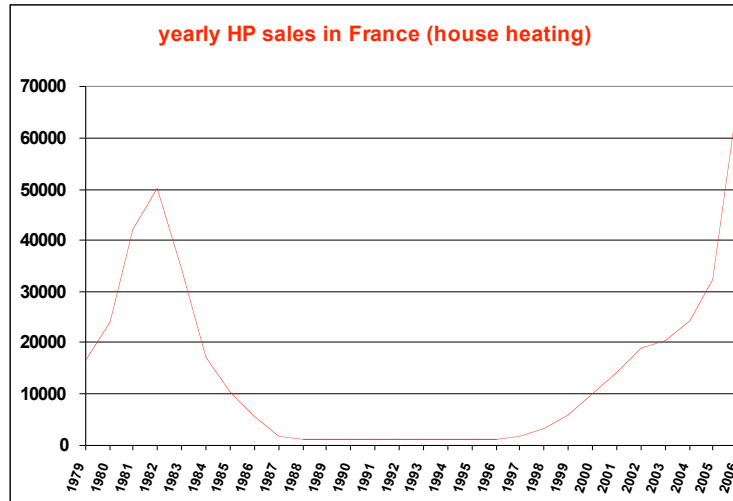


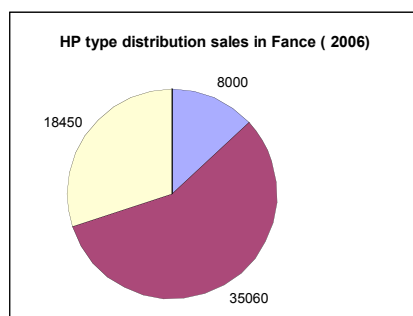
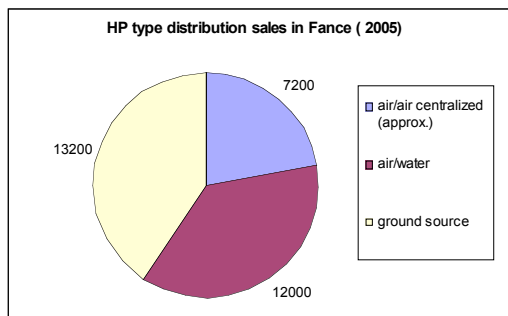
HP French market : past evolution



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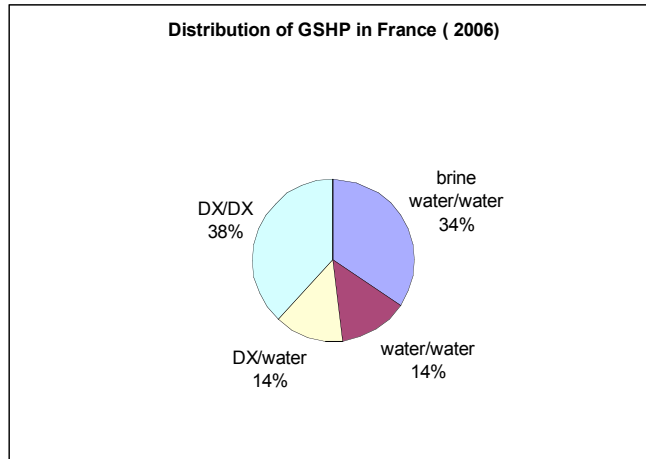
HP French market : recent tendencies



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HP French market : GSHP distribution



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HP quality improvement in France

- Foundation in 2002 of AFPAC (French Heat Pump Association). Many kinds of members :
 - Manufacturers and manufacturers unions
 - Installers unions
 - Technical centres
 - Energy companies and agencies
 - French energy agency
 - Small building design offices
 - Technical Associations



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HP quality improvement in France

- Main goals of AFPAC :
 - Technical exchanges between members to improve the performances of HP in France
 - Facilitate exchanges with external entities (France and Europe)
 - Promote the development of PAC (communication, lobbying,..)
 - Participation to international Working Group on standards



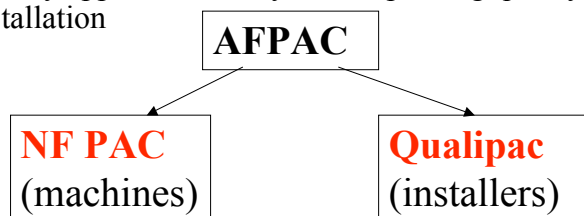
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HP quality improvement in France

- Positive perception of customers (92%) in individual houses, but 30% encountered problems during the first 2 years .

→ Quality approach : 2 ways for improving quality installation



→ Launch in 2007, April, with help of ADEME (French government energy and environment agency)

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HP quality improvement in France

- → **NF PAC** : a certification standard, registered trademark “NF”, for HP machines , elaborated within AFPAC, AFAQ-AFNOR Certification and Cetiati, that includes, among other :
 - mandatory tests , according EN 14511 (nominal points) by an company accredited by COFRAC or accreditation body of E.A.(European co-operation for Accreditation)
 - Min COP required according types of HP
 - Max thermal power : 50 kW
 - Requirements on control during of manufacturing process (ISO 9001:2000), with random control by Certita (subsidiary of AFAQ-AFNOR)



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HP quality improvement in France

- → **Qualipac** : a Quality Chart for HP installers (*), elaborated within AFPAC and particularly installers unions that includes :
 - 10 commitments for installers (answer time to customer request, advises, commissioning, customer thermal assessment, guarantee, system hand over, maintenance contract...),
 - Mandatory training and exam (according EUCERT) for at least one of the employee of the installer company
 - Random yearly control (1 out of 25) of achieved installation by an external independent control body according an AFPAC standard
- (*) considered as company, and not as person



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HP quality improvement in France

And furthermore :

- a Quality Chart focused on drilling companies for HP vertical collectors
- Launched in 2002 by BRGM, EDF and ADEME
- ~ 60 drillers
- the company commits on drilling procedure (collector length design, hole filling,....) and documents supplying (type of collector, lithographic section, ...)
- ...short term : strengthen procedure control



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HP market : national helps

- HP is not yet considered as a renewable energy source by French government
- Nevertheless, as for other RES, national subsidies are existing:
 - For customers : **reduction on income taxes** , equal to 50% of the HP machine price only (if installed by a professional and COP mini), **up to 8000 €** (for a couple ; and a little bit more if children , and only for main dwelling)
 - from ANAH (French Agency for house renovating) : according cases (incomes,..) , some subsidies + grants : 900€ for A/W and 1800 € for GSHP
 - From EDF : loan with low rate



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HP : work program of AFPAC in future

- In short term (2007)
 - To make all effort so that recently launched Quality Approach) become a success.
 - **NFPAC** : ~15 manufacturers
 - **Qualipac** : 200 to 400 installers
 - To increase new members in present scope (ex: new professional unions) ,and extending scope of members like professional distributors
 - Work on HP standards for hot sanitary water (recent emerging market in France)



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HP : work program of AFPAC in future

- In a long term
 - Increasing **NFPAC** manufacturers
 - Increasing **Qualipac** installers numbers by, among other, increasing training centres number spread over France (presently 5 training centres)
 - According to success of Quality Approach, shift toward a certification recognized by French government
 - Extending AFPAC interest to more powerful HP for collective dwelling building and tertiary sector.



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