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Qualitative assessment of direct fiscal measures

Study of the French case Focus groups with installers



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I. Context and Objectives

1. Context and features of the tax measure

Tax credit is allotted to the owners, tenants or occupants on a purely free basis, if they undertake certain work between January 1, 2005 and December 31, 2009.

Work must be done in the main residence (new or old housing, according to the equipment concerned) by professional companies. As proof, the tax authorities require the invoices of the companies having completed work or a certificate provided by the seller or the manufacturer in the case of new housing.

If they exceed the tax due by the taxpayer, these tax credits are refunded them by the Treasury.

1.1. Tax credit in favour of sustainable development

The equipment concerned is fixed in the list published by decree and represented in article 18bis of appendix IV at the General Tax Code (for detail visit the www.legifrance.gouv.fr website)

Actually, the concerned equipment of energy production using a renewable energy source, whenever the date of completion of housing is, is the following:

- Equipment of hot water heating or hot water functioning with solar energy and equipped with solar collectors certified by CSTBat, Solar Keymark or equivalent,
- Equipment of heating or hot water production functioning with wood or other biomass which energy efficiency must be equal or higher than 65%, according to the references of the standards in force, like the boilers (other eligible equipments than low temperature boilers and boilers with condensation), which power is lower than 300 kW and meeting requirements of standards NF EN 303.5 or 12.809.

1.2. Amount of the tax credit in favour of sustainable development

- 50% of the cost of the equipment of energy production using a renewable energy source
- It is granted within the limit of a multiannual expenditure (period going on from the 01/01/2005 to the 31/12/2009) of 8.000 € (unmarried) or 16.000 € (couple). These amounts of maximum expenditure will increase by 400 € per dependant.

- Only the price of acquisition of the equipment is retained for the calculation of the tax credit; in the invoice or the certificate which is given must be clearly mentioned the price of this equipment as well as its performance characteristics.
- Three technologies of renewable can profit from the tax credit: solar thermal, wood energy and geothermal.

2. Methodology

Three focus groups of installers of renewable solutions (solar thermal, wood energy and geothermal heat pump) were recruited following common recruitment criteria. They met:

- ✓ On February 11, 2008 in Marseille, Provence (Group wood energy and solar thermal group)
- ✓ On 15 February in Paris (group geothermal heat pump)

2.1. The content and the types of groups

Wood energy group

firstname	job title	working in the company since	activities of company	number of installations for the concerned technology
Jean-Louis	manager	1998	WE	>5
Christian	manager	2001	WE, ST	8
Hervé	manager		WE, ST	5
Marc	manager	2004	WE, ST	6
Guy	manager	2005	WE	12
Frédéric	manager	2006	WE, ST	15
Thierry	manager	2005	WE, ST	6
Francis	manager	2004	WE, ST	5

Solar thermal group

first name	job title	working in the company since	activities of company	number of installations for the concerned technology
René	manager	1981	ST, WE, GHP	300
Bernard	manager	2003	ST	75
Jean-Michel	manager	2004	ST	175
Frederic	manager	2006	ST	20
Fabien	manager	2003	ST	60
Christophe	manager	1986	ST	>500
Jean-Louis	manager	2003	ST	>60

Geothermal heating pump

first name	job title	working in the company since	activities of company	number of installations for the concerned technology
Franck	Manager	2005	HP/GHP	>20
Marc	Manager	2006	HP/GHP	10
Isabelle	Manager	2006	HP/GHP	40
Bruno	Manager	before 2003	HP/GHP	150
Richard	Manager	before 2005	HP/GHP	>300
Jean-François	Manager	2007	HP/GHP	10
Laurent	Manager	2006	HP/GHP	8

Concerning the homogeneity of the groups, the wood energy seems to be the most consistent, from the point of view of the professional experience and the number of installations, knowing that the industry has seen its development in PACA essentially since 2000.

The group of installers of geothermal heat pump (GHP) shows very different situations in terms of the number of installations: installers, representatives of contractor channel or of manufacturers took part in this group.

It is interesting to note that, having various age and diverse experience (activity dating from 1981 to 2006) and also representatives of various numbers of installations (from 20 to more than 500) in the last three years (requirement by the recruitment questionnaire), the group of solar thermal seems to be the most disparate. Although, as will be shown later, this very multiprofile group will have, in general, an identical judgement on the issues of tax credit.

2.2. The recruitment procedure

Installers were recruited according to common criteria , the number of installations of renewable during the last 3 years, as the main criteria (with minimum 10 in 3 years for solar thermal and with minimum 5 in 3 years for wood energy and geothermal heat pump).

The recruitment took place mainly by telephone, with a few mail exchanges, given the difficulty of reaching representatives of this profession.

Given that several installers corresponding to the criteria of recruitment and invited to the meeting were too busy, the search was spread through the information provided by the WEB.... In general, for the recruitment of wood and solar thermal installers, the list Qualibois and Qualisol available on the Qualit'ENR association's website, has been studied closely. Concerning installers of geothermal heat pump, the list of the association AFPAC, , has been exploited as well as some other lists from the web.

2.3. Regional element can be interesting to note

Concerning the number of equipments, the approved installers “Qualisol” are 12690 at the national level, including 1382 in PACA, where the meeting was held.

Concerning the professionals approved “Qualibois”, this quality control mark gathers today 778 companies, including only 26 companies in PACA.

Regarding the installers of geothermal heat pump, it was impossible to quantify the number of professionals exactly. The official list of the AFPAC mentions only 169 installers in mid-March 2008, the majority of which is not geothermal. Only 12 qualified installers relate to the area of Ile-de-France.

II. Contexts according to the technologies

Two of three groups (solar thermal energy and wood) met in the PACA region (Provence), which sits in a nice context of subsidies: the region and some departments abound national tax credit by direct subsidies to owners, which would facilitate a logical progression of the market ... The sunshine, in support of solar installations, can cover about 70% of the needs of hot water and heating. For the solar thermal, the additional subsidies (region, communities, departments /for example, a system of subsidies is very structured in the Department of Alps Maritimes, 06/) play an extremely important part in the decision. Thus, in addition to the 700 € of the PACA region, the direct subsidies are the following:

For a solar hot water

CG Alpes-de-Haute-Provence : 350 €
CG Hautes-Alpes : 300 €
CG Alpes-Maritimes :50% of equipment
CG Vaucluse : 350 €
Cté du pays d'Aubagne : 400€
Cté de Pays d'Aix : 350 €
Gémenos : 10% net of tax, ceiling 500 €
Orange : 350 €

For a combined solar system

CG Alpes-de-Haute-Provence : 1500 €
CG Hautes-Alpes : 1200 €
CG Alpes-Maritimes : 50% of equipment
Cté du pays d'Aubagne : 1150€
Cté de Pays d'Aix : 500 €
Gémenos : 10% net of tax, ceiling 500 €

Nevertheless, in PACA, the market for solar thermal is loosing stamina.

Almost all installers have had the obligation to diversify their activity towards GHP, PV. Solar thermal is not enough anymore to make a decent living. Because of the very good market in 2004 and 2005 incredible number of plumbers have become solar installers. Even if the market was good until 2006, this was not felt by individual installers who declare 2006 and 2007 as bad years.

