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DELIVERABLE ICE T5.6.1

CONSUMER ENGAGEMENT IN SEIN

DECEMBER 2021

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ICE report T5.6.1

Consumer engagement in Sein

About ICE

Supported by the Interreg VA France (Channel) England programme, the objective of the Intelligent Community Energy (ICE) project is to design and apply innovative intelligent energy solutions for the isolated territories of the Channel. The islands and peripheral territories face specific energy challenges. Many islands are not connected to European electricity grids and are dependent on imported fossil fuels, including oil fired thermal generators. The energy systems on which they depend tend to be less reliable, more expensive and emit more greenhouse gases than those on the European continental grid.

In response to these problems, the ICE project considers the entire energy cycle from production to consumption, integrating mature or new technologies to develop innovative energy solutions. These solutions will be tried and tested at two demonstration pilot sites (Ouessant Island and the University of East Anglia campus) to prove their feasibility and develop a general reproducible method for other isolated intelligent energy systems elsewhere. To transfer this methodology to other isolated territories, ICE will propose a comprehensive commercial offer for low carbon transition. This will include a thorough assessment of local energy resources and conditions, a proposal for a tailor-made model for energy transition, and a package of low-carbon technologies and expertise available from a consortium of selected companies. This ICE-certified consortium will promote this offer to other isolated territories within and outside the Channel zone (5 territories initially). The ICE partnership brings together researchers and SME support organisations and benefits from France–UK mutual support in terms of knowledge and technological and commercial development.

The involvement of local and European SMEs will help to strengthen competitiveness and transnational cooperation.

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1. Introduction

1.1. The importance of consumer engagement in isolated territories

The Aarhus Convention establishes a United Nations-led regulatory framework for environmental projects that emphasises citizens' right to be informed about and comment on environmental issues, and that their comments would be included in decision making. Sustainable energy projects require public participation and support, which are crucial steps for achieving the Paris Agreement's goal of keeping temperature increases well below 2°C and aiming for 1.5°C.

Engagement activities with consumers in projects focused on energy transition is a catalyst in bridging the gap between research and the development or implementation of novel energy technologies that these include. Participation has become an integral part of system evaluation by governments, the energy industry, and academics alike. A close examination of public attitudes is a popular technique for forecasting the spread of novel products, services, or infrastructures. One of the most prominent strategies for forecasting the dissemination of innovative products, services, or infrastructures is the assessment of public views through consumer engagement activities. This entails aligning technical breakthroughs with societal values, needs, preferences, and expectations and striving for socially acceptable and desired futures.

The social or community acceptance of sustainable energy innovations is more than just a welcome feature that helps project development. Energy projects will not be successful unless people adopt and use the necessary infrastructure and technology, modify their behaviour to accommodate the (renewable) energy supply, lower total energy consumption, and accept regulations relating to a sustainable energy transition.

This is especially true for isolated territories since community resistance is one of the key hurdles that impede the adoption of otherwise promising innovative energy technologies in various communities and/or individual households, demonstrating its holistic relevance for project success. In general, people's evaluation of energy initiatives determines whether they support or reject a particular initiative. It manifests itself in how people perceive and act toward energy efforts, as well as in how they respond to these endeavours emotionally. Active opposition, indifference, doubt, passive acceptance, support, and embracement are examples of varied public reaction levels. Misguided, incorrect, and oversimplified ideas about public acceptability can lead to ineffective policies that fail to boost popular support, but instead, inflame conflict between authorities and developers on one side and the public on the other. Misconceptions about the end-users acceptance and problematic integration of a project in their daily lives can lead to ad hoc one-size-fits-all solutions that fail to improve acceptability and may frustrate individuals by leading them to feel they are not taken seriously. Poorly constructed energy transition solutions may unintentionally increase social conflict rather than reduce it.

Therefore, public acceptance of energy projects is not a straightforward concept; it is affected by the characteristics and meanings associated with the areas where projects are located. Most importantly, it is influenced by the psychological and social aspects of end-users to which a project is designed. Prior to developing strategic plans and making governmental decisions, it is critical to engage with consumers so as to minimise difficulties and maximize outcomes of technical interventions. The probability of bad judgments and interventions is reduced by utilising this approach.

1.2. Principles and assessment methods

The three islands in the Iroise sea, Sein, Molène and Ouessant, fall under the heading of NIZs – non-interconnected zones – that is, they are not interconnected with the continental electricity grid, and the majority of the electricity is produced on site by fossil fuel based power stations.

The charter of commitment for the energy transition of the islands of Sein, Molène and Ouessant, signed on 10 July 2015 by the AIP (Association des Iles de Ponant - Association of the Islands of the Ponant), the island communes and their technical and institutional partners, has formalized this momentum for a dramatic reduction in greenhouse-gas (GHG) emissions begun on the islands many years ago.

Within the framework of the implementation of the ICE project, the AIP was selected by the SDEF (Syndicat Départemental d'Energie et d'équipement du Finistère - Energy and Equipment Board of Finistère) to conduct surveys among the permanent inhabitants of the island of Molène, in order to find out about their energy practices and their willingness/ability to engage in the energy transition of their island, the type of equipment in their homes and their awareness of different renewable energies. This information is a necessary prerequisite for the implementation of future smart grid demonstrators such as those promoted via the ICE project.

This document presents the results of this survey conducted on the island of Sein, as part of the ICE project.

2. Surveys conducted

2.1. Objectives, methodology and limitations of surveys

2.1.1. Survey objectives

The participation and involvement of inhabitants in the implementation of the energy transition on the island of Sein is paramount. It is important to have a clear picture of the energy practices of the inhabitants but also to be familiar with their awareness of the different types of renewable energies and their degree of involvement in the energy transition of their island so that projects are carried out in line with the vision and lifestyle of the inhabitants.

The objectives of this survey are as follows:

- to become familiar with the inhabitants' awareness of the method of electricity generation in place on the island, mainly based on the use of fuel oil, as well as their positioning with regard to the different renewable energies;
- to identify the inhabitants' equipment and energy practices from a quantitative and qualitative point of view (type and age) by producing an inventory, paying particular attention to the production of hot water, heating, cooling and back-up equipment.
- to assess the thermal efficiency of their housing and identify possible levers for reducing energy consumption.
- to understand their level of motivation for participating in the energy transition;
- To discuss with the inhabitants the concept of energy costs and find out if they are aware of the difference between the cost of the kWh they consume and the cost of the kWh produced by the fuel-fired power station;

2.1.2. Survey procedure

The survey was conducted using a questionnaire – **Appendix 1** – that included some 30 questions about energy.

Surveys were conducted amongst residents in August and September 2021.

Most of the questionnaires were administered on a face-to-face basis, in people's homes, in shops, on the quayside, at the town hall or even at their place of work.

2.1.3. Information/precautions about results

38 questionnaires were collected, representing about 10% of the homes on the island, giving the survey a degree of credibility and good representativeness.

This credibility is based on strategies to limit sample bias by multiplying techniques, locations and interview times. This allowed the questionnaire to be sent to a wide range of inhabitants (elderly people with little mobility, employees with little availability, etc.) and also meant that interviews could be conducted in people's homes.

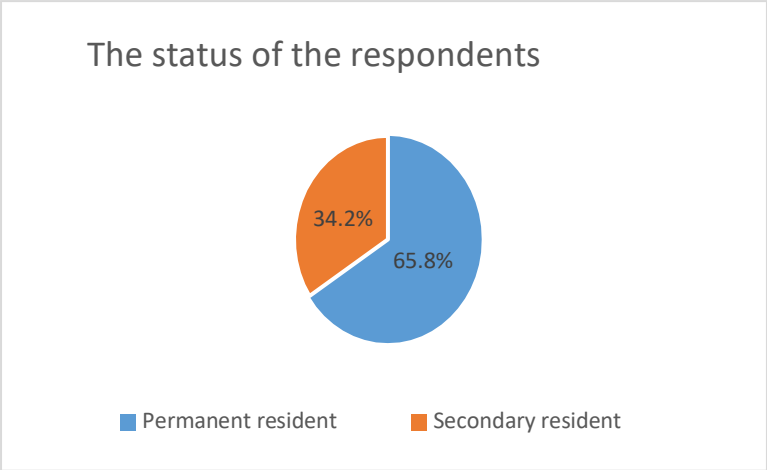
These discussions extended and developed some answers, for example, to questions about renewable energy. The results of this survey are not intended to replace future public surveys, but rather to establish an information base to facilitate exchanges between the population and the sponsors of renewable energy (RE) projects.

Although the sample has been constructed in such a way as to achieve a wide variety of profiles, this survey in its current state cannot claim to be representative in the statistical sense of the term as no representativity test has been conducted.

3. Initial assessment of the situation in Sein

In this section, we mainly present the results of the Sein survey, whose purpose was to produce an assessment of the situation in 2021.

3.1. Profiles of the people we met



Of those interviewed, 25 are permanent residents and 13 are secondary residents.

For permanent residents, the average number of people living in the household is 1.9 (in comparison with Molène where the occupancy rate is 1.76).

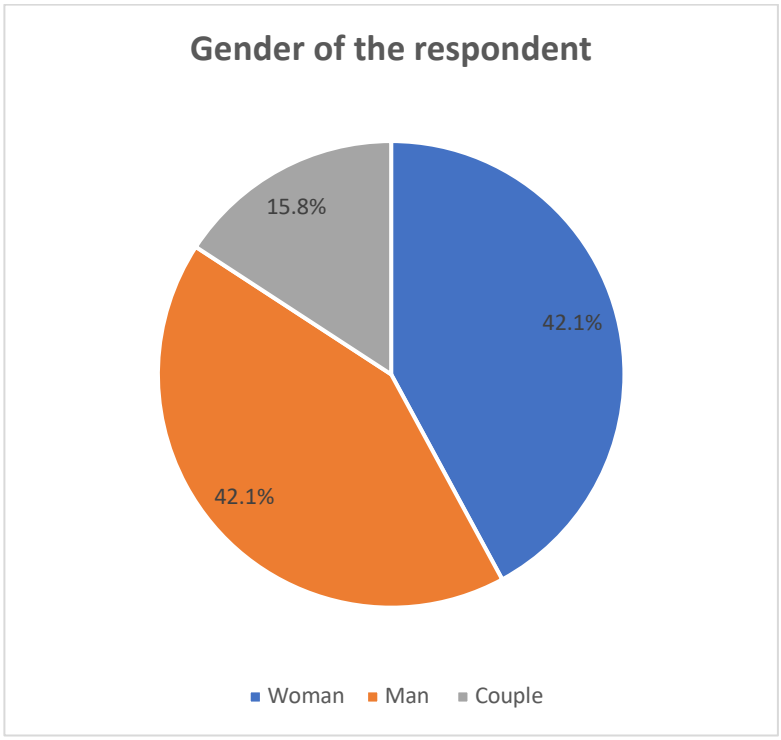
With regard to secondary residents, the majority are present on the island more than 6 months in the year.

Fewer than 4 weeks per year	From 4 weeks to under 8 weeks	8 to 12 weeks	12 to 16 weeks	16 to 20 weeks	20 to 24 weeks	Over 6 months
0	1	1	1	3	0	7

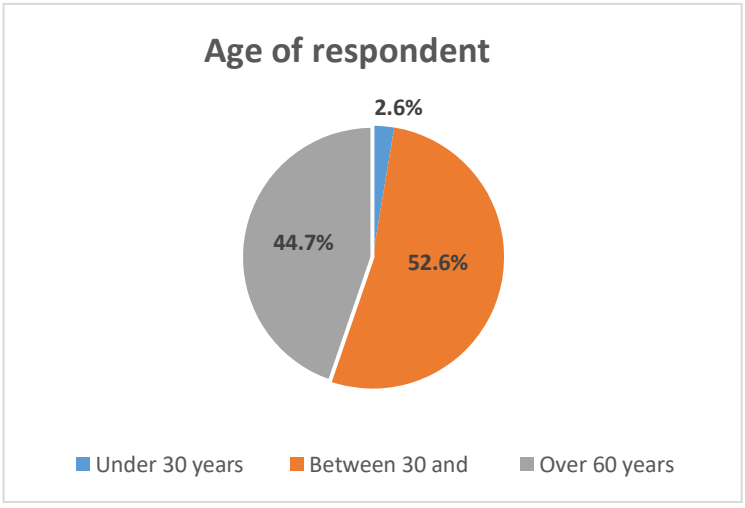
It is important to take this information into account because the status of permanent or secondary resident does not completely reflect the time a home is occupied and therefore the impact on the island's energy consumption. It is therefore essential to involve all owners in the energy transition process, as some secondary inhabitants may spend as much time on the island as a main resident.

