



EUROPÄISCHES INSTITUT FÜR ENERGIEFORSCHUNG
 INSTITUT EUROPEEN DE RECHERCHE SUR L'ENERGIE
 EUROPEAN INSTITUTE FOR ENERGY RESEARCH

Energy Balance of Urban Quarters

Development of Energy Efficiency and Management Strategies


5th Urban Research Symposium, Marseille

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European Institute for Energy Research

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Électricité de France (EDF) – Universität Karlsruhe (TH)
 European Economic Interest Grouping (EEIG)



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Research Groups at EIFER:

- Energy in Cities and Territories
- Regional Sustainable Energy
- Distributed Resources
- Energy Environment Economics

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Current Research Activities related to Urban Quarters

- Energy Efficient Communities: Case Studies and Strategic Guidance for Urban Decision makers
International Energy Agency ECBCS Programme Annex 51
2009 – 2012
- Description and evaluation of current approaches for Sustainable Urban Quarters (“ÉcoQuartiers”) in the French context
2009 - 2010

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What is an Urban Quarter?



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Source: google earth, own illustration



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Why are Urban Quarters relevant / interesting?

- Scale corresponds to urban planning instruments
 - Implementation
- Allows integration / assessment of (large) distributed energy conversion technologies
 - Integrated planning approaches
- Socio-Spatial definition suits technical as well as social approach
 - Sustainable Development
- Possible integration of a wide range of actors
 - Planers, politicians, community representatives, ...
- “Embeddedness” of Urban Quarters
 - Specific national, regional, local solutions

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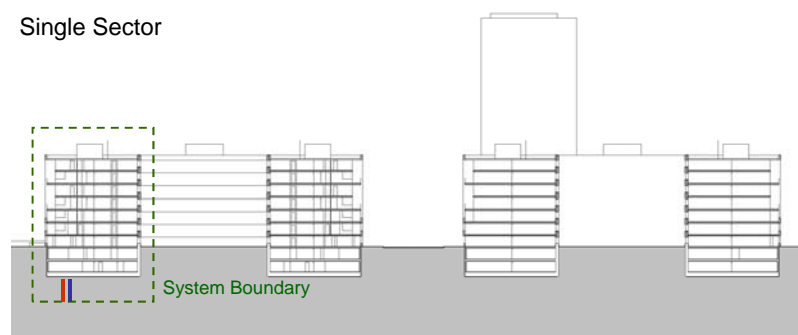


Expected benefits from a wider scope in the energy assessment of buildings (residential and tertiary)

- Integration of technologies that are not financially viable or can technically not be implemented in small scale applications
- Assessment of small scale energy distribution networks (heat, cooling)
- Include criteria specific to urban areas in the analysis
- Analysis of the efficiency potential of the cascading usability of energy in mixed use quarters

