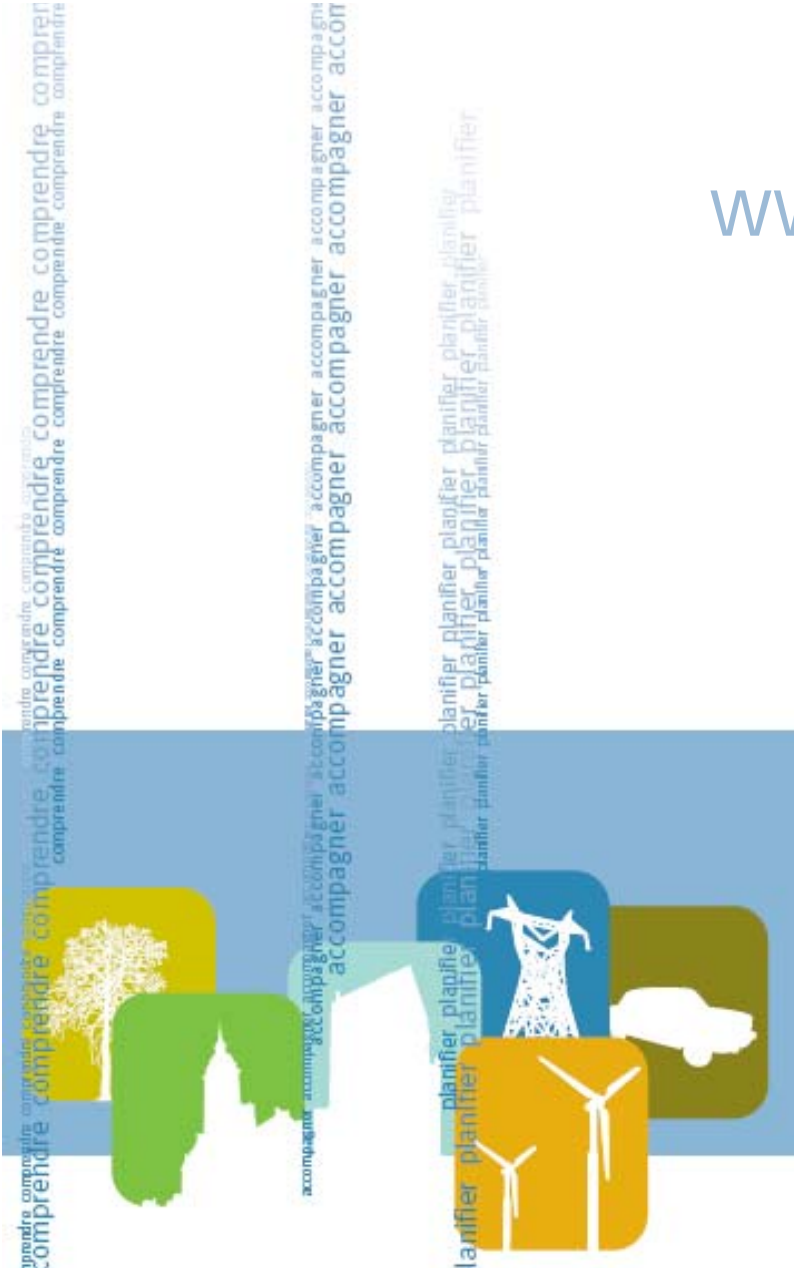


www.énergies-demain.com

- A 35 people research consultancy
- 50% of the business turnover dedicated to R&D
- A strong specialization:
 - In territorial energy planning
 - Carbon assessment
 - Decision making tools



Our ability fields

- **Urban planning**
 - Nanterre, Angers, Paris 18^{ième}, Plaine du VAR, Plateau de Saclay, etc.
- **Building** : GHG emission and energy consumption mitigation plans
 - Council housing of Paris, Midi Pyrénées and Rhône Alpes.
- **GHG emissions evaluation** : projects, goods, territories
 - Carbon assesement of the region Champagne Ardenne, city of Ivry, etc.
- **Public policies evaluation**
 - Carbon neutrality evaluation of the European Regional Development Fund (ERDF) in France (Necater)
- **Transport evaluation (goods and people flows)**
- **Territorial approach** : planning, animation, action plans
 - Seine Saint Denis, Nord Pas de Calais, Champagne Ardennes, Picardie, Montreuil

... for a global vision, a decision
autonomy, and a knowledge transfer





Context and stakes



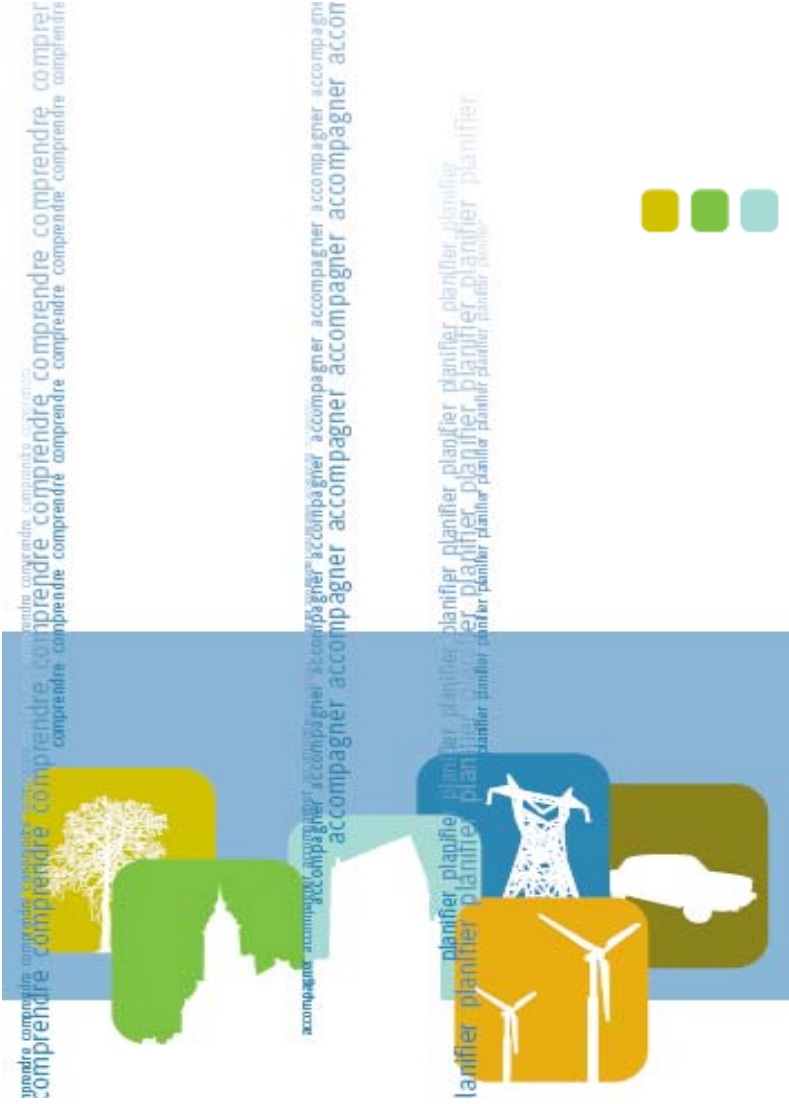
Context and stakes

- A favorable national awareness
 - Legal background
 - National and European commitment

