Fonds Régional de Développement Européen
European Regional Development Fund

ICE
INTELLIGENT COMMUNITY ENERGY

Interreg
France (Channel Manche) England

EUROPEAN UNION

ICE PROJECT DELIVERABLE T5.2.1

CONSUMER ENGAGEMENT IN USHANT

DECEMBER 2021

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BRETAGNE DÉVELOPPEMENT INNOVATION

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Deliverable Consumer Engagement at Ushant

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Recommended Citation Format:

Vonk, G., Vente, H., Stephanides, P., Li, X., Pappas, D., Ioannidis, A., Chalvatzis, K. J., 2021. Consumer Engagement in Ushant (ICE report T5.2.1), Intelligent Community Energy. https://www.ice-interreg.eu/public-deliverables

ICE Project Deliverable T5.2.1

Consumer Engagement in Ushant

BRETAGNE DÉVELOPPEMENT INNOVATION
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About ICE

Supported by the Interreg VA France (Channel) England programme, the Intelligent Community Energy (ICE) project aims to further develop understanding as well as apply innovative and intelligent energy solutions for isolated areas in the Channel region. The surrounding islands and territories are confronted with specific energy challenges. Many islands are not connected to the European electricity grid and rely on imported fossil fuels, notably fuel-powered heat generators. The energy solutions they use tend to be less reliable, more costly and emit higher levels of greenhouse gases than the European continental grid.

In response to these issues, the ICE project considers the entire energy cycle, from production through to consumption, and integrates mature or new technologies so as to develop innovative energy solutions. These solutions will be trialled and tested on two pilot demonstration sites (the Island of Ushant and the University of East Anglia Campus), to prove their feasibility and to develop a general methodology which can be replicated on other isolated territories elsewhere. To transfer this methodology to other isolated territories, ICE is proposing a low-carbon commercial transition offer. This will include a complete assessment of resources and local energy conditions, a proposed bespoke energy transition model and a body of low-carbon skills and technologies available in a consortium of selected businesses. This ICE-certified consortium will promote the offer to other isolated territories both within and outside of the Channel region (initially 5 territories). The ICE partnership model brings together researchers and bodies providing support to SMEs and will be made up of members from both France and the UK in terms of skills, technological and commercial development.

The involvement of local and European SMEs will further boost competitivity and transnational cooperation.

Table of contents

1. Introduction

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. Public participation and support are critical for implementing sustainable energy projects, which are vital steps toward the Paris Agreement's goal of capping the increase in world average temperature well below 2 degrees Celsius and aiming to restrict the increase to 1.5 degrees Celsius.

The participation of the public in projects focused in 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. 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.

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. People's general evaluation of energy initiatives determines whether they support or reject a given energy endeavour. It manifests itself in people's views and behaviours toward energy efforts, and it may be accompanied by emotional responses to these undertakings. 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 acceptability becomes a non-straightforward concept, influenced by the features of energy projects, the attributes and meanings of the areas where projects are located, and most importantly, broader psychological and social aspects of the end-users, which a project aims to serve. In order to minimise difficulties and maximise the desired outcomes of technical interventions – and before strategic plans are developed and governmental choices are made – it is critical to conduct public opinion research. The probability of bad judgments and interventions is reduced by utilising this approach.

In this report, we document our findings with people within the geographical boundary covered by the project, through a survey, to maximise the project's potential and highlight areas of opportunity for seamless integration. Section 2 details the survey objectives and methodologies. Section 3 presents an overview of of the existing situation on the island of Ushant, in terms of engagement with the local population, approach methods and existing energy generation and usage in the area in focus. Section 4 investigates the perception and involvement of the residents in the energy transition, per renewable

generation technology, and the channels for their active participation in the energy transition. Concluding, section 5 will provide a summary of the report.

2. Surveys commissioned

2.1. Objectives, methodology and limitations of surveys

2.1.1. Objectives of surveys

It is essential to ensure the participation and involvement of residents in the implementation of energy transition on the Island of Ushant. It is important to have an overall vision as well as clear and accurate information concerning appliances used in homes, energy practices concerning the use of appliances, as well as an understanding of the feelings of residents in relation to various types of renewable energies and their degree of involvement in the energy transition of their Island.

During the ICE programme implementation period, a total of four surveys were undertaken (May 2018, December 2018, December 2019 and March 2021).

There were four objectives to these surveys, namely:

1. To gain access to representations and practices in relation to energy production and use;
2. To better understand the energy infrastructure of households and how they were used;
3. To define the feelings of residents in relation to various renewable energy sources and to observe changes in acceptance of each technology throughout the course of the various surveys;
4. And finally, the surveys had an operational objective with a view to rolling out initiatives aimed at reducing energy use, of “more rational energy use”, and optimising energy production from renewable sources.

2.1.2. Survey methodology

The surveys were conducted through questionnaires comprising a number of questions related to energy and energy consumption.

The questionnaires comprised closed questions, questions with figures, which could be easily quantified (number of electrical appliances, age of appliances, power sources used in homes, etc.), and also qualitative open questions, concerning the feelings of residents to renewable energies and their degree of involvement in the energy transition.

The vast majority of questionnaires were conducted face-to-face, at people’s homes, in stores, during local meetings or even at places of work.

Information was additionally collected through observations during the questionnaires in people’s homes.

