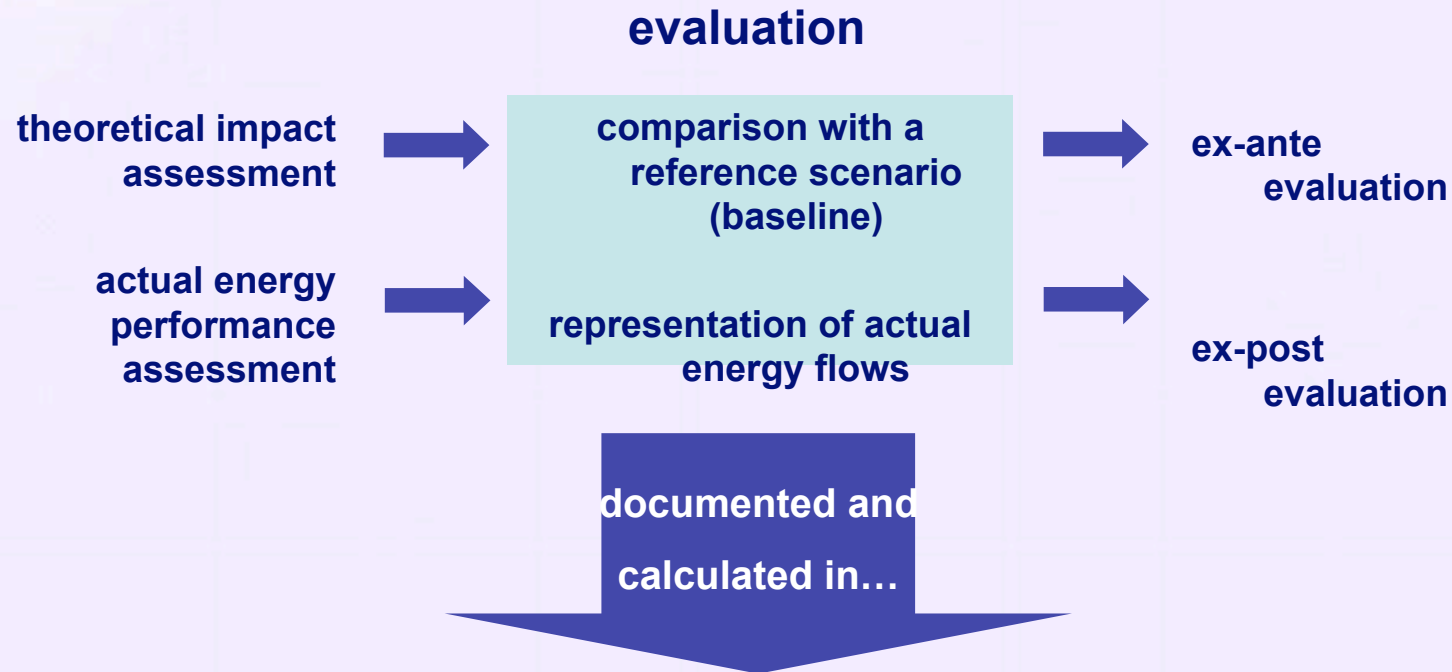
district  
cooling

27 communities of 12 countries in 9 projects





## CONCERTO PLUS: technical evaluation process



**CONCERTO TECHNICAL MONITORING DATABASE**





## CONCERTO PLUS: necessity of evaluation

- **Balance between EE and RES activities?**
- **Comparison between communities and their strategies (benchmarking) on the basis of:**
  - Geographic position
  - Typology of settlement (rural area, new or old urban district...)
  - Main activity in the area (residential, administration...)
  - Energy supply technologies
- **Demonstrate the validity of the CONCERTO approach**

results  
presented  
in order to...