- Studied area specificities and associated issues
 - The sustainability of global natural resources and development of local resources
 - The contribution to the national fight for GHG emission mitigation
 - The social impact of energetic evolution

- A Need for consistency
 - National and international (« Kyoto » inventory for the PNLCC follow up)
 - Comparison between similar areas



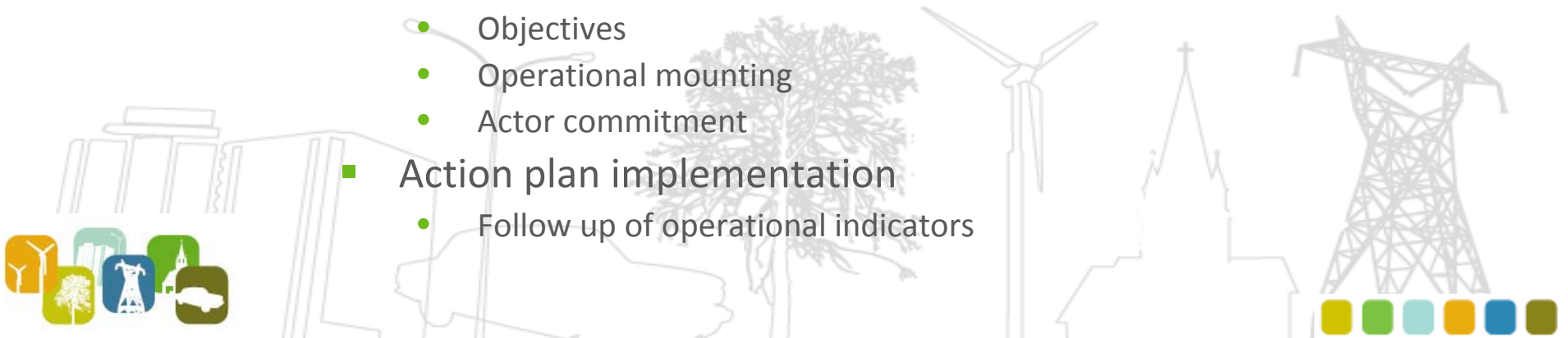


Constrains and methodology



The main steps

- Territorial status
 - GHG emissions assessment and analysis
 - Static issues
- Prospective
 - Scenarios of GHG emissions evolution
 - Dynamic issues
- Elaboration of a action plan
 - Feed the consultation
 - Extended participation
 - Political commitment
- Programming
 - Objectives
 - Operational mounting
 - Actor commitment
- Action plan implementation
 - Follow up of operational indicators



Constrains

- Ensure coherency

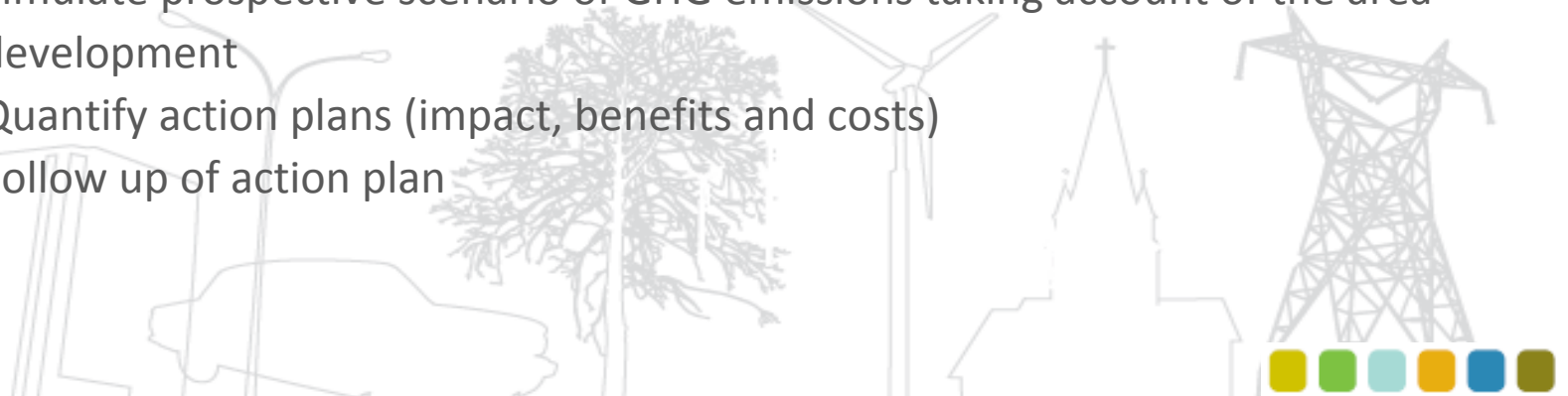
- Homogeneity
- Additivity

- Link GHG emissions assessment to :

- Responsibilities scales
- Potential of action

- Allow :

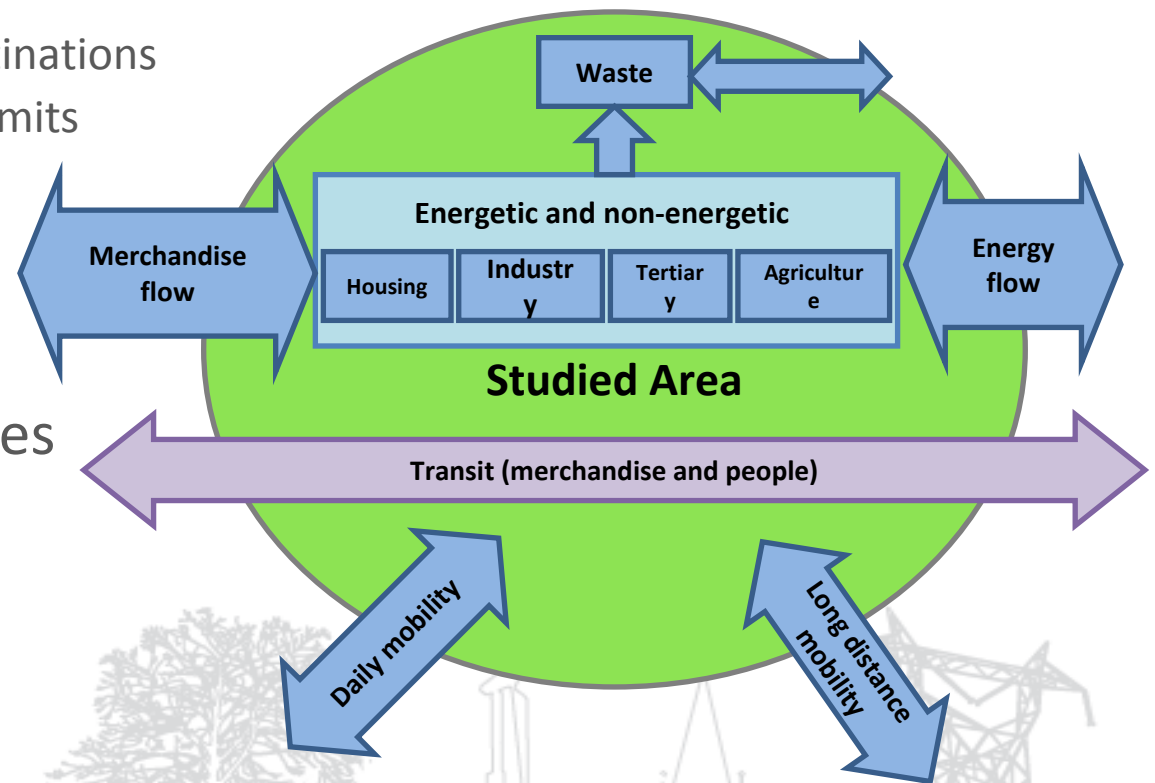
- Simulate prospective scenario of GHG emissions taking account of the area development
- Quantify action plans (impact, benefits and costs)
- Follow up of action plan



