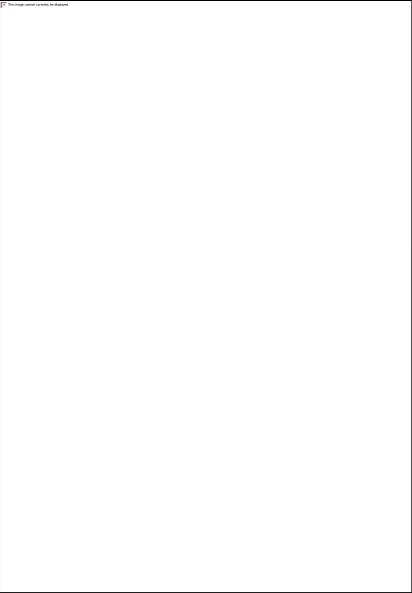
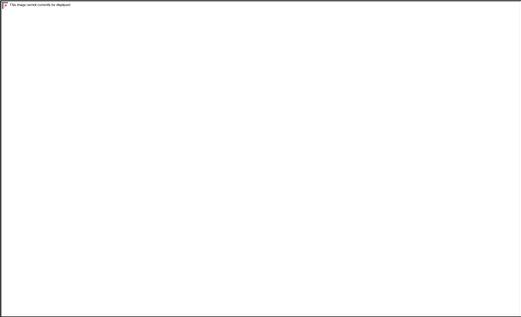


**GEG,  
LONG-TERM STRATEGY  
THROUGH  
'SMART ENERGIE' PROGRAM**

CEDEC – September 2014



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Deputy Director of Grids,  
Smart Energie Program Director



# A SMALL VILLAGE OF GAULS THAT STILL HOLDS OUT...

150 years of History  
A special link to the Municipality & citizens

Energy mix  
Activity mix: power generation, grids, retail, public lighting...

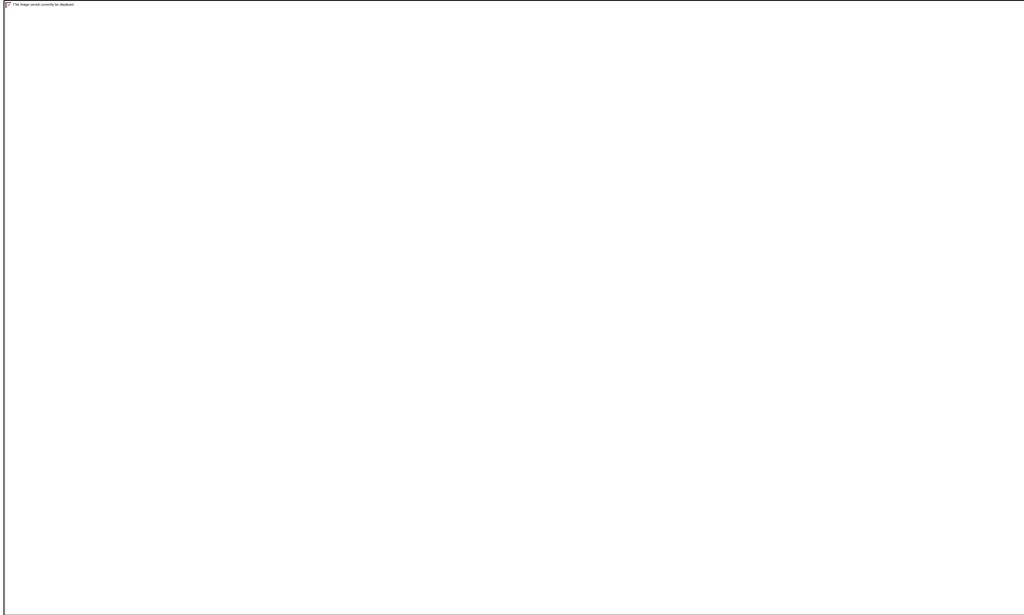
Customers:  
E: 100000 G: 45000  
Grids:  
1000 km HV LV  
200 km Gas

2014: First « Green » mayor in France of a more 100 000 inhab. city

435 employees  
148 M€ sales  
Transit 1 TWh/y  
Prod 215 GWh/y  
( > 50% RES)

