

# Rethinking cities in a post-carbon society

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# Introduction (1/3)

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- **French cities:**

**80%** of national population

**>50%** of GDP achieved in the  
**15** biggest metropolitan areas

**20%** of total area

**66%** of primary  
energy consumption

**70%** of CO<sub>2</sub>  
emissions

Demographic  
weight

+

Economic role

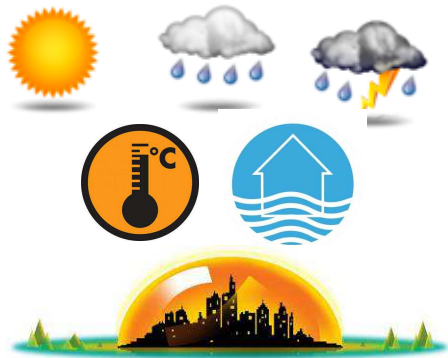
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Climate change  
responsibility

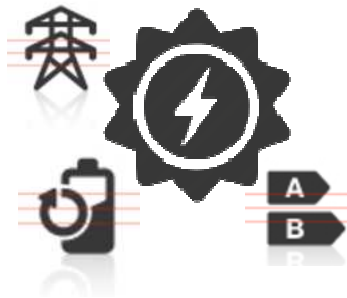
# Introduction (2/3)

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- **Cities and vulnerability to climate-energy issues**



- Costs to face
- Need to adapt



- Energy bill
- Energy security

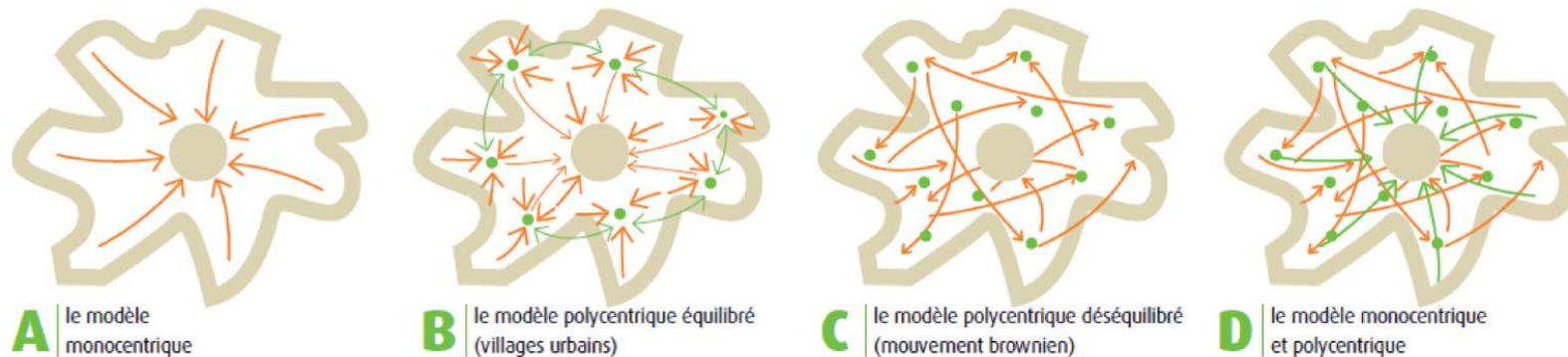
# Introduction (3/3)