Methodology

■ Perimeter

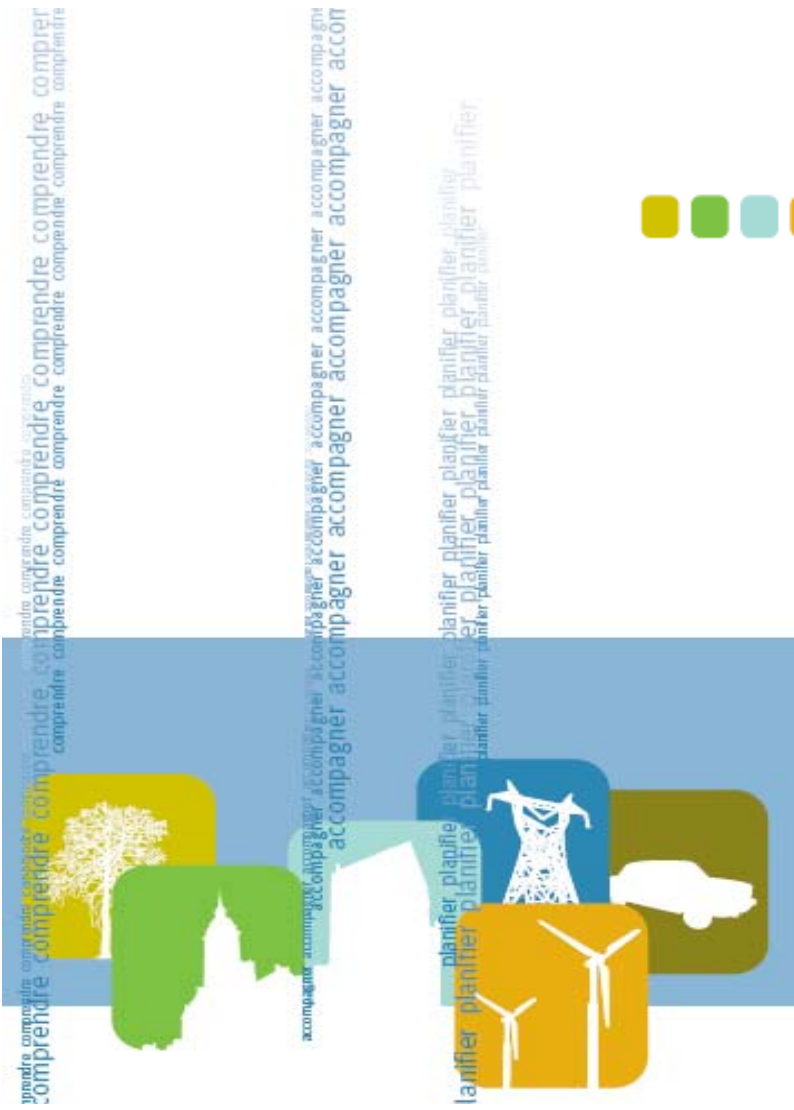
- Avoid double counting
- Distinguish origins and destinations
- Define fixed geographical limits



■ Bottom-up methodologies

- Modelise emissions using structural parameters
- Dynamic simulation
- Action plans quantification
- Continuous adaptation to various states of statistics