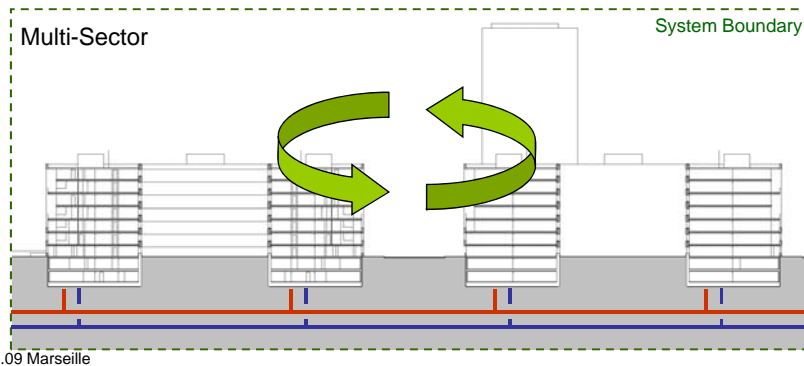


Single Sector

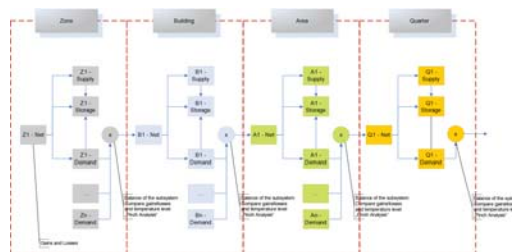




<ul style="list-style-type: none"> + Diverse range of uses + Pos. cascading use of energy + Energy distribution systems + Accounting for urban specifics (e.g. Shading) 	<ul style="list-style-type: none"> - Complexity of calculation - Diverse ownership
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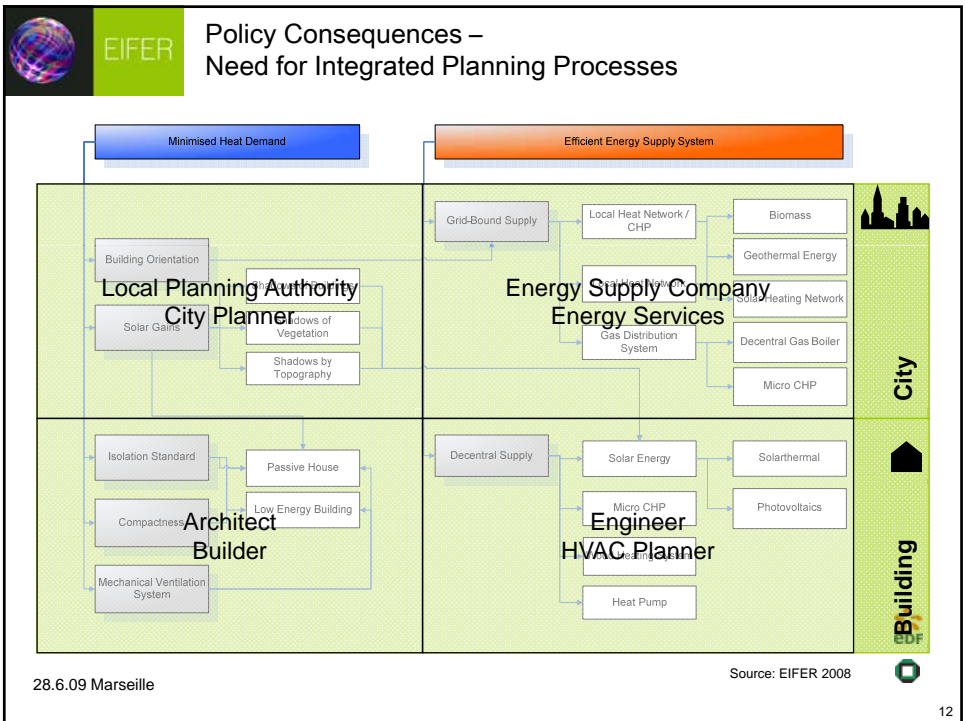
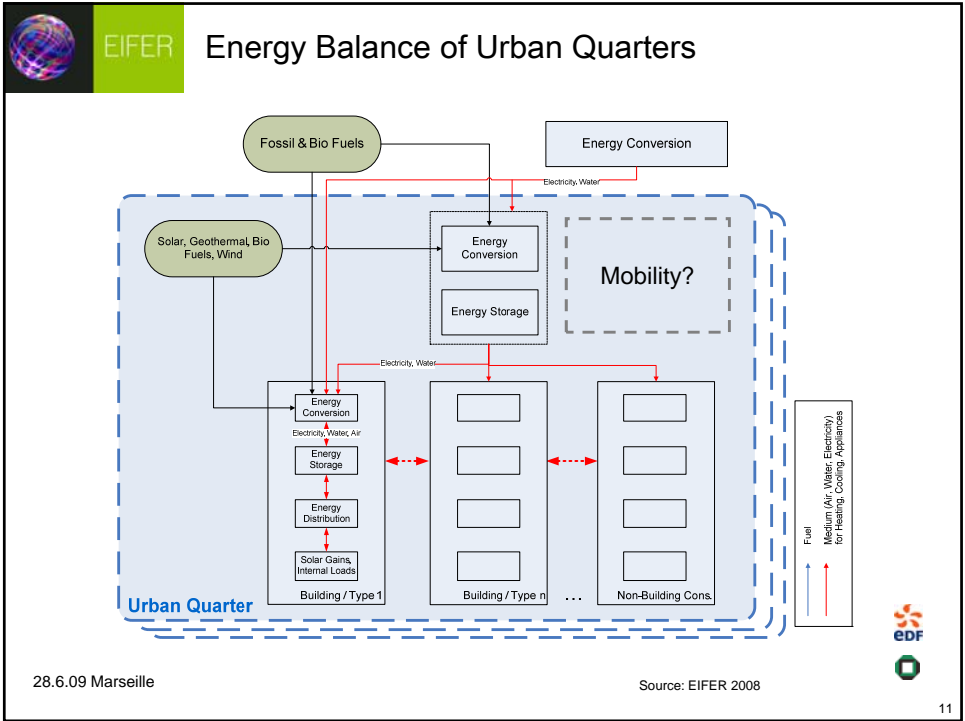


