

Energy transition and green growth in France

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Low Carbon Society Research Network 7th Meeting

*Plenary Session - INDCs and SDGs: Funding Challenges
and Benefits of the Cooperation*



- **Energy transition and green growth in France: new law at the parliament**
- **ADEME's 2030 and 2050 Energy Transition Outlook**
- **ADEME role for green growth : Focus on RDI**



The new law in France for energy transition and green growth

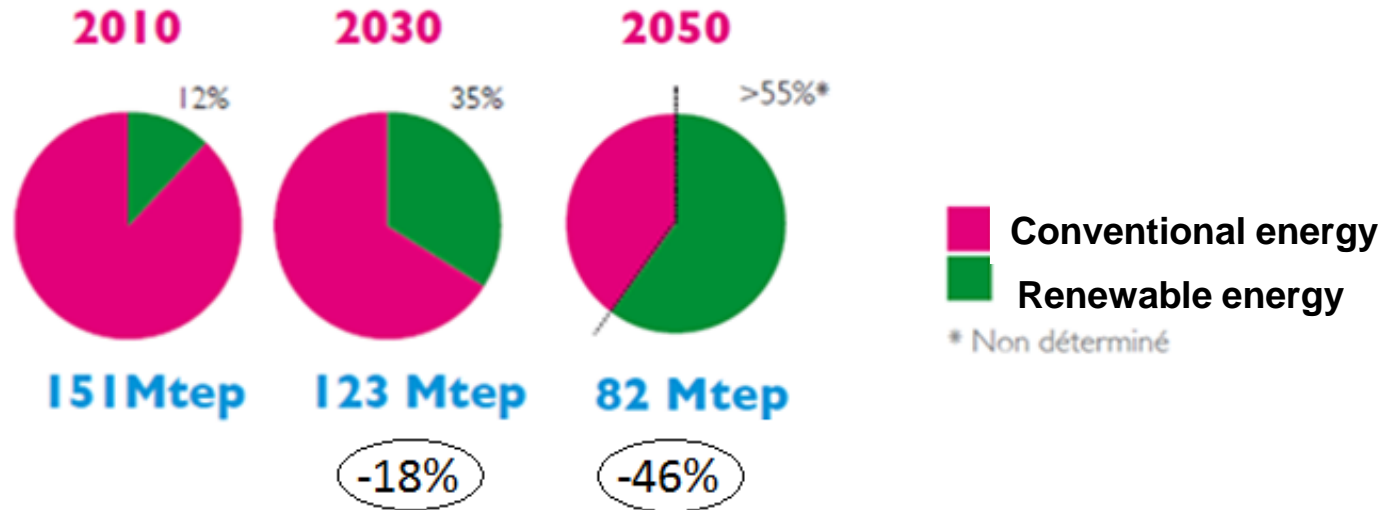
- After a large debate among stake holders in 2013, a new law has been adopted by Government mid 2014 and under discussion by Parliament
- Main objectives to comply with factor 4 in 2050 :
 - ***Reducing GHG emissions by 40% in 2030 (vs. 1990)***
 - ***Reducing energy demand by 50% to 2050 (vs. 1990)***
 - ***Increasing the share of renewable energy from 13,4% (2012) to 32% in 2030***
 - ***Reducing the share of nuclear in electricity mix from 75% to 50% in 2025***
 - ***Reducing the share of fossil energy in energy mix by 30% in 2030***
- PPE (Multiannual programming of energy) cover all forms of energy, including quantitative targets for renewable energy development