2.1.3. Information/precaution as to results

For each survey, 50 questionnaires were conducted, which represents around 10% of permanent households on the Island, granting the survey a high degree of credibility. This credibility rests on the strategies adopted to limit any sampling bias by the high number of techniques, places and times used for questionaries which were conducted in stores at peak visiting hours, in public places, at places of work, as well as door-to-door interviews more notably. This allowed the survey to reach a diverse range of residents (elderly people with lower mobility, employees with low availability, etc.), as well as direct interviews with people at home.

Such interviews allowed for longer and more thorough responses, for instance, to the issue of comfort, motivations in upgrading electrical appliances or any arbitration in the performance of works.

They also provided a more justified opinion around questions concerning renewable energies.

Whilst the sample was constructed with a view to gaining a diverse range of profiles, the survey cannot claim to be fully representative in the statistical sense of the term.

2.1.4. Details from the surveys conducted

2.1.4.1. Survey no. 1 conducted in May 2018: Background to the context

The survey was conducted through a questionnaire comprising around fifty questions primarily focusing on the characteristics of accommodation, the types of domestic appliances, notably heating and hot water, and electrical household appliances.

A section of the questionnaire included qualitative open questions, concerning the feelings of respondents to renewable energies and their degree of involvement in the energy transition.

The surveys were conducted with permanent residents in late March and during April 2018.

The vast majority of questionnaires were conducted face-to-face, at the home of respondents, in stores, during a local meeting and also at places of work.

Information was also collected by way of observations undertaken during interviews conducted in people's homes.

2.1.4.2. Survey no. 2 conducted in December 2018: 1st Follow-up survey

The survey was conducted by way of a questionnaire comprising around thirty questions and primarily concerning the residents' opinion on the energy transition and various renewable energies as well as the manner in which they wanted to participate in the Island's energy transition.

Surveys were conducted with permanent residents in November and December 2018.

The vast majority of questionnaires were conducted face-to-face, at the home of respondents, in stores, during a local meeting and also at places of work.

Information was also collected by way of observations undertaken during interviews in people's homes.

2.1.4.3. Survey no. 3 conducted in December 2019: 2nd Follow-up survey

The survey was conducted by way of a questionnaire comprising around twenty questions and primarily concerning the residents' opinion on the energy transition and various renewable energies as well as the manner in which they wanted to participate in the Island's energy transition.

Surveys were conducted with permanent residents in November and December 2019.

The vast majority of questionnaires were conducted face-to-face, at the home of respondents, in stores, during a local meeting and also at places of work.

2.1.4.4. Survey no. 4 conducted in March 2021: 3rd Follow-up survey

The survey was conducted by way of a questionnaire comprising around fifteen questions and primarily concerning the residents' opinion on the energy transition and various renewable energies as well as the manner in which they wanted to participate in the Island's energy transition.

Initially scheduled to take place in October and November 2020, the surveys had to be delayed due to the 2nd lockdown faced with the measures taken in France to combat the Covid-19 pandemic, and the survey was, consequently, conducted with residents during February and March 2021.

The vast majority of questionnaires were conducted face-to-face, at the home of respondents, in stores, in the town hall or at people's place of work, with respect of social distancing and other measures in force (mask-wearing, social distancing, use of hand sanitizer).

The survey also included an analysis of the change in acceptance of residents concerning each type of renewable energy technology over the course of the 4 surveys.

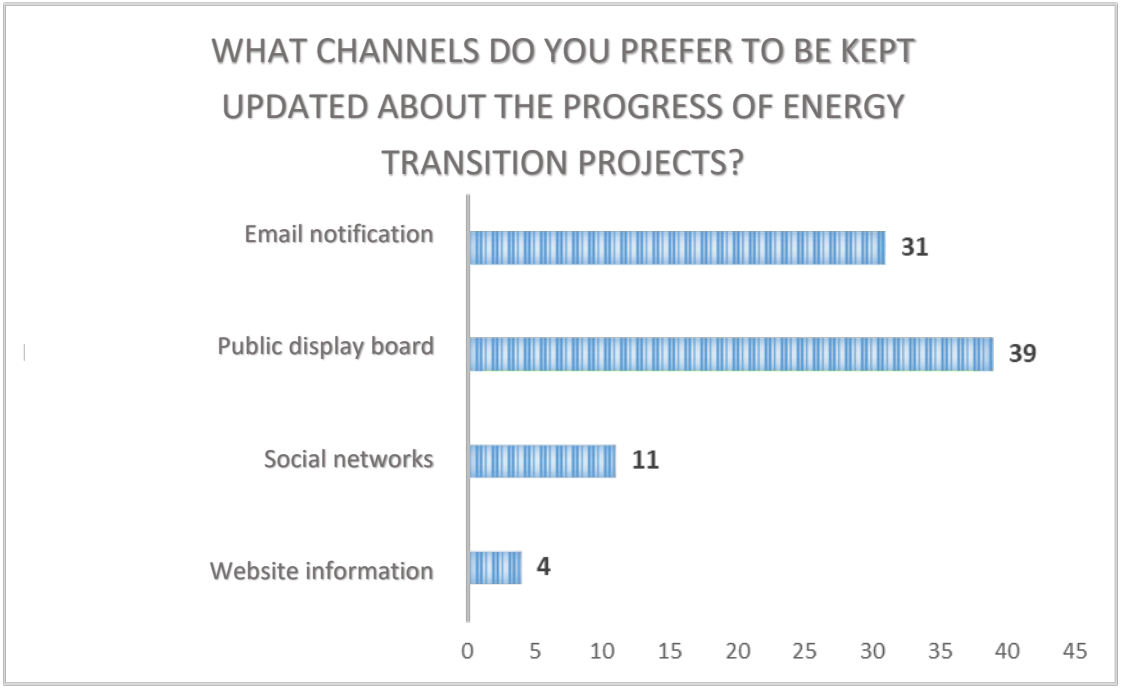
3. Overview of the situation on the Island of Ushant

In this section, we shall primarily present the results from the first survey, which aimed to provide an overview of the situation on the Island of Ushant. We will also add data from subsequent surveys, when they provide us with further data useful to understand the situation on Ushant.

