

The French Energy Savings Certificates Scheme

ADEME - Agency for Environment and Energy Management

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Part I : Principles and design issues

Part II : Results and experiences from the first period (2006-2009)

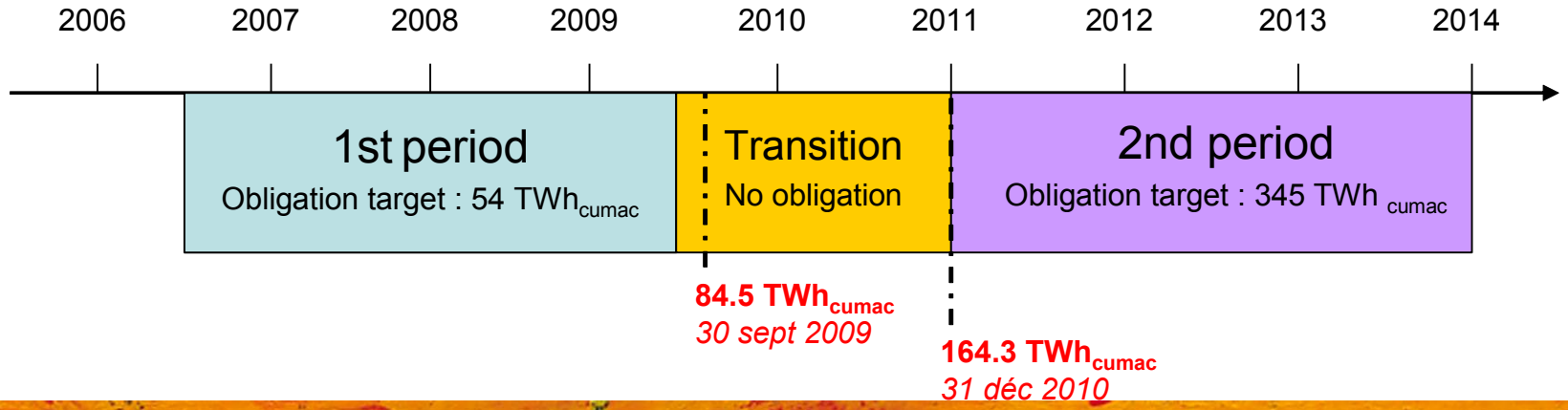
Part III : conclusions , Lessons learnt



Part I : Principles and design issues

Introduction

- The French Energy Savings Certificates (ESC) Scheme set by the 13th July 2005 law on French Energy Strategy
  - Main objective : to reach the diffuse potential sources of energy savings, especially in existing buildings
  - An obligation of energy savings is set on energy suppliers in proportion of their sales for a 3 year period
- Start in July 2006 for 3 years: a first « training » period / low target
- A second period more ambitious : 2011-2013





The Players of the French ESC Scheme

- The ministry in charge of Energy (MEDDTL / DGEC Energy Climate department)
  - Sets the rules and the obligation,
  - Attributes the Energy Savings Certificates and controls the projects.

- ATEE (Energy Environment Technical Association)
  - Plateform gathering economical actors involved in the energy savings market (energy suppliers, manufacturers, retailers…) -> defending the energy suppliers' interests
  - Makes proposals to ministry for new standardized actions

- ADEME (Agency for Environment and Energy Management)
  - « Back office » of the ministry : technical analysis and expertise, evaluation
  - Information campaign to public bodies and companies