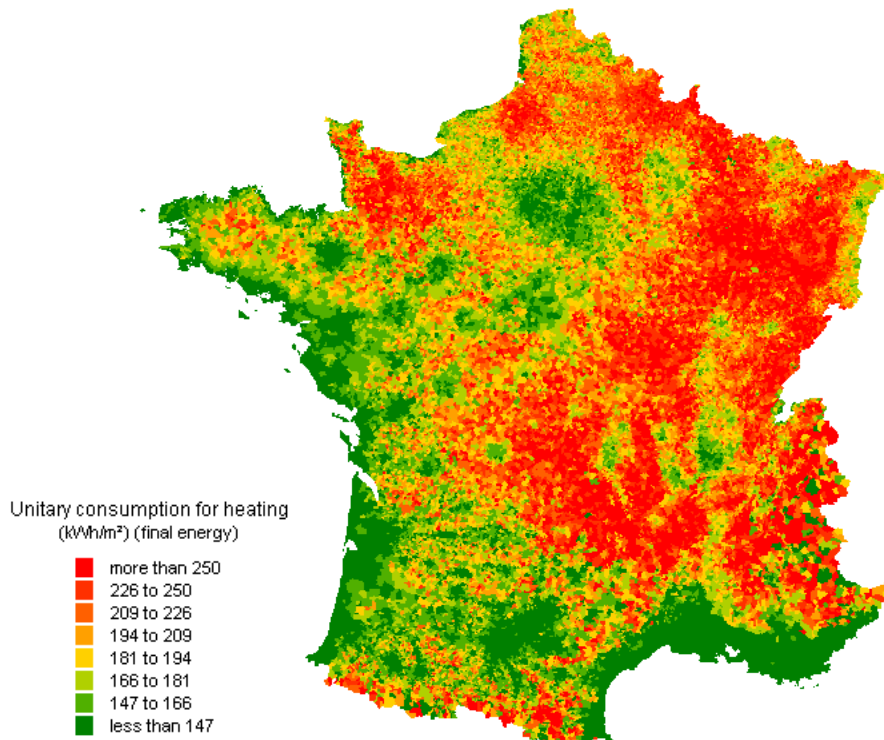




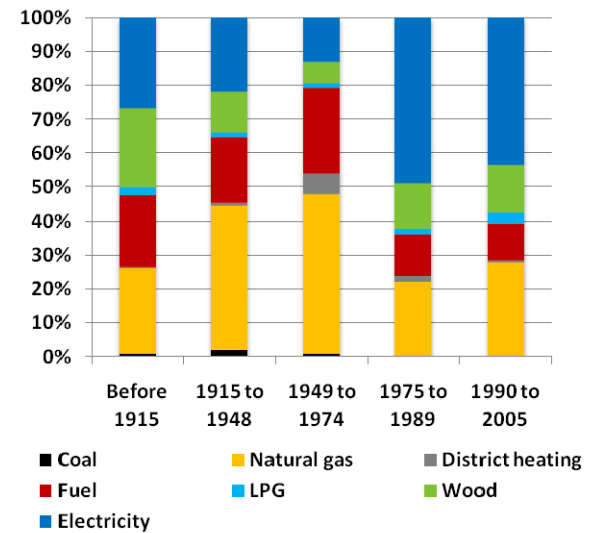
GHG emissions assessment



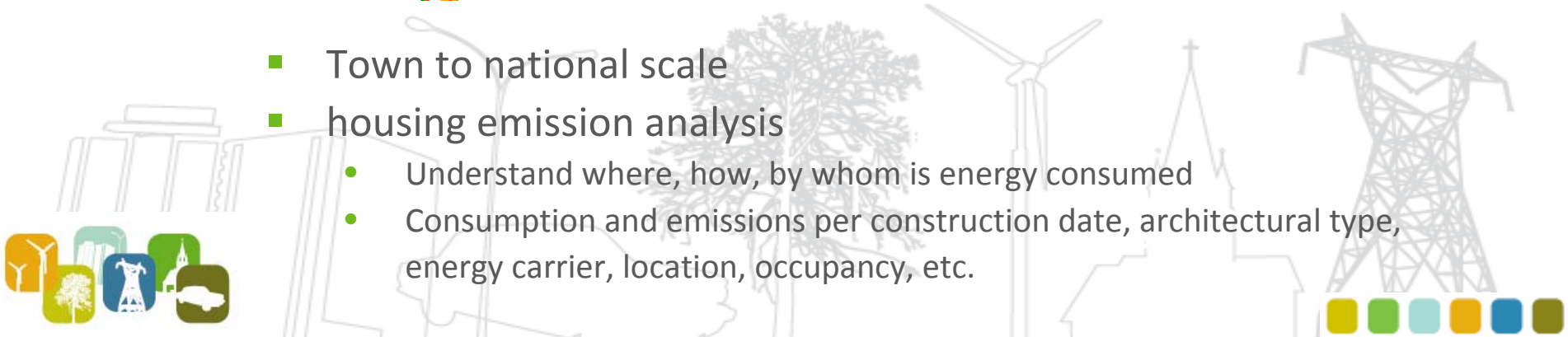
Residential sector



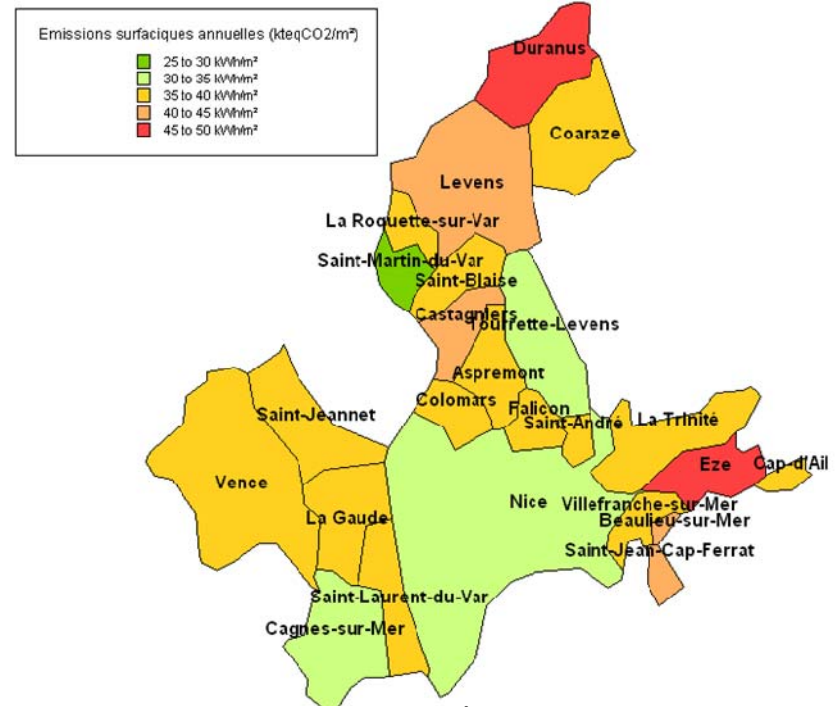
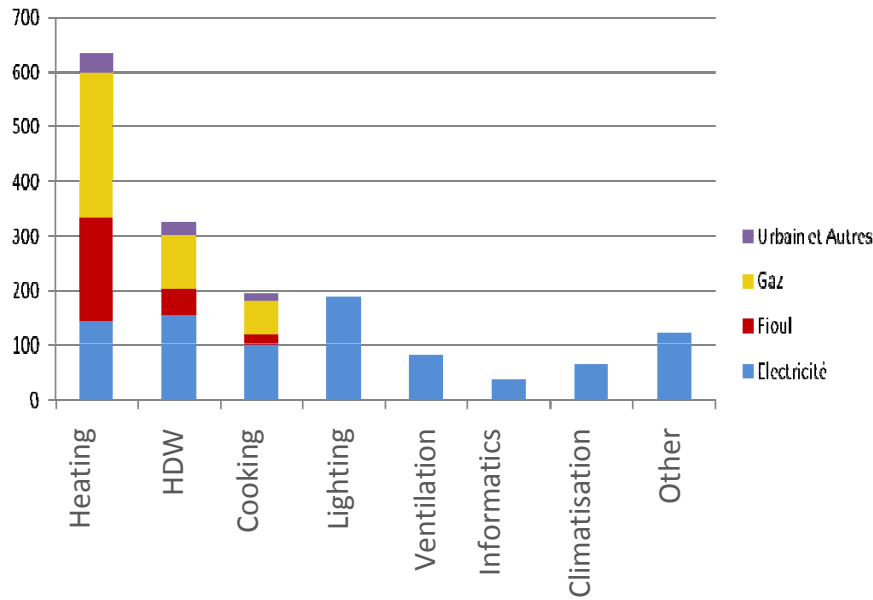
Energy used for heating and hot domestic hot water by building construction date (primary energy)



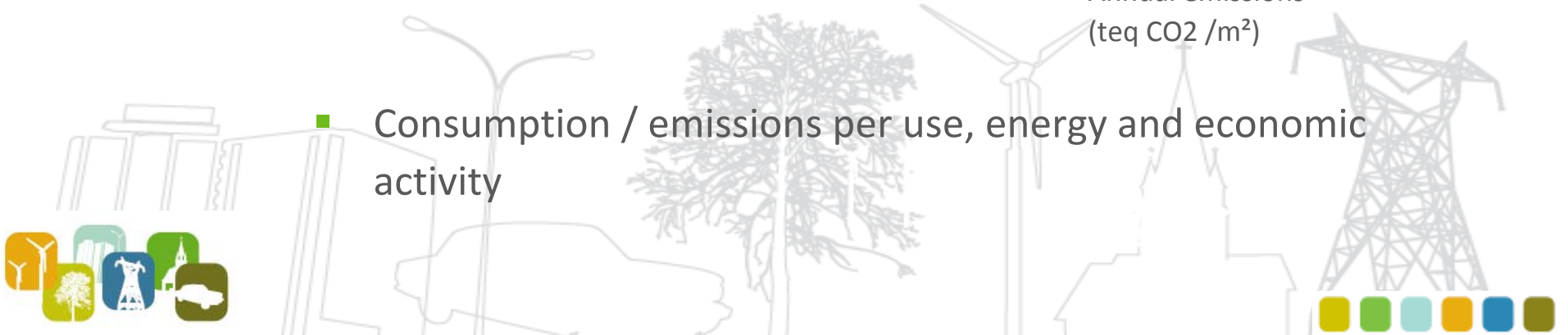
- Town to national scale
- housing emission analysis
 - Understand where, how, by whom is energy consumed
 - Consumption and emissions per construction date, architectural type, energy carrier, location, occupancy, etc.