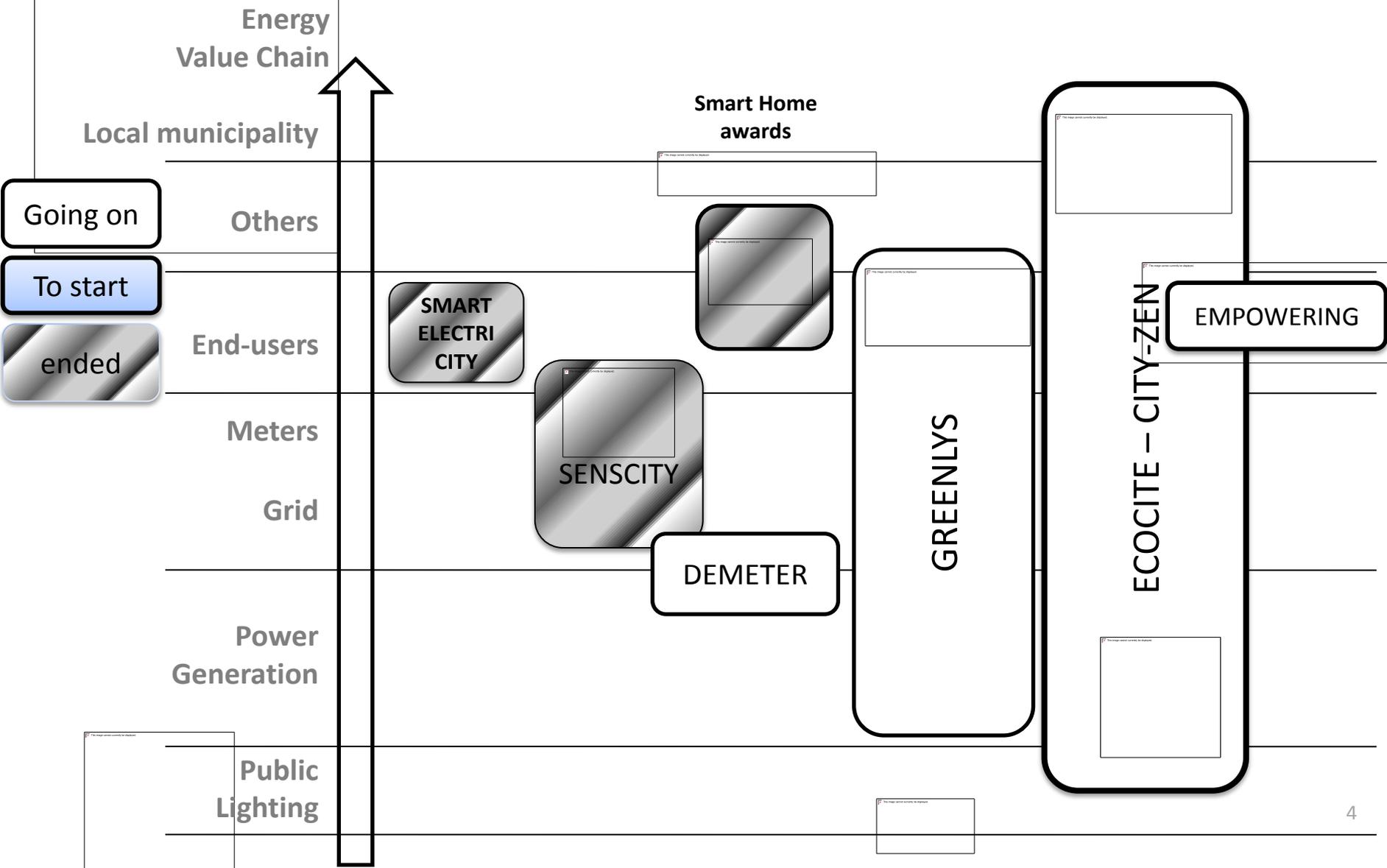
# FEW REASONS OF OUR INVOLMENT IN SG PROGRAMS

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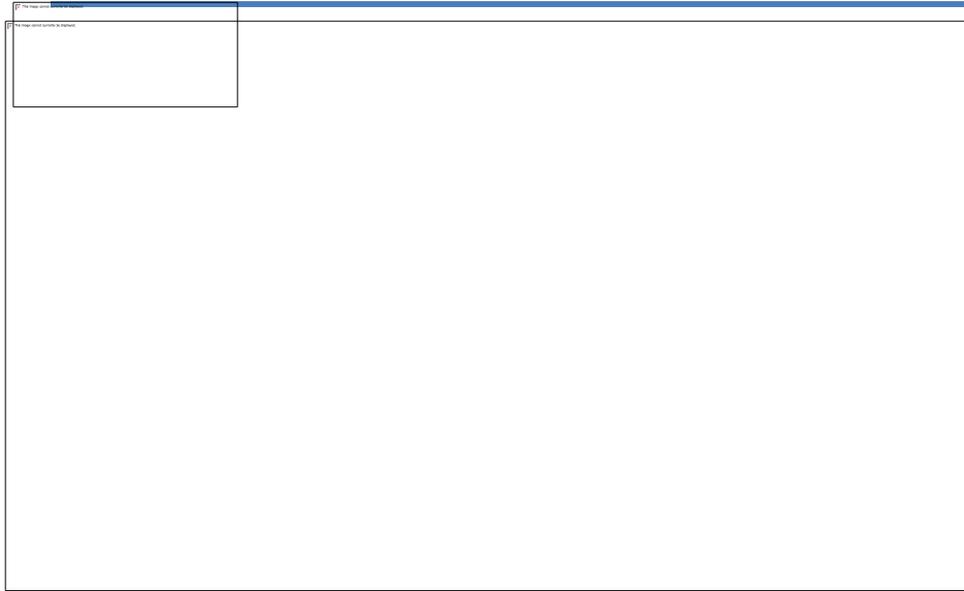


