The “eco” and “low-carbon” cities agenda and the space-scale-efficiency nexus: experience in the EU and China

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Urbanisation & the Anthropocene
humans=force of nature

an informal **geologic** chronological term
Increasingly **popular** among scientists
to mark the **evidence** and extent of human
activities
**leading** to a significant **global impact** on the
state, dynamics and **future** of the **Earth system**
(Schellenhuber et al. 2005; Sijmons in IABR 2014;
Wikipedia)

Anthropocene & the 2% that matters

**GELCS Cities**: trying to make it right
The (great, old?) divide
‘**Regionalism**’: potential (fragmented?) response
& **Next**: from ‘know how’ to ‘envisioning’ futures

Contents
Economic & Ecological Crisis > GELCS Agendas

Eco Cities

Green Cities

Towards SUD

Low-Carbon Cities

Smart Cities

Towards SUD

Low-Carbon Cities

Smart Cities

Eco Cities

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Towards SUD

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Smart Cities

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Literature Overview: Comparing CN & EU

Overview of Eco-Low-carbon agendas

Aims/objectives

Main areas of proposed intervention

Major Challenges/obstacles/problems

CN: Aims

'Sound urbanisation'

Policy approach (rhetoric)

Resources: Energy & environment

• ‘Ecological civilization'
• ‘Scientific development'
• ‘Harmonious society'

Experimentation & pilots + scale up
EU: Aims

- Growth with minimal impact
- Cross sectoral coordination
- Climate adaptation
- Reduce emissions – CO2 focus
- Resources: Energy & environment
- Maximise human well-being & QoL

Overlapping Definitions of LC & Eco Cities

How EcoC Compare to LC:

- Closer focus on environmental urban sustainability
- Specific planning characteristics
- Technological & Spatial

Wong & Yuen 2011; UNEP 2012; Yue & Nan 2011
CN & EU: Practice to date

CN Measures & Solutions:
- Green buildings
- Renewable energy
- Extensive greenery
- Water recycling and efficient use of water resources
- Integrated waste management
- Efficient and easily accessible public transport system
- Green technology: focus on urban infrastructure, particularly transport
- TOD (transit oriented development)

EU Measures & Solutions:
- Green buildings
- City greening measures aimed at promoting biodiversity
- Green technology: innovative, smart and efficient
- TOD (transit oriented development)
- Place-based approaches and place-specific policies
- Urban planning solutions (transport and land use have dominant role): decentralized concentration, land use mix and compact urbanization; re-use of land preferred to sprawl

CN & EU: Practice to date

Similarities

Efficiency-driven Proposals

Transport-related, TOD, ITS...

Energy-related, smart, green...

Gov/Plg/Land-use, Compact cities...

Environment, resources, eco-friendly...

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CN & EU: Practice to date

Differences

CN
Mainly large scale
Greenfields for development
Limited retrofitting

EU
Mainly small scale interventions
Retrofitting existing, brownfield

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The (great, old?) divide: challenges
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Contents
CN: Challenges/Obstacles

- Unclear concept (Leaf & Hou 2006)
- Often just a label (Boyd 2011; Yue & Nan 2001)
- Or overused concept (MacLeod 2012)
- Insufficient capacities to deal with:
  - Huge scale of projects (Wu 2012; Shiuh-Shen 2013)
  - A multiplicity of stakeholders (Hald 2009)
  - Blind adoption of foreign models (MacLeod 2012)
  - Symbolic and fashionable solutions (Shen and Wu 2012)
- Macro policy context
  - Short-term objectives of competitive economic growth among municipalities to meet GDP targets (Ren 2012)
  - Fiscal incentives for land conversion of greenfields (Wu 2012; Lin 2009)
- Inadequate planning and governance:
  - Lack of interdepartmental collaboration (Liu et al. 2014)
  - Lack of integration between sectoral policies (Energy Foundation 2011)
  - Lack of adequate standards and indicators (Wang and Yuen 2011)
  - Inadequate urban form and land use distribution (Baeumler et al. 2012a; Calthorpe 2012)
  - Lack of common vision for the territory (Hald 2009)

EU: Challenges/Obstacles

Inadequate planning and governance:

