



**WP 6: Focus Groups
National report - France**

BARENERGY project, Deliverable D 26

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Introduction: the aims of WP-6

BAREENERGY is an European Union funded research project which explores the barriers and opportunities related to the reduction of energy consumption in six different countries in the European Union (EU). The countries – the UK, Hungary, France, Switzerland, the Netherlands and Norway – have been chosen in order to characterize variations in political, economic and cultural systems within which domestic energy choices are made. The principal aim of the project therefore is to try to understand the comparative influence of structural, political, financial, psychological, social/cultural and knowledge barriers to pro-environmental energy choices across three areas:

- ✓ Domestic energy use;
- ✓ Household appliances;
- ✓ Fuel consumption of cars.

A central aspect of the programme is to ascertain how barriers to the adoption of more energy efficient choices can be overcome and, importantly, to try to identify what could be the most effective levers or opportunities for encouraging change.

This report follows on from the two previous empirical work packages and constitutes the final part of the novel 'empirical trilogy' which underpins the core ambitions of the project itself. This report therefore details the findings from four focus groups which constitute the research framework of WP-6 – *focus groups among targeted consumer groups*. WP-6 can be contrasted to the other two empirical work-packages in several ways. WP-4 for instance was aimed towards clarifying the perspectives of different stakeholders and identifying the influence of their *institutional* role in encouraging more energy efficient behaviour. The quantitative surveys in WP-5 explored attitudes and values amongst European consumers in order to assess 'the strength and relevance of various barriers for change in consumer energy behaviour within different energy regimes in Europe' (BAREENERGY, DoW, 2007:33). The aim of the focus groups interviews has been to explore the experiences of a range of consumers who are potentially in a position to engage in what the research proposal identifies as 'windows of opportunity'. Thus, while it tries to elaborate on some of the quantitative findings of WP-5 regarding barriers to more sustainable energy use, one of the principal aims of WP-6 has been to explore the lived experience of 'strategic groups' or people from various social backgrounds who inhabit 'windows of opportunity' in relation to their everyday energy use.

Methodology and the research process

General methodology and issues

This section sets the scene for the report by considering in brief some of the practicalities of the research process of WP-6, particularly the research design and how the samples were obtained, but also the issues which underpin focus group research and the issues which would be encountered in the data analysis itself.

One of the primary aims of WP-6 is to build upon some of the findings drawn from the stakeholder interviews and also to explore the results of the consumer survey in greater depth. Therefore, while WP-5 was designed to test the strength and relevance of some of the barriers to more sustainable energy behaviours among consumers (identified initially in the three position papers D14, D15 and D16), WP-6 is intended '*to increase our understanding of the attitudes and values among various consumer groups*' (DoW, 2007:34). The philosophical significance of utilizing a methodological approach that will encourage undirected data has been pointed out by Hall (1997:3) who reminds us that, ultimately 'only

people can give meaning to objects, events and processes’. This theoretical tradition draws from theorists such as Berger and Luckmann (1966) and the more recent work of Hacking (1999) in stressing the contingent or open-ended nature of social and political processes especially those seen as ‘fixed’. Focus groups can encourage a ‘social dynamic’ in order to explore ‘why people do the things they do’.

WP-6 was designed very much within this tradition therefore, where the main issues to be explored in this package i.e. ‘windows of opportunity’, the relationship between turn on/switch off, energy efficiency, and changes to renewable could be opened up to discussion amongst potential variables such as age, gender, income and household type.

Methodology for French study

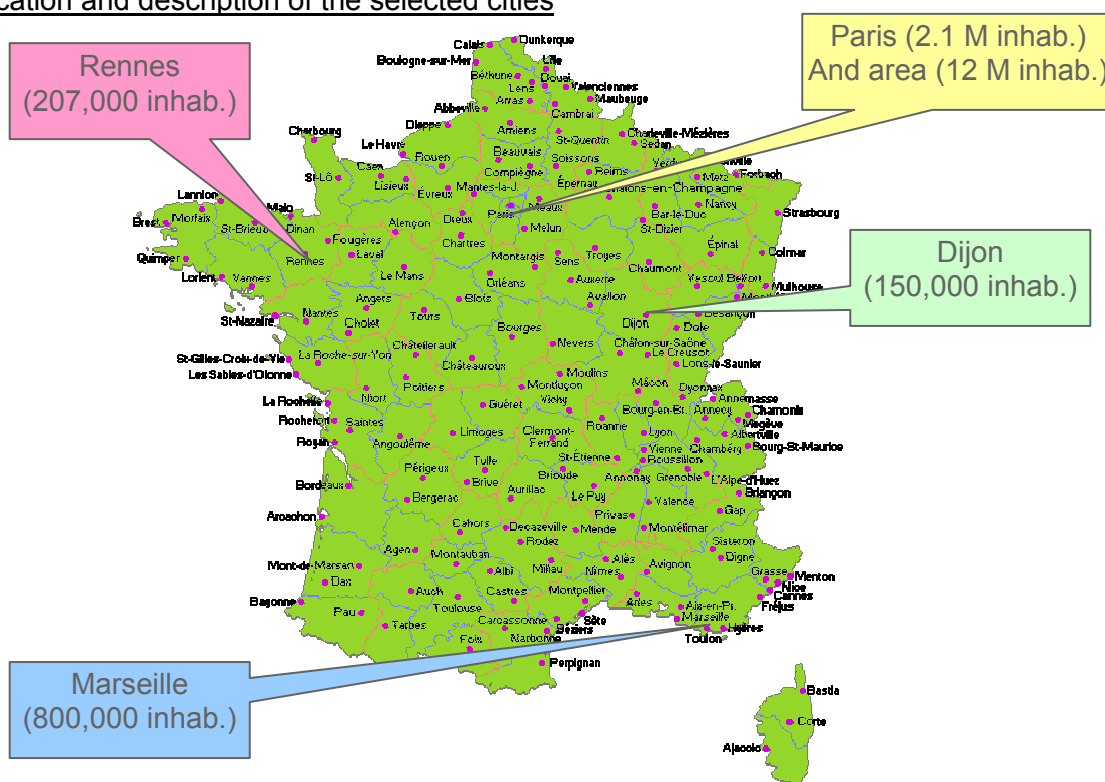
Recruitment

Four focus groups were set up in France, following the WP6 leader’s recommendations in terms of sample.

Both large cities (Paris and Marseille) and medium-sized cities (Rennes and Dijon) were selected. We chose one city in northern France (Paris), one in western France (Rennes), one in eastern France (Dijon) and one in southern France (Marseille).

We then tried to match the other criteria with these cities’ demographics.

Location and description of the selected cities



Summary table presenting the groups

	Group 1	Group 2	Group 3	Group 4
Consumer type	Stable	Stable	Transition	Transition
Income	Low-middle (diversify)	Middle-high (diversify)	Low-middle (diversify)	Middle-high (diversify)
Gender	~ 5 men 5 women	~ 5 men 5 women	~ 5 men 5 women	~ 5 men 5 women
Age	25-45 age group	46-65 age group	25-45 age group	46-65 age group
City	Marseille (south)	Dijon (east)	Rennes (west)	Paris (north)
Marital status/family situation	Diversity (single, couple, family)			
Owners/ tenants	Aim for 50%/50%, tolerance 2/3 tenants	Aim for 50%/50%, tolerance 2/3 owners	Aim for 50%/50%, tolerance 2/3 tenants	Aim for 50%/50%, tolerance 2/3 owners

A table in the appendix describes the people who took part in the focus groups.

In Marseille, only six people came, but the required criteria diversity was still achieved. In the other cities, nine to ten people attended.

The focus group sessions

The English guide was translated and adapted for France. The tested policy initiatives were selected according to their current relevance and diversity. The focus groups lasted around two and a half hours (including one break). Isabelle Moussaoui led the focus groups and conducted the analysis.

The discussions were extremely rich and detailed. The participants were curious about the study's objectives. As in any group meeting, some spoke more than others, but the facilitator frequently re-established the balance in the time allotted to each so that everyone could express him/herself.

The discussions were transcribed using audiotapes by the service providers in charge of logistics within each focus group.

Analysis

The analysis was thematically based. The discussion points were grouped together by theme (corresponding to the interview guide's themes) and the analysis strived to demonstrate the diversity of positions and response typologies. It was not possible to conduct an analysis by city, because the responses were not different from one city to another and the qualitative approach cannot correlate responses and variables such as city, gender, age, etc.

Theme A: Domestic Energy Use

Key findings:

- Three main arguments motivated energy behaviour within the four groups: comfort, savings and ecology;
- There are four behaviour profiles: "frugal", based on the least possible consumption, "manager", seeking out the least expensive behaviour, "delegating", looking to delegate the mental responsibility for energy savings to objects, and "comfort", focused on comfort as its name suggests;
- Three types of actions are implemented: gestures, purchases of small items of equipment and heavy investments.

Barriers and windows of opportunity depend heavily on the behaviour profiles, types of actions and technologies (renewable energies, insulation, etc.).

A.1. What defines energy use: keywords

The focus group participants were invited to list three keywords describing their "domestic energy use".

There were several types of responses:

- Some described the **energy "functions"** in the home: *"computing", "cooking", "hygiene", "household appliances", "lighting", "heating", "bathing", "leisure", "travel"*. Some people gave them in their order of priority (*"those I couldn't live without"*) and others in terms of cost (*"these are the most expensive uses"*).

- Other responses mentioned their **relationship with energy**, with reference to:

Firstly, the **advantages of energy**: *"well-being", "comfort", "light", "ambiance", "convenience", "heat"*.

Secondly, **problems related to energy**: *"control", "imposed", "cost", "energy savings", "spend less", "consumption", "reduce", "waste", "calculate"*.

Some responses were ambivalent (both positive and negative):

* Notion of *"need"*: *"important", "essential", "convenient – we couldn't live without it", "well-being – unfortunately, we're used to living this way"*, i.e. wanting a high level of comfort while deploring the comfort's necessity.

* Notion of *"safety"*: *"adequate wattage"*: *"I like a lot of power. When there's not enough it really annoys me", "the installation needs to be reliable"*, and so safety is the target but is not always reached.

* Notion of energy attention: *"sensible", "committed", "environmentally friendly", "responsible"* are linked to *"avoid waste", "recycle", "save resources", "do something for the planet", "you have to pay attention", "one day there will be a shortage", "sustainable development", "do not abuse"*, showing both the notion of risk and the notion of responsibility.

- Others also mentioned **energy sources**: *"gas", "fireplace", "electricity", "wood", "solar panels"*. These sources may actually be used or be the object of wistful thinking: *"Fireplaces. [You have a fireplace?] Unfortunately not..."* People would ideally like to install one of these energy sources.

Some interviewees gave different types of responses, whereas others gave responses that fit into a typology. The semantics of the keywords teach us that the **trio comfort/savings/ecology** is a reference. The first word is considered to be mandatory, and it limits the other two notions. Financial savings were emphatically affirmed by the participants, and were related both to practices and to a legitimate social standard. Ecology came in third. It reinforced the argument of financial savings but the two always went hand in hand and the former never replaced the latter. Moreover, the participants were looking for a

balance between "comfort", which is "mandatory", and reduced consumption. They affirmed their "need" for water and energy ("*I can't do without water. My water system broke and it was hell, just like war*", "*I absolutely need electricity*"), but they were also striving for "moderate use". They stigmatized "*blindly inflexible environmentalists*" but wanted to do "*little things on a daily basis*".

A.2. What do "energy savings" mean?

When the term "energy savings" is mentioned, it refers to several areas of action, several types of actions and several behavioural typologies.

The primary areas of action are:

- energy itself
- waste sorting
- water management

While the latter two areas are not included in the term "energy" strictly speaking, connections were made by the participants. They are "subjects of attention" both for economic and environmental reasons. Moreover, they refer to similar types of behaviour: consume less, consume better, purchase equipment to reduce consumption, be careful about spending (on water and energy), adopt routine habits.

Furthermore, connections were made with energy: paying attention to hot water makes it possible to save energy; waste sorting can be used for heat production (urban heating).

Several behaviour profiles were identified:

- **A "frugal" behaviour profile**, with the desire to consume less but without the urge to or the possibility of investing in major work: "*I try not to spend too long in the shower – just 3 or 4 minutes. I do my laundry at low temperatures and I try not to buy products with too much packaging*" (Marseille); "*it's better to turn off the lights when you don't need them than to use low-energy light bulbs that are on all the time*" (Dijon). For example, one of the participants in the Marseille focus group (southern France) said he no longer heats his home at all, and that the temperature in the winter is 15/16°C. His motivation was initially financial, but now he has a comfortable income and does not intend to change his lifestyle. The other participants responded, saying "*That's not for me!*"

- **A "manager" behaviour profile**, where what is most important is "*streamlining*" waste and "*making it visible*" to reduce it, and where the economic logic is influential, because it allows them to "manage" changing behaviour. These people refuse to spend money to save energy (just like the first profile), and are rather more attentive to the financial repercussions, rather than the environmental repercussions of their behaviour: "*I save energy for me, not necessarily for the environment*" (Rennes); "*When we go grocery shopping, we buy things that are recyclable even though they cost more. They should be less expensive because they're reusable. That really annoys me.*" (Rennes).