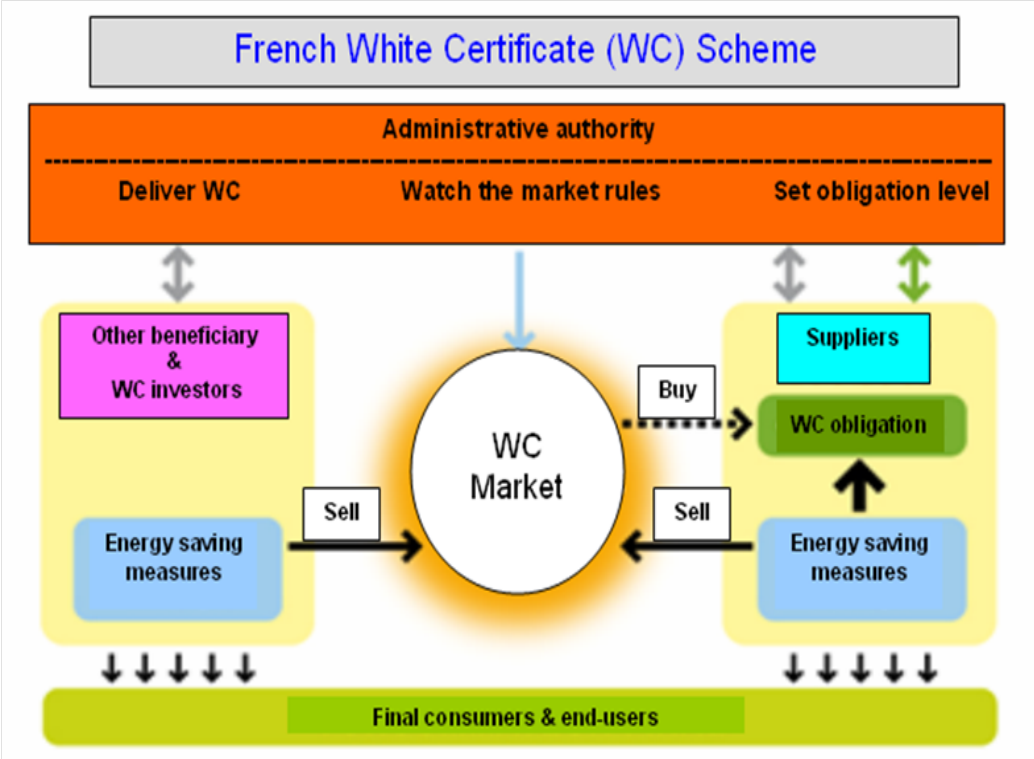
- The « Obliged » Bodies

- The « Eligible » parties

The « obliged bodies » (1/4)

- Energy savings obligations imposed on energy suppliers, because of their regular links with the diffuse final consumers

- Involve energy suppliers in energy savings measures and investments for their customers -> to target small consumers





The « obliged bodies » (2/4)

- **First period** : an obligation of **54 « TWh cumac »**
- ESC concerns every energy supplier whose sales exceed (final energy):
  - Electricity, natural gas : 400 GWh/year
  - Liquefied petroleum gas : 100 GWh/year
  - Heating / cooling : 400 GWh/year
  - Heating oil : 500 m3/year
- Around 2 500 companies concerned :
  - A few dozen large companies (electricity, gaz, LPG, heating / cooling)
  - A large number of small and medium size heating oil suppliers
- **Second period** : new target of **345 TWh cumac** (X 6)

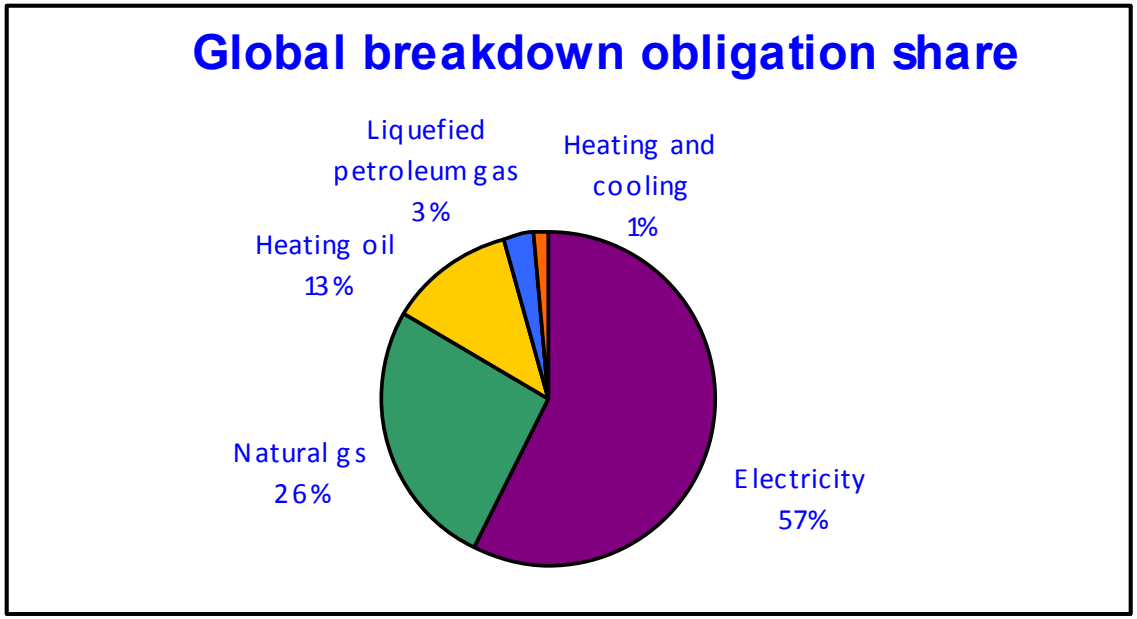
  New obliged companies : about 50 motor fuel suppliers