- Absolute need to be prepared for future
  - Future as an opportunity (not 'only' a risk)
  - Explore new strategic spaces
  - 'Small & local are beautiful'
  - A positive experience of partnership in pilot project
- Drastic criteria in selection:
    - ✓ « Show & evaluate » more than « study & communicate »
    - ✓ OPEN INNOVATION: Demo field (GEG) vs techno & engineering (partners)
    - ✓ Systemic & pooling approach, with partners & subsidiaries
    - ✓ Connexion with Municipality & customers
    - ✓ Business development perspectives

# MAPPING OF PILOT PROJECTS

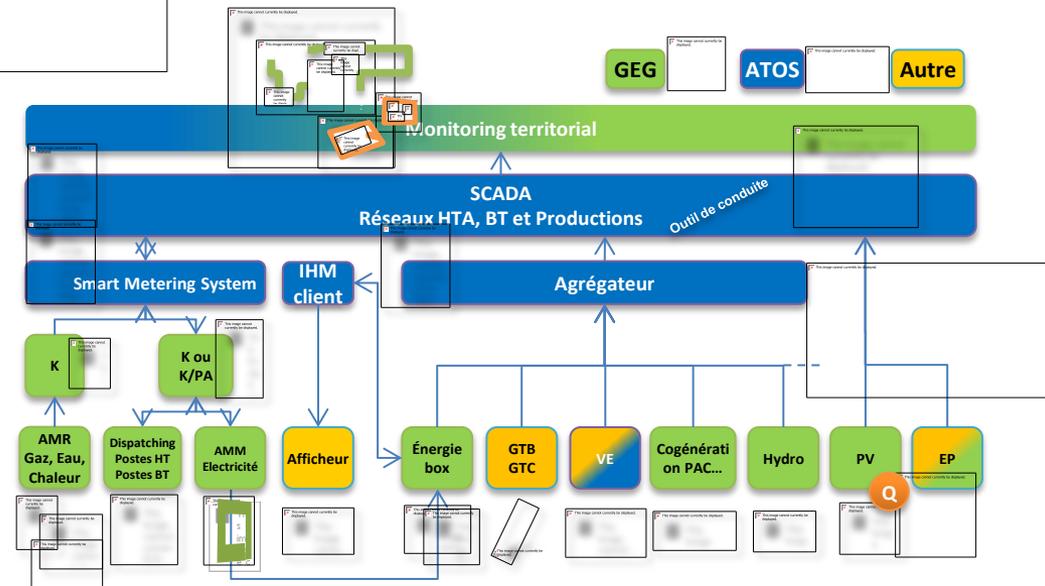


## 2 MAJOR PILOT PROJECTS WITH DIVERSE APPROACHES



- 12 partners, 40 M€
- A systemic approach of SG
- 1000 end-users with advanced devices (smart meter, energy box)
- Costs-benefits analysis

- 2 partners: GEG, ATOS
- Bottom-up & multi-energy approach
- Ambition for full cooperation
- Territorial monitoring dedicated to Municipality







# THE END-USER: A KEY ACTOR IN THE SYSTEM

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- Advanced devices at home are proposed for the volunteers: Smart meter + energy box from SCHNEIDER (WISER BOX)
- Ambition to
  - better understand the consumer's demand and acceptability of advices, offers, services
  - Help them reduce their energy bills with lowest impact on comfort
  - Foster environmental awareness
  - Test dynamic tariffs
  - and evaluate which contribution of DSM to peak shaving.
- 1000 testers are planned to be part of the experiment in Grenoble and Lyon

# THE END-USER: A KEY ACTOR IN THE SYSTEM

- The displays are based on consumption reports with comparison tools, alerts, “eco-advice”, and challenges for users to reduce their bills



- 2 innovative and simulated offers are tested: “Optim’conso” and “eco-pointe”



# THE AGREGGATOR: A NEW AND ACTIVE ACTOR

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- More than 30 000 curtailments carried out
- Data acquisition in order to build predictive models
- Characterization of curtailments: rebound and pay back effects
- Analysis impact of these curtailments on users comfort
- Flexibility forecasting and curtailment optimization algorithms
- First interaction tests with the DSO

**A typical curtailment**

**Power in kW**

**Average  
Indoor Temperature**

# ECOCITE-CITY-ZEN: CONNECT, EDUCATE & PLAN

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50 combined  
gas, elec,  
water, DH  
metering