Some have methods of making their waste visible: "*My children let the water run when they brush their teeth. I put a bowl under the tap and I counted: there were 7 liters per person! I made them use a cup.*" (Paris); "*Once I left standby mode on all night and I saw the meter jump! Now I have power strips to turn off standby mode.*" (Paris).

These participants, however, complained about systems that make consumption less visible, such as automatic debit (to pay the energy invoices), which contributes to "*a lesser degree of attention*" (Rennes), and estimated invoices, with adjustments once a year: "*These {energy} invoices, I don't see them arriving; after I do not have the impression to be really an active consumer.*" (Rennes) ; "*By the fact that the invoices are automatically deducted, we have a lesser degree of attention; in August, there is a correction, but it is late.*" (Rennes)

- **A "delegated to objects" behaviour profile**: some people looked for small or large items of equipment so that they no longer had to worry about saving energy themselves.

For example, one mother explained: *"I had a bathtub, but we had a shower installed, because we have three kids who absolutely loved filling the bathtub for a bath, only to stay just five minutes in the water."* (Marseille).

One man, who had undertaken large-scale insulation work, installed solar panels and bought low-energy light bulbs stated: *"I've bought low-energy light bulbs but it is not my approach to turn them off whenever I leave a room."* (Dijon).

One woman, with children aged 20 and 22 who forget to turn their lamps off, wanted to install *"a cell system"* to automatically turn off the lights when the rooms are empty (Dijon).

These people separate the purchases from the gestures. They have a logic of energy efficiency and not of energy-saving gestures. It is, for them, the role of appliances to be efficient.

- **A behaviour profile focused on "comfort"**, and renewable energies are sometimes a way to increase their level of comfort and their conspicuous consumption.

These people did not want to be bothered by having to save energy. On the one hand, they delegated their savings to their objects – as in the previous profile - but most importantly, *"it's not really a source of concern"* (Dijon). They were therefore willing to make investments for *"thermal comfort"* and *"a pleasant ambiance"* and were looking for simple solutions: temperature regulator. For instance, a man explains that he doesn't manage his thermostat and let it at the same temperature all the day and all the winter: *"20°C [temperature of the heater] all winter, and that solves the problem."* (Paris). These people may have undertaken extensive renovation work (wall and roof insulation, window replacement, installation of solar panels, replacement of their heating system with a more efficient system, etc.), but the main goal was to increase the value of their home, rather than saving energy *per se*. They are in a conspicuous consumption logic. A part of the visibility they want to have involves "green" investments.

These participants reported fairly openly that they often did not pay attention to their energy consumption, unlike the other profiles: *"Sometimes I leave the TV on when I'm not watching it. I don't think it's a good thing but it creates a pleasant ambiance"* (Dijon).

One man said he decided to please his children by buying them *"two flat screens that consume a lot. The bill shot up immediately. Since they're on all day long..."* (Rennes). Here he focused on priorities other than energy savings, in this case what he saw as the "well-being" of his children.

=> Comfort, savings and ecology are inter-related. In the mainstream population, eco-friendly acts are adopted if they do not lower the comfort level and if they are not too expensive. However, some more radical profiles (activists or the "frugal" profile) may give up comfort and/or financial savings to help preserve the environment.

A.3. Energy decisions: gestures/purchases/investments

In terms of actions that are taken to save energy, there is a separation between gestures, purchases and heavy investments (also see deliverables in WP3).

A.3.1. Small daily gestures: some reflexes, an attitude

The participants described various small daily acts that they performed to save energy:

- Turning off the lights when leaving a room
- Deactivating standby mode on devices when possible (or even unplugging some devices, or turning off the power strip powering several devices). These actions were mostly carried out in the evening, with participants explaining that they *"go on their nightly rounds through the house"* to turn off all the lights before going to bed. This included:
 - *"getting up to turn off the TV by pressing the button, and not just the remote control"* (Marseille) [also see theme B]

- Not letting the water run: "*turning off the water when I'm doing the dishes*" (Rennes), "*not taking a shower that's too long*" (Paris)
- Programming the heating system, when there is one, to lower the temperature when not at home and at night (we will come back to this in the "heating" section, A.4.)
- "*Keeping the refrigerator in good condition. I defrost it on a regular basis, whenever necessary. Before, I just did it once a year. Obviously, that wasn't very useful*" (Marseille)
- Not using some appliances (e.g. clothes dryer), not taking the car in some cases (see theme C, "transport")
- Modifying the way in which some appliances are used: "*I do my laundry at low temperatures*" (Marseille)
- Not leaving "*the cell phone charger*" plugged in (Rennes)
- More generally, this implies "*waste reduction*" (Marseille) as well as "*attitudes, civic behaviour, education*" (Dijon).

According to participants, these kinds of behaviours required a real commitment, because they require the mobilization of various habits, attention and actions ("*I try to...*", "*whenever I see that...*", "*I asked...*") as well as the introduction of "*routines*" that become "*reflexes*". Some gestures "*require effort*" (Marseille) and "*everyday attention*" (Rennes). What's more, they require a family commitment or, in any case, attempts to influence the family. "*I'm always behind the children*" was an expression that was used several times during the discussions. Single people said they had fewer problems regarding these issues, because "*when you're single you have more control*" (Marseille).

Barriers standing in the way of energy-saving acts are therefore:

- psychological (cognitive), i.e. related to a perceived mental burden, difficulty implementing this type of act.
- Social/cultural, because it creates a self-image that can be seen as "*obsessive*" or as too "radical", since the social standard is not to waste but also not to be "stingy" or "too environmentalist (also see Rettie, 2009¹).
- It should also be noted that the same acts were always mentioned. Only one person spoke of "*closing the shutters*", and no participants mentioned acts related to cooking, cleaning or DIY for example, as these activities have not been the subject of informational campaigns in France and have not been readily acknowledged as sources of energy savings. There may therefore be a "knowledge" barrier, and one possibility would be to extend advice to a greater variety of activities.

Windows of opportunity are rather difficult to identify, as the focus group participants tended to highlight:

- either their longstanding commitment to these energy-saving acts: "*They keep talking about it now, but I've been doing it for 40 years*" (Paris).
- or a very recent change related to informational campaigns that have been increasing in number over the past few years (we will come back to this in theme D, on "wider issues"). These changes may relate to the magnitude of the acts or to the argument used to back up these acts that were already routine habits: "*[I changed behaviour thanks to] the news. I never used to think about the earth. It was mostly about saving money*" (Paris).

¹ Rettie Ruth, 2009, "CHARM: Social norms marketing for energy efficiency", *First European Conference on Energy Efficiency and Behaviour*, Maastricht, October.

A.3.2. Purchases of small equipment: getting help to eliminate waste

A second set of actions involves purchasing eco-efficient equipment or equipment that manages energy more efficiently.

The objects mentioned in the focus groups were:

- Low-energy light bulbs;
- Power strips, used to plug in several devices (TVs and peripherals, computers and peripherals, in particular) and turn them off all at once, to avoid standby mode;
- Household appliances, with the goal of choosing an appliance that is ranked in class "A" or even "A+" or "A++" (see theme B, "appliances");
- Thermostatic valves on radiators;
- Flow restrictors on the sink and/or shower.

Use of equipment in this way could also be accompanied by energy-saving behaviour i.e. turning off lights; paying attention to heat; turning off power strips; defrosting the refrigerator; doing laundry at low temperatures; turning off the water when brushing teeth; and taking a shower. However, these acts were not always systematic. Some people, because they had this equipment in the first place, did not try to adopt supporting acts, and there was a suggestion that some may even buy this equipment so they do not have to make extra efforts (see the "delegated to objects" behaviour profile above).

It is interesting to note that in comparison with older studies on the same topic², it seemed that the focus group participants were much more informed about the advantages of low-energy light bulbs and energy labels on appliances. We will come back to this second point later. Regarding low-energy light bulbs, their use appears to be increasing, particularly *"in rooms where we leave the light on for a long time": "the kitchen, bathroom, bedroom"*. Motivations are energy savings, *"even if they are more expensive"* (Marseille), and environmental protection (*"to save the planet"*). However, a few traditional criticisms persisted, such as their price and brightness: *"they don't provide adequate lighting"*. However, in-store access is no longer a barrier. A new criticism is emerging: *"I didn't buy low-energy light bulbs because I thought they were terribly expensive and I'm glad I didn't, because now we're being told that they're not good for our health since they have radio-electric phenomena and mercury. When you break one, it's as if you were breaking a mercury thermometer, with less mercury of course, but they say you mustn't pick it up with your hands or with a vacuum cleaner. No, you're supposed to sweep it up. So for something that's supposed to be environmentally friendly and healthy, I think it's worse than before"* (Dijon).

The barriers listed in terms of equipment were mainly financial. We will examine this in greater detail when we discuss energy labels on household appliances.

There are windows of opportunity when:

- a perceived 'mental burden' related to an energy-saving act becomes too heavy (example of children who use much more water and electricity as they grow up, so the parents decide to buy automatic or consumption-control devices to avoid waste);
- devices break or come to the end of their life-span: *"I waited until the light bulbs I'd installed stopped working and then I gradually replaced them with low-energy light bulbs"* (Marseille);
- the accumulation of electrical devices in a same place makes a power strip useful;

² EDF R&D internal studies and ZELEM M.-C., 2002, "Société de consommation et maîtrise de la demande d'énergie, une mise en compatibilité complexe", Global Chance, (16) : "Maîtrise de l'énergie et développement durable", pp. 111-124

- a family change generates new purchasing decisions: *"Because we're a family of five now. My refrigerator was too small. I wanted to replace it. And then I paid attention to energy consumption - A, B, etc. Something I wasn't aware of at all in the past"* (Marseille).

A.3.3. Heavy investments: better comfort for balanced bills

A third category of energy-saving actions involves refurbishment, or large-scale modifications to the home. For example, the participants mentioned:

- Replacing the heating system (see A.4, "heating" section);
- Insulating the walls and roof;
- Replacing the windows (double glazing) and doors;
- Replacing energy sources with renewable energies (solar panels, wood) (see A.5, "renewable energies" section).

These actions are different from daily energy-saving acts in that, as one participant stated, they are *"definitive"*. *"When you've adopted a heating system, once you've insulated your house and installed double glazing and glass wool, once you've regulated your thermostat, then it's definitive. You're not always fiddling with the boiler. But you don't always have the reflex of turning off the lights when you leave a room – it's not automatic"* (Dijon).

Note that many participants had had refurbishment work done – either insulation work or work to install a new heating system – to save energy or to improve their level of comfort.

However, participants also saw **barriers**, which were primarily financial: *"I'm very aware that in my apartment, the window edges aren't well insulated. When you see how much it costs to replace the most basic window, then French windows are out of the question. I know that if I decide to do it, I'll have to borrow with interest, so I go on wasting with a poor conscience and at the same time I tell myself it's not my fault"* (Paris).

Barriers were also related to occupancy status: *"We can't make investments – we rent our home"* (Rennes).

Windows of opportunity are mainly:

- fluctuating energy prices
- financial aid from the State (tax credits, zero-interest loans)
- the desire to increase property value (to sell the property or pass it down to one's children)
- the desire to improve comfort
- the end of property credit reimbursement for a household

=> Barriers and windows of opportunity depend on the technologies and types of actions implemented. The latter depend on population profiles that appear more or less willing to invest in technologies or refurbishment.

A.3.4. Other decisions mentioned: rates and operators

One participant mentioned the choice of an "off-peak/peak hours" rate (tariff). This rate makes it possible to pay less for electricity when national production is low (at night in particular). It also makes it possible to spread out consumption, to avoid production peaks. However, this participant also explained that she did not currently make any significant changes to her habits: *"I had a meter installed for peak and off-peak hours. That helps to cut down costs. There's a price difference, but I don't get up at night to run the machine. I think it must cut costs, but I haven't checked"* (Paris).

Another participant, responding to the question about changes made to save energy, said he had switched suppliers in order to choose an operator conveying a more *"environmentally friendly"* message. *"I switched operators and chose Direct Energie. The price isn't that different from EDF. I just noticed a willingness to work while respecting the environment. Their message is more environmentally friendly and there was an opening offer at the time. I live in a social housing. I can't have major work done. I've been sorting waste for a long time, so in my little way, this is all I can do"* (Paris).

A.4. Heating

After general questions were asked about energy uses in the home, a series of questions was asked about heating.

A.4.1. Heating practices: cold and heat management, heating temperatures

Heating, for the participants, **represents** "comfort", "well-being" and "a cost", "bills", and even "a luxury". It is an "essential" use of energy, "a need" that is vital for their "health". But "it's the most expensive item", and "the others are cheap" (Paris).

