



**INDUSTRY / BUSINESS USE OF  
COMPLEMENTARY MEASURES FOR  
DECARBONISATION - LOOKING BEYOND  
PRICING AND REGULATION TO VOLUNTARY  
AND OTHER APPROACHES**

**EDF'S CLIMATE POLICY AND  
STRATEGIES**

Dr. Jean-Yves CANEILL  
Head of Climate Policy  
EDF

**June 22, 2015  
IEA**



# EDF Group in 1 « slide » (2014) !

- ⊙ A leading player in the energy market, active in **all areas** of electricity from **generation to trading and network management**.
- ⊙ **Balance** between regulated and deregulated activities.
- ⊙ **Engineering and operating generation plants and networks**.
- ⊙ Leader in the **French and UK** electricity markets, solid positions in **Italy** and numerous other European countries; industrial operations in **Asia** and the **United States**
- ⊙ **Entities of EDF Group are regulated under EU ETS and EDF is operating on EU ETS and on the international credits markets through its entity EDF-T**

**38,5 million**  
customers worldwide

**623,5 TWh**  
electricity generation worldwide

**102 g of CO<sub>2</sub>**  
per kWh generated  
(CO<sub>2</sub> emissions from EDF Group electricity  
and heat generation)

**158,000**  
employees worldwide

**€72.8 billion**  
in sales

**64 Mt CO<sub>2</sub>**

# EDF's historical involvement and current positioning

## ▶ EDF and Group historic involvement

- **1990: Launching «Climate Science and Economics» concern in R&D Division**
- 2001-2002: R&D project on consequences of emissions trading on multi-annual management of generation facilities
- **2001: A “Kyoto Steering Committee” organized with the main players of EDF group to share experience and preparing future (AERES commitments)**
- 2005: Developing a “Carbon Fund” to mitigate our carbon exposure before EU ETS regulation enters into force
- **2008: Signing a corporate Carbon Strategy within EDF Group**

## ▶ External initiatives

- 1992: Creation of E7 - EDF is a member - Commitment on sustainable development principles
- **1998 / 2003: With EURELECTRIC, launching the GETS experiments**
- **2001: Active member of AERES (French voluntary commitment system) and investigating CDM and JI projects**
- 2002+: Involvement in the WBCSD “Electricity utility project”
- 2007-2009: Eurelectric project “The role of electricity” and “Power Choices”

# Key challenges and priorities of EDF SD Policy

## Environmental issues

To limit the environmental impact of our operations

### ■ Carbon strategy

- Adaptation strategy to climate change
- Reduction of local impacts

## Societal issues

To strengthen the acceptability of our facilities and businesses

- ▶ Proximity to local bodies
- ▶ Energy access for fuel poor customers
- ▶ Education and skills
- ▶ Group Ethical Approach

## Social issues

- Reference employer
- Quality of life and safety at work
- Group's cohesion

## Governance and communication issues

- Integrating the Stakeholders' expectations (panels and councils)
- Consistency of SD Partnerships
- Communication of our commitments and actions

# The EDF Group environmental policy

## ▶ CLIMATE CHANGE

- **Carbon strategy :**
  - Remaining the lowest CO2 emitter among our competitors, whilst reducing our emissions from present fleets (now : nom more than 150 gCO2/kwh)
  - Making our employees examples of « climate change fighters »
  - Promoting eco-efficient end-use of electricity and investing in R&D for fuel displacement by low carbon electricity
  - Reducing our induced CO2 emissions and proposing a carbon off-set policy
- **Adaptation to Climate change**
  - For our today operations, investments at long term
  - For evolution of demand

## ▶ LOCAL IMPACTS

- air pollution
- water management
- waste management
- biodiversity

*Each company sets its own priorities in regards to our new environmental commitments*