Occupancy status		
Owner	Tenant	Living rent free
36	2	0

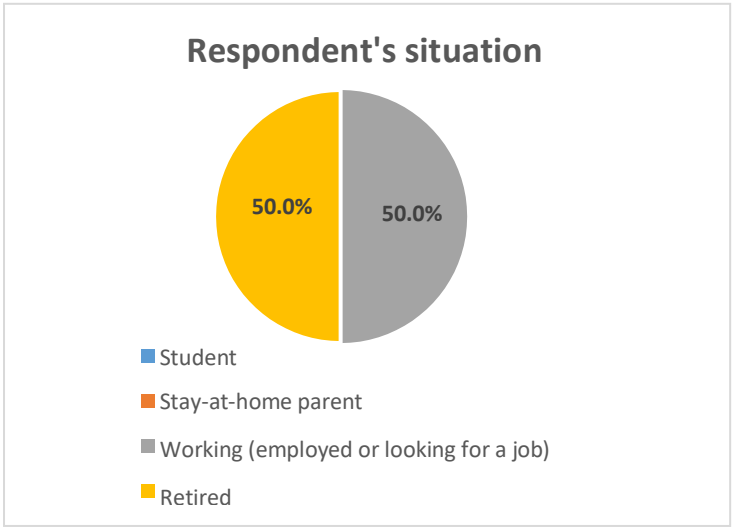
Most of the respondents are owners of their homes on the island of Sein. They are therefore the decision-makers with regard to any work to be undertaken in the home.



The same number of women and men took part in the interviews.



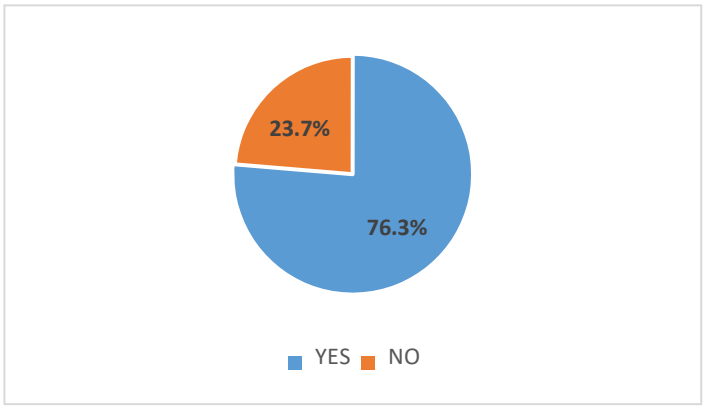
Over half the people we met are between 30 and 60 years of age. Few young people under the age of 30 were interviewed, as not many live on the island.



Half the respondents are working people either in employment or looking for a job. The other half are retired people.

3.2. Inhabitants' awareness of the different sources of energy production

3.2.1. Where the inhabitants stand in relation to the current production of electricity mainly based on fuel oil



Breakdown of inhabitants' answers to the question:

"On Sein, most of the electricity is generated by oil-fired generators. Does this method of production bother you? "

➔ Over three quarters of respondents said they were troubled or even appalled by the **use of fuel oil for electricity generation on the island**. This figure is higher than that registered on Molène (70%)

These people refer to:

- The non-ecological aspect and the public health problem of this method of production.

Sample responses:

"Yes fuel oil really bothers me in terms of its pollution and emissions of heavy particles! When I'm out at sea in my boat, I know when a power generator starts up because I feel it! "

"Fuel oil is not ecological, it is an energy that has run its course. "

- the lack of a real alternative for the island's electricity generation at the moment. They are against the use of fuel oil which they consider polluting and expensive but seem to be rather resigned.

Sample responses:

"At the moment, we can't do without fuel oil entirely, we don't have any alternatives. But oil is expensive, even if we pay the same price for electricity as on the mainland, and the three power generators are fairly polluting. "

"Yes, fuel oil does bother me, but at the moment it's the most economical solution given the number of people on the island. "

- the troubling use of fuel oil but the fact that huge progress has been made in recent decades to limit the environmental impact and improve the reliability of the engines.

Sample responses:

"Yes, it bothers me, but after all the engines that we manufacture today are far more efficient than they were before, there are fewer emissions. "

"The fact that electricity is produced from fuel oil bothers me, but it's a reliable method of production, more reliable than renewable energies.

- Being against the use of fuel oil but they put into perspective the quantity of fuel oil consumed per year at the power station

Sample responses:

"When I see all the hullabaloo made about energy here, whereas the boat consumes 500 L of fuel oil per day, and nothing at all is said! "

"With regard to the use of fuel oil for electricity generation, I am torn, the power station consumes the equivalent of a trawler, so it's peanuts! "

- Their wish to see an underwater electrical cable actually be laid between the mainland and the island

Sample responses:

"I don't understand how it's possible to pull a cable between Ireland and France but it's not possible between the Pointe du Raz and the Ile de Sein, it doesn't make sense. "

"I'm in favour of laying a cable, we know how to do it, it's not complicated! It's basically a cost problem. "

A quarter of respondents said they were not bothered about using fuel oil for electricity generation on the island.

These people cite the fact that the power plant is indispensable for the generation of electricity on the island, and that it's an element rooted in island life. Some people remembered their island when there was no electricity and are satisfied with the ease of accessing energy.

Sample responses:

"Fuel oil is a necessity for the generation of electricity on the island at the moment, so, while we're waiting for something better…"

"No, we don't think about it every day, there aren't any power cuts like before! "

"No, the use of fuel oil doesn't really bother me, I've always been aware of the power station, I'm used to it. "

"No, I'm really not bothered! I knew the island when there was no electricity, when the power station came, it was a revolution! "

"I don't mind the fact that fuel oil is used every day, anyway, what else can we do? "

3.2.2. How the residents feel about the development of renewable energies

In general, the people interviewed are unanimously in favour of the development of renewable energies on the island, but this is sometimes considered too slow. Their remarks are then tempered depending on the different renewable energy networks.

Sample responses:

"Of course we are in favour of the development of renewable energies, to reduce fuel consumption, but also to make energy savings. "

"The development of renewable energies is a good thing, as it means that fuel consumption is reduced. "

"I think the development of renewable energies on the island of Sein is too slow! More needs to be done! "

Interviewees wanted to see their island move toward energy self-sufficiency and become a trailblazer in the field of energy at national/international level.

Sample responses:

"We need to develop renewable energies, the island of Sein could become self-sufficient. "

"I really don't like the fact that fuel oil is used at the power station, the island of Sein would have the potential to be an innovator in terms of the production of energy and even any other ecological cause. The island could be a trailblazer! "

At the same time, residents are very conscious of the fact that, even with significant developments in renewable energy, generators will be indispensable, at least initially.

Sample responses:

"I'm in favour of REs, and it would be good if we could get rid of fuel oil. But we'll always need it! "

"In principle we'll never be able to break away from this method of production, but on the other hand you have to try to reduce fuel consumption and develop REs! "

"We need to decarbonize our energy system here on the island, because renewable energies are intermittent, we'll have to keep the generators and eventually have a mix of several types of energy."

"We need to hang on to fuel oil to ensure a secure supply. And then, before we think about producing renewable energy, we need to save energy first and then put in place an energy mix. "

Residents often mention the fact that energy is a topic that is very divisive on the island.

Sample responses:

"Here, some islanders set up a collective to try to change things (IDSE - Île de Sein Energies). I'm not a member, I don't have much information on the subject but what I do know is that the person who is at the helm earns a salary of €100 000, and that's huge! The first thing I was told when I arrived here is not to join a clique, you need to talk to everyone without taking a stand, stay neutral and look at what's good for the island. "

"We follow the news on energy, the activities of IDSE, some of the family is in the association but we aren't members of anything, we want to remain neutral. "

"The development of renewable energies? You're embarking on a slippery topic! I'm in favour of the development of REs, I'm ready to listen. "

We should point out that a number of inhabitants mentioned the positive impact of a speech made about the island in 2018 by an engineer, Yves Boulay, clearly explaining the energy situation on the island of Sein and the various possible solutions, whilst remaining very factual and scientific. The inhabitants who were involved in this presentation appreciated the clarity and honesty of the remarks and were able to consolidate their knowledge of energy.

3.2.3. Awareness of solar energy

Amongst the people interviewed:

- 75% unreservedly embrace the technology (this figure is lower than on Molène: 83%)
- 25% are in favour but have some doubts or questions about the technology (vs Molène: 17

%)
- 0% are against.

➔ Clear support for solar energy

People who support solar energy unreservedly often use as examples the photovoltaic installations installed on the public buildings on the island, which they feel are successful in terms of generation and integration.
These people would like to see more solar panels on the roofs of public buildings and refer to the large surface areas still available.

Sample responses:

"Solar is very good, but it's not enough, we really need to get going! "

"Solar panels are good, the installations on public buildings are well integrated, it's more aesthetically pleasing than fibre cement. "

"Yes, I am in favour, wherever possible! Solar panels bother me less than TV antennae on roofs! "

"Yes, I'm in favour, this is the best solution! Why not on the ground? Specifically on the Nifran impluvium? "

"It's good, a very good idea! It would be good for everyone to get the equipment, but that's expensive. And it would be brilliant to put solar panels on the church, as the roof surface is very large. Every roof needs to be used, if we are to avoid a wind turbine! "

"Yes, solar panels are really good!" At the moment there are days when the oil-fired power station is completely shut down. "

➔ Support with reservations for solar energy

Interviewees who indicated reservations about solar energy mention:
- the problem with recycling at the end of panel life,
- environmental impacts associated with panel manufacturing
- conditions about the type of building they feel suitable for solar panel installation (these people are not in favour of panels being installed on traditional houses on the island)

Sample responses:

"Yes it's good, there's enough sun here, it works well! I have some concerns about recycling panels."

"There are quite a few solar panels on the island, they run pretty well, it's brilliant! However, there's the problem of recycling the panels…"

"It's a technique that works very well! There are a few installed on the island, and that's a good thing. I do wonder about the recycling of panels and the materials used to manufacture the panels."

"They can be installed on houses but I see more of this technique on new houses, not on the old ones. Old houses are not suitable for pulling cables or supporting the weight of the panels, …"

"Yes I'm in favour! If it's possible for some houses to install solar panels, why not? as long as it doesn't spoil the houses! "

➔ Lack of support for solar energy

No one said they were completely against the development of solar power on the island of Sein.

3.2.4. Awareness of tidal energy

An experiment with tidal energy has been under way since June 2015 in the "Fromveur Passage" between Ouessant and Molène. This energy could eventually cover over half of the consumption of the inhabitants of Ouessant.

It should be pointed out that when the project began this industrial experiment benefited from extensive media cover both in the local and national press and through information from the Sabella company, which developed the prototype.

The D10 turbine was put in the water several times between 2018 and 2020, and each time was removed shortly thereafter when damage to the machine was observed.

The residents of Sein, despite their geographical remoteness, are all aware of the existence of the project.

- 50% of interviewees support the project unreservedly (this figure is higher than the one registered for Molène: 22 %)
- 34% of respondents are in favour but have doubts about the success of the project and question the technology
- 16% of respondents do not believe that the project will be successful (this figure is slightly higher than the one recorded for Ouessant in the last survey in March 2021, since 11.5% of the inhabitants of Ouessant do not support the tidal energy project, or no longer do so.)

➔ Clear support for tidal energy

People who strongly support tidal energy cite the fact that there are lots of currents in the water around the island of Sein and that this would be a clean method of producing energy. The majority hope that the project will succeed and prefer this technology to wind energy.

Sample responses:

"I hope that one day we will have a marine turbine on Sein. I am in favour, if it works in Ouessant, it's a project that could work on Sein as well! That would allow us to have cleaner electricity than we currently have with fuel oil!

Besides, I really want the Sabella project to work, if only to reward the teams that have been working on it for so long, they deserve it! "

"I am very much in favour, more so than for wind power. We'll find a suitable place with all the currents around the island! "

I have always thought that this would be very suitable for the island, there are currents, it's hyper predictable!

"It's 's great. We're in favour! The machine should be tested first in Ouessant and then, once it's perfected, one can be installed on Sein! "

"If it works on Ouessant, why not install several smaller ones on Sein? There are lots of currents around the island and, what's more, it's not the bay of St Brieuc where there are trawlers everywhere, there are places where you don't see any boats at all! "

"I think it's a very clever project! "

➔ Support with reservations for tidal energy

People who support tidal energy but with reservations, cite their doubts about the success of the project, the lengthy development times, the high costs that this type of technology generates, and the fact that it is important for the project to be carried out in consultation with users of the sea.