3.1.Interactions with residents during the ICE project

3.1.1. Communication means favoured by residents

During survey no. 3, one of the questions concerned the communication means favoured by residents on Ushant. Public information notices on the local display board was the largely preferred method, followed by email information. Very few residents used social networks as an information channel (Town Hall Facebook page, other Facebook pages) or the information page on the Town Hall website.



Number of people interested in each type of communciation medium
(Gross figures – Total exceeding 50 : several possible responses by respondents)

3.1.2. Information dissemination: email, display board, Facebook page

On the whole, participation in various events was important and the three most effective communication means were used, namely Information Display at the Town Hall and on the public display board, email and use of the Town Hall Facebook page.

Use of these communication channels was further consolidated through discussions with the Town Hall and the Isles of Ponant Association (AIP) who is used to having regular contact with Island residents.

3.1.3. Information meetings

Information meetings were organised so as to notify residents with regard to the energy transition initiatives being implemented on Ushant, notably including initiatives led in the framework of the ICE project. Two meetings in particular were organised on the evening of 13th November 2018 and 4th April 2019, with around 50 to 70 attendees, representing 6% to 8% of the Island's permanent population.

These meetings were an opportunity to provide feedback from surveys which had been conducted ahead of the meetings (respectively the 1st and 2nd surveys).

The exceptional circumstances brought about due to the Covid-19 pandemic made the organisation of public meetings more difficult.

3.1.4. Drop-in sessions and workshops

In addition to information meetings, interactions with residents also took place through drop-in sessions and workshops, which consisted of drop-in sessions for several hours, generally held at the Ushant Town Hall, allowing residents to visit during their free time to seek further information on any given subjects.

A workshop was organised on 2nd December 2019 between 6pm and 8pm at Ushant Town Hall with three stands devoted to explanations concerning electricity bills, explanations and recruitment for experimentation of "smart connected devices", and the Rénov'iles initiative, which is a financial aid mechanism for home energy renovation. A total of around 30 people attended this workshop.

A drop-in session was organised on 23rd May 2021 between 1.30pm and 8pm to present a prototype of the smart device (Boitaconso) as well as to recruit people interested in trialling the device. A total of 15 people attended the drop-in session.

The exceptional circumstances in place to confront the Covid-19 pandemic made organisation of drop-in sessions and workshops more difficult, and this largely affected the number of people attending public events.

3.1.5. Exhibition entitled "Tous acteurs de notre futur énergétique" [*All of us are involved in the energy of tomorrow*]

An exhibition around the subject of "All of us are involved in the energy of tomorrow" was organised during 2018 and inaugurated in December 2018, with four focus areas:

1. Renewable mobility
2. Housing
3. Energy production/use
4. Context: energy transition on the Island of Ushant

A permanent exhibit is located on the SDEF premises in Quimper, and a mobile exhibit comprising a host of information in both French and English will be set up in various locations so as to reach as many people as possible.

The mobile exhibit was set up in Ushant between December 2018 and January 2019. It then went on to various locations, primarily schools and high schools in and around France.

3.1.6. Critical analysis of methods of interaction used

It is necessary that population engagement takes place while those seeking to achieve it learn more and come to close contact with the population they wish to engage with. At the same time, variations in personal preferences, access to technology and willingness to engage simply mean that no single approach to engagement can by itself be successful. Therefore, different people need to be approached in different ways. As a result a wide-ranging project, like ICE has to be flexible and adaptive in engaging with the public, if it is to avoid a feeling of being left behind to certain groups of citizens.

As it has been described in the previous sections ICE has indeed embarked in a number of engagement and interaction methods, namely email notification, public board display, social networks and website updates. These methods have been in addition to information meetings, drop-in sessions and workshops as well as a public exhibition. Moreover, regular public surveys have been conducted and provide a significant part of the data used in this report.

Overall, the main aim of the aforementioned methods has been to inform the citizens and to be informed by them therefore achieving objectives such as information sharing and consultation. This approach does not include direct citizens' empowering in decision making as this is not within the scope of the ICE project. It is however, important to note that in small communities, even if direct empowerment does not happen by means of citizens having control of decision making for energy issues, it still plays an implicit role. Therefore, activities that fall within broader remit of public consultation are of high relevance in ensuring a degree of consensus with technological interventions proposed and implemented.

Going forward, it is noteworthy that community engagement is an iterative and lengthy processes, which often exceeds the lifespan of a project like ICE. As such, the legacy of ICE with the knowledge acquired, the technological experimentation and the energy community building achieved can be the foundation of more in-depth engagement as the energy transition progresses.