Concerning wood energy subsidies in PACA, in addition to the tax credit, the subsidies for the private consumer represent only 100 € for buying wood logs to a certified seller. The automatic wood boilers are subsidized up to 70% with ceiling, according to the statute of the building owner (among the subsidies represents the sum between the regional subsidy & ADEME & Departments). But in spite of the weakness of the complementary subsidies, for this sector, the trend is increasing. Pellets have appeared. Some installers have organised the distribution of pellets in order to be able to offer their clients the possibility to sign a long term contract for the pellets supply.

The group of geothermal heat pumps gathered in Paris. This is a region where it is difficult to operate in the field of geothermal energy as a matter of the surface... The average area of land for individual houses being restricted, often only the solution of vertical deep geothermal is possible, but this is an expensive solution. However, they quite often replace geothermal solutions by simple solutions, like heat pump air/air and air/water. Additional direct subsidies came late in the region, which explains the late of the geothermal development in Ile-de-France. Today in Ile-de-France, in

addition to the tax credit, the following instances are also able to support the private owner market:

- ✓ The National Agency of Improvement of the Habitat (ANAH) can subsidize a heating pump. Housing should have been for more than fifteen years and should be the main home.
- ✓ Under certain conditions, EDF can deliver loans at preferential rate for a heat pump.
- ✓ Since recently, there is a regional subsidy. This premium accounts for 50% of the cost of the labour of drillings of GHP on groundwater, or with vertical or horizontal sensors.

Depending on the local instances, their available land and their politics, the geothermal market does not develop in the same way. Now they have an alternative because all of them offer different options for heating. In terms of the future of the tax credit, the concern of this region is the most flagrant.

III. Level of knowledge of installers on the measure

The level of knowledge does not vary in Provence, between the installers of solar thermal and wood energy. The higher level of knowledge of the text of financial law by GHP installers is to be noted. It can not be explained by their regional affiliation, but by the width of their product range benefiting from the tax credit.

Overall, the basic knowledge (main home, calculation, ceiling...) is acquired, but installers are obliged in practice to refer constantly to the finance law.

The knowledge of the tax ceiling (8000 € for one person and € 16000 for a couple, accumulated over 3 years, the opportunity to integrate children) is almost good (except some installers form the GHP group), probably because this limitation poses many problems for households wishing to combine several tax credit advantages for many renewable installations. Regarding the exception of the group of installers GHP, the calculation method of the tax ceiling is still being acquired. Several criteria falling into account (living alone, living in a couple, couple with children), it induces a real amalgam in the head of installers.

« It depends on too many things: if there are children, starting from which amount can we integrate 400 € by children... It should be specified when the ceiling is exceeded! The law refuses sometimes to integrate the children. It is not clear. » (GHP installer, IDF)

Concerning the method of calculating of the tax credit, GHP installers appear to be the best informed, probably because a whole range of heat pumps (geothermal or other) benefit from tax credit, but also because of the "ignorance of the extent by the tax services themselves". They claimed to have read the Finance Law, and to have learned the text by heart.

"As we have to continuously justify the method of calculation, we must learn it properly" (GHP installer, IDF)

After the presentation by Observ'ER of the history of the tax credit, the installers were perplexed. The level of knowledge about the evolution in time of the measure is very approximate. Few remember exactly the true history, except for the "old", which compares the period of evolution of the tax credit from 2000 to 2007, to the 80s, when the cessation of subsidies had disorganised the industry of renewable for several years. But most installers remember vaguely. For them, the evolution of the market is explained by the tax credit evolution.

"The evolution of the tax credit explains just the evolution of renewable energies in France » (GHP installer, IDF)

What do the installers ignore?

Regarding the "50% tax credit" put forward by several channels of communication in France, the text of the law is too complicated to decipher, installers find difficult the establishment of detailed invoices, evoke the possibility of mistake by unintentional omission, and find the text of the law too vague.

"There are some niches that require technical details of the hardware, in the charta Qualibois, which requires, for example, a certain type of billing. But around the

table you will have 10 different bills, the same could happen for the Qualisol!"
(Wood energy installer, PACA)

"The fiscal agents know less than installers." (GHP installer, IDF)

Other uncertainties relate to the needs of the structure which installs... Many, particularly in the solar thermal working group, believe that one must be "Qualisol" (label for a quality of solar installation) so that the customer can receive the tax credit, while this obligation is valid only in the case of direct local subsidies (region, department...).

"Everybody installs today, but you have to be Qualisol" (ST installer, PACA)

The specific amalgam concerns installers from PACA, a region where this technology is extremely subsidized,. They speak, of local direct subsidies which vary from one department (municipality, region...) to another, confusing them to the tax credit.

On the other hand, installers try to follow with difficulties the ever-changing list of eligible equipment for the tax credit. They talk about the need for the principal residence, in order to benefit from the measure.

« The measure applies only to the main home, which is problematic in Provence."
(ST installer, PACA)

Conclusion

The level of knowledge of the French tax measure is good enough, but was not acquired in one day. The installers find the mechanism quite complicated. There is some lack of clarity in the definitions of the eligible material, and they make use of it.

IV. General perception of the measure

The general perception of the measure is quite positive; installers maintain the idea that the tax credit should in no way be removed. In other cases, this would lead to declining of the entire sector.

« If it weren't for the tax credit, we would be dead! ». (ST installer, PACA)

The perception is shared among all groups, regardless of the technology of the regional profile representative of installers. All participants claim the continuation of the tax measure.

There are three principal perceived differences:

- ✓ The GHP group is the only one to be sure that the tax credit has led to progress in research and development, in terms of technology and equipment, whereas other groups say that the quality of the material remains variable

"We note an evolution in the ecological direction on the technical level of the machines." (GHP installer, IDF)

- ✓ Wood energy group thinks, that technology evolved independently of the tax credit

"There was no distribution network at the beginning of the subsidizing, it was thus impossible to sell the existing products." (Wood energy installer, PACA)

- ✓ The group of solar thermal accuses, in a certain way, the measure to participate in the declining solar market.

"When there are too much information and request, that blocks." (ST installer, PACA)

This charge also refers directly to the increase of prices; which is estimated to be equivalent, on average, to the amount of the tax credit.

"Because of the measure, it is the method of sale which made a terrible evil: people sell expensive by selling the tax credit."

The elements coming spontaneously, above all, are the tax ceiling which is very limiting

"The law is unjust! You have 6 children and a house of 400 sq m. But you will touch only 8000 € of the entire tax credit amount. It would be righter for a family to touch 30% of the amount of the installation, at least for a big family." (GHP installer, PDF)

Regarding the history of the measure, installers practically all agreed with the fact that the measure has allowed the growth of the market, almost directly proportional to the growing of the percentage of credit.

Conclusion

According to installers, the measure shouldn't be suppressed. Installers already have trouble to make their business run with it and don't dare think what it would be like without the tax credit. The tax credit mechanism has forced the market, but at the same time, it could bring the fall of the sector according to some installers.

V. Perception of the impacts of the measure

On a spontaneous level, the measure seems to be most appreciated by installers... They all note, as a positive impact, the progressions of the market in the field of renewables, whatever the sector. The measure is welcome, but in terms of its implementation (payment deadlines, complexity of the law, uncertainty of the text) the tax credit leaves perplexed... Several limits were identified, the groups were unanimous.