ADEME's 2030 and 2050 Energy Transition Outlook

ADEME's 2030 and 2050 Energy Transition Outlook

Energy balance

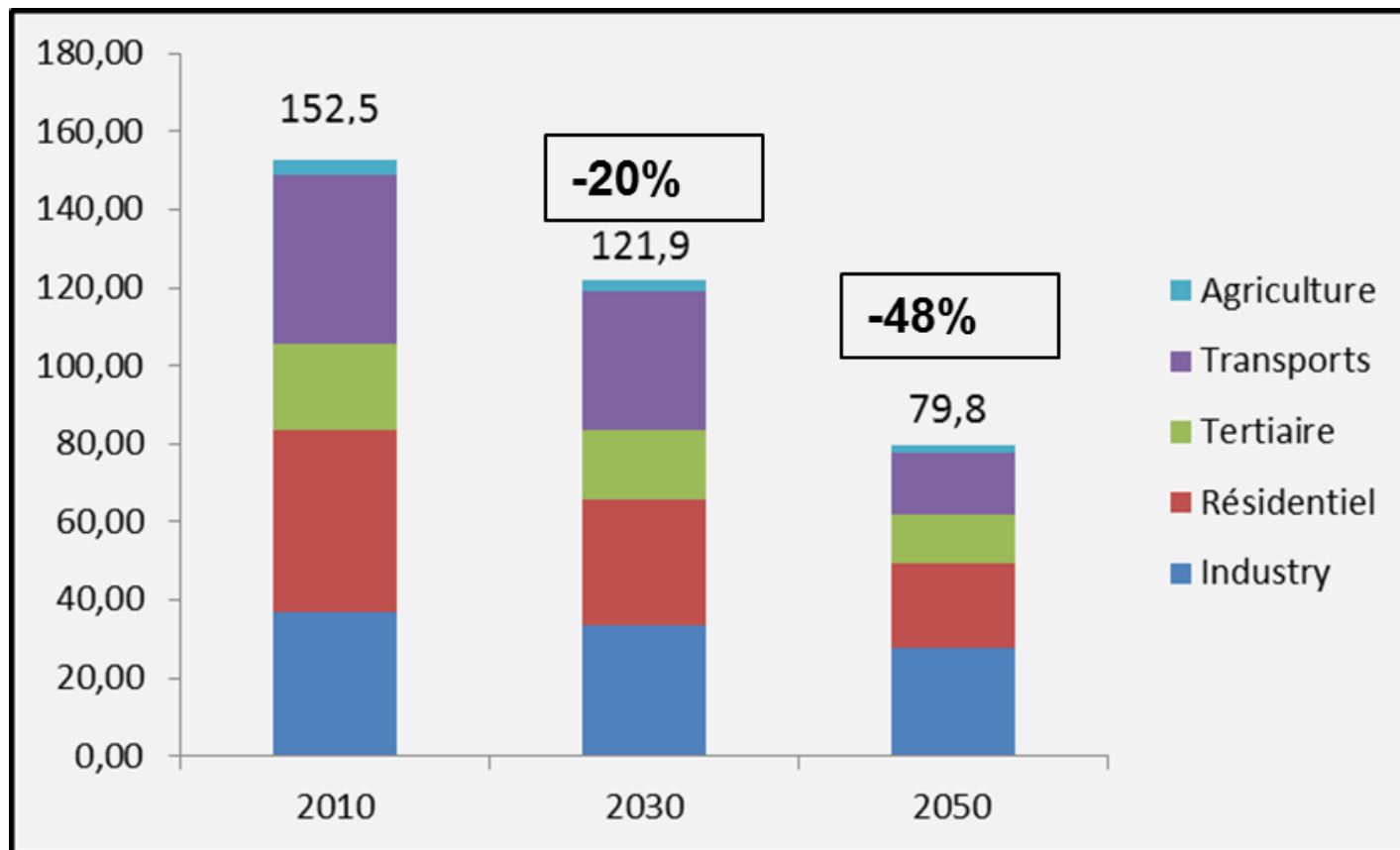


GHG balance



ADEME's 2030 and 2050 Energy Transition Outlook

Energy transition scenarios to 2030-2050 elaborated by ADEME for National Debate (November 2012)