- **Cities in a post-carbon society?**

- Inertia and, in the same time, unique opportunities

Simple representation of spatial organization within an urban region

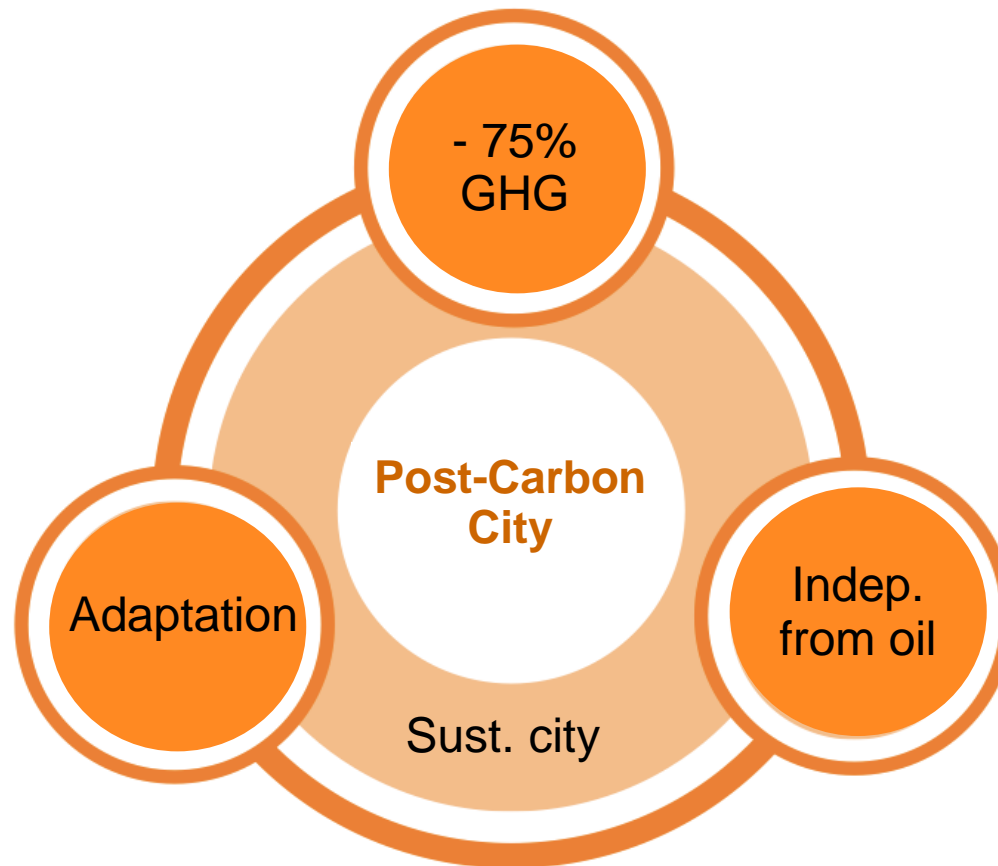
SOURCE : BERTAUD A, METROPOLIS : A MEASURE OF SPATIAL ORGANIZATION OF 7 LARGE CITIES, 2001



# Introduction (3/3)

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- **Cities in a post-carbon society?**



# Outline

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**1. Overview of the research program**

2. Designing six contrasted scenarios

3. From theory to practice



# How was the research organized?

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- **>3 years in a collaborative and transdisciplinary way**
    - 1 **foresight** working group
    - 20 specific **research projects**
    - Action research with 6 **local authorities**
    - Seminars for **debating**
- Coordinated by MEDDE  
and Ademe

# Research question(s)?

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## *Cities as key players for the transition towards a post-carbon society*

*What role and responsibilities ?  
How to achieve such a transition?*



# What scope?

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- Space: The city as an urban area
- Time: Pathway from today to 2050

# Outline

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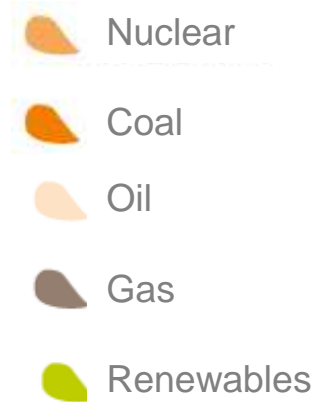
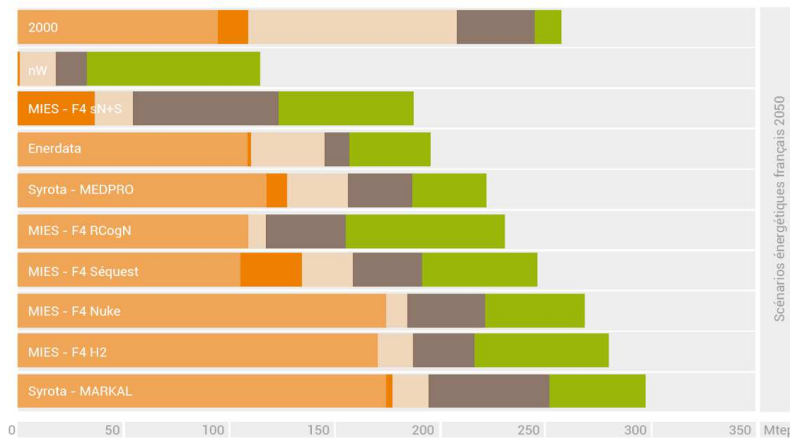