Sample responses:

"With all the currents around it, tidal energy could work very well, I am in favour! But is it efficient? It seems that in some islands, especially Scotland, it works well! Then the fishermen need to be consulted to avoid disrupting their work. They themselves can point out the most suitable places! "

"I have heard of the tidal energy projects at Ouessant and Raz Blanchard. You need equipment to set up a project, to service the installations, you need specialized boats, and that all costs! "

"If it works, yes, I'm in favour! There are a lot of currents around the island of Sein but how long will it be before the technique is perfected? "

"Why not? If this technique is suitable for the island, I'm in favour. However, the system needs to be fine-tuned. "

"Yes! The location needs to be well chosen, in consultation with boat owners and fishermen, the machine mustn't create an obstruction for users of the sea. "

"Yes, why not? But Sabella really has trouble getting their machine to work…"

"Users of the sea need to be consulted! We'll wait to see what happens with the Sabella prototype."

➔ Lack of support for tidal energy

People who do not support tidal energy do not believe in the project given the various typed of damage suffered by the machine and the money spent. They don't think that the weather and sea conditions around the island are compatible with a project of this kind.

Sample responses:

"Sabella has never managed to make it run properly, maybe it will work in 10 years' time? but today, it hasn't been fine-tuned. "

"I'm not convinced, the weather, the storms, you need something robust here! I don't think it would work…"

"It's not at its best yet! Well-established technologies, not prototypes, need to be built on the island of Sein, because maintenance is complicated and expensive! Public money is involved! "

"If there's a problem, intervening is very complicated, you have to get the machine out of the water, it's expensive and it doesn't even work…"

"I'm not in favour, the seabed is not deep enough on the island and the water swirls around a lot here!"

3.2.5. Awareness of wind energy

The various interviews conducted with the inhabitants of Sein clearly demonstrated that wind energy is a very divisive subject on the island. Some inhabitants no longer dare to address the issue, and they have chosen to remain neutral and not to take a stand in public.

It seems as though the island operates in "cliques," in terms of activities, associations or families, and this fact is perceived as an obstacle to installing alternative energies.

We should also point out that half the people interviewed mentioned the failure of the two small wind turbines in the Habitat 29 homes, which contributes to the poor image perpetuated by wind energy, accentuated by the fact that the inhabitants feel there is a difference in the way the ABF [French heritage authority] view planning applications (individual plans vs the project involving the two Habitat 29 wind turbines).

Sample responses:

"You wonder how the plans for the school's 2 wind turbines were able to be passed because they're right in the middle of the village, next to the houses and right next to a classified site ("Les causeurs") whereas, as individuals, we are faced with a whole load of regulations and, overnight, we have an awful thing like that forced on us, and ,what's more, it never worked! It whistled and it vibrated! "

"The Habitat 29 wind turbines were a real disaster. Even on the day of their inauguration they failed to make them work… And then it was dangerous, as one of the turbines actually fell down in the school yard! "

"I have heard about the school's wind turbines, it was a complete failure! It must have been very expensive for very little benefit in the end! What's more, one of the blades landed in the garden of a semi-detached house…"

"and then, it's not too great what happened with the school's wind turbines, what an idea to put something like that close to the children, it's scary! When you think that one of the blades fell off, it's crazy! The vibrations could be heard all over the island! And all that money spent! "

"Obviously I'm in favour of the development of REs but I don't want the island to be covered with wind turbines. Especially given the unsuccessful experiment with the wind turbines in the school, they never worked, and they have just been dismantled, back to the drawing board! It was a very expensive total failure! "

"When you're an ordinary citizen and you want to put in a velux, the ABF gives you a negative response yet they allow the installation of 2 wind turbines in a school yard, and they can even be seen from the boat!! "

The survey reveals that:

- 37.5% of respondents support a wind turbine project without reservation (this figure is much higher than that registered for the island of Molène: 14 %)
- 34.4% of respondents are in favour of a wind energy project but issue reservations
- 28.1% of respondents are against a wind energy project on Sein (compare with the figures from the last survey on Ouessant: 42% of Ouessant inhabitants are against a wind energy project).

➔ Clear support for a wind energy project on Sein

Those interviewed who unconditionally support the installation of a wind turbine on Sein cite the need for this type of energy in the island's energy mix and the fact that the machine can be easily dismantled after 15 years.

Sample responses:

"Why not? If that could help to reduce fuel consumption at the power station! You get used to everything visually, until 2008, there were 2 communication towers as tall as the lighthouse…"

"I heard that there would be a wind turbine at Ar Guéveur, personally, I don't mind. You get used to it, we have to adapt to the island's situation. ".

"We need wind energy, this project would be a good thing, and even if the site is near my house, I'm in favour. I'm not bothered about the noise, as the wind and the sea already make a lot of noise! ".

"I'm in favour! The project proposed by EDF seems very good to me although I know that the people here are against it. It's very difficult to discuss this subject calmly, as people react immediately, without thinking. ".

➔ Support with reservations for a wind energy project on Sein

People who support a wind energy project but have reservations mention: Their strong feelings about the location. The site of Ar Guéveur is not unanimously popular, as those interviewed would prefer it to be located at the lighthouse.

Sample responses:

"I'm in favour of a wind power project but at the lighthouse! With photovoltaics being used at the hatchery, the cables are already in place and the power station isn't far away! At Ar Guéveur, all the

trenches will have to be dug, and the ground is rock there! What's more, the young people end their evenings at Ar Guéveur, around a fire, after the bars close. What would that be like with a wind turbine right beside them? ".

"I don't like it from an aesthetic point of view! But the main problem is location! I don't understand why they chose Ar Guéveur rather than the lighthouse. There's space there, the power station isn't far away, the cables are already there … And what will happen with the helicopter? The landing zone is in the same place! ".

"The location at Ar Guéveur is completely idiotic, it should have been at the lighthouse, all the studies had initially been carried out with a view to a location at the lighthouse… in addition, they only needed to make 50 m of trenches! ".

"At the beginning they talked about the location being at the lighthouse and I was fairly in favour of that but not at Ar Guéveur, I don't like it… It's too close to the village and the houses…

It's a 15-year permit, so if there are any limitations we hadn't thought of, it can be dismantled, it's not like a nuclear power station! ".

The potential adverse effects of the wind turbine:

Sample responses:

"I hope the wind turbine is not going to create interference with the TV or radios, because we're right next to it! The problem is that normally wind turbines should be at least 500 m from the nearest houses, and there it will be 400 m away!

Then we need to look to the future, when we've gone, solutions will definitely have to be found to produce energy! ".

"We live right next to Ar Guéveur, and we hope there won't be any adverse effects. In principle, it will be a small wind turbine, and if it can contribute something to the island's grid, we're in agreement and we'll get used to it! But still the best idea would have been to put it next to the lighthouse. Previously there were communication towers there, and that didn't bother anyone. ".

"Apart from the fact that it will spoil the look of the island a little bit, if it really works, I'm in favour! ".

"With regard to the visual aspect, we would definitely prefer it not to be there! It does spoil the countryside after all. Is it possible to view some visual simulations to see how the wind turbine would be integrated into the site? ".

- The difficulties of moving the machine to the island

Sample responses:

"But how will it be brought here? I had heard about 40 ton trucks but the roads here are not made for that weight! Plus the quays aren't wide enough! ".

"And then, this wind turbine will be difficult to transport If it had been at the lighthouse, the wind turbine could have been brought in by a barge, there's nothing round about and it would have been easier. Here they're talking about destroying a sea wall to take it up to Ar Guéveur! ".

- Their lack of confidence in the ability of the machine to withstand the strong wind

Sample responses:

"The wind turbine will last a winter or two where they want to put it, and after that it will be finished, it won't be able to withstand the wind and the sea. Ar Guéveur is often flooded, waves wash over it, and there's no doubt that the wind turbine will sometimes be under water! ".

- Their support if the project has a limited duration and is for a fixed period:

Sample responses:

"There are inevitably adverse effects which are visual at the very least but the licence is for 15 years and after 15 years it can be dismantled as it's only a matter of 4 bolts! If it's there for a fixed period I'm in favour, while we wait for the marine turbines. ".

➔ Lack of support for a wind energy project on Sein

People who reject a wind energy project on Sein mention:

- the aesthetic side, in that they don't like the way the turbines look in the landscape, especially given the small size of the island. These people love the landscape of their island as it is and don't want it to change.
- the impact on the environment when the machine is installed.
- the high maintenance costs.

Sample responses:

"No, I'm against it, it's going to spoil the island! It's a catastrophe, visually speaking. And it will require extremely large volumes of concrete, and that's not possible! How will the machine be recycled once they stop using it? ".

"NO, I'm against it! I think that there are other solutions to consider before wind energy: solar, coal, etc."

"This has disaster written all over it at Ar Guéveur, because if it breaks down or is damaged, or if there's any corrosion, it will be very expensive to bring in the intervention teams! The experience with the school's wind turbines should be a lesson! Nor do I think it's attractive..."

"No, I'm against it! Given the equipment installed at the school, it can't be described as a success… It broke down very quickly, I've seen that the installations have been dismantled and I hope they will never be repaired! It makes no sense… Islands are small territories, and they should not be spoiled. I am against a wind turbine whatever the location on the island. ".

3.2.6. Where the inhabitants stand in relation to a pyrogasification project

The survey reveals that:

- 69% of respondents support the project without reservations (this figure is lower than on Molène: 81.5 %)
- 26% of interviewees support the project but have reservations about the timber resources and the potential harm this system could cause.
- 5% of interviewees do not support the project.

➔ Clear support for a pyrogasification project

Over 2/3 of respondents though that the project was very worthwhile for the island because it means lower fuel consumption at the power station and it reduces the volume of waste sent back to the mainland. These people consider that the energy produced can be classified as renewable.

Sample responses:

"Yes, I am in favour of wood energy or wood waste, you could call it renewable. ".

"Previously there was an incinerator on the island instead of the compactor, and until 2003 everything was burned. So, it might be worth testing a pyrogasification system."

➔ Support with reservations for a pyrogasification project

The residents who voiced reservations about the project point out:

- the lack of wood or wood waste on the island.

Sample responses:

"Yes, very interesting, I don't know if there's enough waste to supply the machine…"

- High implementation costs in comparison with the energy produced.

Sample responses:

"But how much energy is that going to produce for the island?" What are the setup costs in comparison with energy production? ".

What's more, I'm not sure that there are sufficient volumes on the island of Sein, because normally the pallets are returnable…

- fear of CO_2 emissions from combustion.

Sample responses:

"I have concerns about how the CO2 emissions will be dealt with! We need to see a carbon footprint for the machine. Filters can trap particles, but CO2 is another matter! ".

➔ Lack of support for a pyrogasification project

The people we met who do not support the project feel that the volumes produced on the island are not sufficient to supply a machine like this.

Sample responses:

"It wouldn't be possible here, there aren't enough volumes, especially in winter. "

3.2.7. Where the inhabitants stand in relation to other energy-related projects

The people interviewed sometimes spontaneously mentioned other experiments that might be worth testing on the island of Sein:

- 11 people, or nearly 30% of the sample, mentioned **wave energy**, which they consider to be extremely suitable in the context of the island of Sein and less restrictive than tidal energy in terms of maintenance or upkeep.

Sample responses:

"Yes, I'm in favour of testing this technique! EDF tells us that it hasn't been fine-tuned, but if we aren't given the means to try it, it will never be! ".

"Yes, it should be tested on the island of Sein and if the installation breaks down or requires maintenance, this would seem to be easier than for tidal energy. ".

"You need to dig down and interventions and maintenance are simplified because it floats, the machine is accessible in all weathers and there's plenty of potential around Sein! ".

"There's always a swell around the island, and next to Ar Guéveur it's almost permanent! It would be good to test a prototype! ".

- 3 people, or 8% of the sample, spoke of **hydrogen storage**, which would be interesting to set up on the island of Sein, especially for ultimately getting rid of the generators.

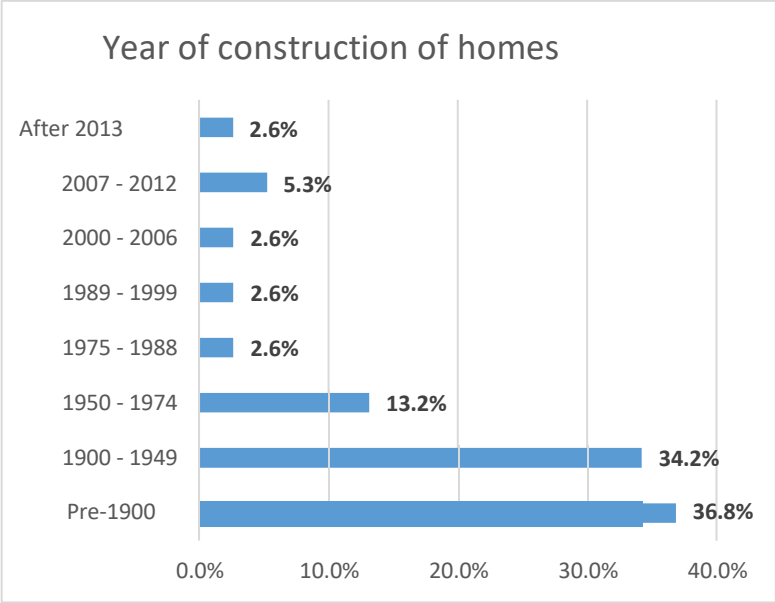
Sample responses:

"Now is the time to invest in hydrogen. I'm really in favour of it, and I would find it very hard if France were behind all the other countries in relation to this. ".