1. The impacts on the consumer

The direct impact of the tax credit is that now everyone talks about it (press, media, television), and often in a context of "energy savings" and "environmental philosophy." The media boom has helped to change, first and foremost, the mentality of the customers: they became "greener", began to enquire... Given that the measure does not allow the immediate repayment, not all consumers can make the investment they would wish to make. Another unpleasant surprise, as will be shown later, concerns the calculation of the amount of the tax credit: bearing in mind that only some of the equipment directly related to the operation of the renewable system is subsidized. Thus the principal negative impact relate to the reality of the deduced amount.

2. Different roles of the tax credit for the consumers

Three main roles were noted:

- ✓ The tax credit is a trigger for investment
- ✓ The tax credit is a "facilitator-maximisateur": it allows making an additional investment or a step, for example to increase in range or in his choice of material. This role is equal to a function of reinsurance; it is a kind of "boost" to the trigger role
- ✓ The tax credit comes as a pleasant surprise, when the investment decision has already been made

The distributions of these three roles, with the illustration of the three groups, are the following:

GHP group

60% : facilitator role

30% : "maximisateur" role

10% : "pleasant surprise"

ST group

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60% : facilitator role

35% : "maximisateur" role

5% : "pleasant surprise"

In Provence, local media and the system of sales relied too much on the argument "tax credit" in recent years. Almost everyone knows sufficiently the measure, which makes the slightest surprise effect less important.

Wood energy group

52%: trigger role combined with subsidies

25% : "maximisateur" role

23% : "pleasant surprise"

This difference in percentage terms, recorded in wood energy group, can be explained primarily by the fact that direct local subsidy (for example, subsidies given by the Department of Alp Maritimes) plays much more important role in triggering, the tax credit comes after ... An installer says about this effect:

"I put 70% in the role trigger, but in truth, this is the role played by mainly department subsidies. The tax credit comes after and play in the decision only for 20%." (wood energy installer, PACA)

The role known as a pleasant surprise increases, probably because the region promotes more solar energy. So, wood energy is secondary, and the interested owners are not aware of the tax measures.

2.1. The role of trigger and its consumer

Broadly, installers attach to the tax credit about 60% the role of trigger.

Installers describe the triggered customer type as following:

- ✓ An "environmentalist" client who is willing to invest in renewable energy whatever the price of the renewable is, but also a customer with an overall environmentalist approach
"This client seeks and speaks much more about comfort and facility, rather than heating needs" (GHP installer, IDF)
- ✓ A client with a low budget
"The tax credit allows sensitized people but without means to invest." (Wood energy installer, PACA)
- ✓ A customer who seeks the economy, who bases his decision in relation to the calculation of return on investment.
"This is a client who looks for the economy, asks for a return on investment and wonders, from when he will make money if he invests more, even with a small budget. Time return is always a criteria." (GHP installer, IDF)
- ✓ It is punctually a customer who pays a lot of taxes
"For people who pay many taxes, the argument is the possibility to detax. French customers do not like to pay taxes. Then, they say "if we can pay less, let's go!"
- ✓ This customer is quite young.

"The advanced-aged client (more than 50 years) looks directly for a price rather than for the direct tax measure." (GHP installer, PDF)

2.2. The "maximisator" role and its consumers

This role represents third of the effects of the measure. It leads to say that every third customer is ready, with the ability, to invest more to increase the quality of his equipment or the number of technologies. The typical client to this role is:

- ✓ A customer who is looking for additional options.
"This customer wishes to go higher in the range. He also promotes the concept of quality, but leaves the choice of brand and of product to the installer." (ST installer, PACA)
- ✓ An older customer, whose standard of living is acquired and whose investment capabilities are also greater.
"These customers are approximately 50 years old and do not worry about the tax credit". (Wood energy installer, PACA)
Exceptionally, the GHP group tells about the younger customer, however this is explained by the fact that, in the Ile-de-France, the purchasing power of households is more important.
"Our customers rather have 36-40 years!" (GHP installer, IDF)
- ✓ A customer "green" and "saving" at the same time:
"These clients all think at the same time a little of the economy and of the ecology. Everyone will ask how much it costs, sooner or later... For this reason, from near or far, we all are working on this kind of customer! "(ST installer, PACA)
- ✓ This is a customer for whom the quality of the installation is very important:
"It looks at the equipment later, but prefers to do it right and privileges the workforce. The environment of the boiler is important for the client in the overall package of the boiler. This customer is ready to pay 15% more for a beautiful arrangement of the installation." (wood energy installer, PACA).
- ✓ The particular case of wood energy installers. They explain that this type of customer engage for wood, but often for a solar equipment also. For them, vaster equipment is more important than the search of the aesthetics or a higher product range. The wood energy group explain their "little" 25%, for this role, by the tax ceiling, they also blame the initial price of the equipment:
"Yes, there is such a role, but a pellet boiler worth about 16000 €, how to add solar financially? We reach the tax ceiling! "(Wood energy installer, PACA)

2.3. The role of a "pleasant surprise" and its consumer.

Not significant, the role of a "pleasant surprise" represents only 12%. The installer's quotas made it possible to release the profile like this:

- ✓ This is the client with the real financial means, so he is mostly middle- and advanced-aged (40-50 years). For this client, the financial investment does not

represents any problem, the repayment of the tax measure could not even been taken into consideration!

"This kind of customer invests in the realization of their dream of several years. Thus they are a little "green". (ST installer, PACA)

- ✓ Therefore, this is a customer who is ignorant of the measure,
"He has a little heard about the tax ceiling. But once calculation made, he is really delighted." (Wood energy installer, PACA)
- ✓ This is a customer who engage most often renovation works, in this sense, does not look for a measure
"Let us suppose that for this customer all is paid. The boiler works with fuel, but it is old, it needs to be changed." (Wood energy installer, PACA)
"That arrives often in renovation, in existing housing. With their service contracts for their boiler, one day people want to change." (GHP installer, IDF)
- ✓ Particular case of testimony by GHP installers: it is a loyal customer who came several years ago, and even decades, for other types of installation.
"This "loyalty" translates directly breadth of products that we propose, in terms of heating and plumbing." GHP installer, IDF)

Installers note, however, that the sociology of clients change from one department to another, particularly in terms of land costs

3. Different impacts of the tax credit on the consumers

All in all, in France, there is an important percentage of clients for which the measure was the trigger for the purchase and there aren't a lot of people for which the tax credit was a good surprise. Thus, several effects were noted on the behaviour of the customer, like positives and negatives.

Regarding the positives impacts, the following ones are listed:

1. Perceived impact on the market

Most installers note the progress of market related to the tax credit (except for a few cases observed in the solar thermal group, mentioned later). The majority speaks of the "dynamism of sales" felt by consumers.

"The customer admits that it is an argument!" (ST installer, PACA)

"There is simply more impact. Even the promoters require it. I live thank' to them! For them, to damp the pump, the tax credit is a major element, it is impossible to circumvent the measure." (GHP installer, IDF)

The behaviour of the new buyer began to be more interesting: for example, since 2005 the people who have invested in renewable were much more interested and carrier of different thinking.

"The customer became a little more ecological, but it is thanks to the tax credit." (ST installer, PACA)

However, installers of solar thermal noted that after a period of euphoria, the effect of "tax credit" was less important and has directly led to a decrease in sales in the sector, in 2007.