Heating practices depend heavily on occupancy status and heating method. Tenants and people with "collective heating" have little room for manoeuvre to adapt their heating as they rarely choose the heating period or the heating temperature. They can often only respond to the situation, either by "covering up", by adding an auxiliary system for cold weather, or by "opening the windows" in the event of extreme heat. Some "complain to the managing agent" (Marseille) to get it to turn on the heat. But the general agreement was that there was little room for manoeuvre.

When people **get cold**, there were several possible strategies or actions that were discussed:

- Many participants said that they "put on a sweater" or "covered up". This practice appears to be on the rise and was discussed during the focus group discussions: "I cover up. Now, I put on a sweater, whereas I used to turn up the heat" (Dijon). The participants explained that this was because the price of heating energies has risen over the past several years (gas in particular). Some, however, "refuse to put on a turtleneck on 25 December!" (Paris) and preferred to have a temperature where they could wear a tee-shirt.
- Some turned on the heat first or after putting on a sweater, if the cold continued, "make sure the radiator isn't broken" (Paris), "check the temperature to see if it's just an impression or if it really is cold" (Marseille).

In terms of the **management of heating temperatures**, there were three types of responses:

- Some of the participants heated their homes very **uniformly**, preferring heating continuity over heat management. This practice is often due to a technical constraint namely they do not have a thermostat, a centralized regulator or a programmer: "It's a 120m² apartment with a high ceiling, so if I turn off the heat and come back in the evening, I have to turn it all the way up to bring it back to room temperature. By the time it heats up, it's time to go to bed, and we can't enjoy it" (Marseille).
- Some of the participants **adjusted their heating practices**, depending on the time of day (mostly day/night), their absence/presence, and the room itself. The trend is often to set "low" temperatures (16-17°C) in the bedrooms (or "don't heat them") and all the other rooms during the night and in the day when nobody is home, and to set higher temperatures (19°C to 23°C depending on the requirements of the participant) in living rooms when the family is home. The argument was primarily economic: "It does save a ton of money [to set different heating temperatures at different times of day]" (Dijon) for instance. Another similar method was used by people with auxiliary heating in a room or wood-fired heating (fireplace, insert). In this case, when it was cold out, or before heating season started, they "add wood to the heater according to [their] needs" (Rennes).
- Two people decided to **no longer heat** their home: "Around ten years ago, I decided not to have heating in my new home. It was electric heating. I saw my bills cut in half. At first it was financial, and then I got used to this lifestyle. It's an excellent remedy for idleness. I'm always active and when I go to bed, I cover up with a duvet. The temperature is 15-16°C" (Marseille). One person was under so much financial stress

that she lives with a temperature of 13°C in the winter. She explained that her apartment is equipped with an under-floor heating, combined with an individual heating system. But she turns only the under-floor heating on, to save energy. (Paris)

In terms of **temperature**, the participants overall said they heated to 19°-20°C, but in each focus group, one or two people said they heated their homes even more (22-23°C). So there are mainly three groups of temperature level:

- One group with about 20°C, as an average or as a permanent norm. For example, one person explained that *"right now, it's barely 20°C, so [she turns] on the towel rail radiator in the bathroom"* (Dijon).
- Those who lived with a more 'moderate' temperature did so out of financial constraint or out of consideration for their health, to avoid "overheating": *"my friend heats his home to 23-24°. I don't feel good there – I get all swollen"* (Dijon), *"the body adapts"* (Rennes).
- People who maintain a higher temperature do so in the name of "comfort".

There are some exceptions or negotiations concerning these rules. For instance, the bathroom may have a special status, and even champions of moderation can "admit" that *"it's more like 25° in the bathroom"* (Dijon). Furthermore, sometimes, participants in relationships encountered problems caused by different heating needs and the search for a compromise: *"I never used to heat the bedroom. I started to a little, because my husband couldn't bear it, but otherwise it's 15°C. [...] At night, I open the window but my husband doesn't know."* (Dijon).

It is important to note that the **sensation of heat** also depends on a home's level of insulation. For example, one participant described how her home's insulation helped her lower the heater's temperature: *"Two or maybe three years ago, we replaced the glazed doors and windows. Before we had to turn up the boiler and I needed it be to 22°C or else I was cold. Now, I can tolerate a more reasonable temperature of 19 or 20°C and we keep the bedrooms at 18-18.5."* (Dijon).

Furthermore, several participants said they do not set their heaters at high temperatures because of the geographical orientation of their homes: *"My apartment faces due south, which keeps in the heat, and I'm between two floors, so I'm heated from above and below."* (Dijon).

Windows of opportunity for changing behaviour related to heating habits are therefore the increased cost of energy, rising awareness that makes people "take the plunge" towards green investments or behavioural changes, and technologies that allow an automatic heating management.

Barriers in the way of lowering heating temperatures are "the sensation of heat" needed to feel comfortable in the home and limited room for manoeuvre on the part of tenants and people with a collective heating system.

A.4.2. Actual or potential changes to save energy

The people in the focus groups had made several changes to their habits or installations over time:

- Addition of a programmer, or change of programmed time slots, to manage temperatures differently at different times of day: *"The first year I heated my home, I didn't really pay much attention. I received the bill, and it wasn't horrible, but I thought it would be a good idea to cut back a little. The possibility that I had was to change the programming mode to try to manage my spending better. Instead of turning up the heat an hour before I get home, it rises when I come home. I never turn it up in the morning anymore"* (Marseille).
- Change of energy sources. There are a wide variety of examples: from gas to electricity, or vice-versa, from fuel to gas or electricity, addition of a wood source. Note that in several examples, these changes are made in tandem with insulation work.

For example, one couple of tenants moved into an apartment *"without heating or double glazing"*. The owner, several years later, installed electric heating. The tenants *"insisted that he replaced the windows"* (Marseille).

The participants in these cases had replaced their heating systems after a series of other home renovations: *"I installed the door frames, the fireplace and the solar panels. I took the initiative of switching to an insulated home, to try out new energies, which made me decide to replace my oil-fired boiler, even though it still worked really well"* (Dijon).

- Insulation work, after noticing *"heat leakage"*, which forces the heating system to run full blast: *"The boiler was often running and in the end, we didn't benefit from the heat. We installed double-glazed PVC windows, we added two layers of glass wool to the attic, and we noticed a change right away. Firstly, in terms of ambiance and thermal comfort, and then in the heating bill"* (Dijon).

Windows of opportunity

Motivations to change would seem to be primarily comfort and energy savings. Changes are often made when moving into a new home, when receiving initial heating bills and when carrying out other infrastructural work.

=> Heating is considered to be a costly budget item, but is also seen as a necessary basic comfort. The price signal may therefore have an impact, but this is not mechanical or linear, because sensory, psychological and social factors may act to reduce this impact.

A.5. Renewable energies: trendy but difficult to implement³

Quite a lot of renewable energies were mentioned when we brought up the term: *"solar"*, *"wood"*, *"wind turbines"*, *"water, the sea"*, *"garbage"*, *"geothermic"*, *"rapeseed"*, *"ethanol"*, *"heat pumps"*, etc.

The positive points were not discussed at length, but most of the participants did not need convincing: *"renewable source"*, *"no more fossil fuels"*, *"accessible to everyone"*, *"it comes from the Earth, it's easier to trust"*.

Several **negative points** were mentioned:

- aesthetic: *"I think wind turbines are ugly"* (Rennes)
- financial: *"it's still very expensive"*, *"The downside is the cost of installation"* (Rennes)
- technologically risky: *"we don't have enough perspective – it's new"* (Marseille)

These two arguments lead to a decision against renewable energies *"for the time being"*: *"[solar panels] Their lifespan is ten years, and they take ten years to pay off, so it's not worth it"* (Marseille)

- administrative: *"It needs to be less complicated. Preparing all the required documents is really complicated"* (Rennes), whether it is in terms of building permits or the resale of electricity to EDF for solar panels.

- in terms of skills: *"there aren't many qualified craftsmen"* (Paris). *"The companies I contacted to install solar panels told me 'you're a whole century ahead of us'. Traditional craftsmen don't install them or can't provide us with information"* (Paris).

There are also **barriers** related to occupancy status. Tenants explained that *"it's pretty hard to have installation work done"* (Marseille). Co-owners have to obtain unanimity from the other owners: *"I'm on a co-owned property, and all the co-owners have to approve. There are three of us. One is against it – he's a non-resident owner, so it's not in his interest to invest"* (Marseille).

³ Because we did not have the time, we did not address this issue with the participants in the Dijon focus group.

However, several people had **already installed** "solar panels" or a "heat pump" in their homes. And many others were "considering it".

However, the participants saw installation as a long process: "You have to make technical decisions – which one will be the best? You have to take time to think. It's really an investment" (Rennes); "the paperwork is complicated" (Rennes).

According to the participants, the renewable energies "of their dreams" were mainly solar panels and "wood-burning inserts". Furthermore, heat pumps were considered to be the next possibility if the cost of solar panels was too high: "We're building a home. We'd like to install solar panels or a heat pump. It will be a question of budget. We haven't received the estimates yet" (Rennes).

Their **sources of information** are craftsmen, ADEME (French Environment and Energy Management Agency) and its *Espaces Info Energie* (energy information agencies), and the general public media, which are dedicating a lot of attention to solar panels and heat pumps: "Heat pumps are all the rage - we hear about them in the news. We know we can receive tax credits with them, so it sparks our curiosity. We've heard our friends talk about them too" (Rennes).

Everyone agreed that renewable energies should be used more. Some, however, said that renewable energies unfortunately lacked **visibility** in their region: "They don't exist in Marseille. Home builders don't install solar panels. But we've got lots of sun!" (Marseille). The issue of visibility, whether at their own homes or more globally, in terms of actions undertaken by the region or country, was considered to be very important for the participants. It was suggested that visibility is a way of "showing" that you are "green" and of setting an example through actions that could be adopted by others: "A friend of mine is a lumberjack and has tons of work right now, because on the city outskirts, there's very high demand in the wood industry, whether it's for new homes or for heating. Architects use a lot of wood. It cuts costs, buildings age better, and it's more ecological when you have to tear down the building. The regional council grants subsidies to certain worksites if they support the wood industry, but the public doesn't see it, except in the countryside" (Marseille).

=> Renewable energies are the subject of widespread awareness and are generally perceived positively. However, there are still barriers in several stages of the installation process (administrative requests, financing, choice of technologies, choice of craftsmen). Moreover, barriers related to occupancy status are significant.

A.6. Conclusion on "Domestic energy use"

As was demonstrated in WP3, there is a wide variety of practices and social representations, and barriers and windows of opportunity, by type of action, household profile and technology. Energy is a basic resource for households, who attempt to find a balance between their desire for comfort, their budget and growing environmental concerns. The solutions that are found are partial, sometimes temporary, and often less than optimal. But the fact that households are concerned about energy, its cost, its access and its sustainability is still a crucial point. We will see that numerous barriers that were mentioned in the focus groups concerning the development of new energy policy initiatives relate to matters of infrastructure and political will. These discourses are not only a classic way of getting rid of guilt and blame other "actors" of the system. It is rather a way of expressing that a behavioural change limit has been reached and that households alone will not be able to overtake it. These discourses express the need for a shared responsibility.

Theme B: Household Appliances

Key findings:

- "Small"/"large" appliances in terms of energy consumption and size are the main distinction to discern whether households will be interested in consumption information when making their purchase;
- The energy label appears to have recently made its mark in France after difficult years;
- Attention to appliances' standby power also seems to be increasing;
- However, this attention should be considered with respect to supply, as households want manufacturers to be more responsible.

B.1. Categories of appliances

When the participants spoke of their electrical equipment, they talked about several "groups" of products.

Some separated their equipment by activity: *"Household, multimedia, heating, lighting"* (Marseille). They consider that the amount of equipment owned *"is exploding"* in some areas, and particularly in the following fields:

- multimedia home entertainment: *"Everyone keeps buying more IT equipment. For example I have a TV decoder, a 'box', an external disk drive, two computers, one TV and several radios"* (Marseille). When people purchase a device they also buy several "peripherals": *"When I bought a computer I thought, I need an external disk drive, a DVD player, a matching TV, etc. And similarly, with the TV, I needed a matching sound system, a video camera... - And a camera too"* (Marseille).
- kitchen appliances: *"the coffee machine, the espresso machine, the oven, the microwave. – The food processor. – The bread machine"* (Marseille).