"Lots of new technologies are available that would allow us to do without fuel oil, including hydrogen storage! ".

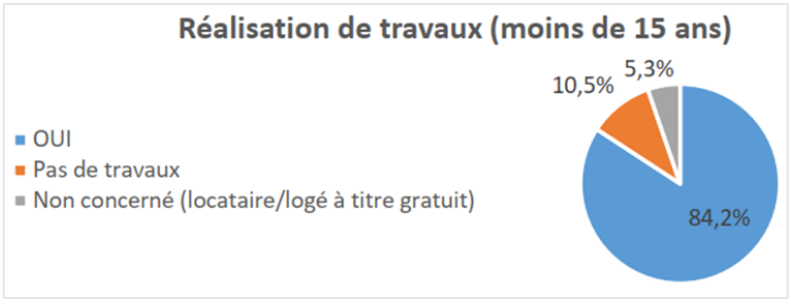
3.3.Characteristics of the homes and equipment installed

3.3.1. Characteristics of homes

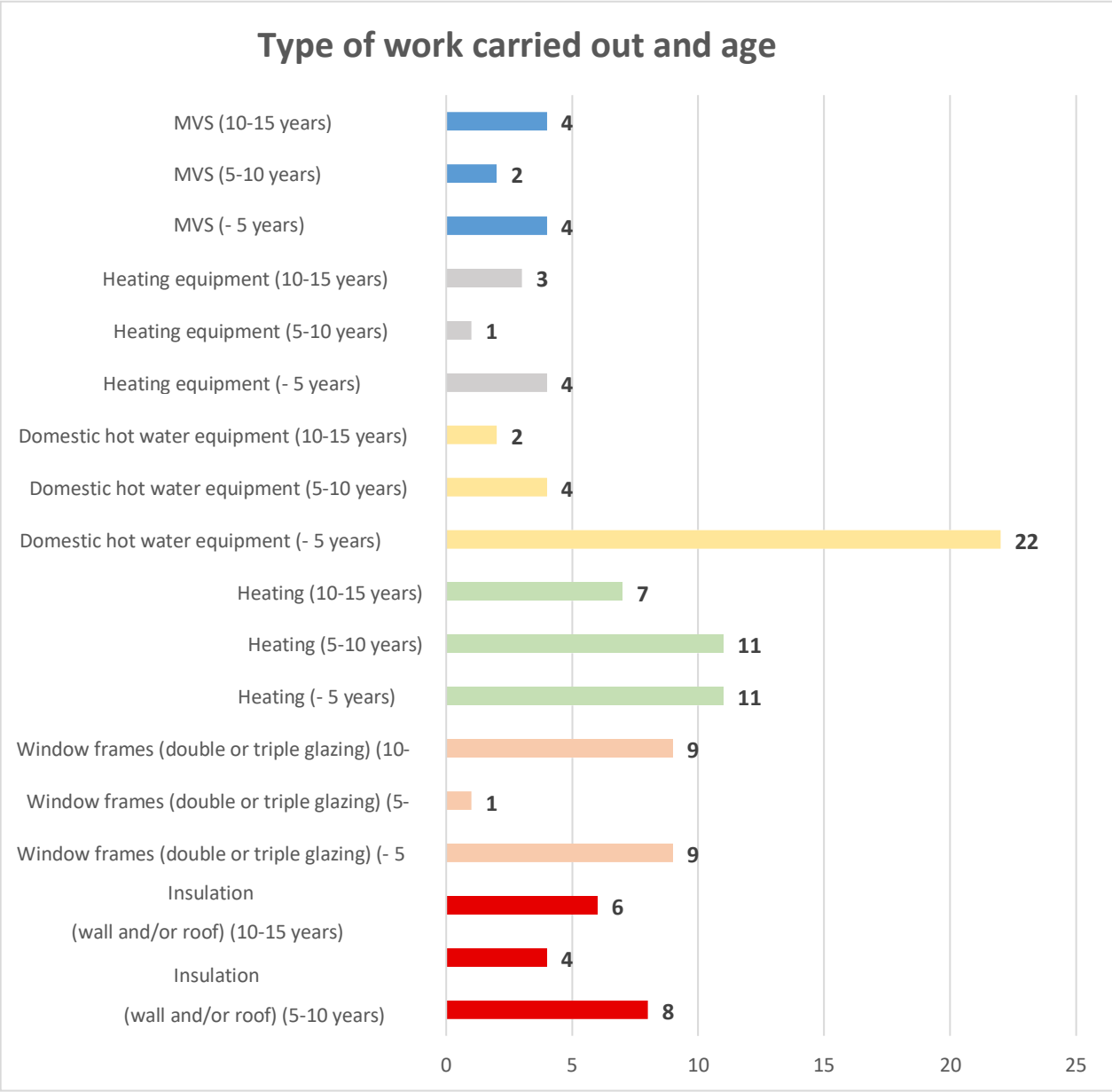


The results of the survey of the islanders show that almost 37% of homes date back to pre-1900.

- 71% date back to pre-1949. By way of comparison, French housing stock comprises
- 35% of housing built prior to 1949 (source: INSEE (Institut national de la statistique et des études économiques National Institute of Statistics and Economic Studies) – housing survey 2017).
- 84% date back to pre-1974, the date of the first thermal standard that for the first time imposed a minimum thermal performance to be achieved for housing.



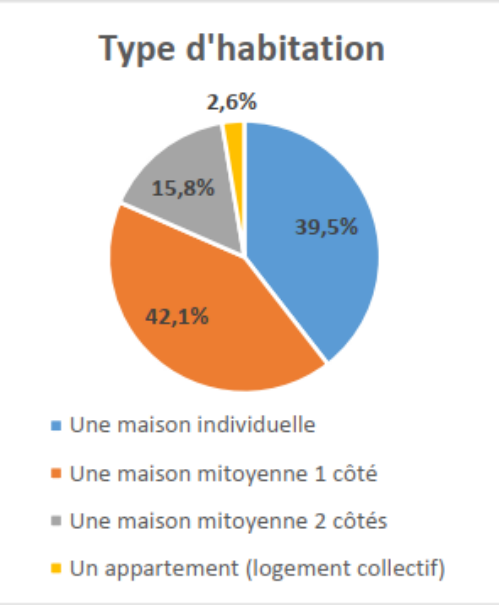
Over 84% of interviewees have carried out work in the last 15 years.



The work carried out mainly concerns domestic hot water and heating systems:

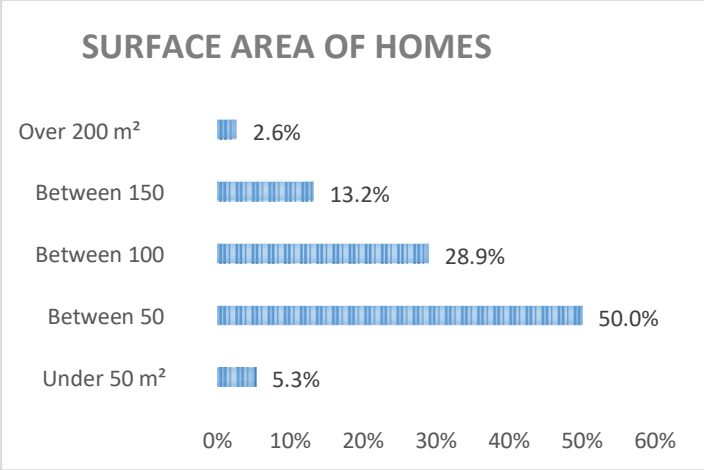
- The replacement of hot water storage tanks: The majority of immersion tanks are under 5 years old.
- Heating systems, with the recent increased popularity of freestanding stoves burning logs and pellets on the island.

We can see that very little of the work carried out concerns the shell of the building, with the inhabitants mainly concentrating on equipment, which they often change as an emergency when a water heater or heating system fails. The building is not always considered as a whole, with a view to improving the outer shell, first of all, and then making the heating systems the appropriate size.



Nearly 58% of respondents own terraced or semi-detached homes, more than double the numbers seen on Molène (26%)

The size of the island of Sein is very small and the number of buildings is therefore reduced.



Dwellings are effectively concentrated, grouped together to withstand the elements with modest surface areas:

- Over 55% of the houses are under 100 m^2.

These facts may offer advantages in terms of optimising energy consumption, but on the island of Sein, other elements need to be taken into account such as:

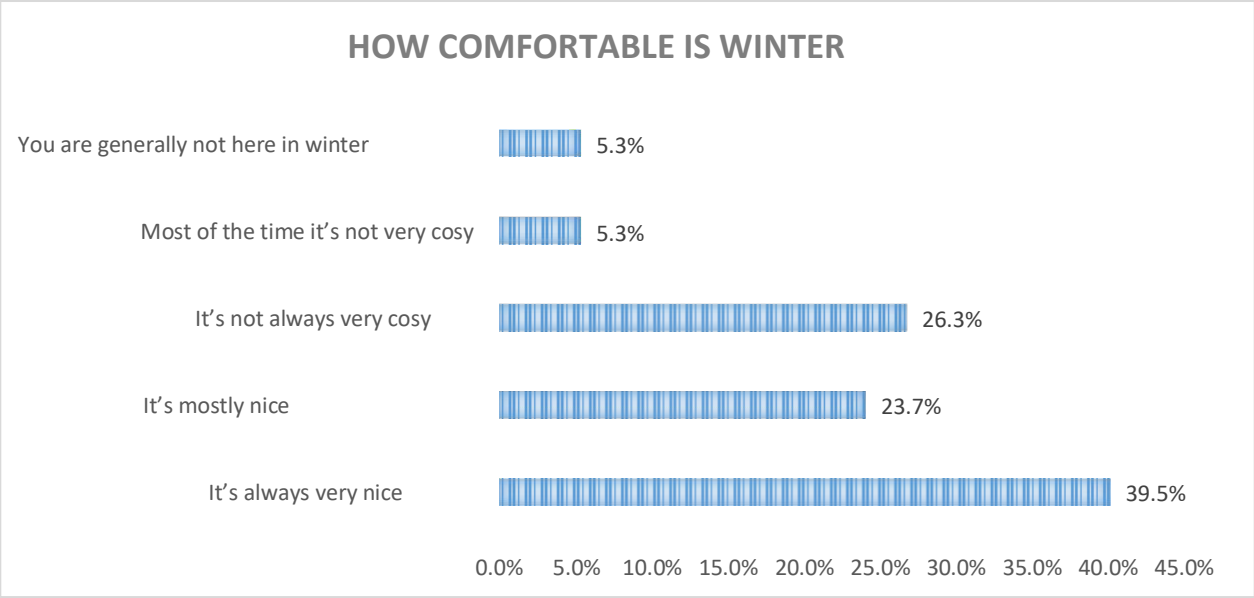
- The high level of humidity,
- High wind levels,

- Housing which is not very weatherproof and mainly lacks any MVS (almost 53% of houses do not have MVS)

MVS	NO	YES, single flow MVS
NUMBER	20	18
%	52.6%	47.4%

Among the homes without an MVS, there are some which actually have an MVS but this has been out of order for several years and the owners have not managed to bring in an electrician to repair it, or in other cases the MVS is working in principle but the owners do not turn it on because they cannot find a tradesman to service it and are afraid of the fire risk.

Consequently, the installation, repair and maintenance of MVSs could really save energy and improve inhabitants' comfort, especially when you consider that one third of the people interviewed find their homes uncomfortable in the winter.

