



## CASE STUDY IMPLEMENTATION OF THE F-GAS REGULATION IN FRANCE

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### Background

Since 1992, France has a decree in place requiring the official registration of all persons handling chlorinated and fluorinated refrigerants, CFCs, HCFCs and HFCs, with an obligation to complete a maintenance and recovery report for all equipment containing more than 2kg of refrigerant.

In 1993, a voluntary agreement between producers, distributors, the *Association Française du Froid* and public institutions established a system for the recovery of refrigerants. To finance the scheme, a clearly visible, per kg rate is applied to the sale of refrigerants by distributors and producers and a subsidy is paid to the operator once the refrigerant is returned to the distributor. Already by 1995, the system allowed 500 tonnes of refrigerant to be recovered annually. By 2011, this figure stood at approximately 1000 tonnes. A study carried out in 2010 by the CE&P of the *Ecole des Mines*<sup>1</sup>, financed by the AFCE and ADEME<sup>2</sup>, anticipates that this could rise to a maximum potential of just under 3000 tonnes per year by 2015.

*Recovery of refrigerants from 2001 to 2011 in tons:*<sup>3</sup>

RECOVERY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
CFC	250	167.1	350	220	95	90	85	60	60	60	32
HCFC	228	319.1	340	350	450	475	500	550	660	690	960
<b>TOTAL</b>	<b>478</b>	<b>486.2</b>	<b>690</b>	<b>570</b>	<b>545</b>	<b>565</b>	<b>585</b>	<b>610</b>	<b>720</b>	<b>750</b>	<b>992</b>

### Implementation of EU Regulation 842/2006

EU Regulation 842/2006 is implemented in France by Decree 2007-737 of 7 May 2007, with certain complementary measures specific to France:

- All obligations of Regulation 842/2006 apply to multibloc equipment containing more than 2kg rather than 3kg of refrigerant;
- Certification is carried out at two levels: businesses (certificate of capacity) and personnel (certificate of capability);
- The verification that certified businesses possess the necessary materials for the handling of refrigerants and the detection of leaks, as well as a register of the movements of fluorinated refrigerants classified by type, is carried out by Authorised Agencies;
- Distributors and wholesalers of fluorinated refrigerants can only sell them to businesses which have a certificate of capacity;
- The movement of all refrigerants, including the quantities of gas sold and the list of buyers, is recorded by operators and declared to the Authorised Agencies (AAs). The AAs, in cooperation with the distributors and producers, then declare them annually to the Refrigerant Observatory (*l'Observatoire des Fluides Frigorigènes – OFF*), supervised by the ADEME<sup>2</sup>.

<sup>1</sup> The Centre of Energy and Processes at the *Ecole des Mines*, one of France's most prominent schools of engineering

<sup>2</sup> Agency for the Environment and Energy Conservation, under the authority of the Ministry of Ecology

<sup>3</sup> Data provided by Air-conditioning and Refrigeration European Association (AREA)/Syndicat National des Entreprises du Froid, d'Équipements de Cuisines Professionnelles et du Conditionnement de l'Air (SNEFCCA)



Since 2008, AAs are authorised by the MEDDTL<sup>4</sup> to issue a **certificate of capacity** to businesses which handle refrigerants according to the conditions laid down in Regulation 842/2006. There are currently 10 AAs in existence, which by 5 July 2011 had certified 12500 cooling and stationary air-conditioning businesses and 18000 automobile air-conditioning businesses.

Since 2010, 3 Certifying Agencies are charged with certifying the Evaluation Agencies, who set examinations for all personnel handling refrigerants and issue them a **certificate of capability**, in line with Regulation 303-2008 (stationary refrigeration) and 307-2008 (automobile air-conditioning). To do so, the Evaluation Agencies have almost all created specific training modules according to the different categories of businesses seeking certification of capacity:

- Cat I All activities in stationary refrigeration for equipment with > 2kg of refrigerant (e.g. air-conditioning of ships, boats, tramways, aeroplanes and refrigeration in trucks).
- Cat II All activities in stationary refrigeration for equipment with < 2kg of refrigerant
- Car III Recovery of refrigerant for equipment with < 2kg of refrigerant (Refrigeration and Air Conditioning or Heat Pumps)
- Cat IV Leak inspection/detection
- Cat V Automobile air-conditioning (covering cars, buses, trucks and any other vehicles mentioned in article R. 311-1 of the French vehicle code)

On 5 July 2011, a total of 72200 individuals had acquired their certificate of capability: 26000 in stationary refrigeration and 46000 in automobile air-conditioning. This is out of an estimated potential total of 35000-40000 in stationary refrigeration and approximately 80000 in automobile air conditioning. A financial aid programme aimed at regulatory training for small businesses started in 2011 to help them achieve certification of capability; this could eventually impact close to 10000 people.

The cost of the certificate of capacity is estimated at an average of between €1000 and €2000 (every 5 years) and the certificate of capability (one-off) between €500 and €3000 depending on the initial level of knowledge of the person being certified. The ministry of education as well as private schools are currently integrating all relevant material into their programmes to enable them to issue certificates of capability to all their graduates; this will be in place by 2012-2015.

A report from Armines highlighted the need to review the 1993 convention on the recovery of refrigerants which, because of regulatory developments, no longer meets the more recent requirements. At the request of the MEDDTL, a specific Working Group representing all relevant actors was created by the AFF and the AFCE to put the new mechanism in place. The new system will be created in 2012 via a MEDDTL regulation and should be transparent, proactive and properly authorised, as well as being compatible with the WEEE and End of Life Vehicles Directives.

To supplement the French regulatory mechanism, a decree due to be issued in 2012 will also limit the sale of pre-charged multibloc equipment only to certified companies or to those having contracted the installation and commissioning of equipment to a certified company. This is significant as it aims to close some of the loopholes in the current provisions. The certification, audit process and training of operatives represent significant costs for contractors, however, pre-charged multibloc equipment and pre-charged monobloc equipment containing more than 2 kg of refrigerant are sold in supermarkets, and refrigerants are sold freely online without regard to the regulation. In

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<sup>4</sup> Ministry in charge of Ecology



addition, non-certified French companies based near the border with other EU Member States can buy refrigerants there, since distributors in these countries are not obliged to ask buyers for their certification.

### **Declarations and records**

Since 2009, the Refrigerant Observatory (OFF) of the ADEME is publishing a report on the declarations of commercialisation, handling and recovery of refrigerants, based on information from operators, Authorised Agencies and producers/distributors. This report will begin to be useable by 2012. Nevertheless, only the data published annually since 1998 by the CE&P of the *Ecole des Mines* on the stocks of refrigerants will allow the effectiveness of confinement to date to be measured. The rapid increase in the HFC bank is due to the replacement of CFCs and HCFCs as well as the rise in the number of heat pumps which are replacing heating systems. This increase partially obscures how effective F-gas is, as measured by the volume of emissions from the refrigerant. Thanks to these declarations, a first tendency towards a lowering of emissions is already visible, but will only be measured and confirmed in 2014-15.

In choosing a refrigerant, energy efficiency should be taken into account to verify that the choice does indeed lead to a reduction in global emissions (TEWI<sup>5</sup>) from cooling and air-conditioning equipment, taking into account both direct emissions (from the refrigerant) and indirect emissions (from the CO<sub>2</sub> associated with the electricity consumption of the equipment).

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<sup>5</sup> Total Equivalent Warming Impact