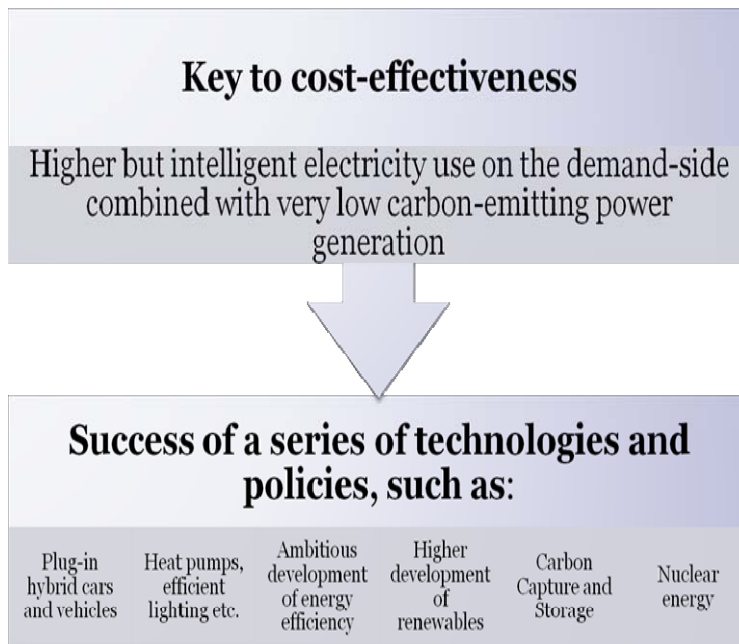
## Why a carbon strategy?

- Reducing carbon emissions has become an issue at stake internationally. Electricity sector is one of the sector first envisioned by administrative authorities when designing carbon policies in all countries
- Financial analysts have identified the carbon risk as an important one and that will have an influence on financial asset values. Reducing risks has to be encouraged as most as possible
- EDF Group is, because of its history, well positioned as far as carbon emissions are concerned. Keep alive this position needs the inclusion of the carbon issue in the strategic gestures of the group
- Carbon has to be integrated in the basic strategy on generation as well as downside

# Eurelectric study

## The role of Electricity

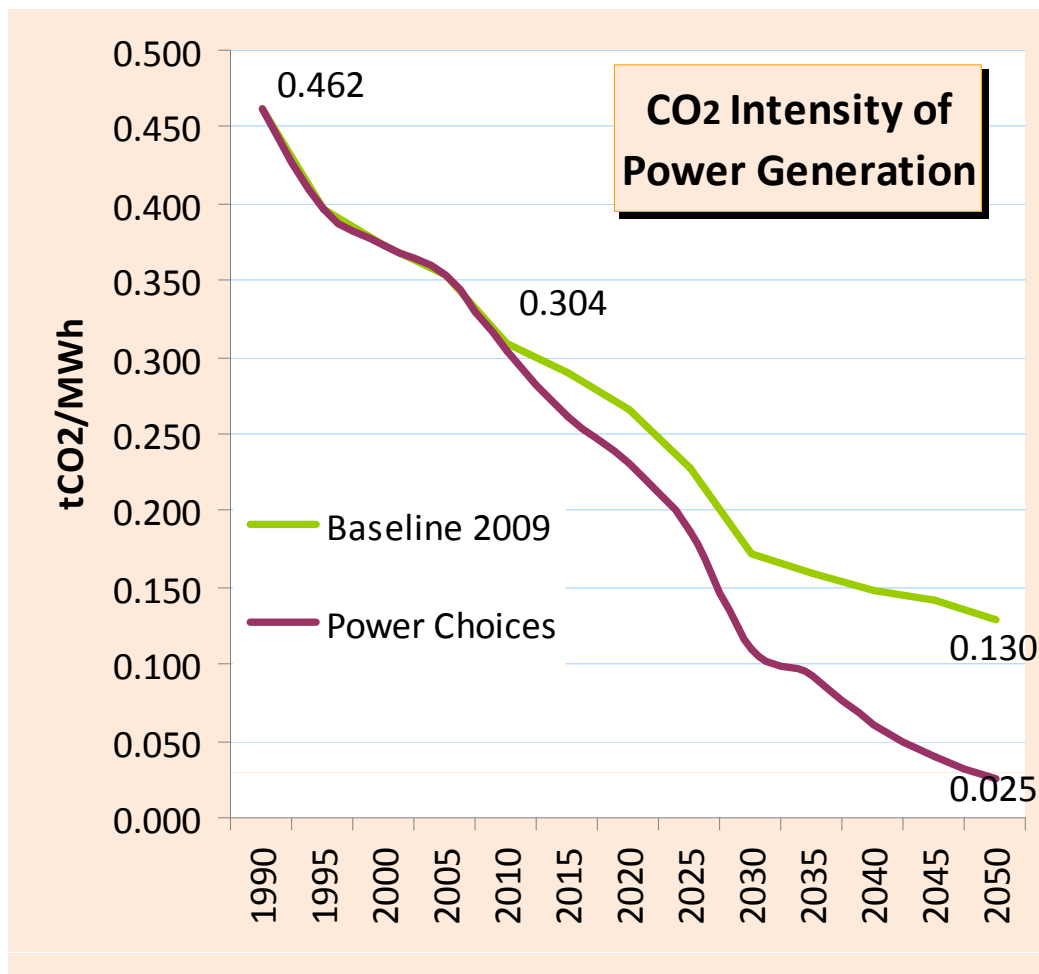
- A scenario showing a road map where electricity use with a low carbon mix contribute :
  - to reduce CO2 emissions
  - To reduce fossil energy dependency
  - in a cost effective way