3.2.Insular specificities related to the energy transition

3.2.1. Electricity production primarily generated using domestic fuel

Over a third of respondents (36%) underlined the pollutant and non-ecological nature of electricity production on the Island.

These respondents spoke about the smoke emissions above the power plant. Some of the respondents, primarily the most elderly, remembered the first power plant which was even more pollutant. They recalled the sheep grazing nearby being "dirty" and the local residents were unable to grow vegetables, only flowers. For these respondents, things are better but they agree nevertheless that the situation is still not satisfactory.

For these respondents, living on an Island which has all of the necessary resources – sea, wind, and sunlight -, to produce clean energy whilst the Island continues to produce energy using domestic fuel is a disgrace. They would like Ushant to be a green island and recognised as such from the outside.

18% of respondents stated they were not bothered by use of domestic fuel to produce electricity.

These respondents explained that their homes were sheltered from the smoke emissions and they never thought about the power plant or the use of domestic fuel in electricity production. For the most elderly respondents, the most important thing was to be able to have electricity on a daily basis.

It is interesting to note that these respondents do not immediately make a link between the non-ecological electricity production method and the development of renewable energies as all of these people stated they were fully in favour of the roll-out of new energy sources on the Island.

18% of respondents underlined the issue of quality concerning the electricity supply.

The fact that the vast majority of electricity cables are now underground was mentioned as an improvement to the supply issues since the frequency of power cuts has fallen sharply. Moreover, on a daily basis, residents of Ushant do not live in fear of power cuts, they have learnt to live with this risk, even keeping their freezers full. They all remembered the major black out affecting the Island in January 2013, following a fire and the successive power plant breakdowns. They all harbour fond memories, having spent convivial moments by candlelight.

However, all of these people (9 out of 50) mentioned issues with current variations which damaged their electrical devices, made lights dim and clocks become out of synch.

The Ushant fuel power plant uses on average **1,800 m3 of domestic fuel per annum** for electrical supply, representing associated greenhouse gas emissions of around **4,660 tonnes of CO_2 equivalent.** In comparison, if Ushant had been connected to the continental electricity grid, the greenhouse gas emissions created for electricity production would have stood at 486 tonnes.

Indeed, electricity production on these Islands which are not interconnected, generates 777 grammes of CO_2 emissions per kWh produced, whilst on the continent this figure is 81 grammes of CO_2 per kWh produced.

In this context, the local authorities on the Island, along with their partners, have understood the urgency in drastically reducing the fuel consumption of the power plan and the associated greenhouse gas emission and initiatives to control electricity demand have been led for several years in this area.

Today, the Islands have gone one step further by setting objectives in terms of figures representing their official commitment towards the energy transition of their region, and namely **to achieve 100% renewable energies in 2030.**

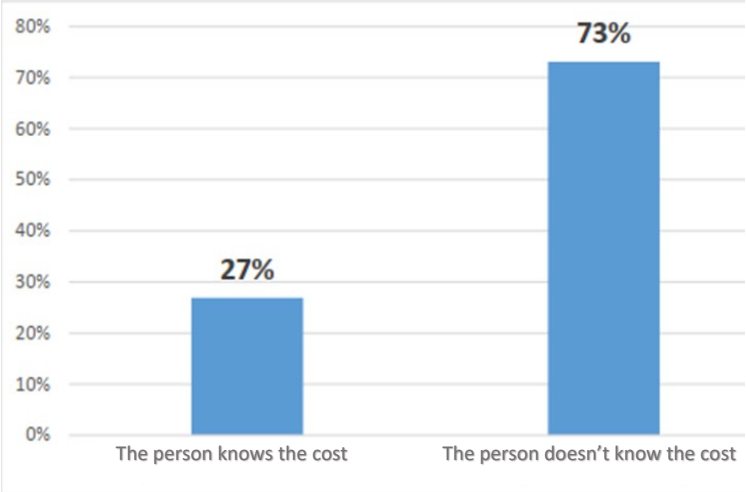
Residents and the cost of energy (taken from survey no. 4)

The majority of respondents were unaware of the cost of kWh used, or of the production cost for 1 kWh; however, the majority were aware that production was much more costly than the price actually paid by residents.

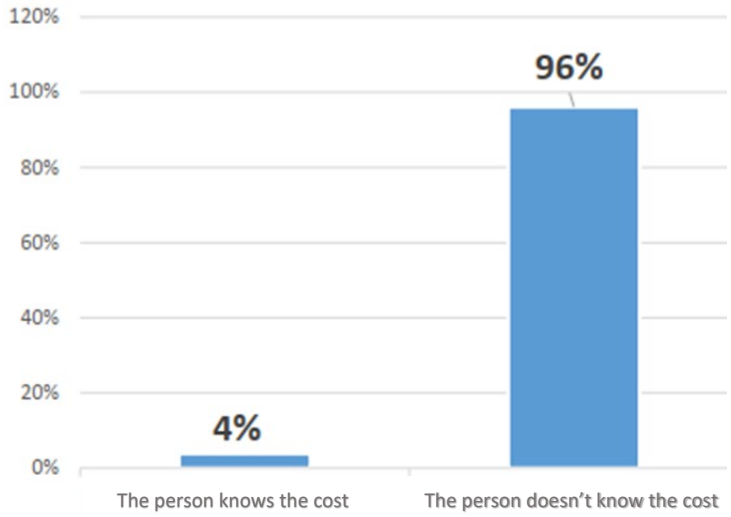
Those residents who were aware of the cost of use of 1 kWh are those who have a problem with their meter, have seen a sudden increase in their bill, or people who work for tourist accommodation owners and are responsible for reading the meter at the end of rentals.