**FORMULATE ENERGY POLICY RECOMMENDATIONS**



## CONCERTO PLUS: specificity of evaluation

- One methodology for a high number and variety of projects
- Methodology defined after the projects were approved
- Quantity and quality of data available differ from one community to another
- Limited budget for monitoring activities
- Short metering period

+

- Required indicators defined to assess the impact of the CONCERTO activities: formulated in the form of percentages

+

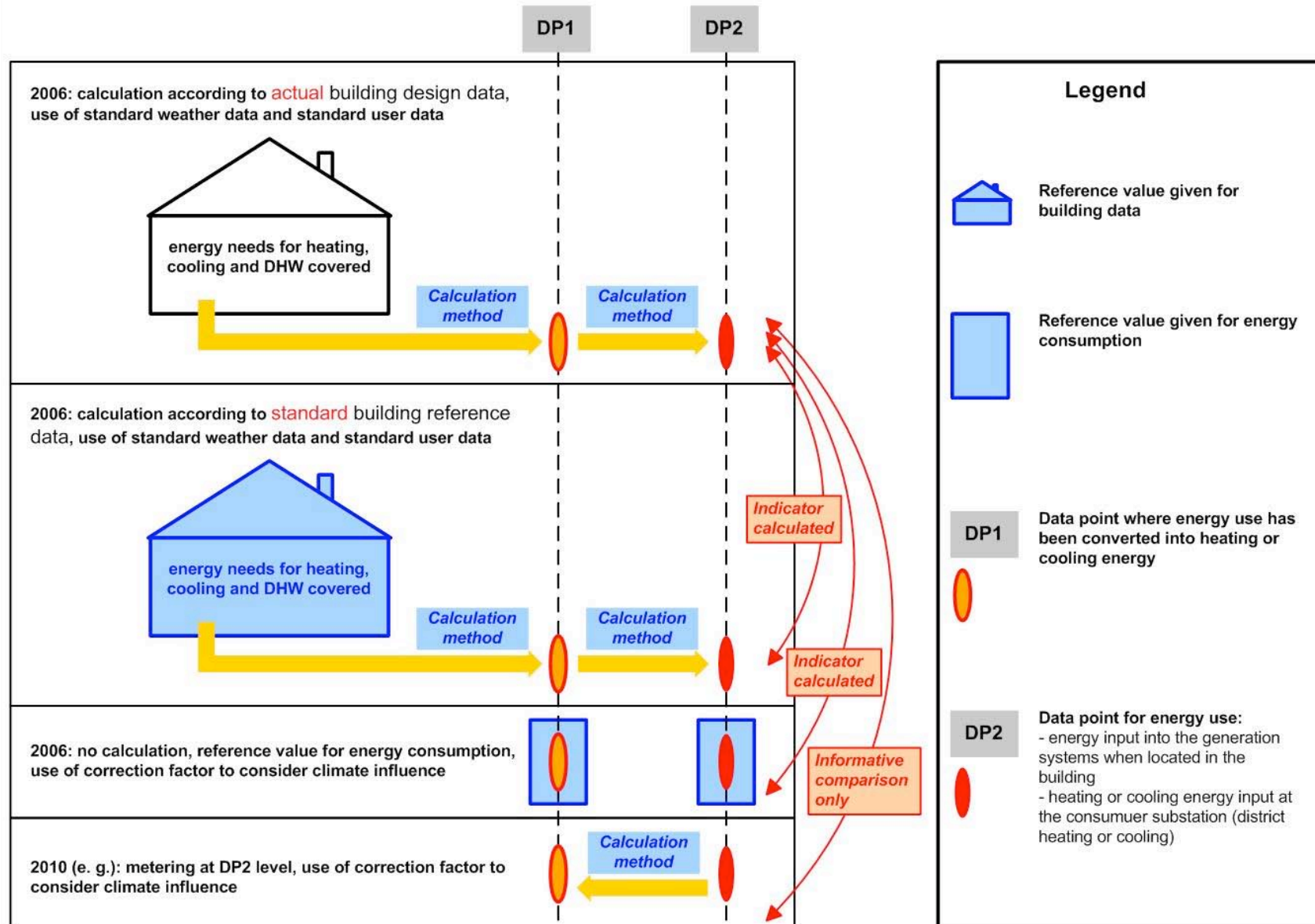
- No possibility to define “control areas”

necessity  
to combine...