Scenario results for 2030 (2005=100)	Baseline	Role of Electricity
<b>CO2 Emissions</b>	<b>110</b>	<b>70</b>
<b>Total Cost of Energy</b>	<b>146</b>	<b>147</b>
<b>Maximum Carbon Value</b>	<b>5</b>	<b>56</b>
<b>Oil&amp;Gas Import Dependency</b>	<b>126</b>	<b>105</b>



# “POWER CHOICES” : approach “ zero CO<sub>2</sub> emissions “ in 2050 for EU electricity generation (EURELECTRIC)



(From Eurelectric)



# EDF Group Carbon Strategy

Remain the lowest emitter (g CO<sub>2</sub>/kwh) among the major European energy utilities  
+ presently : remain under 150 gCO<sub>2</sub>/kwh

## Generation

« remaining the lowest CO<sub>2</sub> emitter among the major European energy utilities »

- Investing in nuclear energy and renewables (hydro, wind, photovoltaic, biomass...)
- Using high efficiency generating technologies
- Implementing R&D programs on low carbon technologies
- Developing « smart grids » and energy storage solutions

## Employees

Making our employees examples of "climate change ambassadors" and EDF Group strategy ambassadors

- By acting on private energy consumption and CO<sub>2</sub> emissions of our employees
- By developing motivation, education, training, and communication actions

## Managing investments

- Integrate carbon in the decision-making process

## Clients

Promoting eco-efficient end-use of electricity

- Innovative appliances and decentralised generation
- Demand side management
- Smart grids and smart meters

and investing in R&D for fuel displacement by low carbon electricity

- High temperature heat pumps
- Hybrids cars, electric cars

## Operational CO<sub>2</sub> emissions

Reduce our direct & indirect CO<sub>2</sub> emissions

- From our buildings
- From our cars
- Generated by transportation and purchase

## Managing CO<sub>2</sub> emissions

Managing carbon risk

- Carbon risk policy
- Compensation policy
- Carbon fund

## Carbon strategy and development strategies How to match them together ?

### **MAIN DRIVERS OF OUR EU CARBON STRATEGY**

- EU absolute targets issued from international agreements**
- 75% in 2050 in case of an international agreement**
- + our own commitments : a low CO2 profile**

### **The case of our existing fleets**

- Improving nominal efficiencies of the fossil fired plants**
- When decommissioning plants, replacing by lower emissions plants**
- Integrating CO2 price signal in the financial assessment of projects**

### **Changing the perimeter of the group (acquiring and/or changing shareholder value)**

- Possibility or not to induce further reductions**
- National energy policy contexts**

### **Increasing capacity on our fleets to meet increasing demand**

- Relying on low and free CO2 generation technologies**
- Examining carefully any fossil fired project (CCS expectations)**
- Integrating CO2 price signal in the decision**

# EDF group's carbon strategy and development strategy

- The development in Europe will be a combination of
  - Evolution of our existing fleets
  - Changing the perimeter of the group (acquiring and/or changing share into a company)
  - Increasing capacity on our fleets to meet increasing demand
- Impact has to be measured regarding absolute and specific emissions
- Compatibility with EDF ambition will be assessed regarding
  - National energy policy contexts
  - Position of the project regarding this context
  - Contribution to the Group emissions
  - Profitability and carbon risk ( integrating CO2 price signal in the financial assessment)

## Concluding remarks

- ▶ Climate change challenge is becoming an important driver of the economic activity
  - Mitigation issues such as « carbon » constraints has to be included in any long term strategy
  - But there are raising questions (adaptation and social issues)
  
- ▶ Anticipation of strong regulatory approaches through setting internal targets can help our Group, and this is possibly the case for others, to adapt more quickly to the new context :

It is one of EDF Group commitment to sustainable development