In other areas, however, the trend is rather to pay attention to energy use, and this is true in the case of lighting: *"I got rid of my halogen bulbs. – I don't turn them on all the way. – Apparently it's the same in terms of energy consumption. – Oh really? I thought I was doing a good thing..."* (Marseille)

In all the focus groups, there was a way of categorizing equipment as either *"large"* or *"small"*, which referred to the physical size of the equipment, combined with a perception of *"heavy consumers"* and *"light consumers of energy"*. This latter distinction explains which appliances are monitored in terms of consumption since they are considered to be *"energy-intensive"*. The responses were not at all the same from one person to another during the focus group discussions, but there were several similarities:

- Heavy consumers are: *"appliances with a resistance"* (only male participants gave this argument), *"the oven", "the refrigerator", "the washing machine", "the iron, if it's used a lot", "electric barbecues in the summer", "the toaster", "the clothes dryer", "the hair dryer", "the stove"*. Several people mentioned information they had heard on TV programs: *"I changed my mind about dishwashers. The program showed that it's better to wash your dishes in the machine than by hand, because it consumes a lot less water and energy"* (Rennes).
- *"Light"* consumers are: *"the TV", "light bulbs", "the computer", "the radio alarm clock", "the stereo system", "the telephone", "the live box", "printers", "the scanner"*. Several people mentioned that *"new generations of TVs – LCD, etc. – hardly consume anything"* (Dijon).

Power, electrical resistance element and duration period of use are the criteria that people use to determine whether or not appliances consume a lot. Furthermore, small equipment in the physical sense of the word is considered to be *"of no interest"* in terms of consumption and investment in the purchase. This means that, even if these appliances are

considered to be "heavy consumers", the participants will not worry about their consumption when they make their purchase. In addition, another distinction was made between leisure/utility. Household appliances are useful, whereas TVs, computers and game consoles belong to a more entertaining universe, although we will see that they are actually considered to be "essential" today.

However, some participants qualified these arguments concerning the perceived low energy consumption of these kind of appliances, by explaining that "*people own more and more of them, like telephone chargers, cameras, etc.*" (Dijon).

If we compare and summarize all these distinctions, we can see that the electrical consumption of an appliance will be monitored more closely if:

- the appliance is "large" physically
- it is considered as containing an electrical resistance
- it is frequently used
- it is classified in the segment of "domestic tasks" (as opposed to leisure)

Large kitchen appliances typically correspond to "*energy-intensive*" appliances, whereas the multiple "*small*" multimedia devices, in spite of their number, are rarely called into question. There is one noteworthy exception: equipment with a visible standby indicator (clock, small light) is the subject of special attention, but this is true when the equipment is used rather than when it is purchased.

B.2. The role of the energy label in purchasing decisions

Compared with studies that were conducted a few years ago (three to five years)⁴, the energy label seems to be much more widely known and more frequently taken into account when purchasing decisions are made. It is, however, not the number one criterion: "*[What are your selection criteria for electrical appliances?] Quality, brand and design. – I first look at the brand and design, and then the [consumption] class. In any case, high-quality appliance manufacturers don't sell classes lower than B*" (Paris). The participants frequently made a link between the product's quality (related to the brand) and class A: "*High-quality products belong to class A*" (Paris).

Labels indicating energy consumption and ranking appliances into consumption classes are widely known and considered as highly visible by the participants: "*You can't miss them. They're stuck on top. Recently I bought a fridge because mine had broken. Now, practically all the fridges are in class A*" (Marseille); "*the labels are pretty big, you can't miss them, it draws your attention, and then of course you'll at least buy in class A if you can't always buy A++*" (Dijon).

The participants themselves mentioned this change, explaining that they look at this information "*more and more often*". Some of them had recently had to replace a household appliance, which was considered to be an opportunity to take this information into account for the first time: "*We're a family of five now. My refrigerator was too small. I wanted to replace it. And I paid attention to energy consumption - A, B, etc. Something I wasn't aware of at all in the past*" (Marseille).

However, not all appliances were perceived in the same way: "*For an electric razor for example, I'll be more interested in the model than in energy consumption*" (Marseille). When appliances are purchased out of pleasure, as a personal indulgence, consumption is not taken into consideration: "*When I bought a bread machine, I didn't look to see how much energy it consumed*" (Marseille). Likewise, a similar distinction is made between small and large appliances: "*I pay attention for large appliances, but when it's small stuff like radio alarm clocks, I don't pay attention*" (Rennes).

⁴ EDF R&D internal studies.

In addition, this information is not available on all appliances: *"It's not on all appliances. It's on large household appliances but I haven't seen it on small ones"* (Dijon). *"I bought a computer recently and there wasn't a label. They're not on TV screens either. I asked questions about my flat screen"* (Rennes).

It is also worth noting that the criteria used to assign energy classes are occasionally criticized: *"Washing machines aren't economical for everything. There are some cycles, such as drying, that consume a lot, but it might still be in class A for washing, so then you have to compare and it's a big hassle"* (Dijon).

Moreover, some participants said they replaced a refrigerator or freezer that was very old (more than 20 years) because it had broken or had poor energy efficiency. But they knew that while the new one would be more efficient, *"the salesperson told me it won't last as long..."* (Dijon). The participants used this argument to express the paradox of planned obsolescence: households are encouraged to buy more recent and therefore more efficient appliances that will nevertheless have a shorter lifespan and produce more waste (see B.5.).

=> The energy label is therefore a secondary criterion in the purchasing decision.

B.3. Should appliances on standby be turned off?

The other practice mentioned to improve energy efficiency was the act of turning off standby mode. Whereas energy labels were introduced in France in 1995⁵, but took time to gain recognition, consumers rapidly became aware of problems concerning standby power. Only a few months after an informational campaign was launched on this topic, studies showed interest in this issue (EDF internal documents). One hypothesis is that appliances with standby were already used in homes, whereas energy labels apply to rare, one-off purchases.

Many of the focus group participants said that it was regrettable that increasing numbers of appliances now have standby power: *"The little lights on all the appliances are really unpleasant. I just hate standby indicators at night – they drive me crazy. When you enter a room, it's like you're entering a spaceship. It's horrible. They can't bear to make appliances without them"* (Dijon).

Some participants had invented strategies to turn off at least some of these appliances:

- *"Pressing the button"*, instead of using the remote control, to turn off the TV;
- Unplugging the appliance;
- Connecting the plug to a power strip with a switch, to turn off several devices at once (particularly those connected to the TV and those connected to the computer).

These acts may be performed systematically after the appliance is used, or at specific moments of the day, and particularly at night before going to bed.

They are performed even more frequently when the appliances are seldom used: *"I don't use the stereo system every day. The stereo is unplugged. When I want to listen to something, I plug it in"* (Dijon).

Such acts required 'effort' (*"I get up and turn off the TV"*) because the participants said that *"the easiest solution is to use the remote control..."* (Dijon) and when a device is unplugged, it has to be *"reprogrammed"* later.

The main argument is related to electricity consumption and the impact on spending: *"[Standby power] consumes a lot of energy. It represents one-tenth of the energy bill"* (Marseille). However, note that some participants turn off their equipment for health reasons, particularly related to the emission of waves: *"I turn off everything that's in standby mode to have a clear conscience. You see, like your alarm clock [an alarm clock that was on the table*

⁵ In France, the energy label was made mandatory for refrigerators, freezers and refrigerator-freezers in 1995, for clothes dryers in 1996 and for washing machines in 1999. It has been extended to a growing number of household appliances (electric ovens, air-conditioners, electric lamps, cars, homes).

during the focus group emitted 'resonance' noises picking up a mobile phone that was on], those are things that pick up everything, they're full of waves, and it's bad for you. And I don't keep my mobile phone next to me [when I'm sleeping] either" (Paris). The environmental argument was seldom used. One person explained that it is "to have a clear conscience" and another said "when they say 'if you leave a device on standby, you're killing a bear', it's an image. But I still try to turn my appliances off systematically. I'm careful" (Dijon). In 2005, one awareness-raising campaign on energy savings showed "shocking" images linking electricity consumption to endangered animals, which were shown dead⁶.

However, some appliances were thought to be useful only when on standby: "I'm not going to turn off the radio alarm clock every day, because I'd have to turn it back on and set the time again. That said, if I leave for a week, I turn it off. The same goes for my hot water tank" (Dijon). Several participants mentioned that they "do not unplug the 'box'". On the other hand, one participant explained that she has "a power strip with the computer, the box, the high-technology group. I turn off everything at night, even the box. I don't need to be called [on the phone] at three o'clock in the morning" (Paris). Several participants reacted strongly to what she said, showing their surprise, because they found it inconceivable to be "disconnected".

Significantly, some devices cannot be turned off: "[Ironic tone] My TV has a 'pretty' little red light, and when I turn it on, it turns blue, it's great...But it doesn't turn off" (Dijon).

Note also that some participants do not see the purpose of monitoring and getting rid of standby power, considering that the resulting electricity consumption is low: "I don't see the point. My energy bill is quite reasonable, aside from heating" (Paris).

Moreover, contradictory recommendations could also make opinions uncertain when it comes to turning off equipment (TV and computer in particular): "When I was younger, I was told that turning off a TV like that [by unplugging it] would damage it. In reality, it doesn't cause any harm" (Marseille). Just like there is uncertainty between the habit of turning off incandescent bulbs and leaving compact fluorescent lights on "for a long time", there is uncertainty concerning the long-term effects of unplugging devices every day.

=> Attention paid to standby power therefore seems to be increasing – as evidenced in the focus groups. The barriers are very often technical: having access to switches for instance; and there are knowledge barriers as well, since there are a lot of contradictory messages being sent.

B.5. The "environmental" impact of appliances

One of the questions used during the focus group sessions was asked in order to try to understand the link between electrical appliances and environmental damage. Many of the participants did not mention environmental damage related to use of energy sources: "[Do you take an 'environment' criterion into account when you purchase appliances?] What does that mean? [what do you think?] It's protection of the planet, but in terms of electricity, I don't see the link...I don't necessarily think about it" (Dijon). However, they did make connections with the appliances themselves, in terms of materials, the emission of waves and waste.

For example, the devices that were considered to be "bad for the environment" were those "that have the fewest recyclable parts, that can pollute, like mobile phone batteries. Household appliances are the worst" (Paris). Likewise, all devices with a reduced lifespan, linked to planned obsolescence, were viewed as producing more long-term waste: "you buy cars and then get rid of them quickly. Before, you could keep a car for more than ten years. Now they're designed not to last and when you consider the tons of parts that aren't recycled..." (Marseille); "All household appliances are designed not to last. In the past, you could keep a washing machine or a fridge for 20 years or maybe more. Now, they make us

⁶ See the "shocking" images from the Nicolas Hulot Foundation campaign, from 2005, at <http://www.fondation-nicolas-hulot.com/goodies/fondefi05.php>

replace them all the time" (Marseille). Awareness concerning recycling and the materials used in electrical devices appeared to be related to a new policy initiative, which was introduced in 2006 and is called "eco-participation". It consists of paying around 1 euro for each new electrical device that you purchase, so that the store will recover and sort used returned devices. Several participants also stated that they regularly went to the waste treatment centre, especially for electrical devices. Selective sorting and drop-off points seemed to be known for dealing with "batteries", "mobile phone batteries" and "mobile phones". Participants mentioned that these devices "all contain more or less toxic products", but that they did not know where to dispose of them.

Attention was also paid to devices considered to contain "gases: the fridge, with Freon" (Rennes).

However, "green labels" were only seldom mentioned, and when they were, they were described as "a bunch of baloney" (Dijon).

Other devices seen as bad for the environment were those that emit "waves" such as "the microwave oven" and "the mobile phone".

And then there are those that require the use of other products, like "the washing machine, because detergent is bad for the environment" (Rennes).

=> The environmental impact of appliances is rarely linked to their energy sources. According to the participants, it is more closely related to materials, the production process and recycling. But French households do seem to be acquiring environmental awareness of this issue.

B.4. Should some equipment not be bought or used? What is essential, what is not?

A series of questions was asked to find out whether the participants had considered stopping or had already stopped using or purchasing some equipment because of the energy consumption or environmental impact related to its use. In the answers of people, these questions refer to what is considered to be "essential" or "superfluous". The focus group participants claimed there is a distinction between "essential" and "superfluous" and yet they depicted superfluous items as being socially essential, in our "consumer society": "we're used to having everything we have. If we have it at home, that means we need it" (Rennes).

Some participants avoid or have stopped purchasing some equipment, for a variety of reasons:

- for a perceived risk, like for microwaves: "At first I didn't want a microwave [because of the waves] and then I told myself it was convenient after all" (Marseille).
- for environmental reasons: "I'm against coffee pod machines" (Dijon).
- to save energy: "I gave my dishwasher to Emmaus a long time ago. Ditto for the coffee machine. I have a French press now - it's great" (Dijon).
- to fight excessive consumption: "I'm not modern in that respect. They can release all kinds of things, but I won't buy into it" (Dijon).
- because the manual method does not require that much effort or is seen as pleasurable: "I don't have a clothes dryer. We like to hang out the laundry, and our laundry room is fairly big" (Dijon).