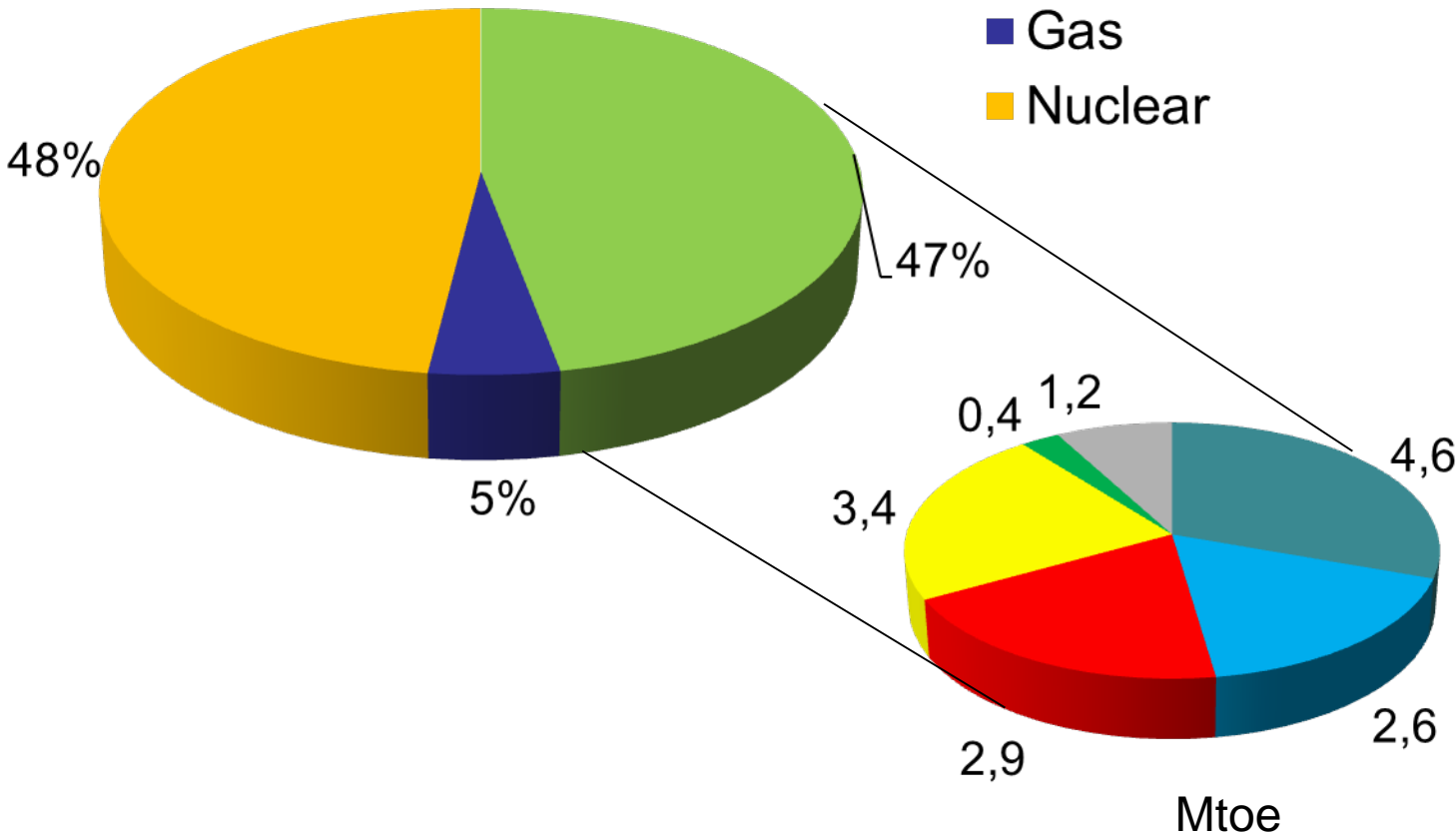


Final energy demand in 2030 and 2050

ADEME's 2030 and 2050 Energy Transition Outlook

Electricity mix in 2030

- Renewable
- Gas
- Nuclear



- Wind on shore
- Wind Off shore
- PV
- Hydro
- Marine energy
- biomass

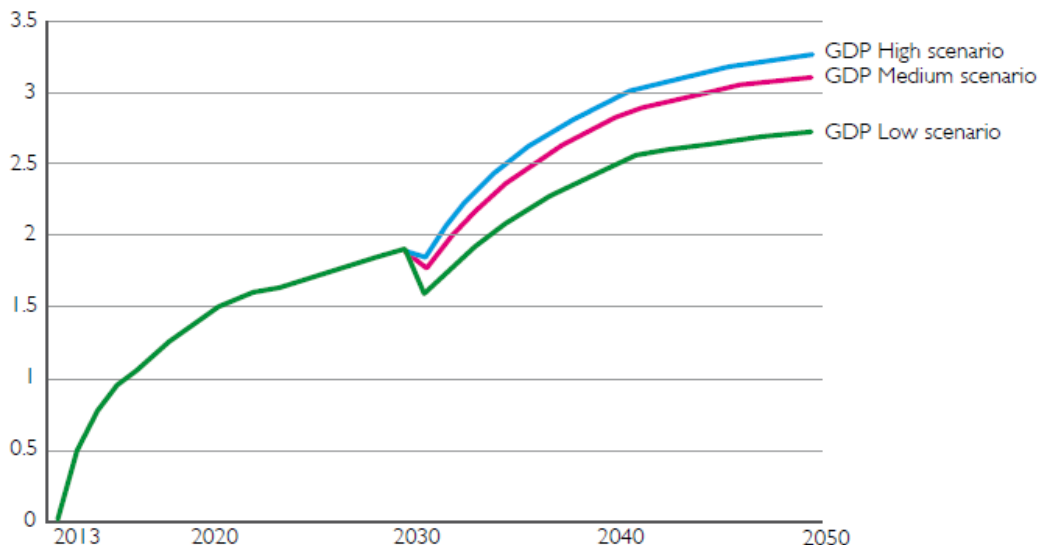
ADEME's 2030 and 2050 Energy Transition Outlook : Macro-economic impact assessment

Macro-Economic Assessment : Use of the 3ME modelling tool

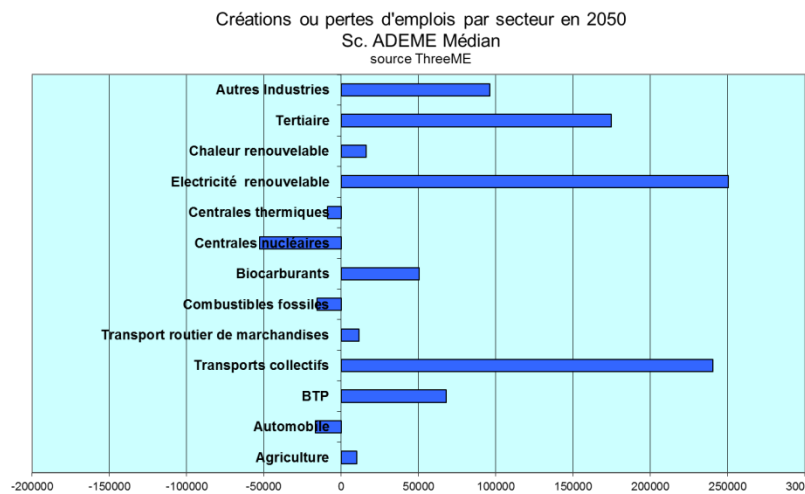
- **Multisectoral Macroeconomic Model for Evaluating Energy and Environmental Policies (ThreeME)**
- **Developed by ADEME since 2008 in collaboration with the French Economic Observatory (OFCE), an economic research centre at the Institute of Political Studies**
- **Supply and demand neo-keynesian model**
- **24 production sectors, 17 energy sub-sectors**

Macro-Economic Assessment : Use of the 3ME modelling tool

Macro-economic evaluation done by ADEME shows that energy transition could be beneficial for economic growth (GDP +3 points in 2050) and employment (+ 329 000 in 2030, + 825 000 in 2050) respectively to a scenario without energy transition