- Functional realities not aligned with administrative jurisdictions (Healey 2009)
- Lack of horizontal integration between policy sectors (e.g. energy, transport, housing, health) leads to partial solutions (METREX 2011)
- Lack of vertical integration between levels of government and scales of intervention (OECD 2013)
- Sectoral policies and fragmented governance practices (EP-METREX 2011)
- Narrow responses to problems, via disconnected planning decisions (EP-METREX 2011)
- Lack of a common policy framework and a shared geographical territory of reference (Wheeler 2009)
- Dysfunctional administrative divisions (Wheeler 2009)
- Overlapping jurisdictions of different agencies and levels of government leads to disjointed action (EEA 2011)
- Lack of vision of regions’ spatial structure as integrated whole (Calthorpe & Fulton 2001; Duany 2002)
Towards ideas and practice of ‘regionalism’:

- Governance & Management
  - Planning systems
  - Governance

- Scale
  - Patterns of land-use and zoning, Lock-in effects
  - Density and Urban Form

- Space
  - Address negative externalities arising from space & scale
  - ‘Smart’ is not necessarily ‘eco’

- Technology & Design
- Efficiency

A clear preference worldwide! (Rapoport & Vernay 2011)

Urbanisation is expressed largely through physical infrastructure development

LOCK-IN factor
- Risks turning the ideas underlying ‘GELCS cities’ into glorified MITIGATION
Chenggong
KUNMING 2013

Source: Energy Foundation 2011
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The Nexus key to SUD

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- Governance
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The space-scale-efficiency nexus & Regionalism in CN & EU

Forms of regionalism in China

- 12th FYP
- City Cluster Development
- Coordination of infrastructure and services provision region-wide
- Intercity associations, regional planning, regional policies to cooperate and solve region’s specific problems (Li and Wu)
- Recognition of Mega-City region for managing local and regional economic policies linked to
  - Regional strategic spatial planning
  - Urban infrastructure investment
  - Promoting territorial development acknowledging place-specific socio-economic assets (Xu and Yeh)
Persistent challenges

- Coexistence with ‘traditional’ planning and governance modes and models - Reproduces nexus problems
- Limited integration between GELCS and regionalism drives
- Discretionary powers used at the expense of cooperation across sectoral and jurisdictional boundaries (Baeumler et al. 2012):
  - Functional diseconomies
  - Detrimental inter-regional competition.
- Source of fiscal revenues and officials performance evaluation still too linked to GDP growth (Lin 2009):
  - Land conversions
  - Property development and Industrial parks
  - Even ‘eco’ parks and districts on greenfields
- Complex coalition partnerships between State and capital (Gu and Wu 2010)

National NUP (2014-2020)

Chapter 18 - ‘Promote construction of new-type cities’:

- green cities [energy, buildings, transportation, recycling parks, green lifestyles];
- smart cities [broadband, IT management/planning, intelligent infrastructure, convenient public service; modern industry; innovative social governance];
- cultural cities [cultural and natural heritage protection, cultural, sports and leisure facilities, free public facilities: libraries etc]

The NUP

Chapter 8 & 27 - on Land:

- Optimise spatial layout and form,

- Respect ecological carrying capacity, follow the ‘National main functional area plan’

- "Establish spatial planning system, unswervingly implement the main functional area system, set ecological protection bottom line, promote development strictly in accordance with the main functional area positioning, accelerate the improvement of development management system for urbanization areas, agricultural producing areas and key ecological function zones, build resource and environment carrying capacity monitoring and early warning mechanisms. Strengthen the control, development and utilization of water resources’

- Establish compact urban space structure; optimise urban industry’s use of land and output rate per land unit (Li et al. 2014)


The NUP

- Cooperation and coordination to achieve economic competitiveness (Newman and Thornley 1999) vs current actual fierce competition (Verdini 2014).

- The resurgence of State-led regional planning in the attempt to improving the current regime of urban and metropolitan governance;

- city-region development: space for the so-called meta-governance (Chen, Zhang, Li and Zhang 2014 in: Verdini 2014)

- A more collaborative governance regime, improved coordination between urban and metropolitan governance and a changing of relationship between State and peripheral institutions (Verdini 2014)
**NUP: the potential of uniting intentions**

- GELCS Agendas
- Regionalism in planning & governance

**Focus on future CN PILOTS**

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- **Efficiency**

**The Divide**

**The Nexus key to SUD**
### Uniting intentions: key ingredients for future pilots

#### Spatial & Ecological planning
- **Regional territorial and ecological space** (focus: eco-system services; carrying capacity)
- **Land use**: spatial structure and urban form
- **Urban design**
- **Natural and built environment** in urban space

#### Governance & Public Policy
- **Planning system**
- **Multi-level governance** (partnerships and cooperation)
- **Intermunicipal cooperation** (e.g., shared management of natural resources and eco-system services)
- **Policy integration** (e.g., land use, transport, housing)
- **Technology** - ‘smart’ solutions and socio-ecological goals

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Know how to En-Vision