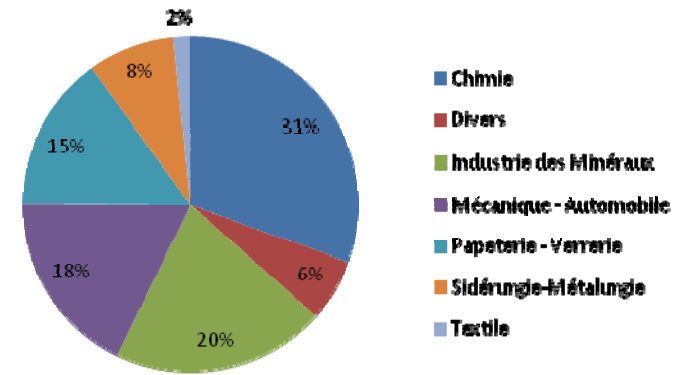
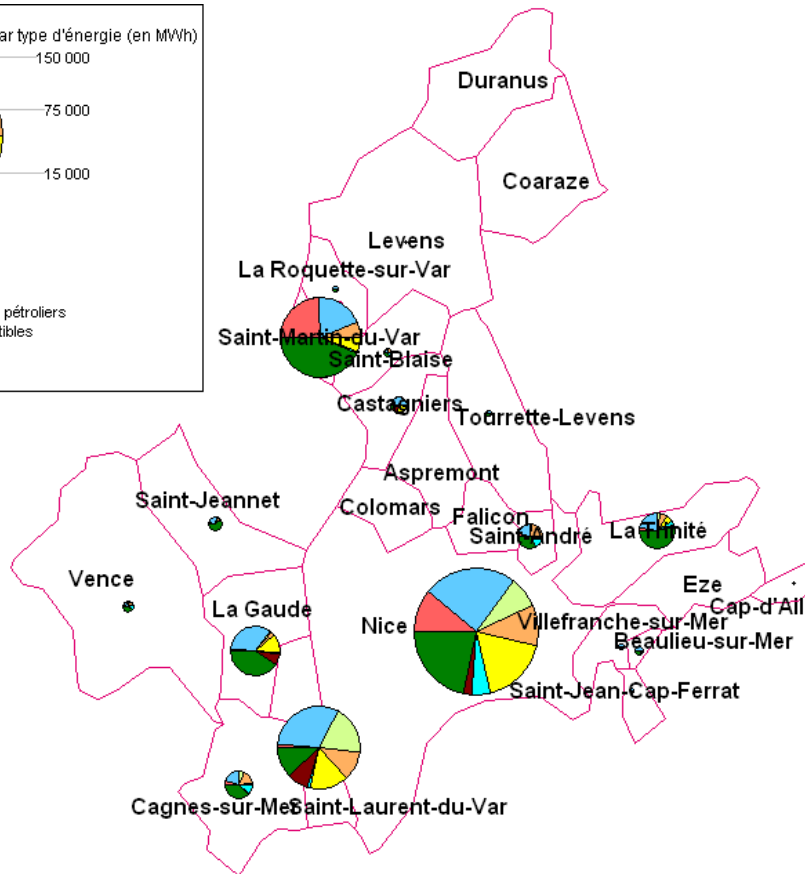
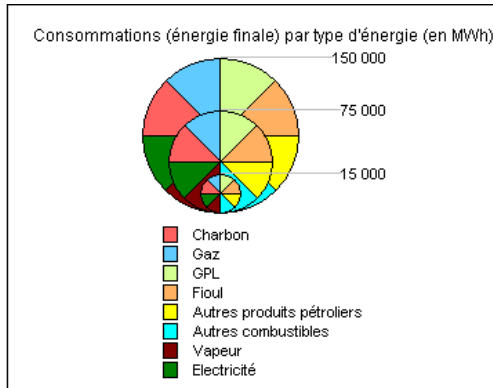
Tertiary sector



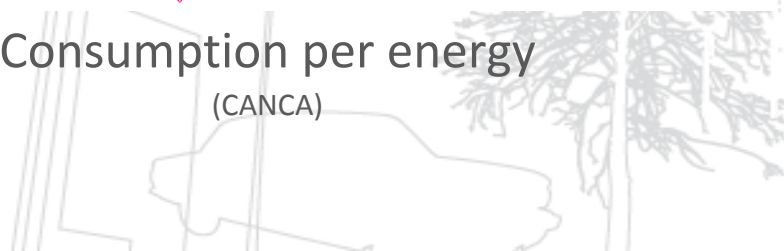
Consumption / emissions per use, energy and economic activity



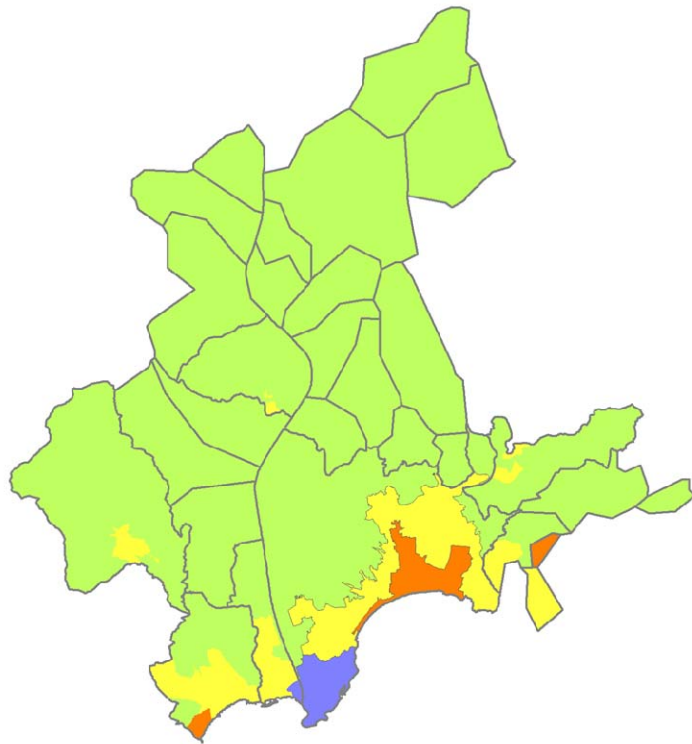
Industry sector



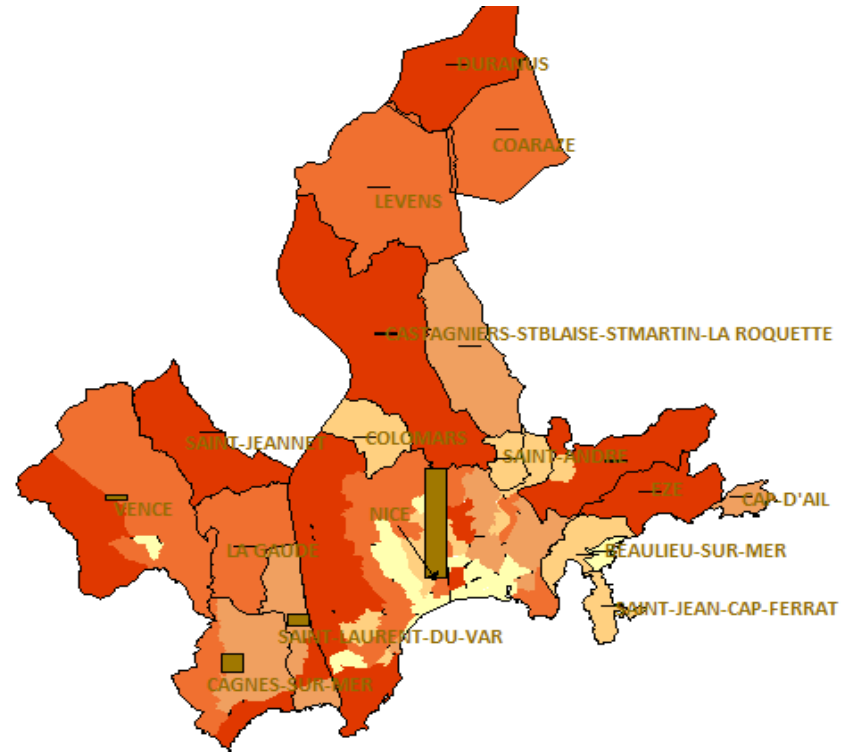
Consumption per energy (CANCA)