  (mass retailers like « Auchan » and petroleum companies lke « Total »)
  - Liquefied petroleum gas : 7 000 t/year
  - Motor fuel : 7 000 m3 / year

  Excluded : domestic fuel distributors (< 500 m3)l

The « obliged bodies » (3/4)

The **individual obligation** calculated **on the basis of the energy market share** to residential and commercial buildings.



- The two first obliged companies account for 80% of the overall obligation : EDF (Electricité de France) and GDF (Gaz de France)

The « obliged bodies » (4/4)

The Obligation is quantified in « kWh cumac » , a specific measurement unit

1 GWh cumac = 1 million of kWh cumac ; 1 TWh cumac = 1 billion of kWh cumac

- If energy suppliers do NOT fulfill their obligations,
  they have to pay a **penalty of 2 c€/kWh cumac** (global financial risk) :
  - **54 TWh cumac (1st period obligations) <-> 1 billion € penalty**
  - **345 TWh cumac (2nd period obligations) <-> 7 billion € penalty**

- The law provide for the possibility to pass the costs on to prices for regulated tariffs -> never done at this time

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- **3 Options for the energy suppliers:**
  - **Implement energy savings programs (at their customers)**
  - **Trade (buy) certificates (on the "ESC market")**
  - **Pay the penalty**

The eligible actions (1/2)

- **« Eligible actions »** = energy efficiency measures which generate ESC
- Energy Savings Certificates (ESC) are delivered for actions referenced in an official list of 210 « standardized action worksheets» with predetermined savings targets (savings are estimated ex-ante through a standard methodology)

Sector	Nb of stand. actions	Operations
Residential Buildings	65	Building insulation, heating, production of hot water, lighting, household appliances, ventilation, etc
Commercial buildings	85	Building insulation, heating, production of hot water, lighting, ventilation, etc
Industry	26	Lighting, electric utilities (motors, compressors), heat recovery, etc
Transport	16	Eco-driving formation, green tyres, freight case mobile for rail-road combined transport, etc
Agriculture	7	Milk pre-coolant, electric utilities (motors, …), etc
Systems	11	Heating systems, public lighting, etc



The eligible actions (2/2)

- Calculation rules of the « kWh cumac »,
  - the energy savings are calculated in end-use energy, cumulated over the lifetime of the project and discounted, with a rate set at 4%
  - the baseline is the stock (heating systems and buildings enveloppe actions) or the market (for other actions)
    - *Examples :*
      - Low - energy light bulb : 190 kWh cumac
      - Loft insulation : 660 to 1 900 kWh cumac per sq.m of installed insulation
      - Condensing boiler : 65 000 to 100 000 kWh cumac
- ESC are delivered after the achievement of the action
  - Standardized action worksheets are available on the Ministry website : *http://www.developpement-durable.gouv.fr/Les-Fiches-d-operations.html*
- Non standard actions could be proposed (2% of the ESC delivered)

The « eligible parties »

- **« Eligible parties »** can also implement actions, acquire ESC and sell them to « obliged bodies », without having any obligation
- Concretely, the « eligible parties » are (2nd period):
  - **Local authorities** for actions on their own buildings or toward third bodies belonging to their territory
  - The **National Agency for Housing** (ANAH)
  - Social housing agencies or **social landlords**
- Large companies were eligible in the 1st period, only for actions on their own building, process or site; they are no longer eligible in the 2nd period (but they can continue to develop energy efficiency actions in the framework of partnerships with obliged bodies)
- A free trade market between ESC buyers and sellers, on the register EMMY (ww.emmy.fr)

How to claim Energy Saving Certificates ?