Others thought that purchasing this equipment was a part of "living in today's world" and that it is hard to stop using devices that have already been purchased: "I really like anything that's new. I'd have a hard time giving up stuff that I've bought" (Dijon). There was a great deal of social pressure to purchase certain equipment in order to participate in "normality". "Children make you have a TV. It's part of their lives" (Rennes). "The computer is necessary – it's a useful form of leisure" (Rennes).

We also saw earlier that moderate use is possible (section A) but there is a tension between consumption and moderation; whether it is in terms of energy consumption or consumption/acquisition of equipment, between a consumption "standard" that encourages the purchase of multiple and increasingly specialized devices (Shove, 2003⁷) and a logic of moderation, which encourages consumers to pay attention to the energy that the devices consume.

=> The barriers to abandoning use or acquisition often involve socio-technical explanations, and the fact that households are immersed in an object-based system. However, concessions are made when needed, which shows that changes are possible when they do not call important principles into question (overall comfort, gender relations, integration of children into society, etc.).

B.6. The role of stakeholders in improving energy efficiency and environmental protection

Lastly for this section, a series of questions was asked to investigate the notion of stakeholder responsibility, and the role that households might play in improving the environmental performance of products.

The focus group extracts already quoted in the first paragraphs of section B show that the participants referred to a "they" - meaning equipment distributors and manufacturers.

The initial responses to the questions asked about the responsibilities of the various stakeholders were that *"we buy what's available in stores. It's up to the manufacturers to be careful"* (Rennes). The participants often considered that supply structures, and maybe even determines, demand.

Participants also felt that distributors were often also responsible for poor-quality imports: *"Wholesalers who buy products abroad and sell them in Europe, who buy from China [should be careful]"* (Rennes).

In particular, it was felt that the lifespan of appliances was their responsibility: *"What makes no sense is that our parents' appliances lasted longer than what we have now. It's not logical"* (Marseille).

Within companies, the participants distinguished between several "functions". For instance, it was felt that companies should improve their research into these matters: *"All of these companies that manufacture products should be taxed sufficiently. They should focus their research more on economic [energy efficient] and sustainable products"* (Paris). However, some felt that marketing should also be called into question: *"Excessive marketing is more and more frequent"* (Paris). *"My personal opinion is that marketing will always win. That is, we'll always tend to buy a product that we find attractive, which will be a higher priority than ecology"* (Marseille).

However, others stated that an environmental revolution cannot occur solely through the goodwill of manufacturers: *"Let's be realistic. Manufacturers need to sell. They're not the ones who are going to make your coffee pot last longer. They're in it to make a profit"* (Paris). The recommendations are therefore to force manufacturers by applying "taxes", and "creating new laws" (Marseille).

However, some argued that the "State" and "public authorities", although they should have the *"power to pressure people into recycling and polluting less"* (Paris), were not seen as very responsible or exemplary: *"In Germany, the deputies get around by bike. They set an example for their citizens. It's not just for Paris Match"* (Paris).

⁷ Shove E. 2003, Comfort, Cleanliness and Convenience: the Social Organization of Normality. Berg.

Participants believed that, in any case, households did not have enough influence: "*we're merely a small link*" (Rennes), "*we're at the end of the line*" (Paris).

=> The fact that households lack room for manoeuvre as "consumers" is seen as an extremely strong barrier in the way of making products environmentally friendly.

B.7. Conclusion on "household appliances"

Household appliances are therefore monitored by households, some of which are more careful than others, but overall, the acquisition of multiple appliances is seldom called into question. However, households perceive manufacturers as the main parties responsible for the energy consumption of appliances and their environmental damage.

Appliances become nowadays an environmental concern: the way they are produced, their level of electric consumption, the available information during the purchase, the manner to use them, how to recycle them, are some new questions. All the lifecycle of appliances is questioned. But all the appliances have not the same level of concern:

- People develop several social categories of appliances. From these categories depends the perception of energy consumption level
- Energy policies focus on some appliances and let the others as "un-thought"
- People are "locked in" the offer
- And people are locked in by the consumer society and the "modern needs", with a very high standard of comfort

Theme C: Travel and Fuel Consumption

Key findings:

- Autonomy, comfort and freedom continue to symbolize cars;
- But cars are also associated with cost, pollution, and individualism;
- Some practices have been changed, for short trips in particular. Personal vehicles are still mainly used for long trips (holidays) and shopping;
- Electric and hybrid cars are earning a positive reputation, but households do not think the market is ready.

C.1. Positive and negative opinions of cars

A first series of questions was asked to explore participants' perceptions of cars.

Positive descriptions of cars were mainly: "*autonomy*", "*speed*", "*freedom*", "*comfort*", "*peace of mind*", "*pleasure*". Moreover, participants mentioned that it was easier to transport objects than with other means of transport. Some mentioned "*safety*" as compared to public transport: "*I don't take the RER suburban train [regional train] at 11 at night!*" (Paris). Several arguments emphasized the notion of "*flexibility*": "*availability*", "*independence*", "*precision: you're not bound by a schedule*" (Rennes). Furthermore, several people considered a car to be "*essential*". It is a "*need*", a "*necessity*".

However, the participants also mentioned several **negative points**, and stated that their negative perceptions of cars have increased: "*It's the crisis. We tend to see more things in a negative light, because it's expensive*" (Rennes). The focus group discussions were suggestive that the financial argument has "contaminated" the other arguments, with the positive points being outweighed by the cost of automobiles. The financial argument, with the increasing price of fuel since 2007 (with a recent dip that still did not offset the previous increase), is therefore significant: "*Consumption*", "*expensive*", "*the cost of maintenance*", "*purchasing price*", "*a car that consumes less costs more, so it's hard to make the right choice*", "*you buy at a loss*", "*parking fines*".

What's more, the other negative arguments were often counter-points to the positive arguments: while one person mentioned safety, others spoke of risk and danger: "*risk of*

accidents", *"you have to be attentive, really alert"*. Similarly, flexibility and the fact of not being bound by schedules were called into question: *"it's always out of order, so you can't count on it"*, *"in cities there's the problem of parking"*. Comfort and pleasure were also put into perspective: *"it's stressful"*, *"fatigue"*. Speed is not always a relevant argument: *"traffic jams"*, *"wasted time – when you're behind the wheel, you can't do anything else"* (Marseille).

Environmental arguments were also given: *"pollution"*, *"the phenomenal waste of energy – in 9 out of 10 cars, there's just one person inside"* (Marseille).

Lastly, arguments were raised in relation to the "personalities" of drivers: *"individualism is so annoying"*, *"[Cars] make people aggressive"*.

=> Therefore, the discussions suggest that people perceive cars to have both positive and negative points, and the increasing price of fuel, considered significant by these focus group participants, modifies their overall perception of cars and their uses. The financial logic participated to some behavioural changes and shifts towards new means of transport (see C.2.).

C.2. New means of transport

It was apparent from the discussions that some of the participants did not or no longer had a car. In particular, in the Paris region, there are people who do not have a driving license or have never had a car. The other participants had at least one car. One of the participants used her car only for specific trips (long or with luggage) and preferred using a *"small motorbike that consumes next to nothing"* (Rennes). However, several mentioned "abandoning" their car with several possible strategies.

The cost of gasoline, new urban planning rules in town centres and a degree of environmental awareness (although minor) were the main reasons why these participants questioned their car use.

- **Short trips**, in particular, have been re-evaluated. For example, one person said that she *"no longer takes her car to get [her] bread at the end of the street"* (Paris). Several participants stated that they *"go shopping on foot when possible"* and take alternative means of transport to go downtown. A variety of reasons were mentioned: the cost of gasoline for short trips; parking made very difficult by a local policy aiming to prohibit or drastically limit cars in town centres; and growing environmental awareness. Some participants said it would be *"outrageous"*, *"ridiculous"* to take the car just to drive a few kilometres or hundreds of meters, alone. Interestingly, the cities in which the focus groups were interviewed had introduced more or less old and more or less restrictive *"mobility plans"*. In Dijon, for example, downtown is almost exclusively reserved for buses. A tramway is also being built and park-and-ride areas allowed motorists from the region to park on the outskirts and take public transport downtown. The residents that were in the focus group described how these measures had heavily influenced their behaviour: *"My behaviour has changed over the past year. I used to drive downtown and now I take the bus all the time"*; *"I was forced to change my behaviour"* (Dijon). Similarly, in Marseille, one participant explained that he had *"totally stopped driving [downtown], because some parts of Marseille can't be accessed by car during the day, and in others, there are no parking spaces, even if you're willing to pay"* (Marseille).

The four cities offered a self-service bicycle rental system. However, this means of transport was used fairly seldom, for several reasons: some people came downtown to go shopping and therefore preferred public transport to take home their bags. In some cities, bicycle parking areas were available only in certain neighbourhoods, and not always the neighbourhood of residence: *"The 'Vélib' system is nice, but if you live in the 13th arrondissement like me, they don't run all the way there. They stop in the 8th or 10th – the chic neighbourhoods of Marseille"* (Marseille).

- **The practice of "shopping"** was also questioned. While some considered that this chore required a car, others had found alternative solutions: *"I used to take my car and I'd hang out*

at the shopping centre (on the city outskirts). I realized it was ridiculous and I could find the same things downtown. So now, I take public transport to go downtown" (Dijon); "I have my groceries delivered to my home" (Paris).

- **Home/work commutes** were also occasionally questioned. Some participants said that they "don't have a choice" and have to take the car, particularly if they compared transport times: "[To go to work] I'm not very far – 4 km – but it's uphill and I have a heavy bag. There's no metro and to take the bus I'd have to leave an hour beforehand" (Marseille). Others said that no public transport could take them from home to work: "I use my car every day. I can't do otherwise. No public transport will take me to work and during the day, I have to use my car on the job" (Dijon). However, this same person described how he "tries to schedule appointments at the same place whenever possible" to avoid driving to the same area several times. Another obstacle is that, away from cities, public transport runs much less frequently: "In the immediate suburbs, it's okay. But any farther, there are just coaches, and they run every hour" (Rennes).

Sometimes the participants calculated cost rather than time. In this case, public transport often "won". "I switched. Now I take the bus in the morning and evening. Gasoline was too expensive. Before, it took me twenty minutes by car. Now, it takes me 45 minutes if I travel by bus, metro or TER (regional train). I used to spend 110 euros on gasoline per month, and now I spend 28 euros on public transport" (Rennes).

The participants also calculated advantages and disadvantages based on a psychological perception: "I used to drive to work. I've been walking to work for the past two years. It's 4 km away. It was expensive and hard to park. I get up earlier now but I don't feel so stressed out" (Rennes).

People who lived on the adjacent outskirts and worked downtown however preferred public transport: "I work downtown so I take the bus. The car is a hassle – you can't park, or else you have to feed the meter all day long, which means there's no point in going to work" (Dijon).

Others had tried to find alternative solutions that do not always "work" very well. Carpooling, for example, is not easy to organize: "In the company where I worked, we tried to organize a carpool. There are people who live far away and don't leave at the same time, so the logistics are hard to organize" (Marseille).

Lastly, it is important to note that another way of changing travel behaviour was not to adopt a new means of transport but rather to move closer to the workplace. Several participants had made this decision: "I've decided not to change my means of transport. My car broke down and I didn't buy a new one. I lived next to Versailles before. It was hard to get around and I was sick of the RER train. So I moved to be closer to Paris. And I don't need a car in Paris" (Paris).

- The trips that are the hardest to change appeared to be **long trips**, especially for **holidays**. Depending on the destination, people will often choose to travel by train or car.

The car is preferred when:

- a large or bulky load is to be carried: "the train isn't always easy. You can't take everything you want" (Dijon). "Marseille-Grenoble by train is a pain. By car, it takes me three hours, and I can bring along my skis and ski shoes, whereas by train... and then once onsite I wouldn't have a car" (Marseille).
- the participants want to be flexible once they have reached their destination, or they want to travel from place to place, to visit "family all over France" (Dijon).
- they are leaving as a family, or with more than two people, in any case.

However, the train was often preferred for "direct" trips, when the destination site has good public transport access, and when people were travelling alone or as a couple. In this case, people could take "a taxi when necessary" or even rent a car for a few days. Trains were perceived positively in that they are "less risky"; the trip is less boring; the "all-inclusive" trip is shorter than by plane; and the train takes travellers "into the city". However, a disadvantage

was seen as their cost: *"when there are more than two people, it's no longer attractive"* (Dijon). Some people therefore looked for special offers to travel by train.

Another solution related to cars was practiced by some participants:

- **car-sharing**, as several participants said they shared a car with one or two other friends. They did not share the car to go to the same place together, but rather shared the use of the car to pay for only one car, to maintain one car and to insure one car. This is restrictive and limits the participants' travel possibilities and pushes them to find alternative solutions.

Some participants also organized, for certain events (a meeting, a dinner party), a carpool, i.e. several people took the same car to go somewhere. One of the participants, in his association, decided that travel expenses would be reimbursed only if the members travelled together.