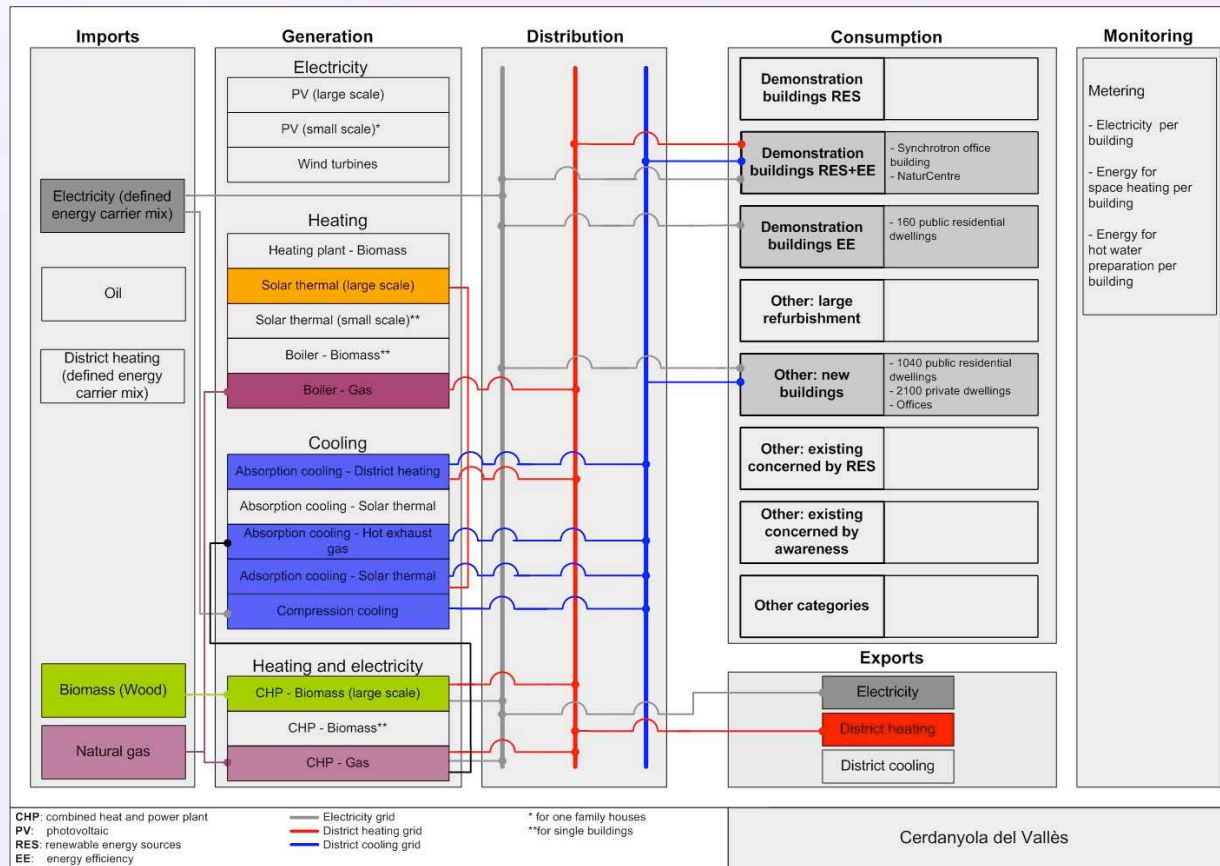
**EX-ANTE AND EX-POST EVALUATION**



# ex-ante evaluation: baseline definition



# ex-post evaluation



- Actual energy balance of community
- Deviation between expected and actual energy balance
- Variability of absolute values (climate influence)
- Influence of awareness measures?



## Conclusions and topics for discussions

- **Necessity to distinguish impact assessment (ex-ante evaluation) from energy performance assessment (ex-post evaluation)**
- **Methodology chosen will allow for comparability in a qualitative way**
- **Data collected will be stored in a database to allow for analysis considering different criteria. This pool of data will provide a unique source of information on energy performance of communities across Europe.**
- **A critical view of the methodology:**
  - Impact assessment depends on baseline definition (for instance: what about cooling in residential sector in southern Europe?)
  - Quality of evaluation depends on quality of data
  - Transparency is the key factor for comparability





CONCERTO

**act2**

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**ECO-City**

Helsingborg  
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Trondheim

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**energy in minds!**

Falkenberg  
Leoben  
Zlín

**RENAISSANCE**

Bracknell  
Lyon  
Zaragoza

**sesac**

Grenoble  
Delft  
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**Thank you for your attention !**

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