# Why some scenarios?

## • Future is quite blurry

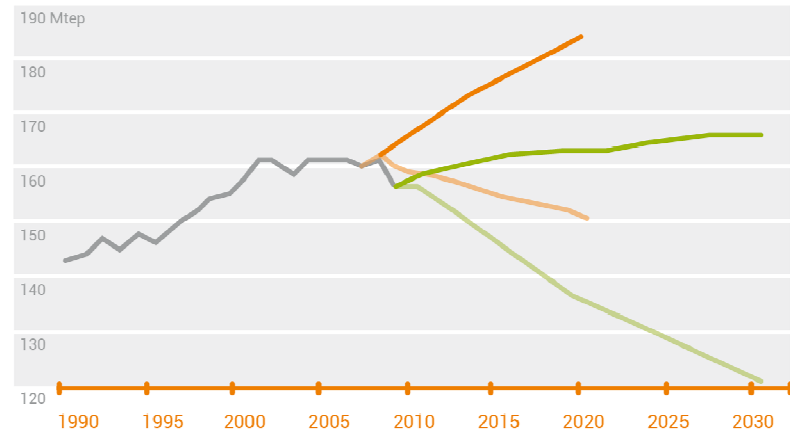
SOURCE : SANDRINE MATHY, MEIKE FINK ET RUBEN BIBAS, « QUEL RÔLE POUR LES SCÉNARIOS FACTEUR 4 DANS LA CONSTRUCTION DE LA DÉCISION PUBLIQUE ? », DÉVELOPPEMENT DURABLE ET TERRITOIRES, VOL. 2, N° 1 | MARS 2011

MIX ÉNERGÉTIQUE EN ÉNERGIE PRIMAIRE - VOLUME (Mtep)



**Energy mix  
(primary energy)  
in 2050 (Mtep)**

Various studies



Record

PROJECTIONS :

- Baseline 2009
- Grenelle 2009
- Baseline 2011
- Grenelle 2011

**Final energy  
consumption**

Projections in 2009  
and 2011 by the  
Ministry

# Six contrasted transition paths

		Degree of flexibility for action		
Contexte	Baseline	Through tech. and price signal	Action on urban invest. and urban planning	Action on urban forms and lifestyles
		<b>Smart wait-and-see attitude</b> <i>Low Carbon Price</i>	<b>New climate and energy infra.</b> <i>Context of centralization</i>	<b>Self-contained city</b> <i>Change in urban forms</i>
	Disruption (fosters innovation)	<b>Carbon Creativity</b> <i>High Carbon Price</i>	<b>Biopolis</b> <i>Context of decentralization</i>	<b>Urban frugality</b> <i>Change in lifestyles</i>
	<b>Drawbacks</b>	Uncertainties Inequalities	Costly Urban sprawl	Hard to conceive