However, the **barriers to using public transport** are still considerable and these issues explain why it is difficult to change behaviour:

- Price: For example, in Marseille, the participants explained that they have *"France's most expensive metro: 1.60 euros per ticket"* (Marseille). The participants often mentioned the cost price of holidays in *"family"* transport. Whereas the price does not increase with the number of passengers in the car, public transport was considered attractive for one or maybe two people, but not for four or five people.

- Times and frequencies: Efforts have been made in some cities to address this issue. For example, in Marseille, the participants said they were very satisfied with bus service at *"closing time from 9:30 to 10:30 pm"* (Marseille).

C.3. A future with fewer cars/Less car travel?

When asked about how they viewed changes concerning cars, for them or generally speaking, the participants gave mixed responses.

On the one hand, participants mentioned progress in terms of technologies, infrastructures and behaviour related to car use, which was amplified by the price of gasoline.

But on the other hand, the participants thought that cars were still be granted a special status that would be hard to modify: *"People aren't willing to give up their cars"* (Dijon). In addition, the need to transport either groceries or leisure gear remained a significant barrier for many people.

Therefore, some participants considered that, even if the price of fuel continued to increase, consumption changes would not be made as far as cars were concerned: *"The price of energy will explode, and we'll find ways of cutting corners elsewhere to put money in cars. The price of diesel fuel has been increasing for years, but people keep buying cars. They deprive themselves of leisure to invest in their cars"* (Rennes).

The **conditions for improvement** that were mentioned were:

- More widespread, more efficient **public transport infrastructures**: *"we need ultra-efficient public transport"* (Marseille); *"Metro trains every two minutes"* (Marseille); *"a better [metro] network, more frequent trains"* (Marseille).

- Lower public transport **prices**: *"if public transport were practically free, people would be motivated to use it"* (Marseille).

- These infrastructures needed to be considered from a more global perspective - that of **town planning**: *"urban planning needs to be re-examined. If I have a metro at my doorstep, I'll use it instead of a car"* (Marseille).

- In addition, several participants mentioned their intention to purchase a rechargeable hybrid or **electric vehicle**. They were currently *"waiting"*: *"I wanted to wait to buy a new car, because I think that within one or two years, I'll switch to an electric car. I was so impressed by the Prius"* (Dijon). The purchasing barriers revolved around *"price"* and a hard-to-understand or immature supply: *"Besides Toyota, I don't know who makes hybrid cars. No French manufacturers do"* (Dijon); *"I contacted Renault, Citroën and*

Peugeot, and they told me they don't sell to private individuals but only to fleets" (Paris) and an inexistent recharge network, or one that cannot grow because of the "petroleum lobby" (Marseille).

However, these people reported a sort of "inconsistency" between two public policies: one that promoted the growth of public transport and therefore a limited number of cars, and one that encouraged the purchase of electric cars: *"They talk to us about urban public transport to replace cars, to move cars away from downtown areas in major cities, and they install buses and tramways. But then they speak about replacing cars with electric cars in cities. They're not consistent"* (Dijon).

On several occasions, the obstacles mentioned concerned **contradictory policies implemented by the State**, which receives financial income related to the use of cars: *"Revise the traffic policy on motorways. But the state gets money from it. They'd need to get rid of all the tolls for smoother traffic"* (Dijon); *"It's the State that's blocking the release of electric cars, because the State taxes gasoline. Electric cars are ready. They could be released tomorrow. Gas stations could be fit with recharge stations in no time"* (Paris).

C.4. Conclusion on "travel and fuel consumption"

Cars continue to be symbols of our societies and our lifestyles, providing us with freedom, autonomy and comfort. However, the rising price of fuel and environmental awareness-raising campaigns are gradually modifying this image. There are as many, or maybe more, negative criticisms than positive opinions of cars. Electric cars could be an "hybrid" solution, adding positive perceptions of car (autonomy, freedom) and positive perceptions of environmental-friendly transports.

The barriers to using alternative means of transport are related to inadequate infrastructures, and to life priorities. Furthermore, some travels are easier to change than others.

Finally, as for the other kinds of collective decisions, the impression of contradiction in the political discourses is a very important point. Cities and the society are still based on the car use, people say. So they have the impression to be locked in this road.

Theme D: Wider Issues

Key findings:

- Awareness-raising campaigns seen as useful, and even essential, but too focused on households;
- Distrust of other stakeholders, particularly when they are "distant" (government, big companies);
- Overly simplistic advice, overly complex policies;
- Rejection of "taxes" seen as opportunistic, preference for incentives or non-financial obligations.

D.1. Energy information: awareness, knowledge and trust in sources

When asked questions about the information they had received related to energy and environmental protection, the responses were varied. Firstly, the participants were asked to give their opinions of the population's awareness level.

D.1.1. A fair level of awareness, but progress still to be made concerning the content of advice

When asked about the **awareness** of French people in general in relation to energy savings and environmental practices, the participants agreed that it *"has improved"*. In particular, the people in the focus groups said the change has been noticeable *"over the past ten or so years"*. *"Ten years ago, when I'd talk to my parents about it, they'd say 'oh, okay, glaciers are*

melting' but it was kind of abstract. I think that now people are more aware that it's not a joke" (Marseille).

The participants, as a whole, even when they were critical of the forms or targets of awareness-raising, did not question it as such, because the environment was considered to be a serious and high-priority subject. They said they *"passively follow"* the advice they receive, and even those who were *"pretty fed up"* (Paris) expressed a personal commitment. Some even insisted on saying that they *"[didn't] wait for all these campaigns to change"* (Rennes).

While many participants considered the degree of awareness to be high, they still held ambivalent perceptions. Some stated that this awareness-raising is essential so that *"they [eco-friendly acts] start to make sense"* (Marseille) but others insisted that *"it's a fashion"* but that the "in-depth" work has not been done.

In addition, this awareness-raising, according to the participants, is currently *"too general", "too abstract", "unclear"* and too repetitive: *"if they keep on hammering in the same things, our commitment will waver after a while"* (Marseille), *"They talk about it so much that we don't hear them anymore"* (Paris), and too focused on facts and not solutions: *"I went to see the film Le Titanic by Nicolas Hulot⁸. The same things keep being said over and over but no progress is being made. He makes an observation but it's nothing new"* (Marseille).

Some participants were highly pessimistic about the environmental situation, because they thought it was too late: *"Personally, I think it's a lost cause [the environment]"* (Marseille); *"Some people say the only real ecological act is suicide"* (Marseille).

In terms of the **content of the information** provided, the following are lacking:

- *"local"* information and actions, instigated by *"local authorities. It's better to get people involved locally than to produce [national] commercials"* (Marseille).
- actions aimed at the *"real culprits"*: *"they tell us that glaciers are melting and what we need to do, that we're at fault, that we're individually responsible, but they don't say which companies are polluting"* (Marseille).
- suggestions of *"concrete"* actions

For some participants, awareness-raising is not enough. There was a divide in the focus groups between advocates of "positive" incentives and advocates of "obligations". The participants hesitated between:

- the need to remain free to choose one's actions: *"I think it would be better to start with advice than to enforce strict rules all of a sudden. It will mean giving people a sense of responsibility, which is a softer approach than just saying 'that's how it is so deal with it'"* (Dijon).
- and the need to "follow" a movement: *"[What do you think about the advice that is currently being given concerning energy savings?] It's often instructional, but it can also be seen as very directive. I think people need to be bombarded with information before they take any action"* (Dijon); *"I tend to follow the herd. If it's prohibited, you're not allowed to do it so you don't do it"* (Dijon).

In the section below we will examine the participants' responses to several policy initiatives that were proposed.

Importantly, when considering their responses, it is important to note that the participants considered themselves as very, or possibly even excessively, informed. In this capacity, they saw themselves as quite "privileged" in comparison to other populations, considering that *"there's a lot of information in the media, but it's not necessarily accessible to everyone"* (Rennes).

In addition, in their opinions, *"only rich people worry about the environment. Everyone [around this table] has a job, but I don't think poorer people have the same concerns"*

⁸ *Le syndrome du Titanic*, directed by Nicolas Hulot and Jean-Albert Lièvre, a documentary released in theatres on 7 October 2009.

(Rennes). The participants therefore think that France is better off than less wealthy countries, and that well-off populations are better informed and have more room for manoeuvre than needier populations. However, they think French people are less educated and apply less of what they learn than Germans or "northern countries".

D.1.2. Trust in sources of information and awareness-raising messages: Proximity and concrete advice

In terms of information sources, the participants said that they preferred television programmes and "word of mouth", and all sources that provided concrete, local (social or geographic) advice. They considered these to be reliable and that they would be more likely to lead to tangible behaviour change, over more general, abstract campaigns run from far away (the State, big companies) by people with unknown and therefore suspicious "interests".

- For example, when talking about **public authorities**, a difference was made between "the state" and "the government" on the one hand and "local authorities" and the "city" on the other hand. The former group, which is national, was considered to be a source of rather strong distrust: "What does the government do to keep companies from polluting? Nothing" (Marseille). "[Who do you trust to provide you with advice about energy?] Definitely not politicians! I don't want to listen to them – they try to manipulate us" (Dijon). The only exception was considered to be the "ministry of the Environment" whose "logo" is proof that the information it passes on will be serious. On the local level, however, several participants mentioned the following as serious sources of information that they paid attention to: "the newspaper of the city where we live", "the city's billboards" and explanatory sheets sent out by the municipality, on waste sorting for example.

It was also significant that the participants mentioned the "media" that publicize governmental initiatives as legitimate sources of information. There was an implication therefore that information given directly by the government would be seen as suspicious, whereas information on a measure reported "on the TV news" would be seen as more legitimate.

- **Corporations** were highly criticized and suspicious in the eyes of the participants, for several reasons. First of all, environmental awareness-raising conducted as part of major companies' communication campaigns was the subject of much criticism: "They need to stop all those commercials with sleeping kids and guys walking in nature⁹. – They think we're idiots. – We're well aware that it's not out of altruism - they're just doing it to boost their image" (Marseille). "We're sceptical about EDF's message on the environment" (Paris). The hidden reasons why companies run these campaigns, according to the participants, included "marketing" and "a fashionable way of doing good business" (Paris). However, once again, more targeted information about an initiative, or a concrete offer, would be taken seriously: "I have friends who installed solar panels. They went to EDF and hired EDF-approved installers. You can trust EDF. You're guaranteed that the work will be well done. If I had the money, I'd do the same" (Paris).

Moreover, corporations were the subject of suspicion regarding their environmental actions. We will see that people felt that companies were not solicited as frequently as they should be by public authorities, unlike "private individuals". Furthermore, the participants said that these companies tried not to fulfil their obligations or did not voluntarily act in favour of the environment: "Big companies pollute all over the place" (Marseille). "They do anything they can not to take the blame. They adapt to new regulations, but it doesn't always involve improvement [i.e. environmental awareness]" (Marseille). "There are factories that buy rights to pollute. It's disgraceful! They pay taxes to pollute, but isn't the goal to pollute less? What hypocrisy" (Paris).

⁹ Reference to Total's television commercial currently playing in France, and its slogan "For you, our energy is unlimited", which has provoked debates in networks of environmental activists.

- **Expert debates** were also mentioned as a source of confusion: "*With expert advice it's the same as in lots of areas. You find one thing and then the opposite. Someone will say it's good and the other will add A+B to prove that it's not true*" (Dijon).

- **Debates between people who say that human activity is behind climate change and people who affirm that climate change is a natural phenomenon or who tend to minimize climate change** were also mentioned several times. Some personalities who represent these debates in the media include Nicolas Hulot and Yann Arthus-Bertrand on the one hand and Claude Allègre on the other hand. These were the only people mentioned by name in response to these questions concerning information and awareness about the environment and energy. Opinions were divided ("*I identify more with Allègre*" (Dijon)), and all of the various methods used were seen as questionable: "*I have more trust in people who do their jobs than Nicolas Hulot who gets on my nerves – he jumps on a plane and goes to the far end of the world*" (Paris).

- **Televised media** were frequently mentioned as "sources" of information. Numerous television programs are sources of behaviour change and awareness-raising. There is the "*televised news program*", which describes "*government incentives, tax relief, etc.*" (Marseille) even though on the other hand, the reports are sometimes criticized as depicting utopian practices: "*They talk about tree houses – it's not for your average Joe in his apartment...*" (Marseille). Mainstream science programs, such as "*E=M6*", were also watched and viewed as credible sources of information. There are also programs that speak about consumption, such as "*c notre affaire*" on France 5, and programs that promote certain behaviour, aired on M6, such as "*C'est du propre*", which gives advice on home cleaning and storage, balancing a budget and saving energy and water, as well as "*D&co*", which offers DIY and decoration advice. For example, participants in various focus groups had recently seen a program encouraging viewers to use a dishwasher instead of washing dishes by hand, to save water, and had taken this advice. It is worth noting that the participants, like in previous studies, mentioned "*commercials*" that are actually awareness-raising campaigns run by ADEME (French Environment and Energy Management Agency), but this institution was not mentioned or recognized as the source of the campaign.