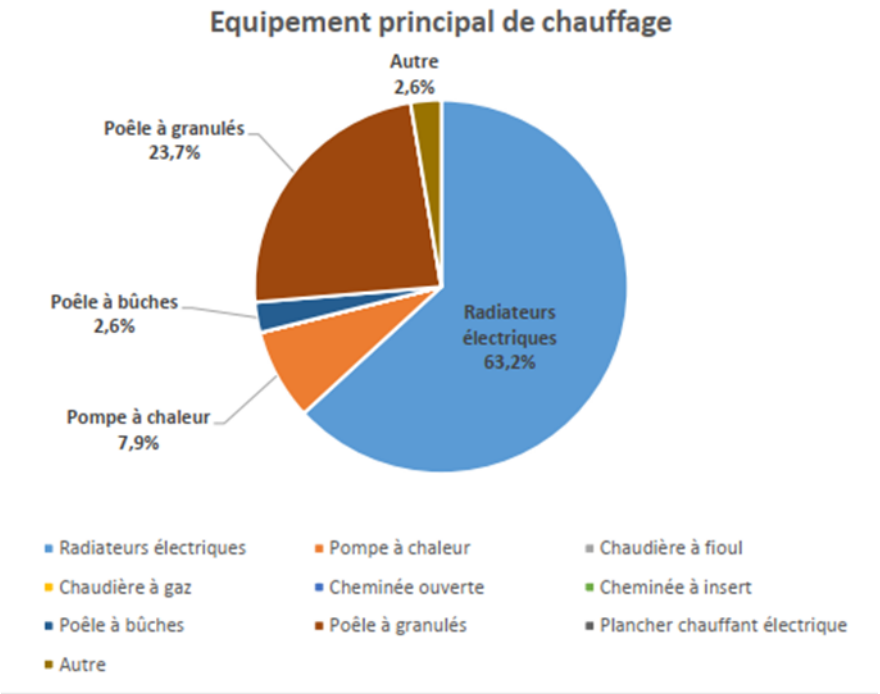


People who feel that their home is always nice in winter in most cases have new wood burners, which heat and dry out homes quickly.

3.3.2. Equipment present

3.3.2.1. The heating

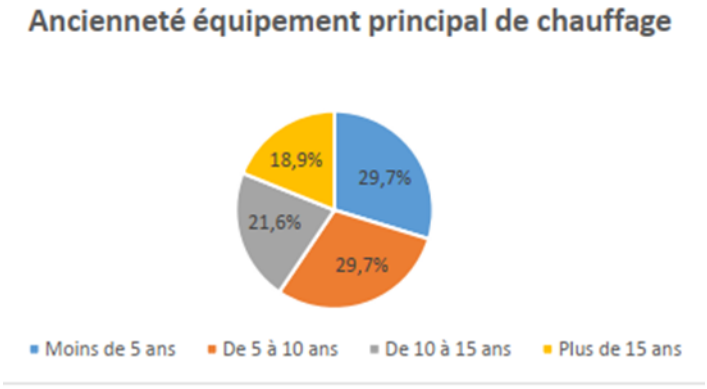
As far as the main heating system is concerned, heating by electric radiators accounts for just over 63% (vs 48% on Molène) and wood heating systems for about 26% (vs 23% on Molène).



NB : « Autre » = Aucun moyen de chauffage principal

These figures can be compared with the results of the survey carried out in 2016 on Sein by the AIP under the heading of the Boucle Energétique Locale (BEL) [*Local Energy Loop*]. Heating by electric radiators seems to have lost ground in the last 5 years, falling from 82% to 63%, while wood heating rose slightly from 7% to 26%.

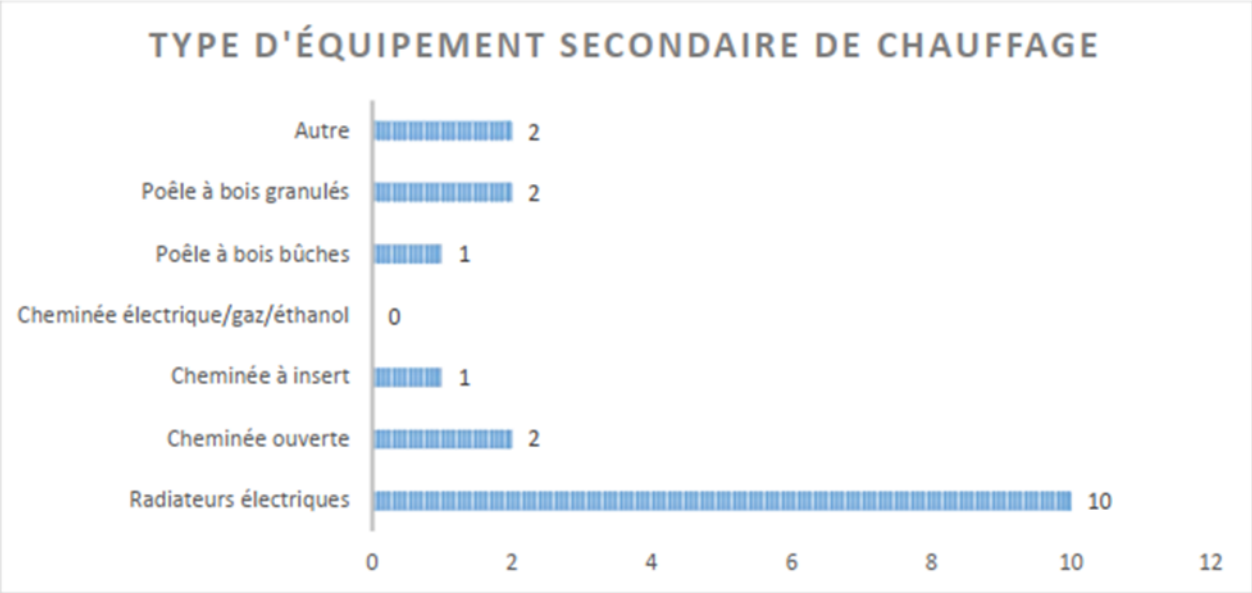
Pellets are preferred by the inhabitants, as it is a fuel considered convenient to handle, less dirty than logs, easier to store, and devices can be remotely operated using mobile phones (locals enjoy returning to a heated house after a few days on the mainland.)



The main heating system in nearly 2/3 of homes is under 10 years old. Overall, the main heating systems are newer in Sein than in Molène (In Molène, 2/3 of the main heating systems are over 15 years old).

Secondary heating systems	YES	NO
NUMBER	18	20
%	47.4%	52.6%

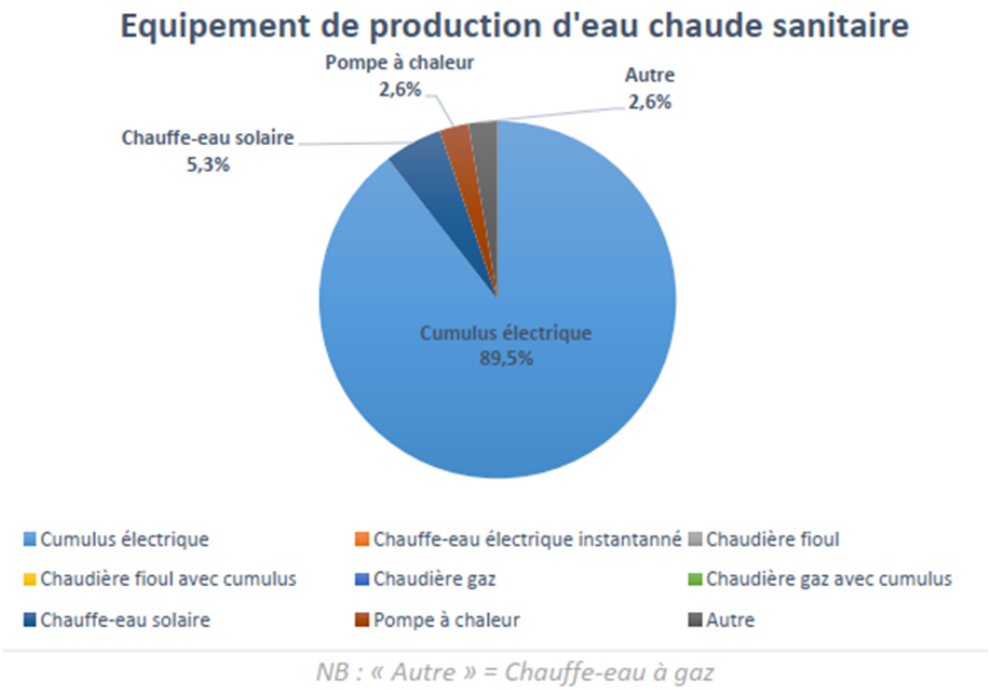
A little under half of homes have secondary heating systems, most of them electric radiators, always as a supplement to a wood stove burning logs or pellets.



If we take into consideration all the main and secondary heating systems, 16 homes out of 38, or nearly half of homes have a freestanding wood-burning appliance, which is generally beneficial in terms of reducing fuel consumption at the power station. By comparison, this figure is 35% on the island of Molène.

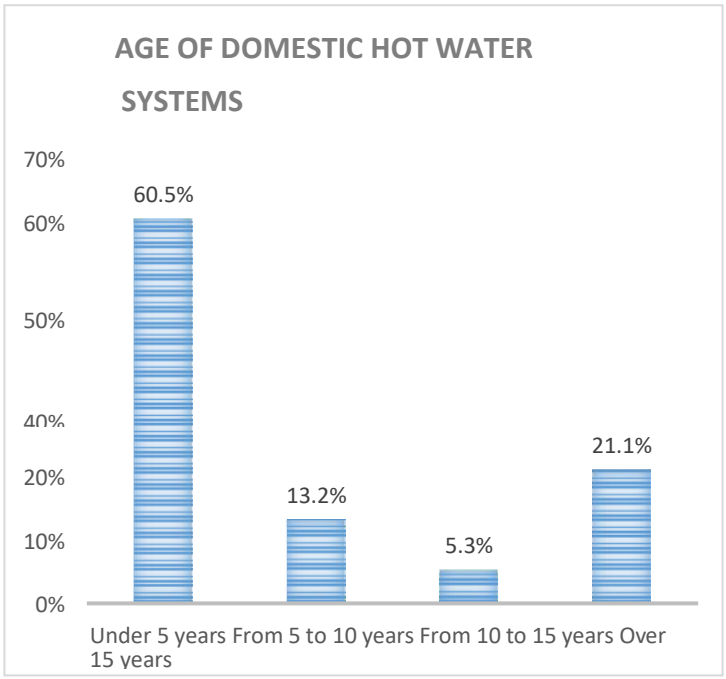
3.3.2.2. The production of domestic hot water

89.5% of domestic hot water is produced by electric water heaters (vs 77% on Molène).



NB : « Autre » = Chauffe-eau à gaz

The stock of hot water storage tanks is very new since nearly 60% of the equipment is under 5 years of age. By comparison, the average lifetime of water heaters on the mainland is 11.7 years (Source: Eco-Systems– 2012 data).



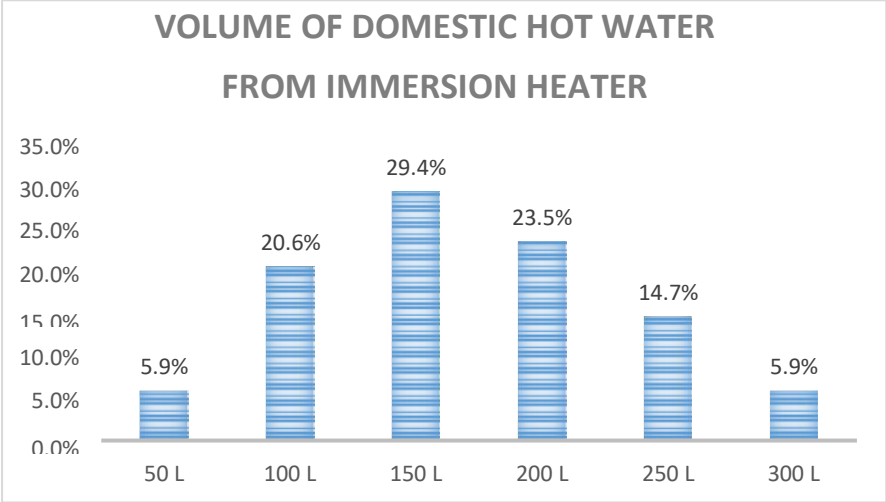
The islanders interviewed point to a significant renewal rate for electric water heaters that they explain is due to the characteristics of the water produced after desalination for the island of Sein, which probably impairs the life of the devices, or even because of variations in the voltage grid that probably damage the tanks.

We can see that the high representation of electric immersion heaters that do not require regular maintenance means that consumer experts are not able to intervene and recommend more energy-

efficient systems before the equipment breaks down.

In any event, it would be advantageous to set up a more thorough study of the cause or causes of hot water immersion tank malfunctions, by analysing immersion heaters left at civic amenity sites over several months.