# Outline

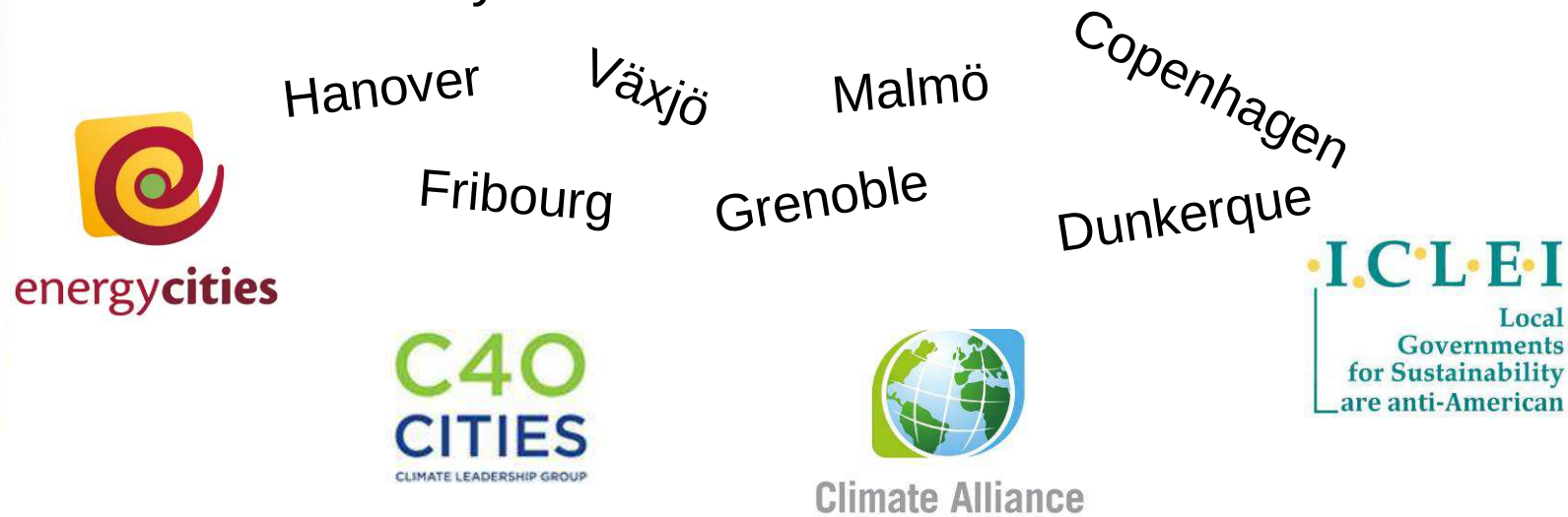
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1. Overview of the research program
2. Designing six contrasted scenarios
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# The movement is (already) on its way