Daily mobility



Urban typologies
(CANCA)

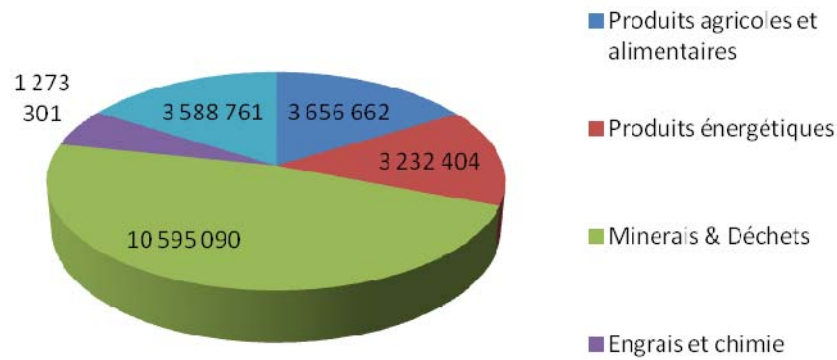


Emissions per move
(CANCA)

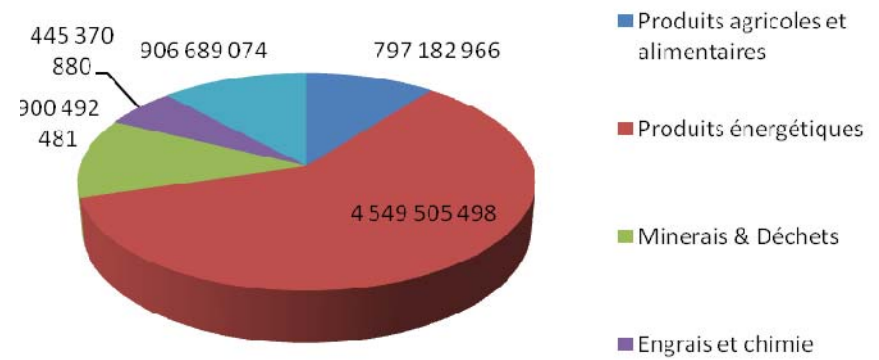


Merchandises transport

Tonnes (Canca)



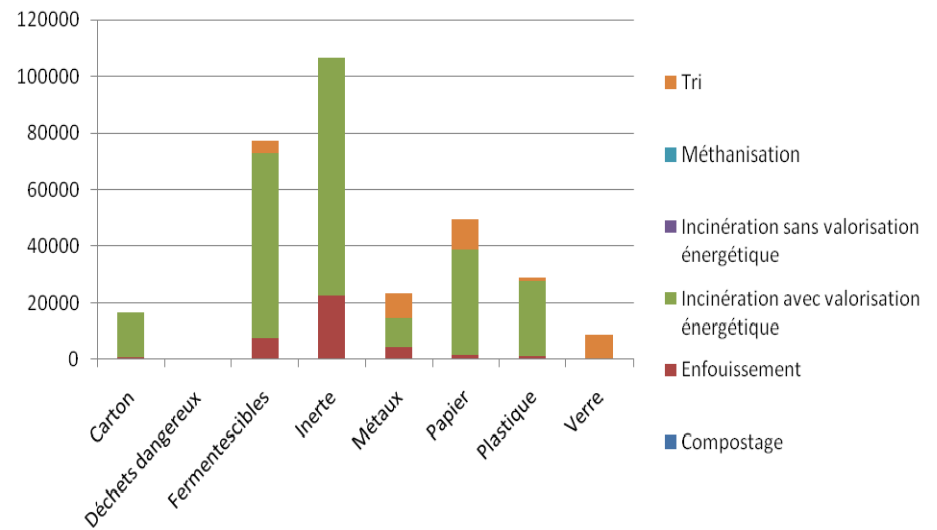
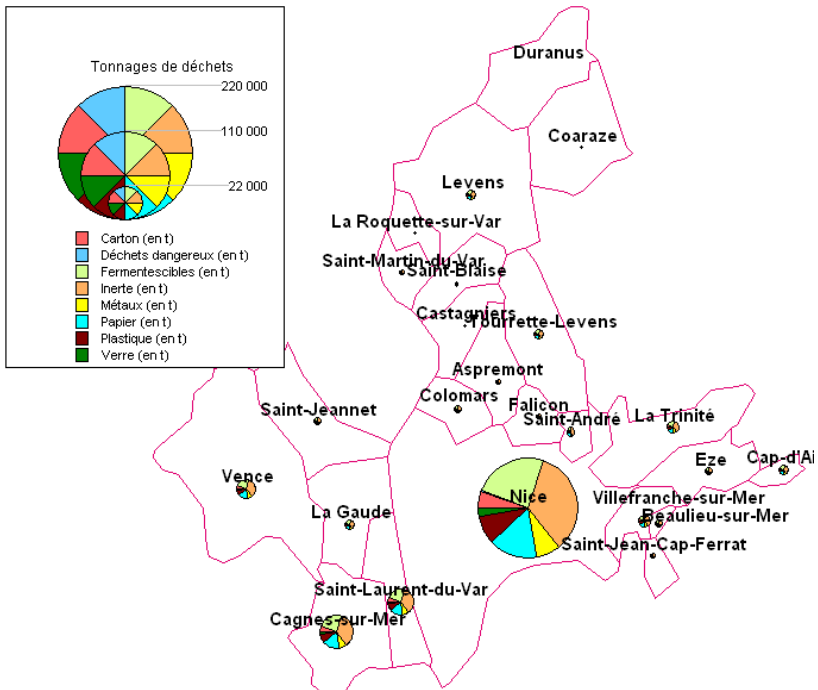
t.Km (Canca)