A much larger number of respondents did, however, know the cost of use rather than the cost of production of 1 kWh on Ushant, notably because this figure comes directly out of their wallet.

Distribution of responses by residents to the question "**Do you know how much 1 kWh of electricity costs at Ushant?"** (Around €0.15ct/kWh, excluding subscription).



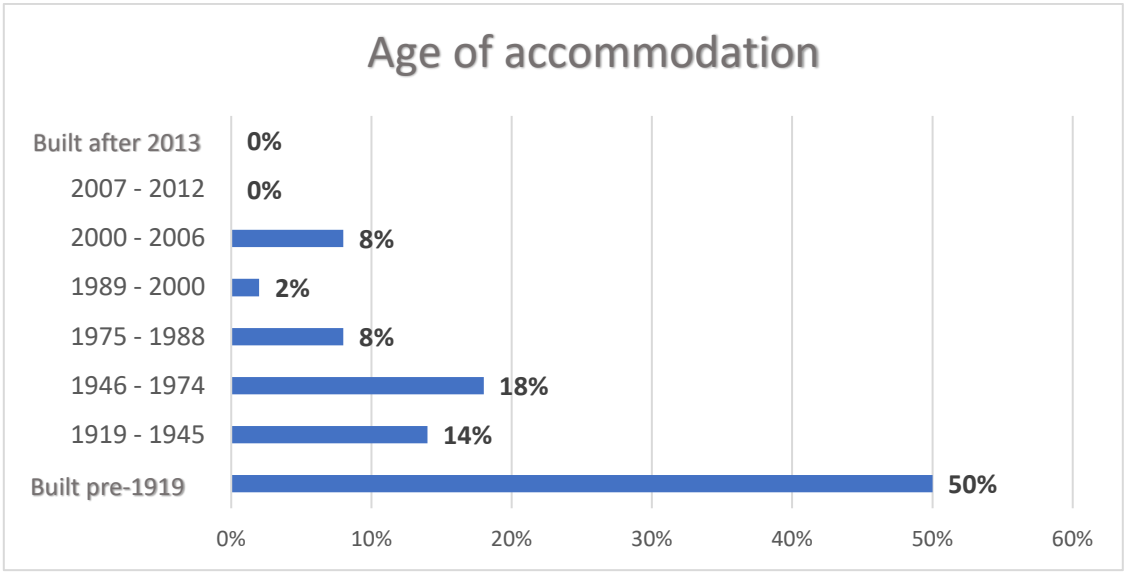
Distribution of responses by residents to the question: "**Do you know how much it costs to produce 1 kWh of electricity at Ushant?"** (Around €0.35ct/kWh).



3.2.2. Old residences, partially renovated

In addition to the issue of accessing energy and the associated greenhouse gas emissions, the characteristics of housing on Ushant constitute a key element to be taken into consideration in the energy transition on the Island.

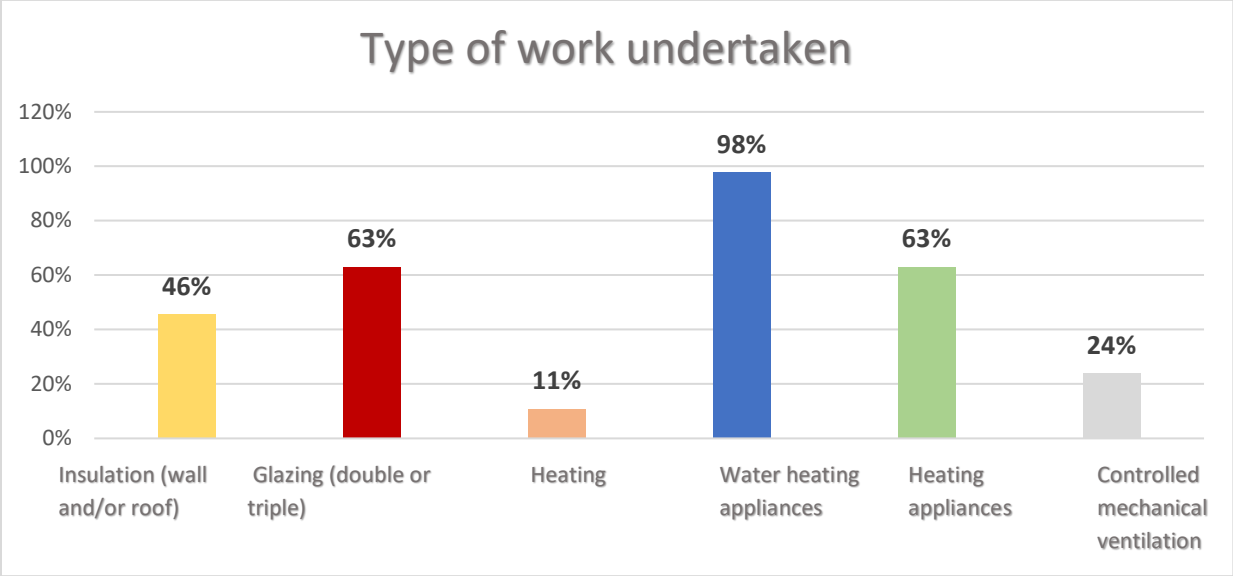
Ushant notably has old residences, having undergone partial renovation with almost no renewable energy systems.