2. Product offers: level of quality of the products offers.

The other impact of measurement concerns the enlargement of the offer: manufacturers offer now a variety of "renewable" equipments. There is the very flagrant evolution, for a customer, of quality and grade of equipment. For example, wood energy and GHP installers think, that the boom in sales is related more to this evolution, less to the tax credit:

"There was no distribution of pellets throughout the period of subsidies, making sales impossible. The current boom in sales is directly linked to the automatic boiler and wood pellets. The client enjoys!" (Wood energy installer, PACA)

Regarding the performance of the products, opinions are divided: installers of solar thermal and wood energy note a broadening of the range, but a very variable quality, while GHP installers focus on the progress in the field of technology and of research. This group finds the new range much more efficient:

"Yes, the equipment is much more advanced, regulation, for example, is more refined" (GHP Installer, IDF)

Regarding the negatives impacts, the following ones are listed:

1. Perception of the rise in prices

The industrials would profit from the measure by to increasing their prices. Thus all installers in solar thermal noted an increase of the price of equipment, almost proportional to the measure.

"All the manufacturers have their solar kit, but no consequent drop in prices... when we have to pay about 4000€ at a price of the catalogue..." (Solar thermal installer, PACA)

The wood energy installers find the same thing and qualify, for the story, wood boilers a "Rolls Roy's".

"It is certainly that, since the tax credit, it's not the same thing for the honest installers. You can see it on bills. The price of equipment has increased tremendously." (Wood energy installer, PACA)

In the heating pump business, the prices would also increase from manufacturers:

Even if on my side I did not change my selling method, the raising of prices is logical to explain, because we note the increase in copper prices." (GHP installer, IDF)

GHP installers do not note direct increase in the price of equipment, but announce that, for a customer, the price has increased, because of his obligation to respect the new standards. Indeed, the investment to correspond to these new standards easily covers the amount of the tax credit.

The drift, according to all the groups of installers, could be translated into a direct sale of equipment from other countries (Germany, Spain, Asia,..) or, worse, would contribute to the development of a network of crook sellers who use the tax credit as a commercial argument, regardless of all the subtleties of this measure.

The tax departments are criticised for their lack of control. Many abuses are done and no one is caring for that. Although in the end, all tax payers will pay for these abuses.

2. The modification of the profile of installers since the introduction of the measure

Customers feel that the profile of installers would change in France, not to the good side. There is an arrival of all kinds of businesses without quality. The number of poor quality installation increases.

"To have the tax credit, everyone can sell, you should not be Qualisol. The bad installations create such problems. That should be taken into account in the tax measure!" (ST installer, PACA)

"Qualisol or Qualibois – it does not matter today, what a pity. No matter who can obtain the Qualisol label, but at least there exist standards to install boilers with wood. From there, we could create a confidence in installers, there should not be problem anymore." (Wood energy installer, PACA)

Conclusion

The principal effect of the tax credit in France is the trigger effect. Bringing into the market a lot of unscrupulous installers that should be controlled.

The quality of equipment has improved however and the range of products has increased.

VI. Success / failure factors

1. Success factors of the measure

There is two big real success factors concerning the tax credit:

Firstly, thank to tax credit, there is a real increase in the renewable market, a kind of help which allows customers to decide and which allows the industry to not only survive but also to grow. Thus, the success of the renewable market translates directly the success of the tax measure.

"If there were no tax credit the market would have been null!" (ST installer, PACA)

"Only the tax credit induced the development of the solar thermal sector!" (ST installer, PACA)

It is also important to note that there is no unpleasant surprises concerning a tax measure: it is always granted), although there is no tax controls.

But it is absolutely necessary to insist on a true factor of success of the tax credit, the price of fossil energies. To date, when the barrel of oil has exceeded the price of 100\$, for a customer, this rate is important and contribute to sensibilise the public opinion. In other words it pushes to invest in the renewable technologies. Beside the tax credit, the argument "price of the fossil fuel" weighs heavily

"If fuel goes up, the customers know that they will be able to deaden their installation. Before it was only made with an ideological concern. But now a new generation of customers will arrive and make its installation because of the will to save energy. In fact the oil price makes them move!" (Wood energy installer, PACA)

In spite of the price of the fossil, if there were no tax credit, the consumers would not change anything in their old installation, as the idea of the initial investment is their fear. In the event, the tax credit continues to be required.

« People still prefer to stay in fuel and even with the price of fuels, compared to the amount of the initial investment in renewable. With a barrel with 100 \$ I want to profit from the tax credit! » (GHP installer, IDF)

2. Failure factors of the measure

As the tax credit was a real success as regards the development of the market, it is not possible to speak about literally negative impact of the measure. They are rather negative repercussions or a kind of perverse effects probably due to the mechanism of operation of the tax credit.

2.1. Administrative complexity / technical requirements...

The administrative difficulties of the measure have been noted and discussed on several occasions by all groups, the emphasis has been placed by installers of solar thermal. They stress that the information is improperly constructed, or missing, as evidenced by this quote:

"They are counting on us to calculate, but we also have not learned the law in 5 minutes, it's complicated..." (ST installer, PACA)

Installers believe that the text is so large and quite difficult to understand that only the personal appreciation of a tax controller will decipher it. But the result of this personal appreciation stays unpredictable. Therefore, installers say they all have on them an annex detailing material and read it several times to understand.

"The customer does not understand anything, we have to provide legal information, but if this is not clear for the tax services, it is even less for us. However, it induces our cheating; we are obliged to turn to fraud." (Wood energy installer, PACA)

The difficulty of the text of the law of finances and the way of calculating induced a true difficulty in the invoicing of the customers. The installers estimate that nothing is clear for the establishment of the invoices. The calculation takes into account the tax ceiling, it is perceived like a true "headache". In addition, there would be no retreat concerning the tax control of the private owners, whose invoices would be erroneous.

2.2. Level of structuring of installers...

All evoke an obligation to the quality... The structuring of the installation vocation would be done on dual level, because of the tax credit, which requires only the approval Solar Keymark or CSTB, but no label for professional installers... There should be a chain of quality (Qualisol, Qualibois, QualiPAC...), mandatory for installers granting tax credit.

"It should be more qualified installers who have the right to give to consumer the tax credit, the equipment should not be installed by anyone" (Wood energy installer, PACA)

"A portion of the workforce does not fit into the calculation. An installer that works well or badly changes the performance of the equipment. Some are not doing their job intelligently. But why invest in the equipment and not in the quality of the installation? This would have a decisive impact on the size and quality of the installation" (GHP Installer, IDF)

Some installers recommend even to take the exam, which provides access to quality, every three years, as an example of Belgian operation, cited by an installer of wood energy.

"I am so certain of my quality in opposition to other sellers that I propose to be the first to pass by again this exam!" (Wood energy installer, PACA)

In terms of the structuring of the sector, the approach of the tax credit, excluding any quality workforce, have had repercussions in the future, at the level of the entire chain of renewable, and also at the political level.

2.3. Communication campaign

From the point of view of the positive impact of the national communication, installers recognize that there is an agitation around the measure: during the fairs and exhibitions, through phoning and distribution of pamphlets, on the Internet, in the press. But it also revealed a real problem of structuring and of means of distribution of information, which compromises the ease of the sale.

Problem of circulation of information (according to quotas):

- ✓ No centralized information on a website, for example (on the contrary, some installers cites the example of local websites, where everything is often more clear!)
- ✓ No simplified mailing from the "Spaces Info Energy" (information desks on energy, created by ADEME), almost no involvement of these desks in communication on the tax credit
- ✓ No information on the tax credit in the renewable sector made by the official tax journal
- ✓ Information on the measure would be drowned because of other communications campaigns on environmental measures (including transport and carbonic gas rejection); for its part, the communication on the measure do not refer to the positive contribution of renewable sources in the discharge of greenhouse gases.