DEVIATION FROM THE BASELINE SCENARIO IN INDEX POINTS – SOURCE:THREEME 2013

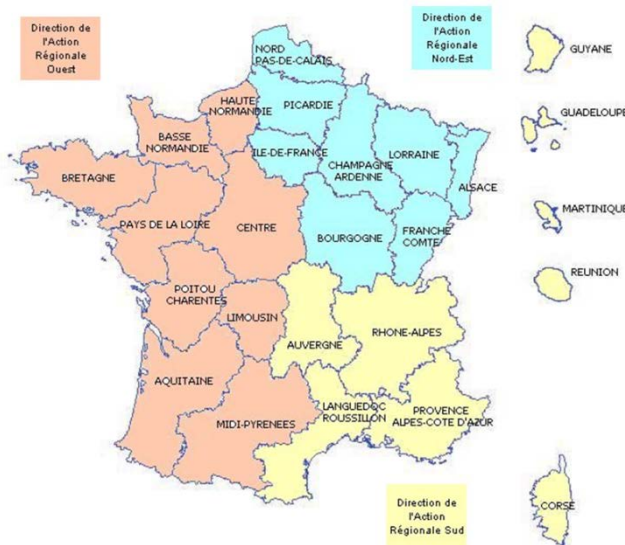


ADEME role for green growth : promoting innovation with French companies

ADEME activity as operator of public policy

ADEME is involved as Public Agency under the authority of Ministry of Energy, Environment, Sustainable Development and Research in the field of energy efficiency and renewable energy:

- *Advices for the Government (on policies and measures) and developing tools for companies and local authorities*
- *Awareness campaigns and information of large public*
- *Supporting investments in the field of heat production from renewable energies and waste reduction*
- *Supporting research and innovation for green technologies*



A staff ~ 1 000

- **3** central sites (~50%)
- **26** regional directions
- **3** representations in overseas territories
- **1** office in Brussels



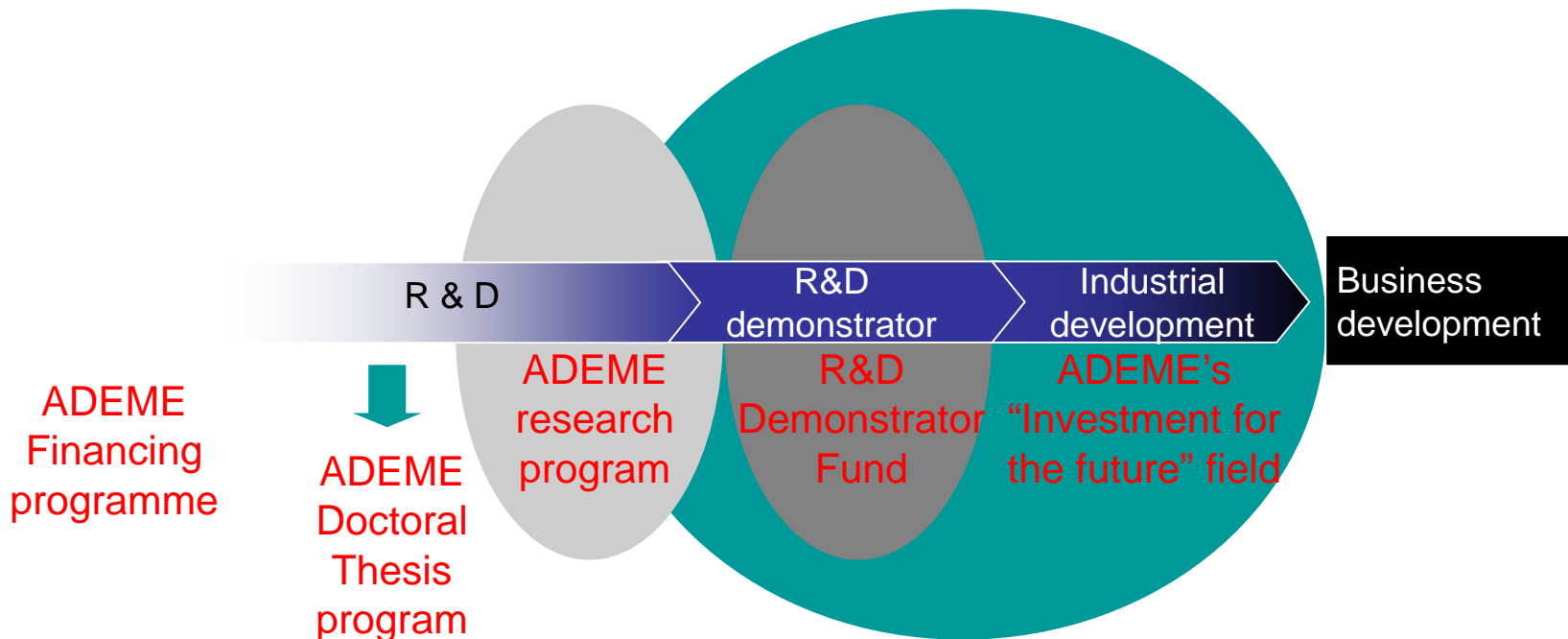
ADEME activities for energy transition and green growth