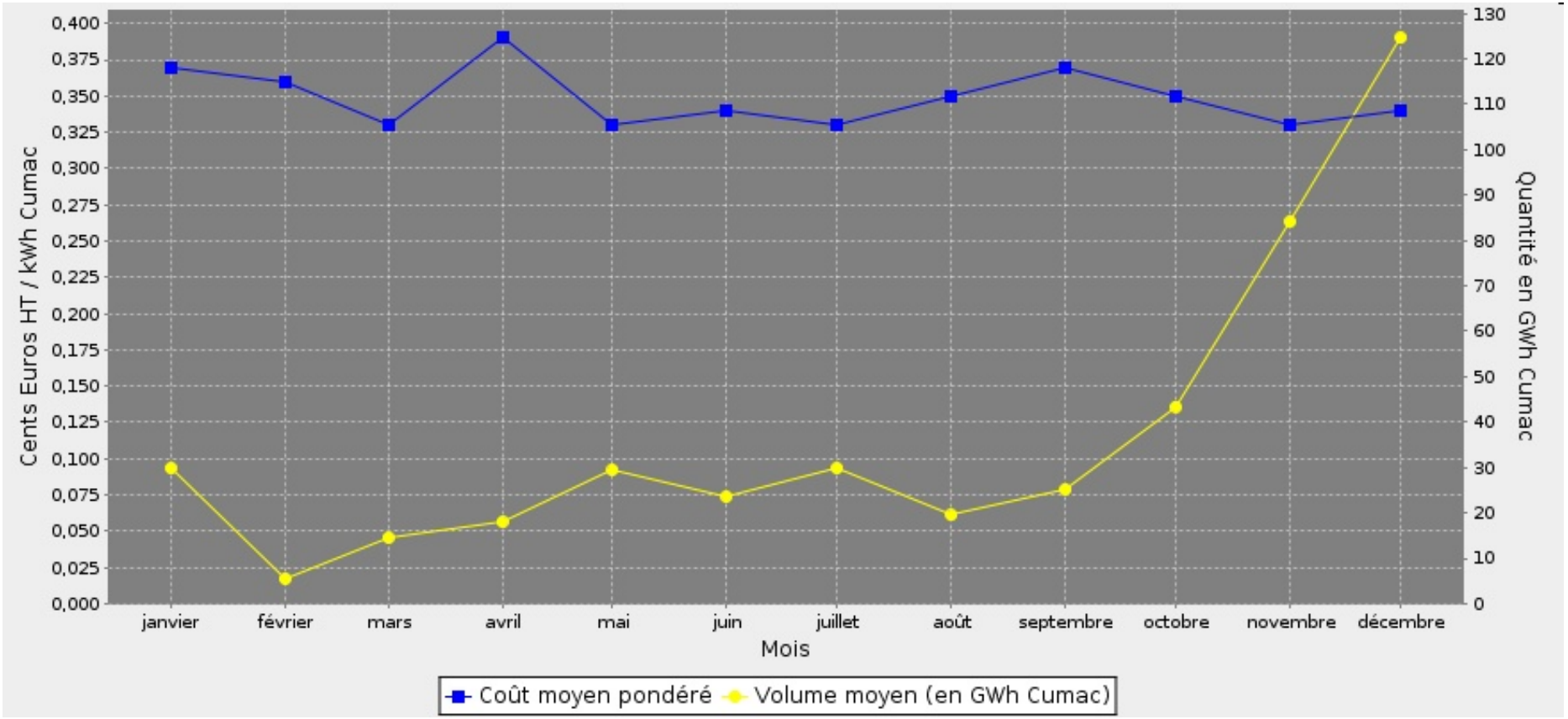
A summary

- The realized operation must fulfill all the requirements of the standardized action worksheet to become eligible to ESC
  (minimum level of performance, equipment certification, …)
- The local state administration (« DREAL ») attributes the ESC and controls the projects.
- The allocation of ESC is done through the electronic registry named “Emmy”
- ESC are definitly attributed after the achievement of the action
- In october 2011, creation of a “National coordination Unit for ESC” to simplify the attribution of all ESC, controls and sanctions.

The register Emmy (1/2)

- It is the registration tool of ESC attributed by the administration to obliged and eligible parties (www.emmy.fr)
- Each ESC owner has his own electronic account
- At the end of the obligation period, each obliged supplier must have on its account the amount of ESC required by the administration
- The register is also the way to exhange ESC :
  - Each account's owner can declare himself « buyer » or « seller » and have access to the list of others buyers and sellers
  - The negotiation on the price's sell is given by mutual agreement
  - The exchange is realised by an order between the two accounts
- **First period : a weak market (less than 3% of ESC traded) and low price of certificates : between 0,30 and 0.35 c €/kWh cumac**

The register Emmy (2/2)



Evolution of the price on the market in 2010 (in blue)