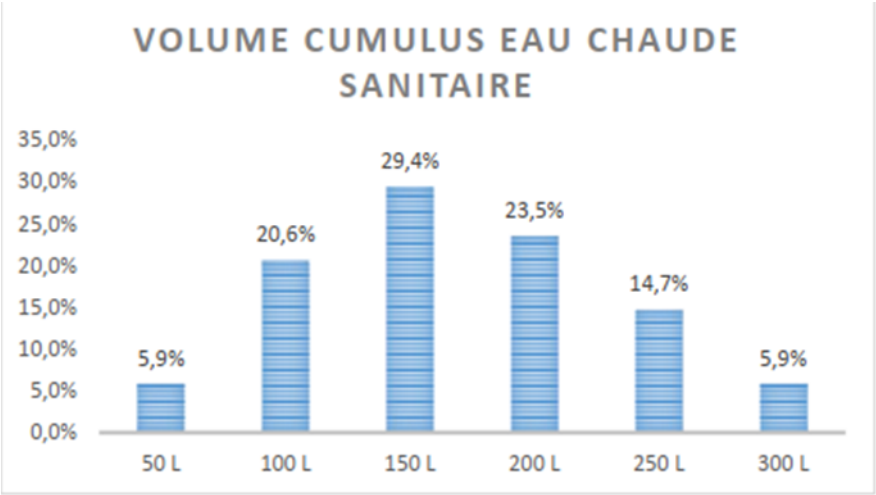
The production of domestic hot water accounts for a significant amount of electricity consumption and therefore fuel oil consumption at the power station. This study of user electric immersion heaters is a necessary prerequisite for the development of alternative methods for producing domestic hot water apart from basic electric immersion heaters, such as solar thermal water heaters or thermodynamic tanks.



The average volume of hot water storage tanks does not entirely correspond to the occupancy figures of homes. Homes are occupied on average by 1 or 2 people, which should correspond to average hot water tank volumes in the order of 50 or 100 litres. The over-dimensioning of hot water tanks can be explained by the increased need for hot water in the summer period when people are visited by family or friends.

A number of interviewees reported that their hot water tank is too large for their daily needs.

3.3.2.3. Other equipment



Homes with cisterns represent 58% of the sample (substantially identical to the figure recorded for Molène) but of the 22 houses with tanks, 7 are currently unused due to the absence or failure of the pump but also sometimes due to the development of algae or fungi in the tank, rendering the water unusable.

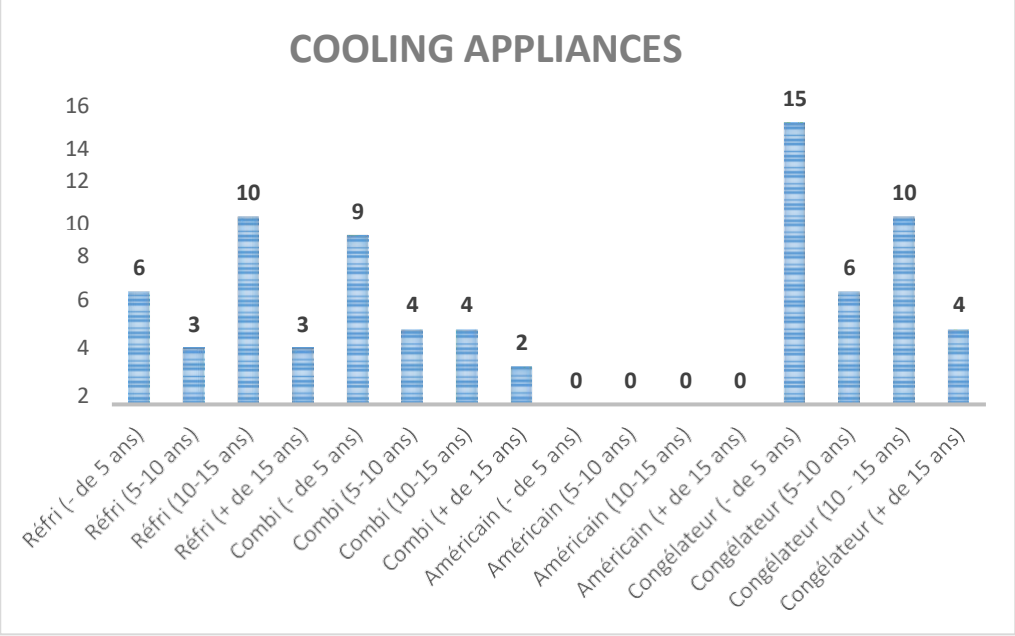
Just over 18% of the people interviewed have an oil stove as a means of heating (with one person having this as their sole means of heating).

Although oil stoves emit numerous pollutants that have significant health and environmental impacts (which must be correlated with the fact that half the population do not have an MVS), people who choose this mode of heating appreciate the speed at which the system heats up.

Just over 18% of the people interviewed have one or more dehumidifiers, which is consistent with the rate of homes without an MVS.

3.3.2.4. Cooling appliances

	Number	Average rate per household
TOTAL cooling appliances	**76**	**2.00**
Refrigerators	41	1.08
Freezers	35	0.92



The survey reveals a particular feature to be linked with the island lifestyle, namely, a number of cooling appliances which is slightly higher than the average observed on the mainland.

For example, the survey shows an average of 2 cooling appliances per home (vs 2.16 in Molène), even though the occupancy rate of homes is relatively low, over 92% of permanent residents live

alone or in couples, and the size of the homes is not very large, with over 55% of homes being under 100 m^2. By way of comparison, the average number of cooling appliances per home on the mainland is 1.8 (Source: Study 2016 IPSOS for Eco-Systems).

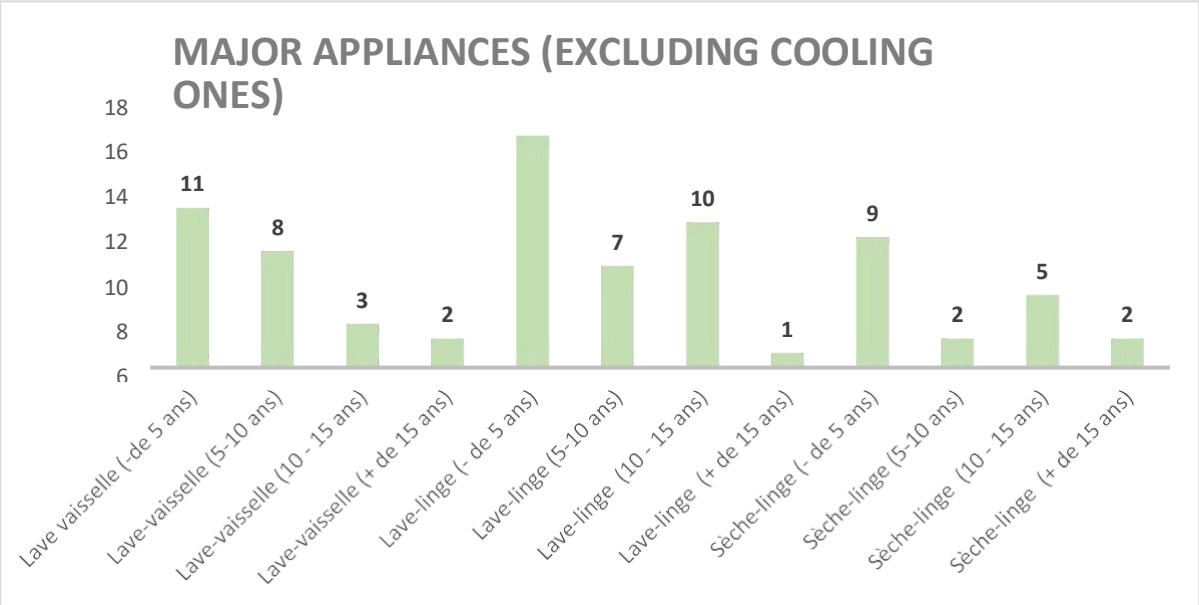
By analysing these numbers more closely, it appears that this discrepancy is due to an overcapacity in freezers whose number is almost 2 times higher than on the mainland:

Island data		**National data (Source: 2016 IPSOS study for Eco-Systems)**	
Average number fridge-freezers per household	**Average number freezers per household**	**Average number fridge-freezers per household**	**Average number freezers per household**
1.08	0.92	1.3	0.5

The overcapacity of freezers can be explained by local practices, with amateur fishing appearing to be an important factor determining the doubling of freezers even for people living alone. Most anglers and beneficiaries of amateur fishing activities prefer to store fish products in a dedicated freezer.

Moreover, for economic reasons or due to the availability of certain products, many islanders bulk buy their food on the mainland and then freeze it. If we add to that a desire to control the risk of no boat links in bad weather, we can see why there are more freezers than the average number found on the mainland.

3.3.2.5. Major household appliances (excluding cooling appliances)

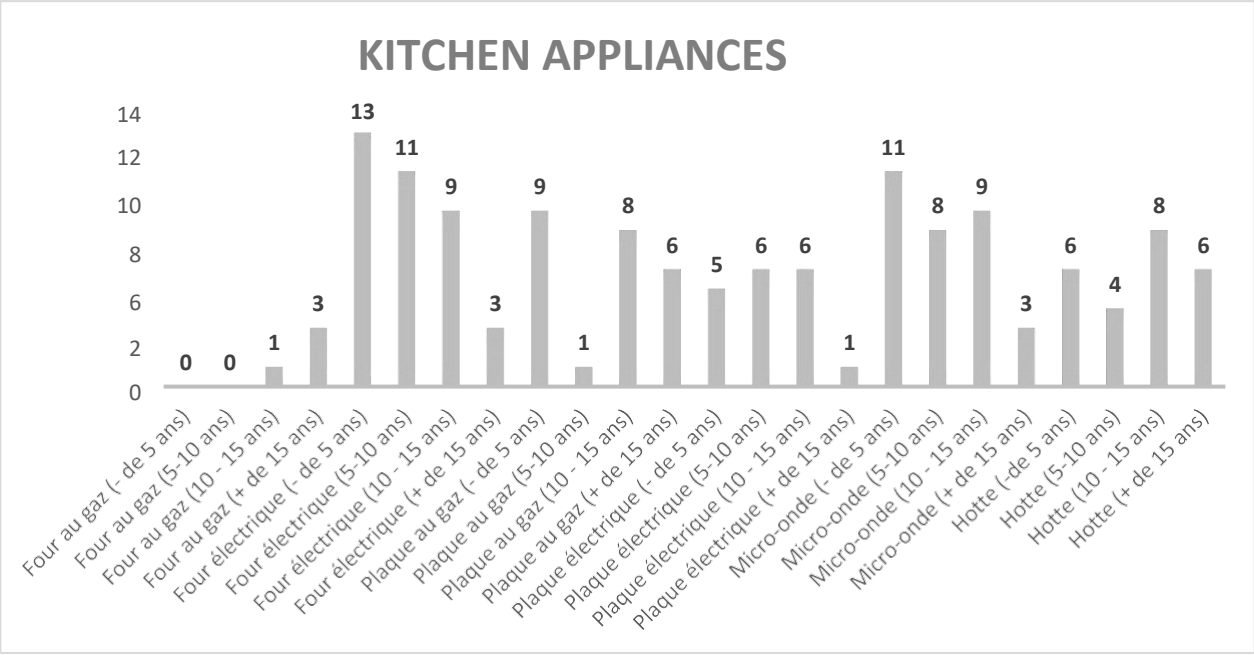


The washing machine is the appliance found most frequently in homes (90% of the people interviewed have a washing machine). 63% of people own a dishwasher and 47% own a tumble dryer.

These three types of major household appliances present on the island are generally new, with almost half being under 5 years old.

For tumble dryers, the equipment rate on the island is about 24%, while the national average is 40% (Source: Study 2016 IPSOS for Eco-Systems).