- **Other media** were brought up as well, such as "*the press*", "*60 millions de consommateurs*", which is the magazine of one of France's largest consumer advocacy associations, "*children's literature*" and "*the radio*".

- **School** was mentioned as an institution that carries out awareness-raising operations, particularly for children in primary school (6-10 years). The results from previous studies¹⁰, were confirmed, according to which parents think their children under the age of 10 are "reasonable" whereas adolescents are less aware or put what they learn into practice less often: "*My eldest is 17, my second is 10 and my third child is 4. The eldest consumes a lot, while the second one is more sensible*" (Rennes); "*At school, they learn more and more*" (Paris). "*When I was a kid, at school, they didn't teach us what they do now*" (Rennes).

- **Family upbringing** was also an importance source of awareness for the participants, who considered their "*civic behaviour*" to be a long-term responsibility: "*It's part of our children's education. I come from Reunion, where I was always told not to waste natural resources*" (Paris). Parents said that they pass this awareness down to their children: "*We make special efforts to inculcate them with this responsibility*"; "*it's our job to educate them*" (Rennes).

- **Word of mouth** and observations of other people who had taken measures to save energy were also serious sources of information that people trusted: "*[Who do you trust]? Word of mouth. – People who use it at home who can give us advice. – It's true that we like having concrete figures: our friends talk to us about money*" (Rennes). In this respect, the arguments given by other households often related to the participants' own problems. In particular, since the actual impact of renovation work and energy-saving gestures on spending is often

¹⁰Garabau- Moussaoui Isabelle, 2009, "Behaviours, transmissions, generations: why is energy efficiency not enough?" ECEEE Summer Study Proceedings.

difficult to anticipate, people looked for testimonials, both to compare problems and find solutions: *"People my own age, and my neighbours I met at the neighbourhood party, have the same problems I do and they respond mostly in the same way. Pretty much everyone keeps their homes at 19°C now"* (Paris).

- Furthermore, it is important to note that the participants each listed **several sources** of information and some explained that they formed their opinions based on a series of information channels: *"I listen to everything. Afterwards, I form an opinion, then I make a decision"* (Dijon); *"It's important to have several sources of information"* (Rennes). Moreover, participants stated that they actively sought out information on energy savings when they are motivated by a project: *"To have information and look for it, you need a project"* (Rennes).

D.1.3. Targets of awareness-raising campaigns: too much focus is placed on households

The question on awareness-raising and information also generated responses concerning the targets of these campaigns. We saw that the participants often had the impression that they are *"bombarded"* with information. They criticized an unequal allocation of responsibility in these messages. While they were willing to do their part, and generally approved of environmental awareness campaigns (*"we're docile"*), they expressed criticism, and even anger toward other groups that were not subjected to the same pressures to change their behaviour.

They considered that corporations are less subject to these pressures and are more resistant to behaviour change: *"I get the impression that lots of individuals are making small efforts, and it helps us feel better, but are the big companies that pollute so much doing anything? Is the government doing anything against them, is it trying to regulate their pollution?"* (Marseille). *"We say to ourselves, we've replaced our light bulbs at home, but at the same time, in my company, they leave the heating on full blast all night"* (Rennes).

It was felt that the state and local authorities were not setting an example: *"Their messages are positive, but they don't always set an example and that's a shame. The street lights in towns stay on all the time"* (Rennes).

Whereas participants reactions were very positive regarding awareness-raising in households, they were fairly critical in this respect: *"it makes you want to rebel"* (Rennes). Others chose to withdraw into themselves: *"I save energy for myself"* (Rennes). *"We, as private individuals, we adapt, we make efforts and we make hard choices but we're just specks of dust. But we still do it. We do it for our wallets too, in the end, even if investments are a bit costly. But it's just crazy when you see local authorities, street lights, offices: it's maddening"* (Rennes). To take up the typology of Hirschman¹¹, households hesitate between "loyalty" (raising the awareness of households is good), "voice" (but all groups need to be treated the same) and "exit" (I do it for me, not for the global environment).

=> French people's awareness appears to be improving but progress still needs to be made. Campaigns are seen as useful and essential, but households prefer close, local, concrete information that opens the door to capacity of action. Likewise, as far as stakeholders are concerned, local stakeholders are trusted the most. Households want for other stakeholders to be held accountable and set an example.

¹¹ Hirschman Albert O., 1970. Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States. Cambridge, MA: Harvard University

D.2. Opinions of various governmental initiatives: what needs to be done to change behaviour?

One question of the questions asked during this section was to identify knowledge and opinions of initiatives that have been introduced in the country regarding energy and environment. First, participants were asked an open-ended question regarding what came to mind when we brought up "governmental initiatives created to protect the environment". Then, three initiatives were presented, to find out what the participants knew and thought of them.

D.2.1. Spontaneous responses

Few initiatives were listed spontaneously by the participants. They spoke about the three initiatives that we presented and proposed to the discussion (see D.2.2. to D.2.4), with much greater awareness of the "carbon tax", as the participants described the stormy debates that have been taking place in France since September 2009. The other two initiatives were mentioned but rather vaguely. For example, they listed "*tax incentives for refurbishing work*" (Marseille); "*a 25% tax cut if you're equipped with energy reducing stuff*" (Paris); "*insulation work equals tax cut*" (Paris); "*Tax credits for renovation: a friend of mine got one of those. And the zero-interest eco loan*" (Rennes).

The other initiatives that were mentioned were:

- Eco-participation in household appliances, called the "*household appliance tax*" by one participant (Paris); "*The few centimes they add to the price of appliances to round it off, when you buy a household appliance. For recycling, they add 2 or 3 centimes*" (Marseille).
- Environmental incentives offered for the purchase of a new car: "*The scrappage incentive*" (Marseille), the "*bonus/malus system*" (Paris)
- "*The 'green' eco-label for cars, the sticker they give after a technical inspection if the car pollutes less*" (Paris)
- The "*Vélib was intended to be ecological at first*" (Paris)
- The prohibition of high-wattage incandescent light bulbs: "*I don't think 100-watt light bulbs exist anymore*" (Marseille)

Moreover, one participant also mentioned a more indirect policy but one that seems to count as an environmental incentive: "*In terms of transport, there's the large-family card for SNCF trains, which encourages us to take the train*" (Rennes).

The initiatives listed were often criticized by the participants, and the suspicion of the government that was analyzed earlier was found in these criticisms. This criticism was expressed in two main forms:

- The lack of exemplarity: "*At the Parc des Calanques, they close off the site to the public for military training. They shoot at half of the Calanques with lithium bullets. You're not so dumb as to go there to protect nature when there's a group of guys shooting guns! I find it depressing - there's no real political will*" (Marseille)¹²
- Paradoxical governmental communication advocating environmental measures on the one hand, but on the other hand, support for industries and the economy, which was considered polluting by the participants: "*In the summer, when there are ozone peaks, they tell us not to take our cars, but industries keep on running, because the economy can't stop*" (Marseille); "*The scrappage incentive is mostly to boost the sale of cars and the economy in general. They want us to buy cars but not use them!*" (Dijon). These criticisms even went so far so as to chastise the lack of transparency regarding the government's "interests" and its links with industrialists: "*The Vélib was intended to be*

¹² The participant was referring to a fire that ravaged more than 1,000 ha of Calanques (limestone formations with unique vegetation, protected as a "classified site") in the Marseille area, caused by military training in July 2009.

ecological at first. – Oh no, it's just to make JC Decaux [the provider that won the contract for the City of Paris] richer" (Paris).

Furthermore, some participants criticized initiatives that they did not consider to be truly "sustainable": *"Bio-fuels are a big sham. The entire planet will go hungry, if they plant only rapeseed, we'll still need to eat wheat" (Dijon).*

Governmental initiatives would appear to seem mostly abstract to some people therefore to and create a great deal of distrust. However, some initiatives encountered a certain degree of "indifference" on the part of households (eco-participation, for example) or are supported by them (bonus/malus for cars, tax cuts, for example). It seems that incentive initiatives or mandatory but "free" or inexpensive initiatives are better accepted than initiatives that require a significant financial contribution.

We selected **three different initiatives** to attempt to find out what is known or not, acceptable or not, and effective or not, according to the participants. First, the **"energy climate contribution", more frequently called the "carbon tax"**, consists of a mandatory financial contribution to the consumption of "polluting" energies. The **zero-interest eco-loan** is a financial initiative but is voluntary and offers incentives for energy efficient renovations, and is based on investments and not daily behaviour. Thirdly, the **Energy Performance Assessment** is an energy label for buildings. It is mandatory and requires a service payment for the assessment, but this payment is included in the purchase or rental of a home.

D.2.2. The "carbon tax": inequity and an ineffective price signal

The first initiative that was chosen was selected for its large-scale media coverage (lively debates have taken place in France on this subject since September 2009) and also because of the principle this initiative is based on: creating a price signal for behaviour change. We cannot currently present assessments or opinions of the introduction of the initiative, which is not yet in effect. However, the participants from the focus groups gave their first impressions.

The presentation text on these initiatives which was read out to the group participants was as follows: *"The Energy Climate contribution, also called the carbon tax, is a tax on polluting energies (gasoline, diesel, gas, fuel, coal). Its goal is to change behaviour thanks to a 'price signal'".*

We saw earlier that this initiative had been emerged spontaneously during the focus group discussions. All of the participants had heard of it, but their levels of information, understanding and ability to concretely explain the system varied greatly.

For example, some of the participants had heard of it, but said they did not *"really understand the procedure or the purpose" (Marseille).*

Others understood there would be an exchange of money: *"We have to give money and they'll give it back to us" (Marseille); "I'm not against it – I'm going to receive 142 euros. [You already know how much you're going to receive?] It's 130 euros in cities and 142 in the countryside" (Dijon).*

Several mentioned the goal of environmental awareness-raising: *"If it can get the message through to some people, then why not? But it's getting to be too much" (Dijon); "It's to say you were a polluter...But it's not very clear" (Marseille); "[It's to] make people aware that they need to save energy, but it's not very clear" (Marseille).*

However, criticisms of the initiative were very harsh during the focus groups (provoking severe reactions) and were based on two main arguments:

- The price signal alone will not change behaviour: *"It's a palliative solution" (Dijon); "It's imposed by itself, without any related projects. No public transport or multi-modal transport" (Rennes); "The people who don't have a choice will be taxed the same" (Rennes).*
- The *"redistribution"* will be unfair: *"It's really expensive to install energy saving devices. But it's still low and medium [incomes] that will have to pay. People who are*

relatively rich will have everything – the electric car, double glazing, solar panels, and maybe a non-polluting Boeing! But once again, the poor people will have to pay..." (Paris)

To conclude, this initiative again triggered criticisms of the government's "interests", with the government looking to *"stock up on cash"* (Dijon); *"it's just one more tax"* (Rennes).

The issue of obligation versus incentive was also raised: *"They should do something else, like reward people who make efforts, who use their cars less"* (Rennes); *"It would be better if they decreased the price of transport"* (Rennes).

D.2.3. The zero-interest eco-loan: a good incentive, but for households that can afford to take out a loan

The second initiative that was used for the discussions was the zero-interest eco-loan, which was presented as follows: "It is a loan granted by banks, under the supervision of the Ministry of Ecology. It concerns owners of homes built before 1990 who want to carry out a set / a package of energy efficient work (insulation, window replacement, etc.) in their primary residence. The maximum amount is 30,000 euros. It has been in application since 1 April 2009".

This second initiative was known by participants who had undertaken renovation work or who knew people who had benefited from this initiative. It triggered less violent reactions from the participants than the carbon tax. Some described what they knew about this initiative: *"You have to be an owner"* (Paris); *"You have to do at least two different things"* (Paris); *"It's combined with the tax credit"* (Rennes); *"It's good for people who are renovating, but too bad for people who are building"* (Rennes). They often spoke about conditions that they themselves did not meet, and so they could not have access to the initiative, even though they had sought out information. One of the participants also mentioned: *"Above a certain [income] level, you can't access it – that's what I understood"* (Dijon). In fact, this initiative cannot be combined with tax credits if the household's income exceeds a certain amount (45,000 euros per year).

The criticisms were also less harsh. Some of the participants said they thought this initiative was attractive: *"I think it's smarter than a tax. It can help some people get started with renovation work"* (Dijon).

Others criticized the use of a loan system: *"It's another way of getting into debt. I'm not poor, but I couldn't reimburse 20,000 euros, even without interest. There needs to be a loan minimum, even with zero interest"* (Paris); *"Who will finance the zero interest? Not the banks, but the State, which means us"* (Paris).