"On the one hand we can make the advertising; on the other hand we suffocate it!" (ST installer solar, PACA)

Problem of structuring:

- ✓ The communication addressed to the masses does not take into account the European factors of eligibility, it stays on the national level
"There is no communication on the Solar Keymark, which makes equipment also eligible for the tax credit in France." (
- ✓ No clear message ready for distribution, either by the ADEME network (Spaces Info Energy) or by the tax network
- ✓ few information provided on the tax ceiling, given that it presents itself as a real limiting factor
"Concerning the ceiling, it is not clear to the customer. Inside of understanding that the low text talk about 50% and the ceiling of 16000 € for a couple, the customer simply believes that, if he is married, the amount of the will reach 50% and that is all!" (GHP Installer, IDF)

- ✓ there is the real necessity to read the text of the law to clients. According to most of communication, installers noted incorrect the figure of 50%: once the workforce and the portion of non-renewable materials deducted, the real tax credit tantamount to a maximum a third!
"Broadly, that measure makes it possible to save 30-35% of the total price, but in the head of people it is half... Now that the dream is broken, the battle begins: who sells best, who makes dream. Then the best commercial relation wins." (GHP installer, IDF)
- ✓ The quality and motivation of TV advertising realized and paid by ADEME seems unsatisfactory:
"When we see ADEME to advertise, that's not very communicating. » (ST installer, PACA)

Thus, there is the direct impact on the degree of knowledge of the tax credit by customers:

- ✓ The degree of knowledge is very approximate
"On average, customers with big houses (for example, below 150sq m) have no information or have vaguely heard of the measure, just have an idea of the true modus operandi of the tax credit." (GHP installer, IDF)
- ✓ In the field of new housing, the level of knowledge is very low:
"In the field of new housing, if someone spoke about GHP is that he has cleared the way" (GHP Installer, IDF)
- ✓ Clients have absolutely not acquired information on the tax ceiling, which often happens as a bad surprise:
"Customers are certainly informed, but not in a proper way!"(GHP Installer, IDF)

In conclusion, customers are obliged to actively seek information in order to be up to date

These opinions, including the quality of publicities or the inaccuracy or the restriction of information, are debatable and reflect only the opinion of the installers. But that shows before all the fear of the installers as regards the future of the tax credit.. It is necessary however to note that the communication network could be widened. The great positive point remains the general impression that the communication campaign boosted the market of renewable.

2.4. The problem of late refund

The other problem of the tax credit, revealed by the fitters, is directly related to the complexity of cashing, by the customer, of the deduced sum... The fact that it is not a question of direct refunding, but of deduction, made with a complex calculation.

There is also a forward of this deduction over the following year, exploit the enthusiasm of the customer, in his desire for investing.

The installers estimate, that the true impact of the tax credit would be instantaneous only in case, where the customer would touch money immediately. They are many to speak about new banking systems, proposing the environmental loans at rate zero, in order to decrease the impact of this problem. They try to show that in the context of forward in time, it is the only durable means to accompany the tax measure.

"The refunding is too long, 50% are not enough, the State does not do anything, why touch the deduction only in January of the next year and not immediately? The length of cashing prevents the customer to be decided." (ST installer, PACA)
"We are confronted with people who do not have means. Or they have money, but this money is not available for this case. "The large ones lose, the thin ones die" (ST installer, PACA)

For this reason, the installers propose that the tax credit appears in the bank file of the financing.

"Many other means of financing exists! For example, that of the bank of Gaz de France, SOLFEA, which works even for the wood boilers with a GDF contract. Why the energy operators think about and not the tax authorities?" (Wood energy installer, PACA)

This seasonal operation also poses problem to installers on the level of their organization. In the certain cases, they feel obliged to advance the amount of measure, but only if the treasury of the company allows it.

"And it is possible! For example, in PACA, we can have a 2-3 month cash advance thanks to the Region which pays us directly." (ST installer, PACA)

2.5. The limit of the tax ceiling

The real difficulty of sale proves to be the tax ceiling, applied to the households wishing to invest in the renewable. Except the fact that it poses problem, the measure is perfectly learned by a large majority of installers.

Knowing that this limit includes a lot of principles of renewable and of high environmental quality, the customers, wishing to invest more in this sector, go quickly blocked in their investment. Psychologically, client does not think coherent to continue to invest without an unspecified help. According to installers, the decided customers have all the will to invest.

"The problem it is that with the tax credit we can sell at any price, but the customer will be limited by the ceiling to make another thing in renewable." (ST installer, PACA)

Indeed, the stop of this tax assistance, once the ceiling of 8000 or 16000 reached, decreases the capacity of investment. In this case, the installers even quoted some examples of fraud, in order to mitigate this limitation:

"I give you an example of a purchase in SCI (real civil society) composed of 2 brothers and a sister, and of a chargeback to the proper name. In this manner the customer can continue to profit from the tax credit" (wood energy installer, PACA)

In addition, the notion of the tax ceiling would induce the fraud and the quasi immediate disillusion of the customer:

"Some sell the tax credit even when it was already consumed, it is a swindle. When it is eligible 25% by here and 30% by there, people can exceed the ceiling very quickly." (ST installer, PACA)

The installers, more particularly in the solar thermal group, ask, why the ceiling applies for an installation of bad quality. That would induce the deduction of the capacity of purchase, without the result of quality opposite.

The GHP installers insist on the fact that they must all the time recall to the customers the mechanisms of the calculation and of office plurality of the tax ceiling, in order to avoid bad surprise. They also go beyond the limit, finding it quite as unjust, and straightforwardly propose to replace it by the consequently penalization as regards the CO₂ rejection, that applied for example to transport.

"Instead of the limiting by the tax ceiling, that measure should function like for a large car: it is necessary to penalize for CO₂ rejected into the atmosphere!" (GHP installer, IDF)

The great dilemma, revealed by the installers of the South of France, concerns the eligibility of certain equipments, which they regard as "non-renewable" (like aerothermal heat pumps) with the tax credit. That would generate the going beyond of the tax ceiling:

"Why the heat pumps are eligible with the tax credit? It is inadmissible. It incites the customers to consume electrical energy, in particular in aerothermal, where the total coefficient is of 0,5 over one season of heating. We would wish the withdrawal of these kinds of heat pumps of the list of material benefiting from measurement." (Wood energy installer, PACA)

2.6. Unscrupulous sellers of the tax credit

All participants are very angry and anxious about some commercial habits that are very problematic. They refer to some companies that have a telephone sales service quite aggressive.

"There are some sellers who sell that tax credit; they make true harassing and sign without knowing the business. I know my business and I do not do that." (Wood energy installer, PACA)

"Yes, even for the material of very bad quality, you have on the French market a lot of sellers, who center their commercial argumentation on the institutional subsidies." (Wood energy installer, PACA)

These companies can be spotted in exhibitions as well; they have sellers that come across wandering consumers and make a forced sale.

Installers also criticise their lack of competencies once the sale is done. The installation is not well done and after sale service does not exist. The customer hardly appreciates...

The extreme rise of prices is linked to this phenomenon. Some companies do not hesitate to invoice very high prices to customers: until 9000€ for a material that is usually 3000-4000€.