The results of the survey conducted with residents of the island showed that 50% of homes were built pre-1919. This figure is identical to that of the French National Statistics Office (INSEE).

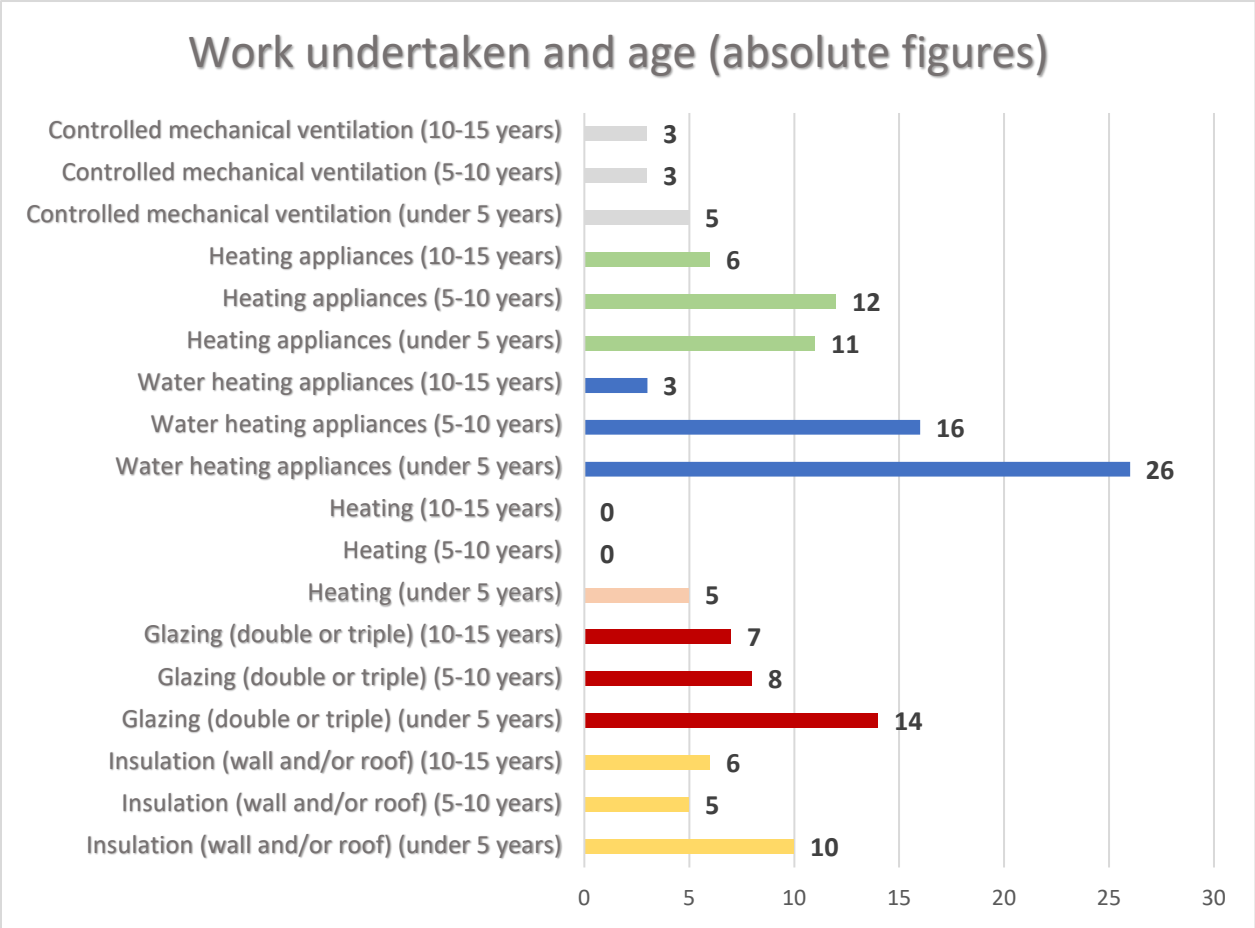
82% of homes were constructed pre-1974, the date of the first heat regulation which was the first time a minimum heat efficiency threshold was set for houses.

Amongst the respondents, 92% have undertaken works in the last fifteen years.



This figure is larger still when we undertake a more detailed analysis of the figures; we can note that the works undertaken are often ad hoc (simple replacement of a hot water tank or new carpentry), and it is very rare that a complete renovation was undertaken with a view to improved energy efficiency. Works were, in the vast majority of cases, undertaken as an emergency (when the immersion or water heater breaks down or the windows are no longer water or air tight).

We have, moreover, noted that the majority of work undertaken is recent (within the last 5 years), and concerned heating and hot water production, insulation and glazing.



It would therefore appear that the Public Aid Programme (PIG) which was operational on Ushant between 2012 and 2017 allowed residents to conduct work to make energy savings. Moreover, around a quarter of respondents stated that they had received funding provided as part of the Programme.