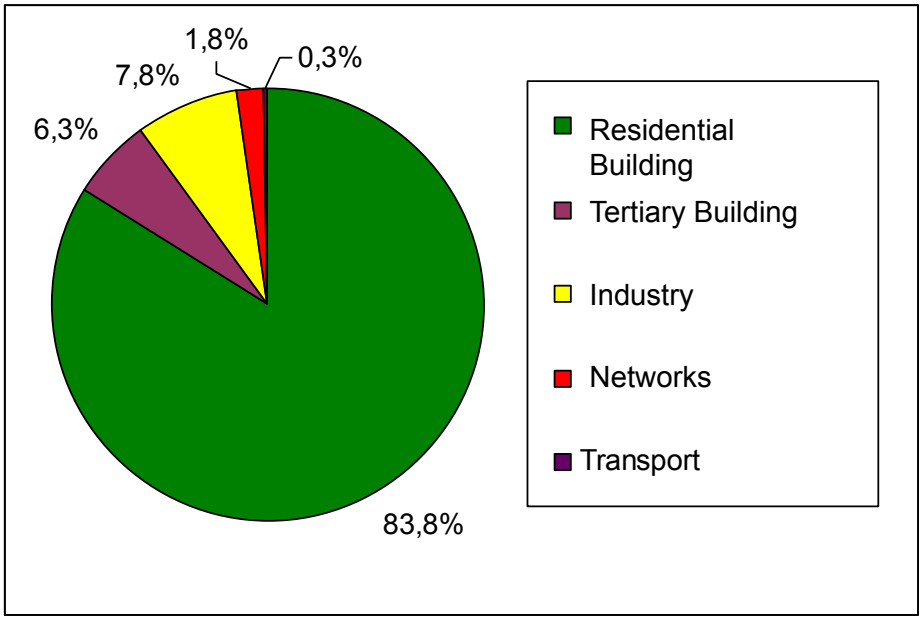


Part II : Results and experiences from the first period (2006-2009)

Quantitative results

- **First period target *(July 2006 – June 2009)*:** 54 TWh cumac ;
- **30th june 2009 (end of the 1st period) :** 65,2 TWh cumac delivered**.**

---> Target widely overtaken



- 83,8% of operations in residential building ;
- 72,3% of operations in heating (boilers, heat pumps, etc.).

Operations	*% WhC(s) delivered*
Heating	***72,3%***
Insulation	***14,4%***
Industry	***5,6%***
Others	***7,8%***

Source : DGEC (French Energy Department)

Costs analysis (1/2)

- **Estimated costs for consumers :**
  - 3,9 billions € invested by consumers**, of which 1,3 Mds € of tax credit ;**
  - **energy bill reduction for consumers : 4,3 billions €.**
- **Estimated costs for obliged subjects (energy suppliers) :**
  - 210 millions €, **about** 0,39 c€ / kWh cumac **(far below penalty : 2 c€ / kWh cumac)**
  - **64% of indirect costs : human resources, partnerships, marketing, administration ;**
  - **36% of direct costs : benefits for customers (subsidy, subsidied loan).**

Main part of costs supported by households

Complementary tax credit available on most equipments

	Coûts directs Direct costs	Coûts indirects Indirect costs	TOTAL	
Obligés Obliged subjects	74	136	**210**	*5%*
Consommateurs Consumers	2 551		**2 551**	*63%*
Coûts fiscaux Tax cost	1 305		**1 305**	*32%*
TOTAL	**3 930**	**136**	**4 066**	*100%*
	97%	*3%*	*100%*	

Source : Study ADEME-CIRED « costs and benefits of white certificates schemes », 2009



Costs analysis (2/2)

But are the energy savings additionnal ?

Would renovation works happen without the scheme ?

- The tax credit supports the demand and is the real economical trigger

- The ESC Scheme helps the supply to develop and structure the scheme, makes the promotion of the tax credit

➡ To date, mechanisms are more complementary than additionnal

Environmental impacts analysis

- Impact on final energy consumption :
  - **7,77 TWh/year of Energy savings** ;
    - ***about 0,95% of French building consumption (residential-tertiary)***.
- Impact on GHG emissions :
  - **1,83 MtCO2 avoided per year**, (equivalent to the annual emissions of 1 million vehicles) ;
    - ***about 1,3% of residential and tertiary sector emissions***.
- Estimation of renovations number :
  - 550 000 replacements of heating systems (boilers, heat pumps, …) ;
  - 340 000 insulation works (270 000 about fenestrations and portals, 70 000 about opaque surfaces : lofts, roofs, walls, etc.).