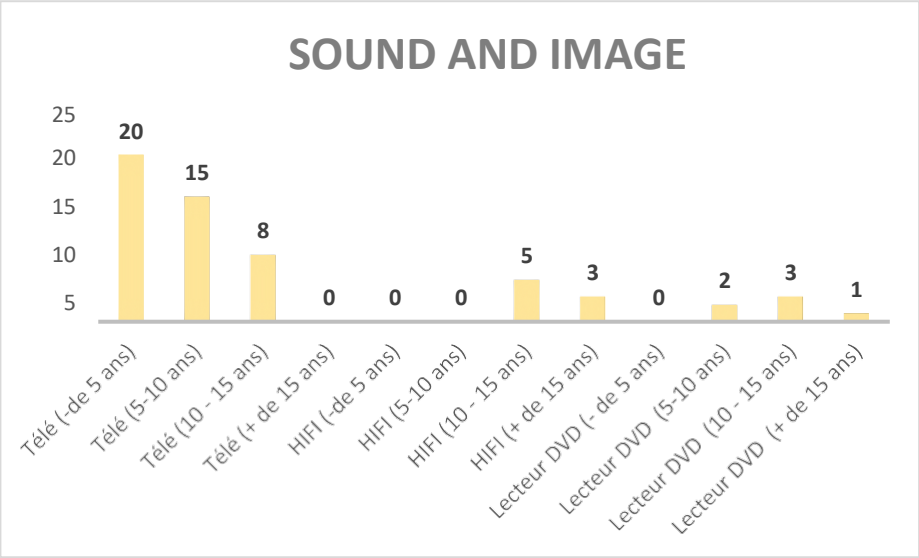
3.3.2.6. Kitchen appliances



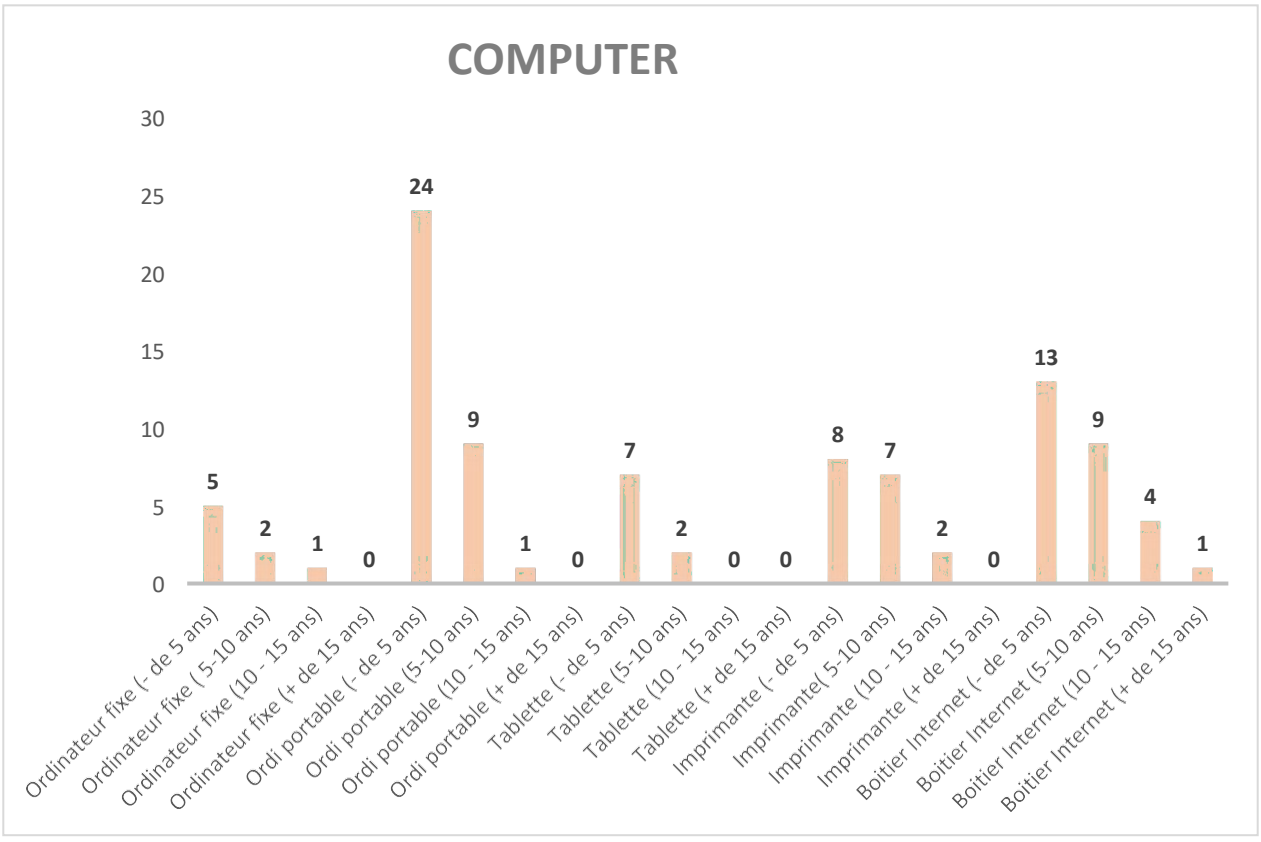
The kitchen appliances are generally new on the island of Sein, since one third of the equipment is under 5 years old.

Some of the equipment is very old, as it is second hand. This equipment is often obtained by islanders from friends or island families.

3.3.2.7. Sound, image and computers



It appears that HIFI equipment and DVD players are losing ground in the light of the new ways of accessing music and series/films/documentaries.



60% of the computer equipment on the island is under 5 years old.

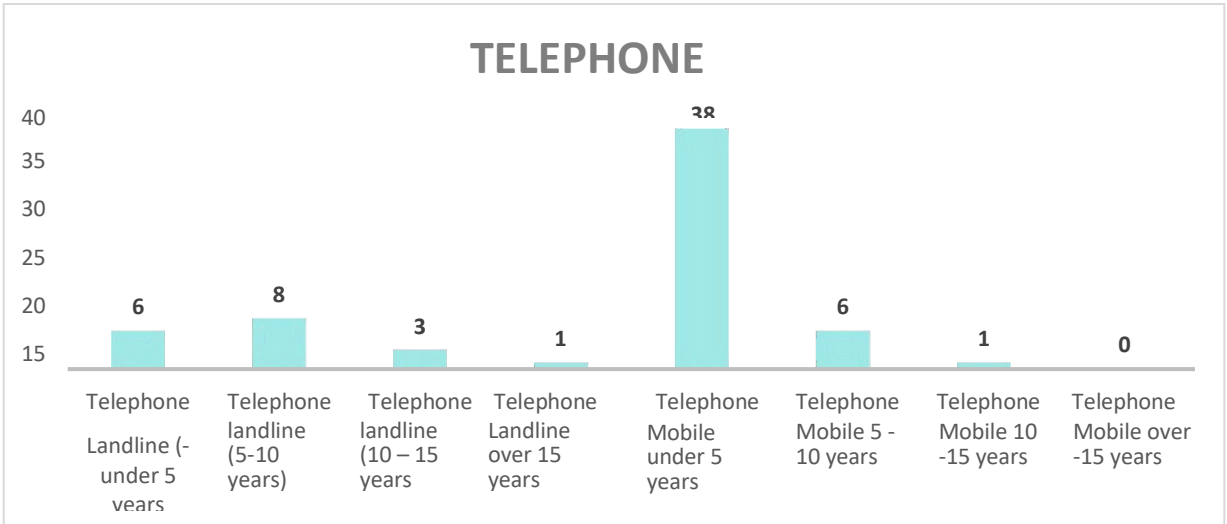
	SEIN	FRANCE (Data 2017 – CSA source "Observatory of audiovisual equipment in households in metropolitan France")
Average number of screens per household	2.47	3.6
Television	1.13	1.6
Computer	1.1	1.4
Tablet	0.24	0.6

The average number of screens per household on Molène is lower than in France as a whole.

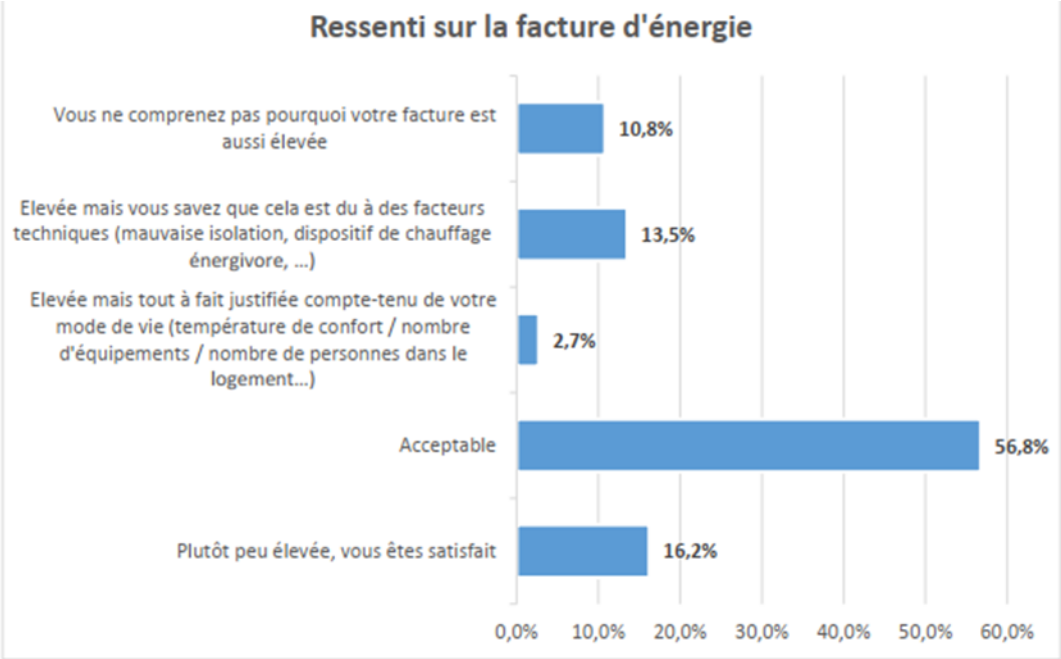
	NUMBER	%
HOUSEHOLDS WITH INTERNET	27	71.1%

71% of respondents have access to the Internet in their homes (vs 68% on Molène). By way of comparison, in France, this figure amounts to 85% (Source: CREDOC Study – November 2016). This data is important for defining and implementing the means whereby inhabitants participate in the energy transition.

3.3.2.8. Telephone



3.3.3. Impact on the invoice



Energy bills are considered low or acceptable by almost three quarters of respondents (this is lower than the percentage recorded for the island of Sein: 61%). When invoices are considered high, they are in most cases deemed to be totally justified either because the amount is associated with a personal choice (comfortable temperature for example) or because this amount is explained by one or more technical factors (poor insulation, energy-intensive heating device. etc.).

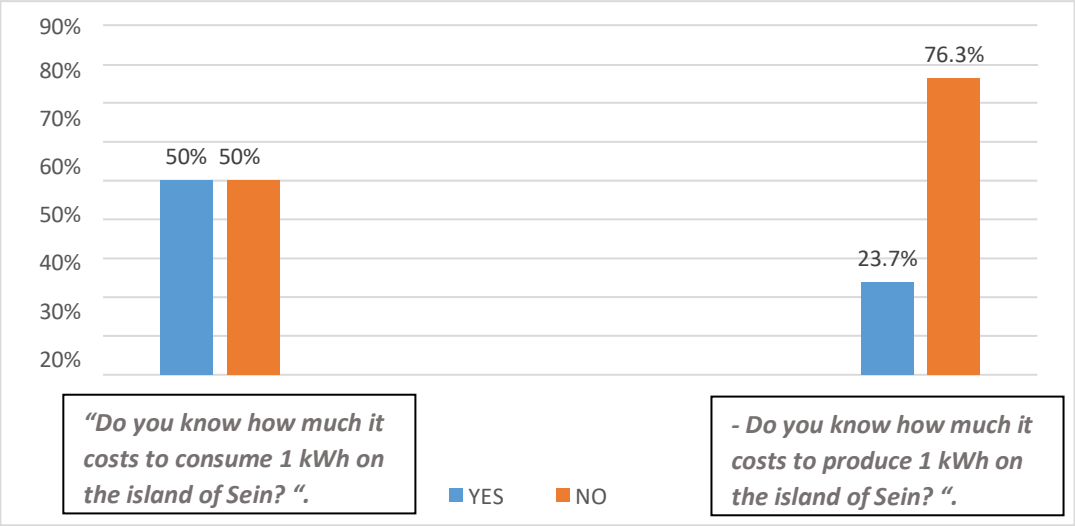
Just over 10% of people don't understand why their bill is so high. It would therefore be useful to raise these people's awareness of the specific situation, with an analysis of load curves to check that there are no malfunctions within the electrical system, and to carry out a further diagnosis of homes to identify possible ways of saving energy.

3.4.The inhabitants and the cost of energy

Half of respondents know the cost of the kWh they pay on their invoices. On the other hand, the vast majority (more than 76%) do not know the cost of producing 1 kWh on the island.

One third of people know that production costs much more than the price actually paid by the inhabitants.

Inhabitants of Sein seem more knowledgeable about energy issues than residents of Molène, yet in the same energy situation ((42% of inhabitants of Molène know the consumption cost of 1 kWh and 87% do not know the production cost of 1 kWh).



The issue of the energy transition on the island of Sein seems to be a more important topic than it is on Molène. This could be explained by several factors:

- The IDSE movement has encouraged inhabitants of Sein, whether they are for or against, to inform themselves about energy, and to attend the numerous public meetings that have taken place in recent years on the island.
- A wind energy project is already well under way on the island, and is generating much debate.