- **Supporting research and innovation** for new technologies and services (R&D, Investments for the Future)
- **Funding demonstrators** (ZEB, buildings rehabilitation, smart grids, vehicles, industrial processes...)
- **Technical advices** for regulations (buildings codes...) and labelling (buildings, equipment, cars), for energy efficiency obligation of energy suppliers and certificates, for financial and fiscal measures
- **Tools development** for GHG emissions inventory and reduction plans for communities, companies (tertiary, industrial, freight transport)
- **Funding local programs** with regional authorities

Strategy for Research, Development and Innovation 2014-2020

RDI supported by the agency will focus on, among others:

- **devise responses to the expectations of society**
- **provide support for public authorities to help them build sustainable development policies that match these expectations**
- **accompany the emergence and implementation of a national offering of technologies and services that meet energy and environmental challenges**



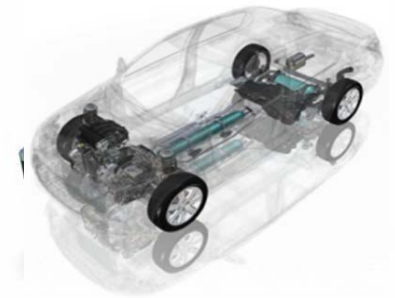
What is funded through ADEME Investments for the future program ?

- Public fund managed by ADEME : 3 billion €(2010 – 20217) (half already decided)
- Innovative technologies :** research demonstrators, industrial research, experimental development, pre-industrial experimentation
- Topics :** renewable energy, smart grid, road vehicle, railway, ships, circular economy, energy efficiency, storage, hydrogen...
- Target :** mainly companies
 - 85% of credits
 - **50% of funded companies are SBC and medium size**
- Investing through reimbursable aids, subsidies and capital investment



Demonstrators and industrial experimentations in the transport sector

- **Technological innovations on cars : thermal (toward 2l/100 Km efficiency), Hybrid, electric...**
- **EV and hybrid charging infrastructures**
- **Specific vehicles for urban use**
- **Advanced mobility services experimentations (car sharing, car pooling...)**
- **Innovative Railway**
- **Innovative Ships**

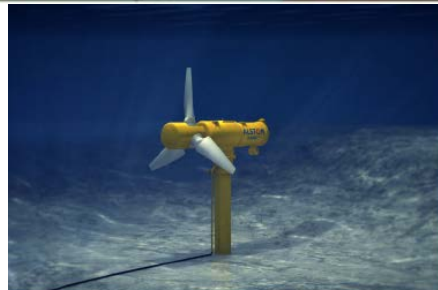
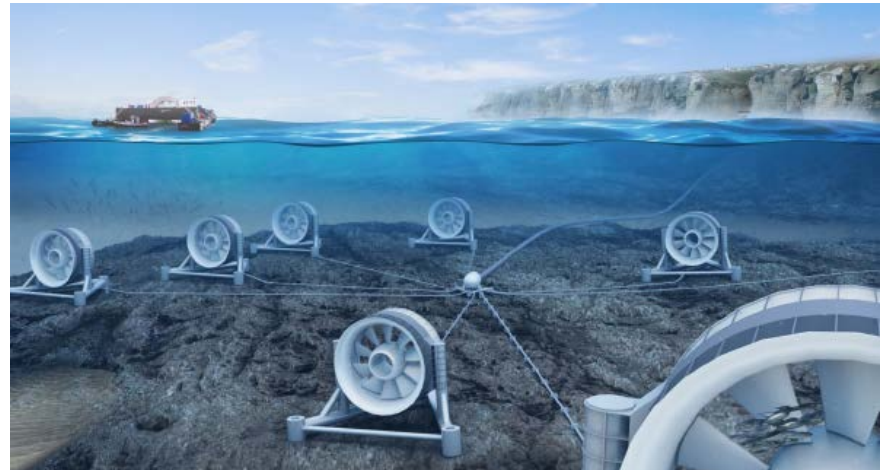