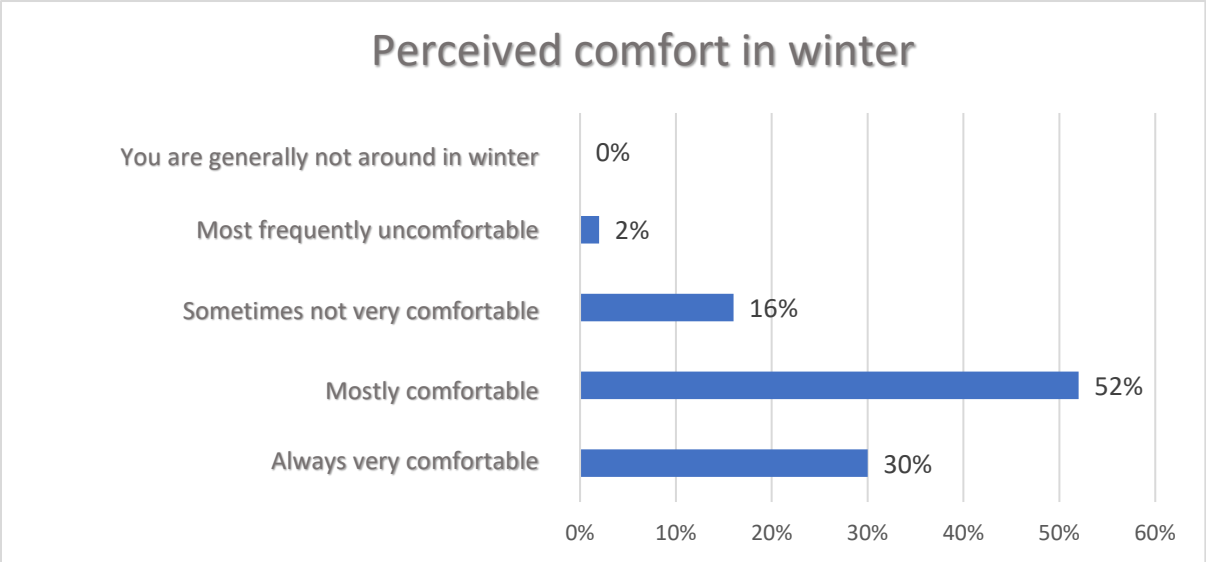
Another figure which is evident from the surveys is that a number of residents have installed, or plan to install, a porch, often of a modest size, to the front of their home. These respondents stated that a porch can be used as a small storage area and prevents wind and sea spray from entering their home and cooling the temperature each time the front door is opened. Many observed a drop in their energy use as a result.

3.2.3. Homes and their devices

The survey highlighted a certain amount of information concerning housing and devices used within primary residences in Ushant. This information would allow for more targeted initiatives to be implemented in the framework of the Island's energy transition, and to choose the most effective initiatives best suited to the Island's characteristics.

3.2.3.1. Island residents are relatively satisfied with their heat comfort and energy bills

Island residents comprising the sample group stated that they were satisfied with the level of heat comfort within their home.

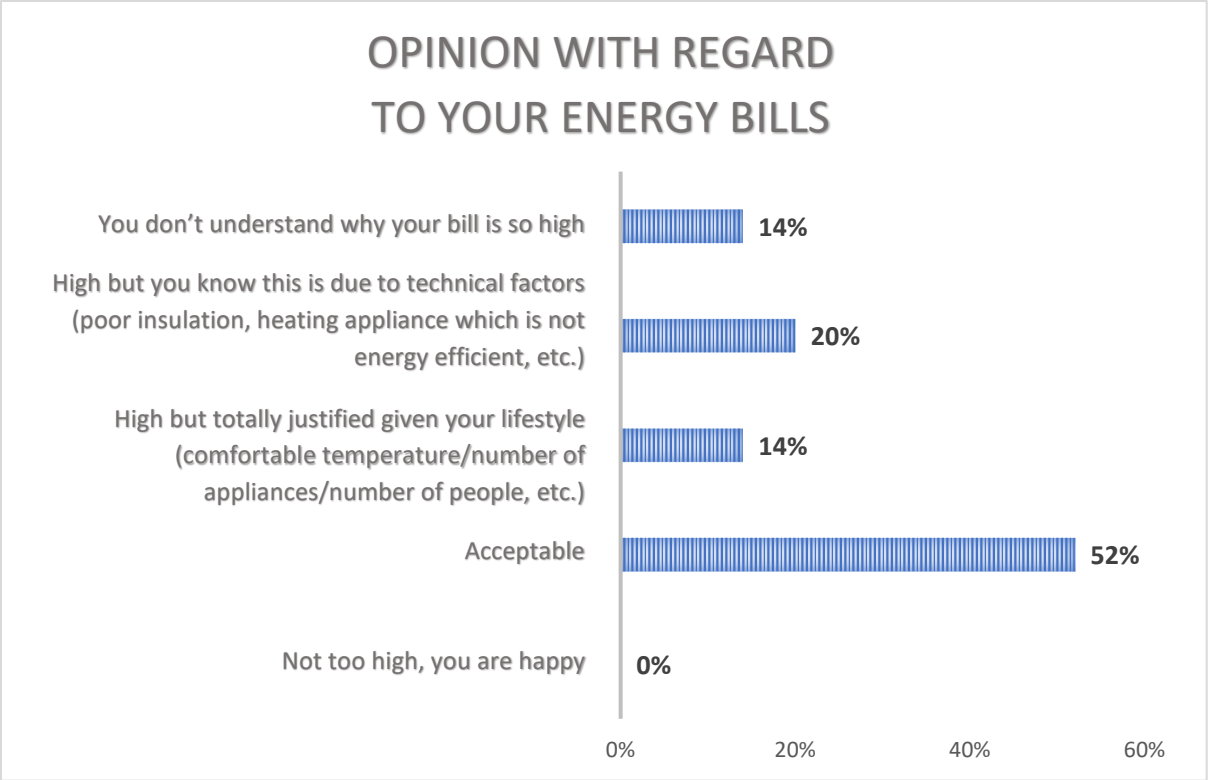


30% of them stated that it is always comfortable, whilst 52% stated that it was comfortable the majority of the time.