- 5 typologies of merchandises
- 5 modes : road, train, plane, river, sea



Waste sector

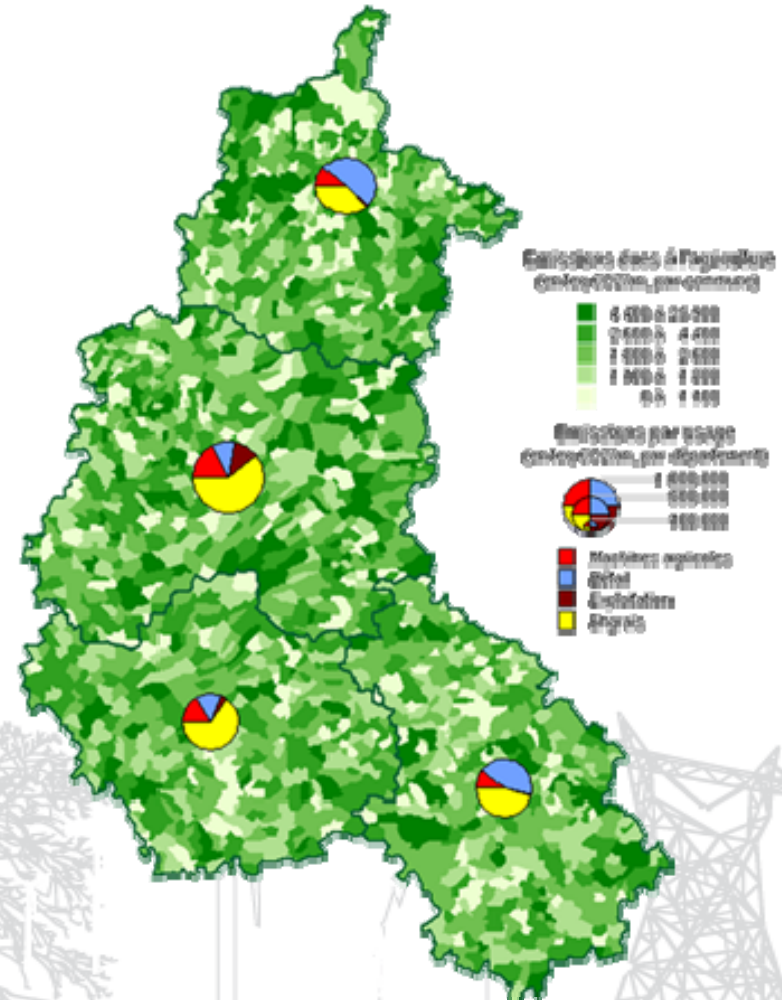


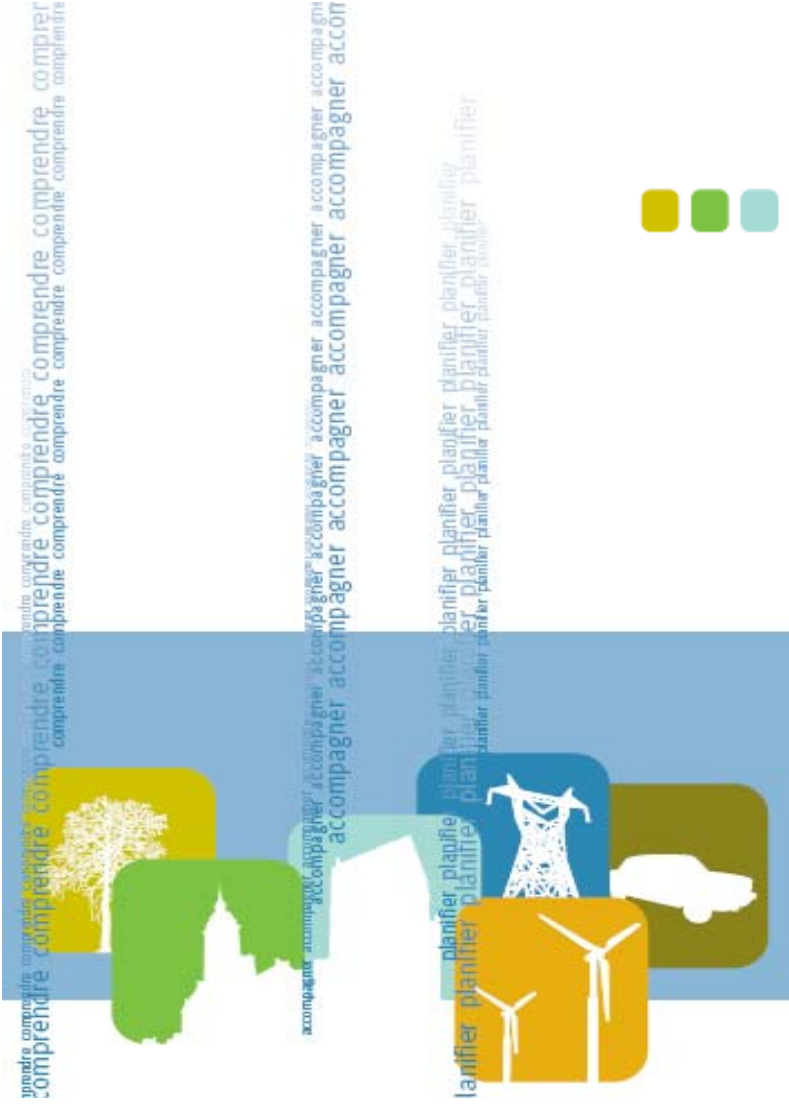
- A demand oriented approach
- Territorialized waste treatments



Agriculture and land use

- Local specificities
- Cultivation practices
- Breeding practices
- Land use management