425 M€ funded by ADEME since 2011

Projects example : energy from ocean, Two experimental farms

NEPTHYD Project : 5.6 MW, 4 turbines

NORMANDIE HYDRO : 14 MW, 7 turbines



Hydrolienne OCEADE 18 - 1.4 MW



Hydrolienne Open Hydro sur la barge d'installation

Financing green innovation at territories scale

Positive energy or low consuming buildings: towards positive energy buildings in new construction/ refurbishing existing buildings at best performances through **industrialization of construction**

New concepts for buildings to avoid urban spreading - Dwellings exchanging energy



Sustainable mobility:

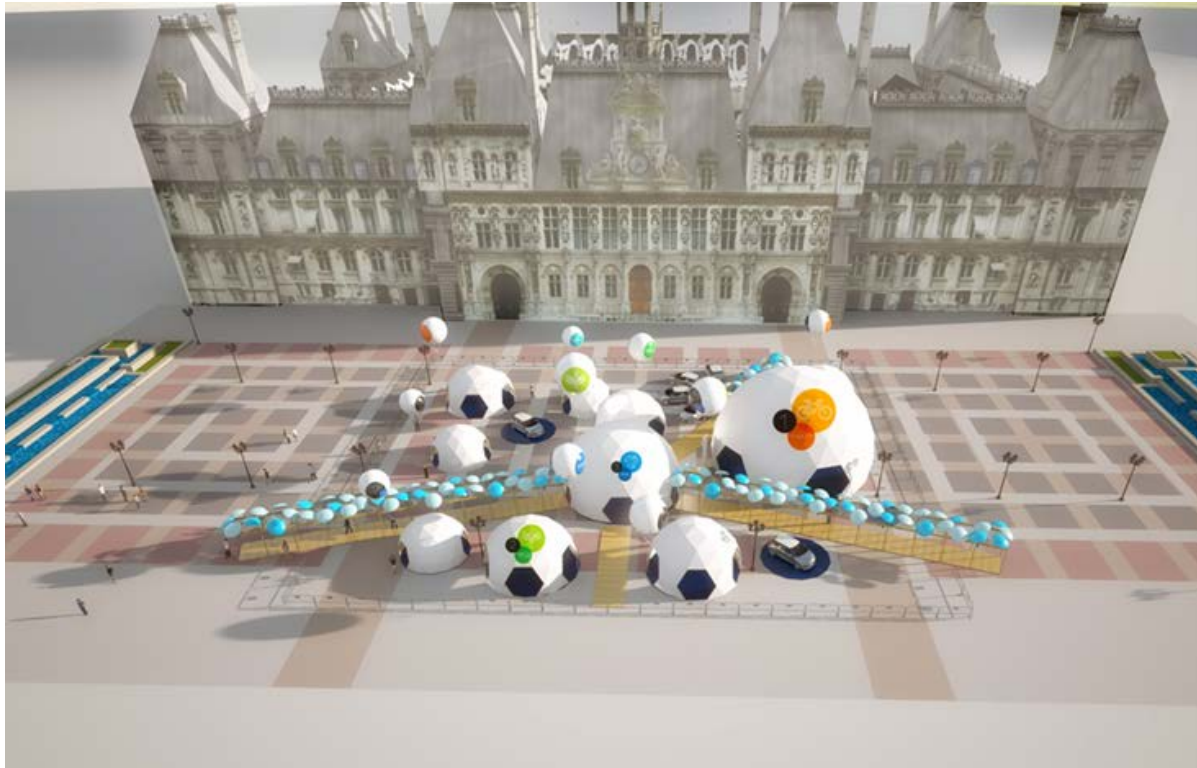
Urban mobility services and interoperability of transport modes, **infrastructure for electromobility**



Smart grid at the scale of territories : Objective to integrate > 20% renewable into the grid and demand response with smart meters: 16 projects already launched (experiments in the cities of Lyon, Grenoble, Nice, Toulouse..., or in islands (Corse, Guadeloupe, Réunion) **7000 households involved in DSM projects (9 projects)**



Exhibition of low carbon technologies on the square of Paris Hôtel de Ville Paris, 3 – 8 July 2015



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Thank you for your attention

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