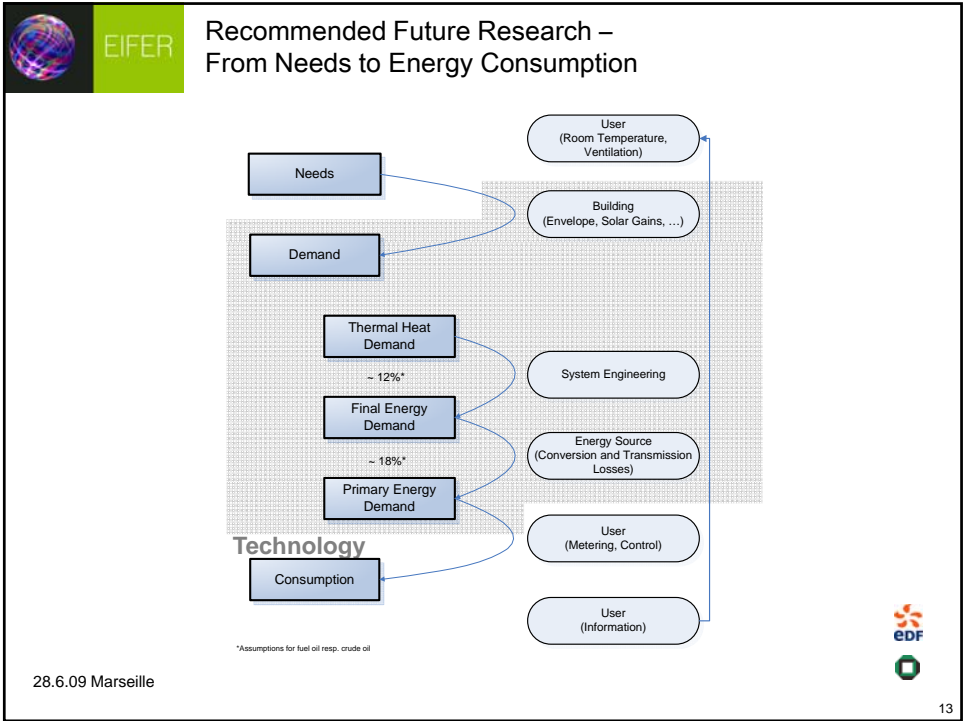
- Division of the system into subsystems corresponding to the reality of planning processes
- Description of demand and supply replacing energy by enthalpy to assess efficiency/potentials of heat exchange within the system



Zone - Building - Area - Quarter







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L'urbanisme exprime la manière d'être d'une époque.
Le Corbusier: La Charte d'Athènes

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