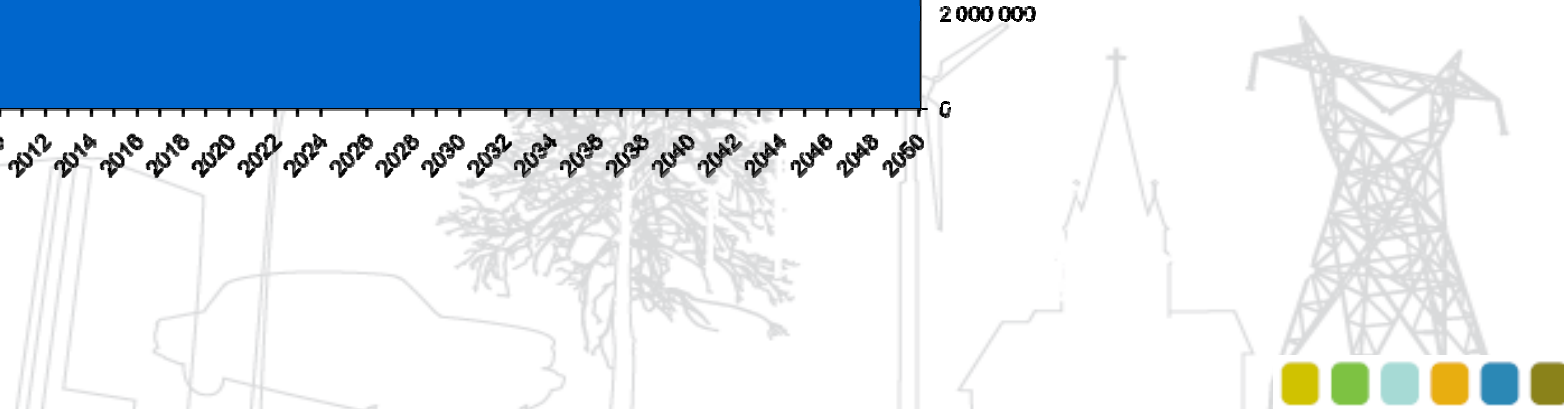
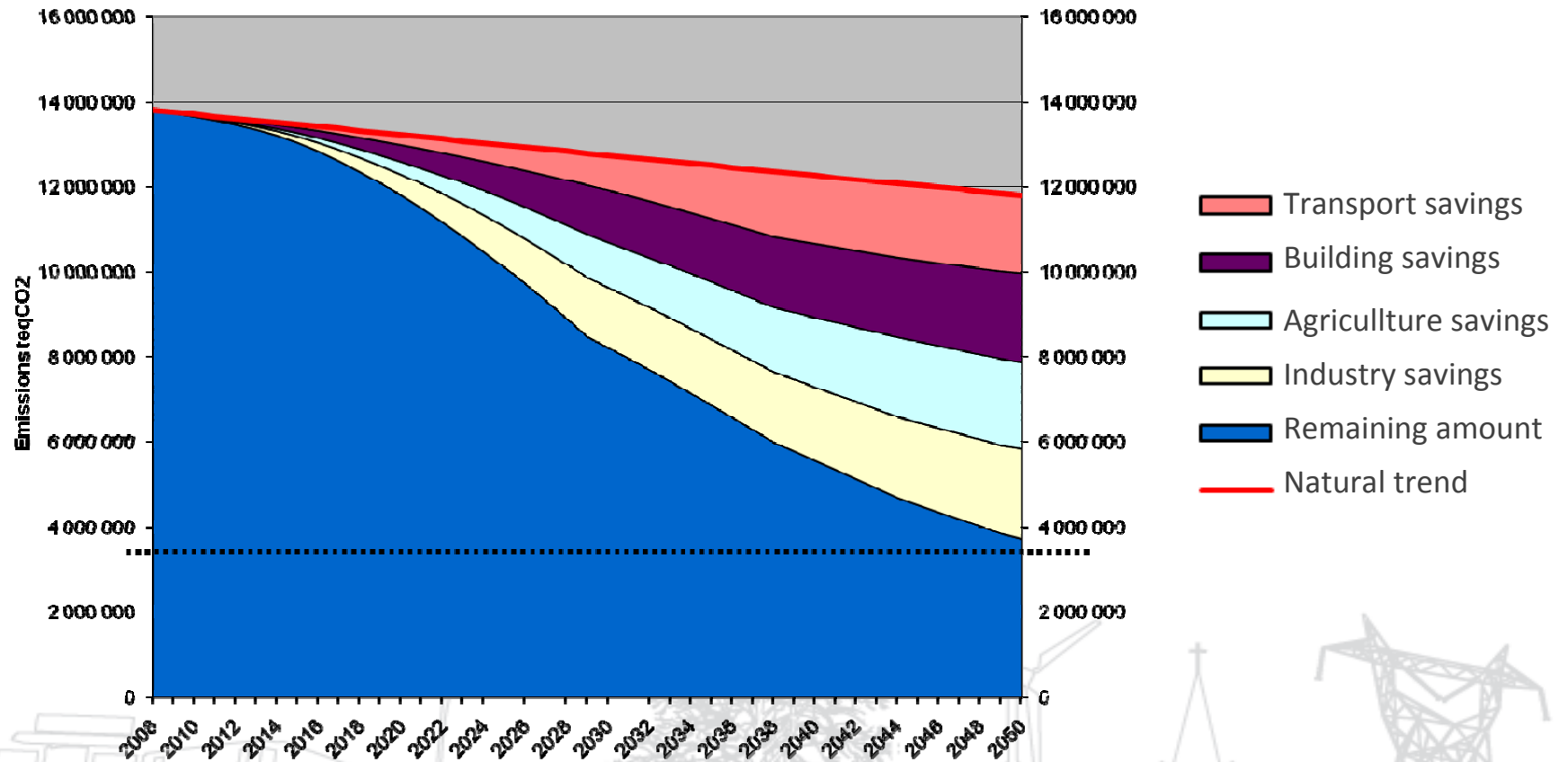




Dynamic scenario Action plan



Scenario and potential emissions savings



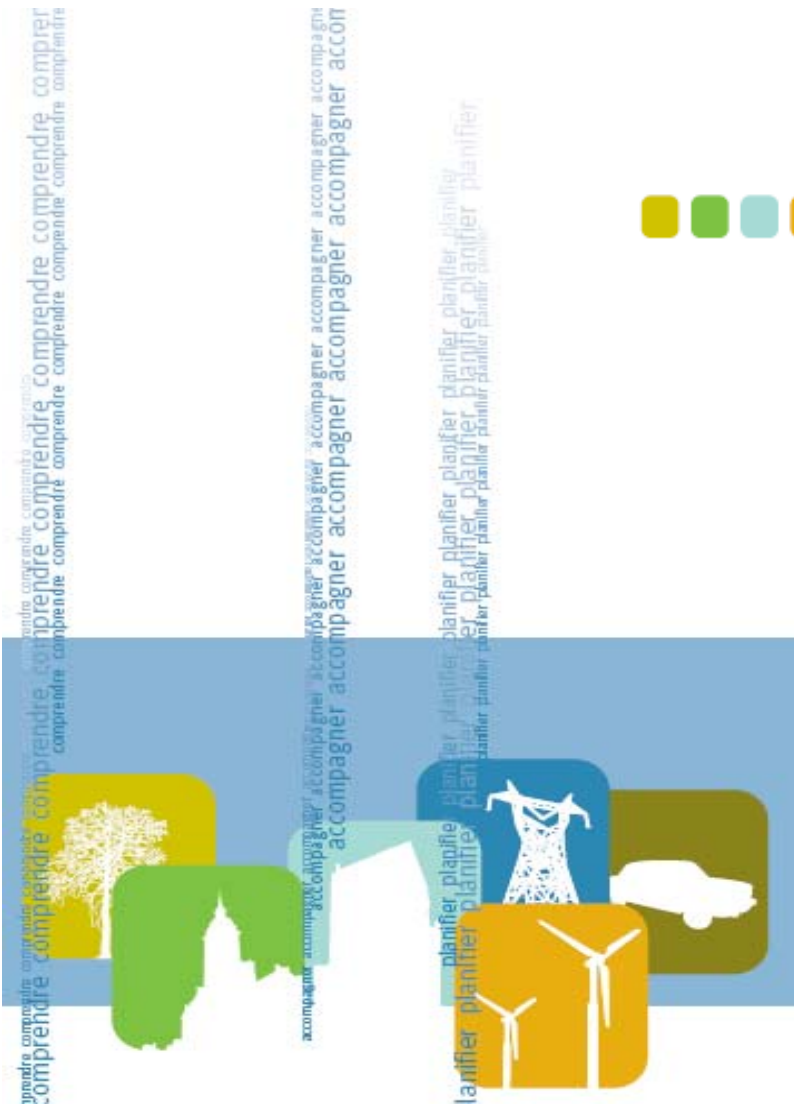
Action plan

- Territorial planning choices and energy / climate policies in terms of mitigation and adaptation
 - Refurbishment policies
 - Adequacy offer / demand
 - Urban planning solution (buildings, transports, urban forms)
 - Local resources valorization
 - Fossil energy mitigation and substitution
 - Energy network evolution

- Quantification

- Cost
- Benefits
- Energy / emissions savings





Conclusion



Conclusion

- This methodology allows:
 - The establishment of an information system continuously improved
 - The additivity and comparability of data
 - The description of the possible future scenarios
 - The quantification of action plans in terms of impacts and costs
 - The follow up and the evaluation



Thank you for your attention.