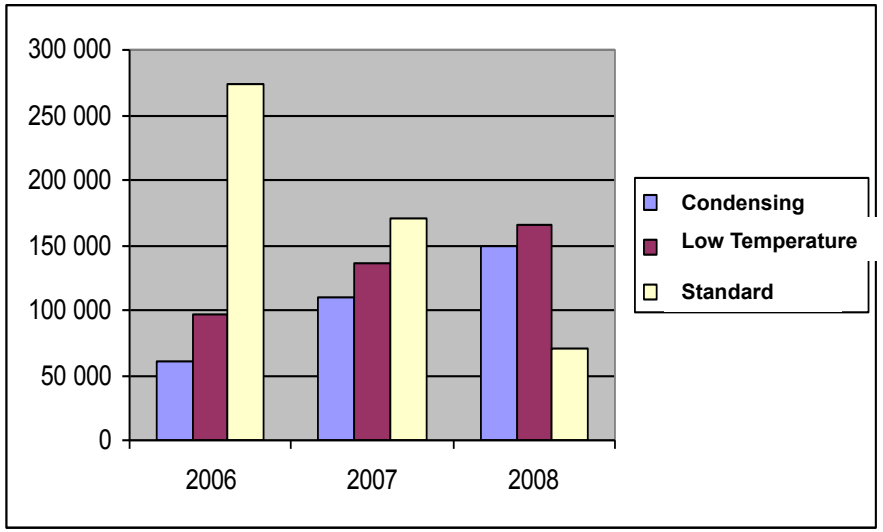
Methodology of assessment : A mix of Top/Down and Bottom/Up methods :

- Top / down because of ex ante evaluation of energy savings in standardized actions
- Bottom / Up because of real data (operations numbers)

Source : ADEME assessment (French Agency for Energy Management and Environment)

Benefits for the Energy sector & consumers

- A process to create and publicize the official list of standardized actions ensuring quality actions :
  - an increased visibility and credibility (quality criteria, high-quality level) ;
  - a consultation process (ATEE, ADEME, Energy Ministry) : consensus on values ;
  - an opportunity for stakeholders to share their experiences about evaluating energy savings.
- Intesresting structural effects on markets :
  - evolution of EE market **(e.g : boilers) ;**
  - integration of EE in the marketing strategy **of obliged energy suppliers.**
- Increasing of the professional awareness on best pratices for EE actions :
  - trainings of renovation workers can be rewarded by ESC ;
  - development of certified equipments ;
  - professionalization of the actors (certification).



Boilers market evolution in existing residential dwelling
Source : OPEN Survey (ADEME 2009)

Will improve the results of the energy efficiency policies on long term



Conclusions

Part III : Lessons learnt and evolutions for the second period (2011-2013)



The Changes for the 2nd period

- A new target more ambitious (345 TWh cumac, x 6,4 / first period).
- New obliged actors & new strategies : the motor fuel suppliers (supermarket chains versus oil companies).
- Development of new transport standardized energy saving actions :
  - actions already in the scheme : eco-driving formation, green tyres, car sharing;
  - new actions : freight case mobile for rail-road combined transport, river transport equipments, mobility plan for administration or enterprise, PAYD contract, inflating of tyres, ... (to be defined)

Lessons learnt so far : simplify the scheme …

- For the most common energy saving actions, definition of official standardized energy saving measures worksheets :
  - these worksheets have proved to be an efficient way to encourage actions and to limit transaction costs ;
  - for measures not covered by worksheets (i. e. specific measures), development of a guide of recommendations to help the obliged and voluntary subjects.
- Energy suppliers are free to reach their objectives (in all sectors : industry, buildings, …) and ability to freely trade certificates
- Ability for energy suppliers to transfer their obligation into collective structures
- Under certain conditions, ex post control is possible (justificatory documents are not provided to the administrative authority but made available at its request in case of control)
- Restriction on the obligation: threshold of 20 GWh cumac mini for ESC dossier, and on the number of obliged or eligible bodies.



… whithout reducing its efficiency and its security.

- To get certificates, the obliged or voluntary bodies must prove :
  - the reality of the energy saving action (invoices) ;
  - for the 2nd period period, his pro-active pro-active contribution in the achievment of the energy saving action (audit, incentives).

- For the 2nd period, several clauses have been set to reduce the probability of double counts, (the energy consumer and the ESC owner must co-sign the ESC invoice).

- For the 2nd period, the time limit between the end of the energy saving action and the request of certificates is reduced to one year (no time limit during the 1st period).



Thank you for your attention

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