"The tax credit ultimately should not be used as a commercial argument which involves the DRIFT. When we see the rise in prices and the drift of certain business firms with prices above 6000-7000 €, the customer does not buy any more." (ST installer, PACA)

2.7. The tax credit would generate a fall of activity

Paradoxically, the tax credit would be, only for certain solar thermal installers, synonymous with fall of activity. It should be recognized that the sector is touched by this fall since 2006, that is to say since the development of solar photovoltaic. But the arguments showing the studied tax measure seem relevant: the solar industry would increase today, in France, the price of their material of the amount of the tax credit:

"In Germany we buy the same equipment with half price. Which is the conclusion? The manufacturer who imports into France add today at the prices the amount of the tax credit. Everyone takes his share, it is inadmissible. " (ST installer, PACA)

On the other side, according to the same group of installers, in order to sell eligible material with the tax credit, the technical and administrative difficulties related to the approval of the material at the CSTB would represent the second direct factor of this fall.

"For selling with the attractive price, I tried to import material besides, where the factory prices are less expensive. But it is impossible to import into France, because the CSTB makes it difficult!" (ST installer, PACA)

The third factor would be related to too much information and request, which is not always done well.

Lastly, it is obvious with all the solar thermal sector that the communication on the tax credit has suffers in front of the higher offer of the photovoltaic. It returns from there to the problem of communication, evoked higher.

Conclusions

The tax credit generated a side effect, which developed in parallel with the installation of measurement. Here is the main part of the factors limiting the measure:

- ✓ The administrative complexity does not allow to follow simply and efficiently the eligible technical criteria. It induces the true problem of invoicing.
- ✓ In a recurring and quasi unanimous way, installers announced the concern of not taken into account of the workforce and labour. They stress that the quality of the installation carry enormously for the customer. Thus, a specific help for this reason, coming directly from the tax services, would be very well perceived. It is a reflexion to be engaged on the level of the structuring of installers.
- ✓ The Communication campaign appears to installers badly built or drowned in the flood of information on the environment. That obliges them to specify information to their customers.
- ✓ The tax credit reveals a true problem of refunding and cashing, differed by the tax service. It makes the tax measure less inciting, especially where the new customers, younger and more modest, do not have immediate global budget... The obligation to advance a part of the price for installation is sometimes fatal with its final realization.
- ✓ The tax ceiling displeases enormously since it cuts a part of customers or a part of the purchasing power of this one.
- ✓ The attractive principle of measure involved a development of a kind of parallel "tax credit selling" market which conditions the quality of the installation and increases its price.
- ✓ According to some marginal opinions, the tax credit would generate a fall of activity. It is related to the difficulties of obtaining of French technical certificates (requested in the criterion of eligibility to measurement) and also to the raising of catalogue prices by the industrials.

But on the other hand, the beneficial effect of the measure is noted by everyone. There is the increase of the market proportional to the increase of the tax credit. Also, the procedure allows an operation of measurement without fault. To note the rise of fossil fuel prices that pushes customers to use the tax credit: the excessive price of the fossil induces the change of mentality, the tax credit helps there.

VII. Improvements

Above all, the recommendations, coming directly from installers and customers, essentially concern the immediate financial effect of the measure, instead of the forward to the following year, so far. The deferred refunding prevents a large percentage of customers, with an average budget, to invest.

1. Direct proposals of improvements

There are many measures, proposed by installers to improve the device of the tax credit, but they are not always realizable... Two ways were distinguished in this direction:

1.1. Justified and realizable measures:

- ✓ Above all, to make the tax credit durable in time. It is true that emanates from the budget of the State, but according practically to all the installers, the suppression of the measure after 2009 would result in a very consequent fall of the market of renewable:

"The tax credit boosted the sales well" (ST installer, PACA)

"Thank to the measure, the sales develop." (GHP installer, IDF)

"To continue at least till 2015 hoping the change of the mentality" (wood energy installer, PACA)

The tax credit maintains the renewable sector, in the immediate future the tax credit must continue." (ST installer, PACA)

To simplify the text of the law and the administrative procedures, to clarify what is refundable or not, the final aim of this proposal being the faster refunding.

- ✓ The taking into account, in the calculation of the tax credit, of the labour, particularly the work of a qualified person, having signed a charter of quality and which begins to follow it...

"It would be absolutely necessary to include a little more the workforce. The price of the equipment dropped, but the quality remains on the same level. If one subsidizes only the work of the industrialist, the equipment will be less important, less powerful, less expensive, which would induce the reduction of the tax credit. After all, the output is not the same it depends on the labour quality, thus the quality of work counts! The reasoning "it does not matter the installer, we subsidize only the machine", is not good" (GHP installer, IDF)

This measurement would also limit the field of intervention as regards installation and its drifts (use of the tax credit as a commercial argument, drift of the prices, bad profitability of a badly realized installation,..)

*"It is necessary to lock the accesses to the profession, not to let make by no matter whom, one wants all to promote a field of excellence which is the renewable one!"
(Wood energy installer, PACA)*

Another aspect of positive repercussion awaited of the proposed measure is illustrated by these remarks:

"I give you an example: I know windows installers sold 30 to 40 heat pumps in 6 months. They present themselves like professionals! However, they are not professional right for that! It is absolutely necessary to impose the qualification of the installers!" (GHP installer, IDF)

- ✓ To improve the product offer by fixing the minimal level of quality of the material in the financial law. This wish of installers resume the ask of the customer in direct correlation of the tax measure with the quality of the whole material:

"If the State subsidizes, it must work, it should not be technically simple. Why not go beyond and add the automatic calculation of saved CO2?" (GHP Installer, IDF)

"There should be a requirement, a standard EN, for example. But because the standard changes and increases every time compared to requirements, the product exists today, it does not tomorrow. For example, you begin to have burners that are accredited, but the boiler is not anymore." (Wood energy installer, PACA)

That induces also to include and count in the tax measure the device of counting of the energy. This measure would prove not only the effectiveness of the equipment, but also that the work is properly done.

- ✓ To increase the ceiling of the tax credit. Indeed, this measurement seems to act negatively, and especially in a psychological way, on the customer. So, according to installers, it would decrease the number of sales, especially if the customer cumulates several installations in renewable or energy saving over several years

"If the State wants the energy saving, there is no reason to maintain the tax ceiling" (ST installer, PACA)

- ✓ To define and fix a dispersion of the market prices, in order to avoid any commercial drift and the introduction of the doubtful practices

"It is a good intention at the beginning, but transformed into a drift. It would be necessary well to define the market price, QUALIT' ENR could do it. " (ST installer, PACA)

"We would need a control of the catalogue prices by the tax controllers" (GHP installer, IDF)

"We have to improve other means of financing in order to decrease the heaviness of the initial financing. For example below 3000 € customer can finance by himself, but beyond it is difficult. " (Wood energy installer, PACA)

1.2. Not easily realizable measurements:

- ✓ Knowing the administrative complexity of the tax measure, some GHP and wood energy installers try to recommend the suppression of the tax credit and its replacement by the direct subsidies. It should be known that these proposals emanate from the installers coming from the region or the departments with a mechanism of attribution of local subsidies. It seems to motivate the customers still more.