- Initiatives already exist

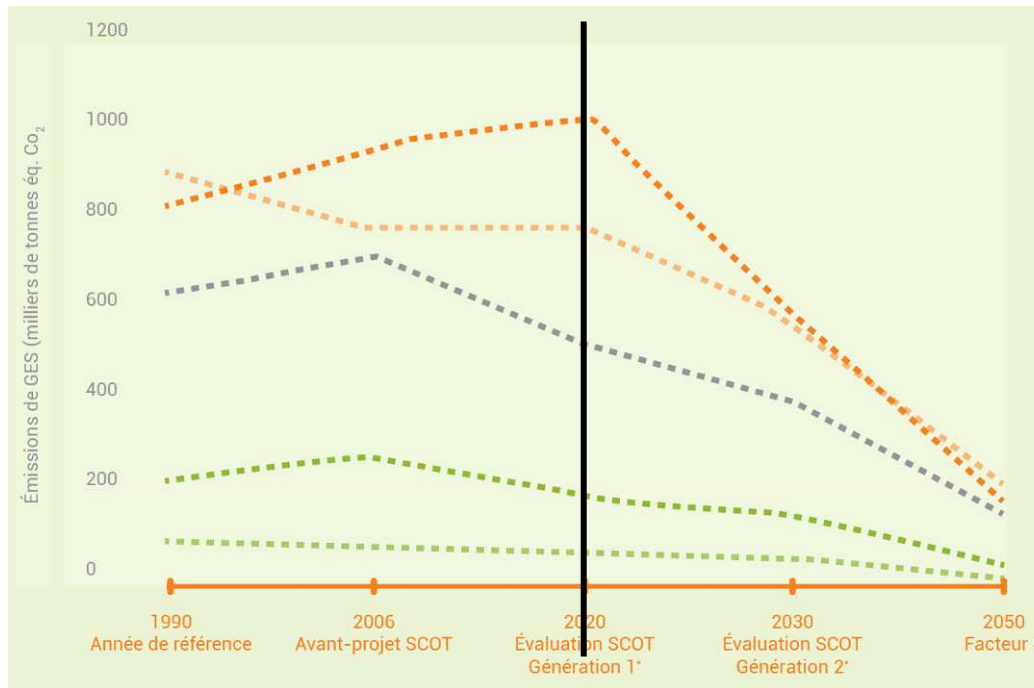


- What's at stake: **massification** at all scales and for all actors

# Three examples

## 1) Tours

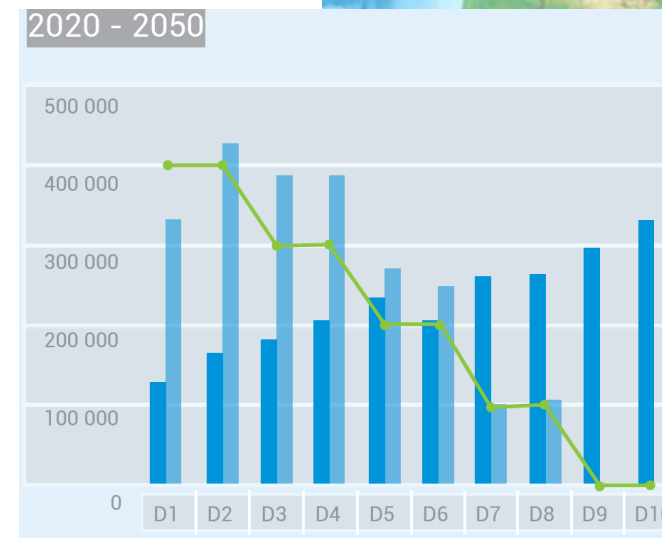
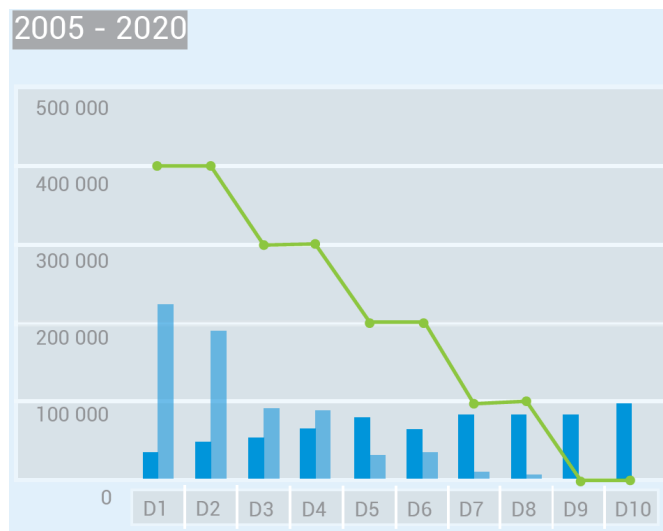
Planification and consistency over time horizons



# Three examples

## 2) Lille

Social challenge: inequality and redistribution



 Carbon tax  
 Redistribution

 Modulation of redistribution

→ Carbon Creativity (Scen. 2)



# Three examples

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## 3) Fontainebleau

Social innovation: importance of local fabric

→ Biopolis (Scen. 4)



# Conclusions (1/2)

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- **Qualitative and quantitative assessments**

- None of the scenarios reaches the post-carbon city by 2050  
→ *Solutions lie in diversity and complementarity*

- **A few directions for action**

Technical innovation + Social innovation and change in lifestyles

# Conclusions (2/2)

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- **A few directions for action (...continued)**

- Constistency over:

- *Time horizons: long, medium and short terms, combined with the uncertainty of crises*

- *Spatial scales: vertical and horizontal ones*

- **A seventh scenario for a global framework...**



# Thank you!

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