The issue of social equity was raised again because, even if the initiative does not require minimum incomes, the poorest populations would not be able to commit to this type of expense.

D.2.4. The Energy Performance Assessment: "It's like termites..."

The third proposed initiative was an energy label for buildings, and was presented as follows to the participants: "The energy performance assessment of buildings is conducted by professionals and is used to identify the forecasted energy consumption of apartments and buildings that are for sale or rented. These assessments must be carried out whenever a home is sold (since 1 November 2006) and whenever rental agreements are signed (since 1 July 2007)".

This initiative triggered few responses. It was seen as being *"attractive for the tenant"*, *"to negotiate prices"*, *"to choose a home"* (Marseille).

However, those who had experienced it first hand did not see it as particularly useful. It was considered to be mandatory, *"like termites"*, and is thus just one more administrative formality that is part of buying/selling or renting a home: *"The owner gave 'it' to us with the earthquake risk. [did it influence your choice of rental?] No, not at all"* (Marseille). It was seen as an additional cost: *"It's a rip-off: the asbestos assessment, termites, etc. It's expensive"*

and there are a ton of them" (Dijon). The participants did not really see the appeal, either in terms of home selection (other criteria are much more important) nor in terms of financial negotiation. The general assessment was that it was a piece of information with no strategic purpose: *"It didn't change a thing – neither for the buyer nor for me"* (Rennes). One participant did explain though that she was able to negotiate the purchasing price of her home thanks to this initiative: *"I negotiated the price based on the work that needed to be done in the apartment. There were the ceilings and windows. I lowered the price by 25,000 euros"* (Rennes).

Moreover, the participants said these assessments are performed by inadequately trained people: *"They are jobs that were taken by uninformed people. You don't need a diploma to open that type of company"* (Dijon). And the results are not seen as reliable: *"I had an assessment performed in the apartment I used to own: it was ranked as class C. I was surprised, because it was old and air blew through the windows"* (Rennes).

D.2.5. Opinions of effectiveness factors

To conclude this section and to follow up on the various criticisms that were made of the initiatives described above, the participants were asked to describe, in their opinions, a initiative that would be effective for the environment and energy savings.

The opinions that were given were similar to those seen earlier:

- "Taxing" tools, which were highly criticized, should be replaced with incentive systems or mandatory but "pain-free" systems;
- The focus on households should be abandoned in order to "distribute" responsibilities to all "polluters";
- The excessive number of initiatives damages their visibility and their effectiveness;
- The State should show a real commitment to energy savings, for example by *"paying to insulate all poorly insulated old homes"* (Dijon);
- Efficient infrastructures should be promoted, rather than prohibiting certain types of behaviour and making people pay: *"They should improve public transport and railway freight"* (Rennes); *"They need to increase the number of hybrid and electric cars, [so they are] much less expensive"* (Rennes);
- The participants thought that the State, in spite of "a lot of hype", *"doesn't really want to do anything either"* (Rennes);
- Schemes should be more flexible to better correspond to households' possibilities: *"Instead of expecting us to commit to large amounts, they should issue small loans, even to replace a window that costs 500 or 1,000 euros; that way, people can renovate gradually, without going broke"* (Paris).

The participants also noted a discrepancy between a rapid development of initiatives (*"with each new government or each new minister, they publish a text"* (Dijon)) and the inertia of buildings: *"buildings are supposed to comply with thermal standards. – 20 years ago, these standards didn't exist. Who says it won't change again?"* (Paris).

D.3. Conclusion on "Wider issues"

Awareness-raising campaigns were seen as important and sometimes even essential. However, they were criticized for giving advice that is too general, too abstract and too focused on making households feel guilty. The government and major corporations were distrusted in this information/awareness-raising, whereas households tended to place more trust in the local sector (Cities, craftsmen, neighbours, etc.).

The proposed initiatives were seen as complex, and were criticized because they are hard to access and have significant perverse effects including inefficiency. Taxes were viewed negatively, in that they are unfair socially and are merely a pretext for the State to claim hidden taxes. Non-financial obligations (thermal regulations, etc.) and incentives were

preferred. Moreover, the focus placed on households was criticized and there was a suspicion of the government and corporations when it came to the environment.

General conclusions

The four focus groups in France described different types of barriers and opinions concerning these barriers. Note also that barriers depend greatly on the type of theme under discussion: they are very different for energy savings, energy efficient appliances and refurbishment. They also differ according to technologies and social groups (refer to this same result in the WP3 state-of-the-art deliverables).

In terms of **cultural-normative and social barriers**, the participants expressed the view that energy practices are embedded into a social and cultural standard of comfort that is difficult to challenge. However, today, comfort is not the only "value" mentioned: households are looking to reconcile comfort, savings and ecology. The latter value is the subject of specific practices, but sometimes clashes with the first two values, which creates tension (just like the comfort/savings opposition causes tension).

These barriers can be lifted when values are successfully reconciled rather than opposed:

- For example, ecology involves a new style of comfort, which is closer related to environmental protection, or the technological innovation of energy-efficient appliances and systems;
- Likewise, financial savings and ecology can go hand in hand (by consuming less, saving energy, etc.).

In terms of **knowledge barriers**, the participants distinguished between, firstly, general knowledge of environmental problems and overall awareness, which were considered to be mostly good, even though they could still improve, and secondly, specific, concrete knowledge that would enable this information and awareness to be implemented in daily life. Putting words into action is still sometimes problematic, not because of a lack of information, but rather because of a lack of "know-how".

Individual/psychological barriers: various types of attitudes toward energy and comfort were identified (frugality, delegation to objects, comfort, manager). Furthermore, a mechanism that involves guilt removal/transferring responsibility to other players can allow the participants to justify contradictions in their practices. While it is very difficult for people to adopt behaviour that is completely consistent with their values, it is also difficult to live in a state of contradiction. Insistence on expressing barriers, constraints and other responsibilities may, to an extent, be analyzed as a psychological defence mechanism against "double bind". But we will see that this also concerns structural barriers.

Economic barriers: they are, of course, extremely significant, on several levels. First of all, energy efficient or renewable equipment requires a considerable financial investment. Returns on investment take time. In addition, technical difficulties are encountered and knowledge is required (finding craftsmen, choosing the technology, etc.). It also seems contradictory to pay money to save energy. When the price of energies increase, it becomes more "logical" to refurbish. But refurbishments are even more likely to be undertaken if there are other reasons for doing so (value of the home, social distinction, solving other problems, such as noise pollution, etc.). These economic barriers are related both to "economic rationality" logics (how much does it cost? How much does it pay?), but also to several other logics (technical, social, related to lifecycle, etc.). Moreover, note that the economic argument is used as a way of making efforts and changes (concerning behaviour or technologies) visible, and is therefore a sort of measurement with a shared unit (monetary).

A second way of interpreting the notion of economic barrier for the participants was their criticism of the economic world. According to participants, the legitimate and recognized goal of "corporations" would be to "make money". This perception implies a tendency of the companies to slow down the environmental-friendly social and technical innovations (lifestyle changes, green materials, industrial process), in particular if these innovations are imposed

by the outside of the company. However, corporations supposedly "use" the green movement for their own ends by publicizing or exaggerating actions that in reality are very limited (they are accused of "green washing").

Political barriers: political barriers were significant for the participants, who criticized the government for its lack of involvement and exemplarity and its inclination to promote certain interests (those of industrialists in particular). In addition, governmental initiatives were seen as complex and needing to be managed by households rather than further upstream.

Physical and structural barriers: These barriers were also expressed adamantly, from several angles. First of all, the lack of infrastructures offering a real choice and opening the path to real behaviour change is one of the major barriers expressed in France. This is related to political barriers. The lack of urban planning, of transport alternatives, of energy management displays, of insulation regulation, are some examples of mentioned lacking infrastructures.

A second interpretation of these barriers was related more to a lack of technical knowledge on the part of households as well as on the part of stakeholders (craftsmen in particular).

A third interpretation involves socio-technical barriers, i.e. the ways in which the material environment channels possible behaviour. There was both the notion of "supply", as households can buy only what is available on the market, and the notion of "situation", as being a tenant could stand in the way of certain decisions.

=> There are therefore fairly general barriers in the way of behaviour change, the responsibility of which is shared between various levels of actors who are all part of a "system". And there are barriers related to various gestures, purchases, investments, technologies, social groups, attitudes (etc.) that should be analyzed in further detail.

Appendices: descriptions of the participants

	Gender	Age	Familial situation	Profession	Owner/tenant	Transition/stable Profile	Average declared monthly income of household	Weighted monthly income of household
P A R I S - S T A B L E								
	M	64	Couple with child	Retired - Services	Owner	Has had major work done and plans to have more done	€3,500	€1,750
	F	46	Couple with child	Documentalist - Administration	Tenant	Has had major work done and plans to have more done	€3,400	€1,700
	M	59	Couple with children	Consultant - Legal	Tenant	Plans to move in 2 years, has had major work done and has plans for more	€4,500	€1,800
	F	60	Couple with children	Teacher	Owner	Has had major work done	€6,000	€2,400
	M	48	Single	Customer service officer Banking	Tenant and Owner	Plans to move	€2,800	€2,800
	F	46	Single with one child	Production Manager – Arts and Entertainment	Tenant	Plans to move, has had major work done and plans to have more done	€2,100	€1,615
	F	53	Couple with children	Employee - Medical	Tenant	Plans to move, has had major work done and plans to have more done	€4,400	€1,760
	F	47	Couple	Secretary – Administration	Tenant	Plans to move and has had work done	€4,000	€2,667
	M	48	Couple with children	Real estate agent	Owner	Has had major work done and plans to have more done	€5,000	€1,667
	M	52	Couple	Coordinator – Association	Owner	Has had major work done and plans to have more done	€2,700	€1,800
	M	53	Couple with children	Executive - Finance	Tenant and Owner	Moved and has had work done	€4,500	€1,607

Gender	Age	Familial situation	Profession	Owner/tenant	Transition/stable Profile	Average declared monthly income of household	Weighted monthly income of household
M	40	Single without children	Unemployed	Tenant	Renovation in 2003	1500	1500
F	37	Couple without children	Driver	Tenant	Moved on 26/06/09	2700	1800
F	28	Couple without children	Driver-delivery person	Tenant	Moved in 12/08	3100	2067
M	41	Couple with 3 children (15, 11 and 10 years)	Executive assistant	Owner	Move and renovation work in 2006	3700	1423
F	27	Single without children	Unemployed	Owner	Move in 2007 and renovation work in 2008	1300	1300
M	45	Couple with 3 children (11, 9 and 6 years)	Laboratory assistant – Academic hospital	Owner	Is currently having renovation work done	4000	1667
F	26	Couple with 1 child (6 months)	Technical and sales employee – landscaping	Owner	Move scheduled for 2010	3900	2167
M	42	Couple with 2 children (13 and 8 years)	High school teacher	Owner	Moved and had work done in 2008	4400	2095
M	43	Single without children	Unemployed	Owner	Moved one year ago	1500	1500
R E N N E S - T R A N S I T I O N							

Gender	Age	Familial situation	Profession	Owner/tenant	Transition/stable Profile	Average declared monthly income of household	Weighted monthly income of household
F	50	Couple with no children at home	Sales assistant – stationary	House tenant	Stable	€2,400	€1,600
F	50	Couple, 1 child at home (20 years)	Regional registrar	Apartment owner	Stable	€3,400	€1,700
F	58	Couple, 1 child at home (17 years)	Human resources assistance—banking	House owner	Stable	€4,000	€2,000
F	52	Couple with no children at home	Asset management consultant	House owner	Stable	€4,200	€2,800
F	59	Couple, 1 child (18 years)	Assisting spouse	House owner	Stable	€5,000	€2,500
M	47	Couple, 2 children (19 and 17 years)	HR Representative – La Poste	Apartment owner	Stable	€5,000	€2,000
M	59	Single without children	Technician – agriculture/farming	House tenant	Stable	€1,700	€1,700
M	65	Single with no children at home	Sales director - motorcycles	House owner	Stable	€6,500	€6,500
M	56	Couple with no children at home	Specialized employee – electronics	Apartment tenant	Stable	€3,900	€2,600
D I J O N - S T A B L E							

	Gender	Age	Familial situation	Profession	Owner/tenant	Transition/stable Profile	Average declared monthly income of household	Weighted monthly income of household
M A R S E I L L E - S T A B L E	F	45	Couple with children	Teacher - Social	Apartment owner	Stable	€961,	€2,500
	M	32	Couple	Teacher	Tenant and owner	Stable	€2,200	€3,300
	M	26	Single	Project manager – Sports	Apartment tenant	Stable	€1,500	€1,500
	M	38	Single	Developer – IT	Apartment tenant	Stable	€1,000	€1,000
	F	27	Couple	Station manager – local TV	Apartment tenant	Stable	€1,666	€2,500
	F	30	Couple	Teacher	Apartment tenant	Stable	€2,150	€3,225