"Concerning budgets, to introduce everywhere, like a subsidy, for example in Ile-de-France, to advance without waiting. The State has to pay people, to found strong and direct subsidies." (GHP installer, IDF)

This proposal completes testimonys on the length of the tax refunding. But it is clear: if this measurement is stopped, that can involve other harmful effects on the market. For example, there could be the sale of the subsidies which would put in danger quality. It is necessary then to reflect differently on the mechanism of refunding.

- ✓ The including of the technical study, suggested in particular by the GHP installers.

"We have to impose a more detailed study!" (GHP installer, IDF)

This additional measure seems difficult because the price of this measurement would probably increase the price of the installation of the difference produced thanks to the tax credit

- ✓ To limit the tax measure by product. It seems to be a very long step, also the list of the products is difficult to establish. On the other hand, the revision of the categories of products profiting from the tax credit seems paramount for the installers. In all full knowledge of the facts, is it possible to distinguish the equipments contributing just to energy saving and truths renewable systems.

"We need an obligation of results." (Wood energy installer, PACA)

- ✓ The recommendation of a tax credit based on the calculation of average output was heard several times, that would induce the targeted tax measure :

"The solution air-water and air-air is less powerful than the geothermal one, for example. According to the various solutions, the output is not the same one, the benefit is thus different, the time of return also. Thus the same tax credit for these different solutions - it is unjust. " (GHP installer, IDF)

"The tax credit should be targeted, there should be more alternative in the restoration. The amount of tax credit could depend, for example, on the surface of walls, on the quality of insulation; it should be the same thing for the solar equipment. The drift of the prices increase will be stopped." (ST installer, PACA)

"A tax credit should be more targeted. That would give the access towards products which generate energy saving. " (Wood energy installer, PACA)

This proposal seems not easily realizable in a lapse of short time, because it is necessary to imply a whole step of measurements and comparative.

2. Recommendations related to the context of measure

The flood of direct improvements on the tax credit made it possible to release some recommendations bound to the context of measurement, like:

- ✓ To re-examine and rebuild on the bottom all the communication system. Indeed, this aspect seems one of the main issues of the good performance of the tax credit. According to installers, this is the fact: in France, people would have already exceeded the period of passion for measure. Thus the stop of the campaign would involve the decline of the market. It appears also important to insist, in this step, on a concept of environmental engagement.

"The tax credit should allow people invest in quality. It would be a kind of social ecology. By making communication, we would make economy and social ecology at the same time! If you want to really work, you should work all renewable energies, to learn more about it." (Thermal solar Fitter, PACA)

In addition, a right communication, diffused by the tax services, practically absent, would be highly appreciated.

- ✓ Instead of installing a meter of energy efficiency, to move a council structure for checking of the good performances of the installation.

"When you make come a council, let this council come back and control consumption" (GHP installer, IDF)

This measurement seems probably expensive for a customer with average budget, except if this council is an administrative structure. Nevertheless the concept of control was evoked by several installers.

"The information on the tax credit does not appear in the official tax newspaper, it is regrettable!" (GHP installer, IDF)

- ✓ In parallel, the installers evoked the generalization of the VAT as well on European as on the national level. It means the application of the rate of 5,5% in a new as in an existing housing.

"Make the VAT 5,5 in the new housing ! There are not already lands in Ile-de-France, we work primarily in restoration. Thus the VAT can play a positive impact." (GHP installer, IDF)

To be attentive: this proposal translates the amalgam which they make between the tax measure and a direct tax. But this amalgam induces the following idea :

The generalization of the VAT seems important in the improvement of the operation of the tax credit. Indeed, the current VAT is lower in the restoration (5,5% instead of 19,6% in new housing), where the customer delays to invest in the renewable. For this reason, the installers have all the same conclusion: *"We have 90% of customers in the restoration" ... The VAT fall up to 5,5% in the new*

housing can induce the growth of the number of investment in renewable technologies, because their financial fraction in the total construction budget is very tiny. In this manner, the fall of the VAT could become a new success factor for the tax credit.

3. Improvement actions recommended for principal actors of renewable field

Looking from the point of view of authorities and other concerning actors, several levels of accompaniment of the measure can be detected. Thus the ultimate recommendations are addressed above all to these actors:

3.1. Recommendations for the Ministry for Finances and Industry

- ✓ To maintain the tax credit minimum a few years, so that mentality can change
"Leave the tax credit until 2020, but inform on becoming to it measurement"
(GHP installer, IDF)

"Leave the measure available until 2015; wait at least for the change of mentality." (Wood energy installer, PACA)
- ✓ To inform in a regular and better way on becoming to the tax measure
"The Ministry must inform on the evolution of the tax credit upstream and not downstream" (ST installer, PACA)
- ✓ To leave the measure on the national level, contrary to the VAT which the installers wish uniform on the European level
"Since operation follows the national practices, that measurement remains national!" (GHP installer, IDF)
- ✓ To reflect on the new mode of refunding
"If the state can not give the money cash, it would be especially necessary to think about the speed of the refunding mechanism." (ST installer, PACA)
- ✓ To simplify the text of the law, to clarify the situation
"It is necessary to clarify the situation: married - only, to simplify the way of calculating." (ST installer, PACA)
- ✓ To make obligatory the specific control of the tax declarations notifying the tax credit
"There would be then more appreciations, thus the control would be easier." (ST installer, PACA)
- ✓ To restrict the list of the material subjected to the tax credit
"The State must re-examine the notion of "renewable." (ST installer, PACA)
- ✓ To include the qualified labour, to apply the measurement to the whole installation (poses + material)

"They have to include the phase installation to avoid perverse effects on the trend of prices, and to privilege Qualipac!!!" (GHP installer, IDF)

3.2. Improvements concerning the ADEME action (according to quotas)

- ✓ To be more open, objective and available
"Be objective, ADEME is too dependent politically" (GHP installer, IDF)
- ✓ To improve quality of its communication on the measure
"When we take the example of the ADEME advertising, like "hurry up, that heats", what we compare? Only like that people would understand! Today, each environmental advertising proposes the quantity of emitted carbonic gas. Besides in our sector nobody makes truly the promotion of solar energy, we is orphan." (ST installer, PACA)
- ✓ To have financial means constant.
"To obtain more of financial means, in the field of renewable energies, in particular at the regional level." (ST installer, PACA)
- ✓ Like, for the Ministry, to re-examine the list of the material and the notion of "renewable" (recommendations of the solar thermal, which advise to exclude the heat pumps)
- ✓ Punctually, GHP installers wish ADEME support their field better. *"ADEME considers that the installation (as regards the labour) is quickly done. They would wish the change in this field." (GHP installer, IDF)*

3.3. Recommendations for the manufacturers of renewable field

- ✓ To maintain the growth of the factory prices
"To stop having excuses supported by versions of repurchase of mines etc" (ST installer, PACA)

According installers, even the consumers could take part by their action in the accompanying of the tax measures. Concerning the recommendations expressed mainly by solar thermal installers, the wish would result in the capacity and especially in the desire of purchase of customer. That could rhyme with maintains of the market, also of the professionals level:

"To buy more! While buying, the customer privileges the professional sector, because it which generates employment" (ST installer, PACA)

"The tax credit must divide between all. The customer must be satisfied with what one gives him! " (ST installer, PACA)

Conclusions

Availabilities, simplicity of the marketing, subsidies, linked to the performance of the material, combined with an obligation of quality and control of installers. These proposals are relevant and translate the frame of mind of the installers, but also of the French consumer. On the other hand, certain proposals will be utopian and reflect the distance of people working on the ground of decisional reality. The installers have an in-situ experience feedback, but not an evaluation of the long-term repercussions. This is why, proposals such as the direct cheque, the technical study, or the establishment of the tax credit by product (...) are not realistic at the moment. Broadly, these proposals are to take with parsimony, but they represent the excellent base for analyzes and final proposals.