3.5. Participation of inhabitants in the energy transition

3.5.1. Participation in the energy transition

Participation in the energy transition of the island	YES	NO
NUMBER	33	5
%	86.8%	13.2%

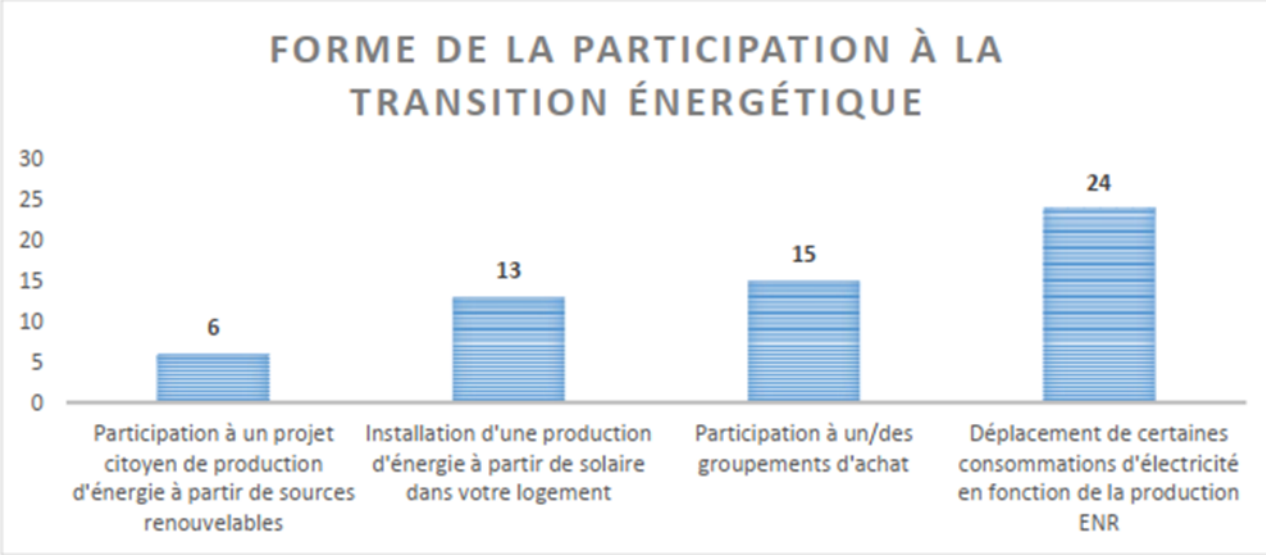
Nearly 87% of the people interviewed are ready to participate in the island's energy transition (this figure is higher than in Molène: 77%). Some people who do not wish to participate have mentioned that they are not always present on the island and others say that wish to remain neutral on the subject of energy, often because they have people in their families who belong to IDSE and they don't want to cause dissension.

Sample responses:

"We don't want to participate, we want to keep out of the projects because we don't want any problems with the family, we don't take part and in addition, we don't have enough ammunition to take up a position ourselves. We have recently retired, we don't want any stress in this respect. ".

"I'm not there all the time, I don't see myself making any commitment. ".

3.5.2. Method of participating in the energy transition



The majority of people interviewed who are prepared to participate in the energy transition agree about time shifting certain types of electricity consumption in line with renewable energy production. Some want to have tariffs differentiated in line with the production of renewable energy.

Sample responses:

"To time shift some consumption, prices per kWh would have to be differentiated according to the time of consumption, such as for off-peak hours/peak hours. ".

"Time shifting consumption is feasible and necessary, but I think that to really encourage people, we need to have cheaper kWh tariffs if REs are produced. ".

"As long as we know, we can time shift usage. ".

"Yes, I'm in favour of adjusting my consumption in line with the production of RE. It's not the price that would prompt me to act, but rather the fact that the consumption of fuel oil would decrease and the benefits that this would bring to the grid. If you know how much energy you use in real time when you start a machine, I think that's really good, I agree to participate, we're going in the right direction! ".

Other people are not prepared to time shift some of their electricity consumption either because they feel that this approach is too restrictive, or because some daily practices are constricting in terms of times.

Sample responses:

"It's not possible for me to time shift my use of electricity because I have guest rooms and I've got tumble dryers operating all the time! ".

"Time shifting consumption is restrictive! If you have to check every time you want to start a machine…"

13 people are interested in installing a solar thermal or photovoltaic system in their home. These people would like more information. Some of them are interested but do not know if an installation of this kind is technically possible in their home. The 1st individual photovoltaic systems that were installed on the island 10-15 years ago are often mentioned to stress the importance of using reliable companies. (NB: The company that installed the 5 photovoltaic power stations at the time quickly went bankrupt, and the system could only be connected a long time afterwards by another company.

The significant costs of implementing this are also raised by the people we interviewed.

Sample responses:

"Personally, I'm interested in it, but technically I don't know if it's possible on my roof! ".

"I am personally interested in it for my home, but I've heard that the company that installed the 1st photovoltaic systems on the island never returned to make the connections! You really have to choose a reliable company. ".

"I might be interested in solar power for my own home, but I would need financial incentives because these systems are expensive! ".

"I am interested in a photovoltaic system for my own place! If we can save a bit on our electricity bill, that's great! The first people who installed solar panels 10 or 15 years ago were scammed, the company that made the systems went bankrupt without having connected the panels! It did a great deal of damage to solar energy's image here on the island, it dampened people's enthusiasm…"

In contrast, only 6 people chose to take part in a citizen project, which can be explained by several factors related to the presence of the IDSE group:

- People with family or acquaintances who are members of IDSE, don't dare to get involved in such a project because they're afraid of upsetting them
- Inhabitants who aren't familiar with the IDSE movement no longer have any faith in the creation of a citizen collective given the failure of the IDSE's efforts.

Sample responses:

"No, I don't want to participate in a citizen project because we saw what happened with IDSE, the project was taken over by people from outside and a lot of inhabitants got burned! ".

Annex 1: Survey questionnaire

ENERGY TRANSITION QUESTIONNAIRE - SEIN

CHARACTERISTICS OF YOUR HOME

1 - You live in:

- ❍ A detached house
- ❍ A semi-detached house
- ❍ A terraced house
- ❍ A flat (collective accommodation)

2 - What is the liveable area of your home?

- ❍ Under 50 m²
- ❍ Between 50 and 100 m²
- ❍ Over 200 m²
- ❍ Between 100 and 150 m²
- ❍ Between 150 and 200 m²

3 - Are you a(n):

- ❍ Owner
- ❍ Tenant
- ❍ Living rent free

4 - Date of construction of your home:

- ❍ Pre-1900
- ❍ 1975 - 1988
- ❍ 2007 - 2012
- ❍ 1900 - 1949
- ❍ 1989 - 1999
- ❍ After 2013
- ❍ 1950 - 1974
- ❍ 2000 - 2006
- ❍ Don't know

5 - Have you done any work in the last 15 years?

- ❍ Yes
- ❍ No work
- ❍ Not affected (tenant/living rent-free)

6 - If yes, please describe:

	Under 5 years of age	Between 5 and 10 years old	Between 10 and 15 years old
Insulation (wall and/or roof)	❍	❍	❍
Window frames (double or triple glazing)	❍	❍	❍
Heating systems	❍	❍	❍
Domestic hot water systems	❍	❍	❍
Heating related equipment (radiators, programming, thermostat, etc.)	❍	❍	❍
MVS	❍	❍	❍

YOUR EQUIPMENT

7 - What is the main equipment used to produce heat? (One answer only)

- ❍ Electric radiators
- ❍ Gas boiler
- ❍ Wood burner (Logs? Pellets?)
- ❍ Heat pump
- ❍ Open fire
- ❍ Heated floor
- ❍ Oil boiler
- ❍ Insert fireplace
- ❍ Other, please specify:

8 - How old is your main heat production equipment?

- ❍ Under 5 years of age
- ❍ Between 5 and 10 years old
- ❍ Between 10 and 15 years old
- ❍ Over 15 years of age

9 - do you have secondary equipment for generating heat in this home?

- ❍ Yes
- ❍ No

10 - If yes, what is it?

- ❍ Electric radiators
- ❍ Insert fireplace
- ❍ Wood burner (Logs? Pellets?)
- ❍ Open fire
- ❍ Electric/gas/ethanol fire
- ❍ Other, please specify:

11 - Does your home have an MVS?

- ❍ No
- ❍ Yes, single flow MVS
- ❍ Yes, double flow MVS

12 - From the point of view of the comfort experienced in winter, you would say that:

- ❍ It's always very nice
- ❍ It's not always very cosy
- ❍ You are generally not here in winter
- ❍ It's mostly nice
- ❍ Most of the time it's not very cosy

13 - What equipment is used to produce domestic hot water?

- ❍ Electric water heater
- ❍ Oil boiler and immersion heater
- ❍ Solar water heater
- ❍ Instant electric water heater
- ❍ Gas boiler
- ❍ Heat pump
- ❍ Oil boiler
- ❍ Gas boiler and immersion heater
- ❍ Other, please specify:

14 - If you have an immersion heater, indicate the volume:

15 - How old is your main equipment for producing hot water?

- ❍ Under 5 years of age
- ❍ Between 10 and 15 years old
- ❍ Between 5 and 10 years old
- ❍ Over 15 years of age

16 - Do you own the following equipment:

- ❍ One or more electric booster radiators
- ❍ A dehumidifier (how many?)
- ❍ A water tank with an electric pump
- ❍ Oil stove
- ❍ A generator set
- ❍ One or more mobile air conditioning units (how many?)
- ❍ Other

17 - Your household appliances (indicate a number in the corresponding boxes):

	Under 5 years of age	Between 5 and 10 years old	Between 10 and 15 years old
Single refrigerator	❍	❍	❍
Fridge-freezer	❍	❍	❍
American-style refrigerator	❍	❍	❍
Freezer	❍	❍	❍
Dishwasher	❍	❍	❍
Washing machine	❍	❍	❍
Tumble dryer	❍	❍	❍
Gas oven	❍	❍	❍
Electric oven	❍	❍	❍
Gas hob	❍	❍	❍
Electric hob	❍	❍	❍
Microwave oven	❍	❍	❍
Extractor hood	❍	❍	❍
Television	❍	❍	❍
HIFI chain	❍	❍	❍
Fixed computer	❍	❍	❍
Laptop	❍	❍	❍
Tablet	❍	❍	❍
Printer	❍	❍	❍
Land line	❍	❍	❍
Mobile phone	❍	❍	❍
Internet box	❍	❍	❍
DVD player	❍	❍	❍

18 - Does your energy bill currently seem:

❍ Maybe a bit high, you are satisfied	❍ Acceptable	❍ High but completely justified considering your lifestyle (comfortable temperature/number of appliances/number of people in the home…)
❍ You don't understand why your bill is so high		❍ High but you know that this is due to technical factors (poor insulation, energy-guzzling heating system, …)

QUESTIONS ON PERCEPTION AND ACCEPTABILITY

20 "On Sein, most of the electricity is generated by oil-fired generators. Does this method of production bother you?

❍ Yes ❍ No

Can you expand your response?

21 - Do you know how much it costs to produce 1 kWh on Sein?

❍ 5 ct€/kWh ❍ 15 ct€/kWh ❍ 25 ct€/kWh ❍ 40 ct€/kWh

22 - Do you know how much it costs to produce 1 kWh on Sein? (to be compared with the cost of production on the mainland: 5 ct€/kWh)

❍ 5 ct€/kWh ❍ 15 ct€/kWh ❍ 25 ct€/kWh ❍ 40 ct€/kWh

23 - What do you think about the development of renewable energies on SEIN?

In general

Solar

Tidal energy

wind power (project under way at civic amenities site)

Biomass

24 - Would you be willing to take action in relation to the energy transition of your island?

❍ Yes ❍ No

25 - If yes, in what ways? (several possible responses)

❍ Participation in a citizen project for the production of energy from renewable sources

❍ Installation of means of producing solar energy in your home

❍ Participation in a/some purchasing association(s)

❍ Time shifting certain types of energy consumption in line with RE production

ADDITIONAL INFORMATION:							
26 - Are you a(n):							
❍ Permanent resident	❍ Secondary resident						
27 - If you are a permanent resident, how many people live in your household:							
28 - If you are a secondary resident, during the year your accommodation is occupied by yourself or your guests (family, friends, etc.):							
❍ Fewer than 4 weeks per year	❍ From 4 weeks to under 8 weeks						
❍ 8 to 12 weeks	❍ 12 to 16 weeks						
❍ 16 to 20 weeks	❍ 20 to 24 weeks						
❍ Over 6 months							
29 - Gender of respondent (representing the home)							
❍ Woman	❍ Man						
30 - Your age:							
❍ Under 30 years of age	❍ Between 30 and 60 years of age	❍ Over 60 years of age					
31 - Your situation:							
❍ Student	❍ Retired						
❍ Stay-at-home parent	❍ Working (employed or looking for a job)						
32 - Indicate your name and contact details:							