Individual  
solutions in  
collective  
heating flats

50 energy  
boxes in  
residential  
(elec heating)

> 1000  
Displays +  
AMM in new  
buildings

EV plugs  
(low & fast  
charge)

Heating pumps  
of the thermal  
loop + PV + gas  
cogeneration

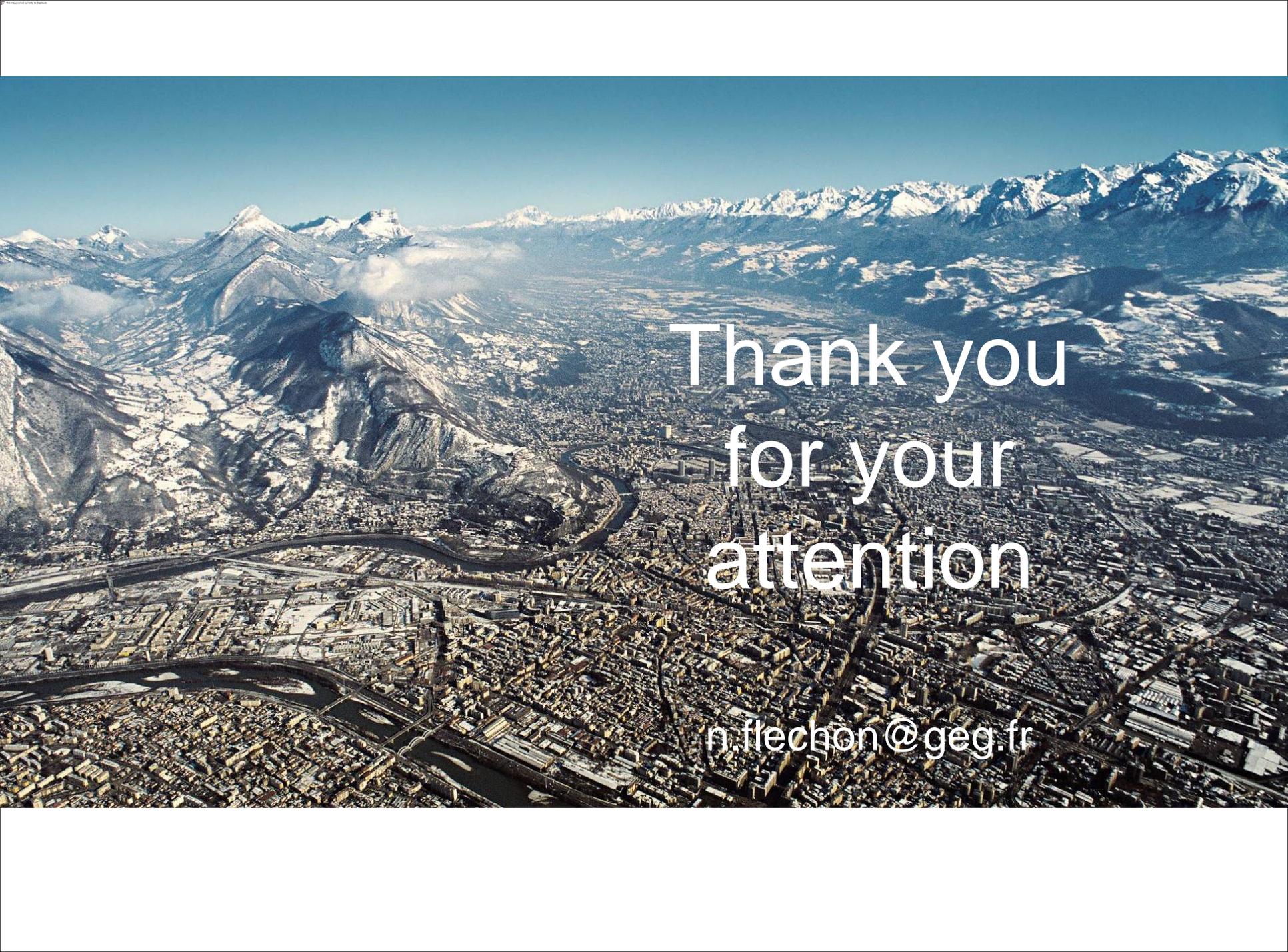
# TAKING THE OPPORTUNITY FOR EDUCATION & PLANNING

Techno-push  
approach to  
define needs  
& demand

Mock-ups for  
different  
audiences

Year-to-year  
improvement  
for tools  
development

Real-time,  
comparison,  
forecast,  
planning

An aerial photograph of a city nestled in a valley, surrounded by rugged, snow-capped mountains. The city is densely packed with buildings, and a river winds through it. The sky is clear and blue.

Thank you  
for your  
attention

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