VIII. Conclusions and recommendations

Basing on the researches it is possible to reduce the number of differences mentioned between technologies.

- ✓ Regarding the market evolution: the loss in power of the market of solar thermal in PACA, the wood energy market on the increase, the stable GHP market in Ile-de-France but strongly depending on surface land... But, in spite of these different contexts, there is the need of diversify for all technologies!
- ✓ Regarding the level of knowledge of the measure: approximate for solar thermal and wood energy groups is highest for GHP installers because of their breadth product range benefiting from the tax credit.
- ✓ Regarding the performance and the level of quality of the products: installers of solar thermal and wood energy note broad range, but a very variable quality, while GHP installers focus on the progress in the field of technology and of research concerning development of a range. This group finds the new range much more efficient
- ✓ Regarding the prices : GHP installers are the only ones to defend the price stability and explain its increase by the new approach of the equipment choice by its customers
- ✓ Regarding the great dilemma, revealed by the installers of the South of France, which concerns the eligibility of certain equipments that they regard as “non-renewable” with the tax credit.

Broadly, there is the major difference of opinion and of context between two camps: solar thermal and wood energy, technologies questioned in the South of France, and GHP technology, representative, in this study, by installers coming from the Region Ile-de-France. Indeed, there is not the same evolution of accompaniment of the measure by the direct local subsidies, there is a technology surely renewable for a first camps, but debatable for all the range of heating pump for a second one. It is also important to note the disenchantment of the solar thermal group in front of the evolution of the photovoltaic market.

In spite of these differences, the general perception of the measure is great: « *If it weren't for the tax credit, we would be dead!* ».

Installers are unanimous, the measure boosted the market, but at the same time, it could bring the fall of the sector according to some installers.

In a spontaneous way, installers are very angry and anxious about some very problematic commercial habits like the “selling by some companies of the tax measure”. That gives the installation not well done and there is no after sale service.

In a general way, the Perception of the impacts of the measure allowed to release a “portrait robot” of the new customer, thank to the role of “trigger” which would represent about 57% of the French customer. The roles of “maximisateur” and of a “pleasant surprise” are leaving behind, that proves birth of the new younger and “ecological” customer with a limited budget. Nevertheless, the role “maximisateur”, which represents a third of the consumers, released the notion of required quality.

The need for this customer to invest above all in the quality of the installation makes emerge the concept of the hands work, the labour, the workforce... This notion reflects the importance of the quality label.

Concerning the impact of the measure on the customer, **three essential positives impacts** can be listed:

- ✓ Perceived positive impact on the market
- ✓ Perceived improvement of the level of quality of the equipment
- ✓ No unpleasant surprises concerning a tax measure: it is ever made and refunded

But there are also negatives effects, like:

- ✓ Perception of the rise in prices of the amount of the tax credit. According to the solar thermal installers, that would marginally influence the fall of the market
- ✓ the profile of the installer duplicated in two streams : quality installers and swindlers

Also, these negative effects involved a multitude of failure factors felt by all users of the measure, as well customers as installers

- ✓ The rise of fossil fuel prices
- ✓ The administrative complexity / technical requirements...
- ✓ The problem of cashing, in direct connection with the preceding factor
- ✓ The level of structuring of installers
- ✓ The communication campaign and especially its problem of information circulation and of its structuring
- ✓ The limit of the tax ceiling and the way of calculating of this one
- ✓ The variable quality level of the equipment

It is obvious that these success/failure factors dictate the recommendations of improvement of my measurement. First of all, installers improve go in two directions: more control and larger potential basis of customers.

Once refined and analyzed, these proposals can give following justified and realizable recommendations:

- ✓ First of all, to make the tax credit durable in time
- ✓ To simplify the text of the law and the administrative procedures
- ✓ To create a reference not for every product, but per type of installation; to calculate the tax credit only on that; may be to define and fix a dispersion of the market prices. So that the prices will not inflate any more.
- ✓ To improve the product offer by fixing the minimal level of quality of the material in the law. Also to add in the equipment and count in the tax device the process of counting of the energy
- ✓ To take into account, in the calculation of the tax credit, of the labour, make a quality label for installers who allow to touch the tax credit, and make it hard to obtain. All installers are proud of their knowledge this is why they are not afraid of having strict standards. They feel as an aristocracy among other installers, they call themselves "the field of excellence". There could not be

comparison with the big stores or the recent installers coming from other areas, without background.

- ✓ Not to abolish but to raise the tax ceiling to make people able to invest in the renovation, (this kind of customer constitute 90% for the installers), to insulate first and then still have margin to install some solar thermal.
- ✓ Create mechanisms to support the first part of financing for the tax credit. Or make the return quicker in order to open the market to less wealthy people.
- ✓ Open tax credit for secondary houses, which is particularly important in the region like Provence because of the rents.
- ✓ Enable new houses to benefit from the tax credit for the installation of solar thermal. (with, for example, the 5,5% VAT)
- ✓ To communicate more on RES and also on tax credit. In Provence, for example, installers have the impression that the premium offered by the regional council is better known than the possibility of tax credit. Because there is a lot of flyers and communication in many places. There is also a reproach to ADEME which is not communicating enough and in the right direction. ADEME should explain and compare fuels, rather than do a global abstract campaign « *let's hurry, it is getting hot!* ». This kind of campaign was deemed not to be very clear in the contents of the message. Customer also would need a right communication, diffused by the tax services

There are no properly absurd proposals, but some proposals are difficult, politically delicate or long to realize:

- ✓ The suppression of the tax credit and its replacement by the direct subsidies.
- ✓ The including of the technical study, too expensive
- ✓ The limitation the tax measure by product, very long
- ✓ The sending of the council structure which would come to check the good performance of the installation, probably too expensive

These improvements could be realized by several major actors of renewable, step by step. Thus, the distribution of the roles would have allowed at the same time

- ✓ For the Ministry for Finances and Industry : to maintain the tax credit minimum well beyond 2009, to reflect on the faster mode of refunding, to simplify the texts, to clarify the situation, to make obligatory the control specific, to restrict and to fix the list of the material subjected to the tax credit, to include the qualified labour
- ✓ For the ADEME : to improve the quality of its communication on the measure, to negotiate with the State more of financial means for the additional subsidies, and, like the Ministry, to re-examine the list of the material and the notion of "renewable" and to support the quality of the workforce
- ✓ For the industrials of renewable field, to maintain the growth of the factory prices
- ✓ For the consumers, capacity and especially in the desire of purchase. That could rhyme with maintains of the market, thus also of the die of the professionals:

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The intention to create the measure like the tax credit was great and mostly appreciated; it works and supports all the field of renewable. But there is a lot of failure facture to modify in order to make it infallible, since we are in the French system, which people is very little educated with the environmental problems, where the policy of the State supports the nuclear power, where the purchasing power is with lowest. By the other side, the study made possible to highlight a new younger and opened spirit customer. Thus the modification of these failure factors in the good sense will be carried by the wind.