16% believed that from this perspective, it was sometimes not very comfortable and only 4.5% stated that it was uncomfortable the majority of the time. This means that over 80% of the sample group reached the desired temperature level for comfort.

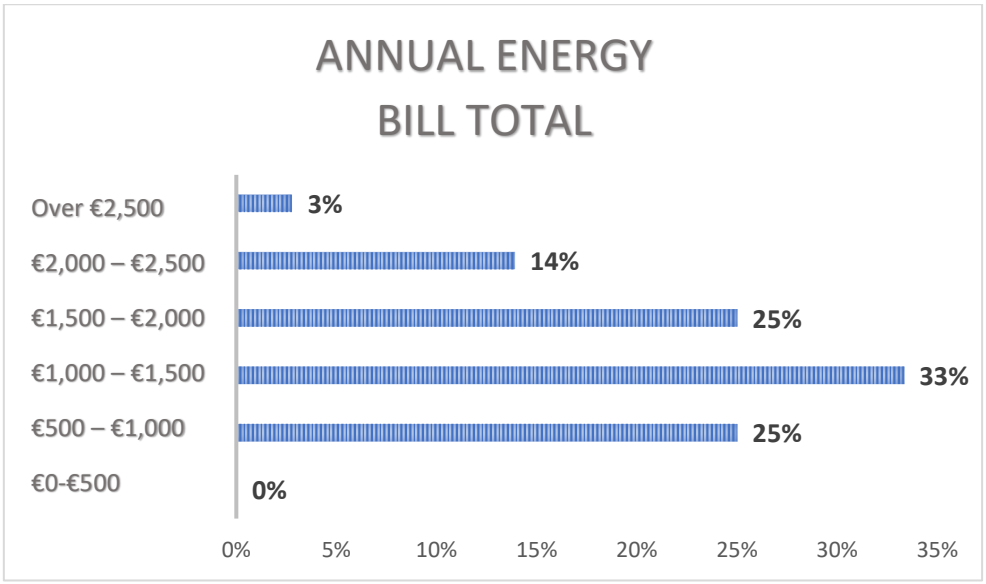
74% of respondents could recall the total amount of their annual energy bill, often thanks to the total amount of instalments debited. Other respondents did not know how much they paid either because they were men who were asked and the women supervised and paid the bills, or because they were elderly people only concerned by their comfort level.

Only 2 respondents of the 50 comprising our sample paid their electricity bills in real terms, and thereby were aware of precisely how much energy they used, with all other people paying monthly instalments.

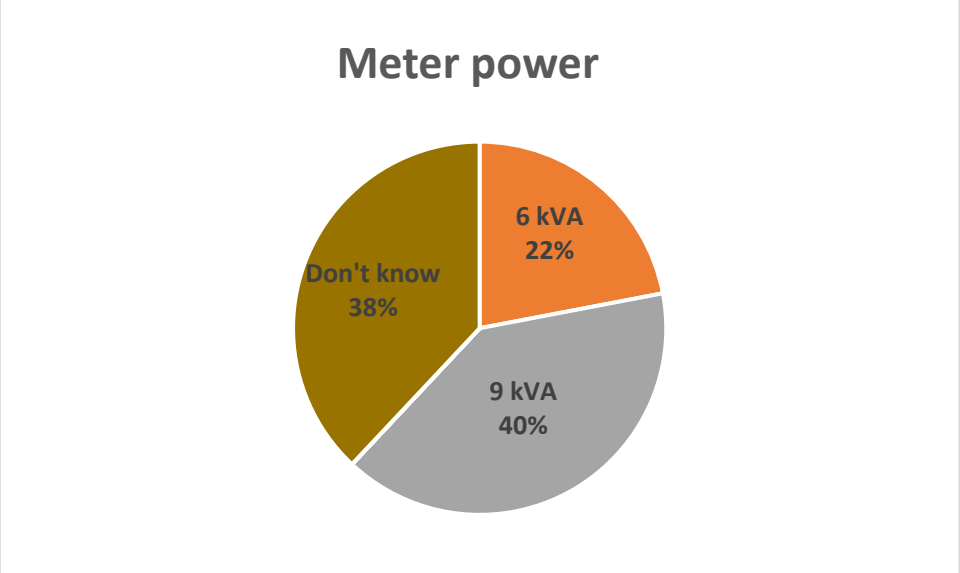


Energy bills were deemed to be acceptable by over half of the respondents. Where energy bills were considered as being too high, in the majority of cases they were deemed to be perfectly justified whether because the total amount was justified by a personal choice (comfortable temperature for instance), or because this amount could be explained by one or more technical factors (poor insulation, heating device which is not very energy efficient, etc.).

The below graph shows the distribution of annual totals of energy bills paid by the respondents.

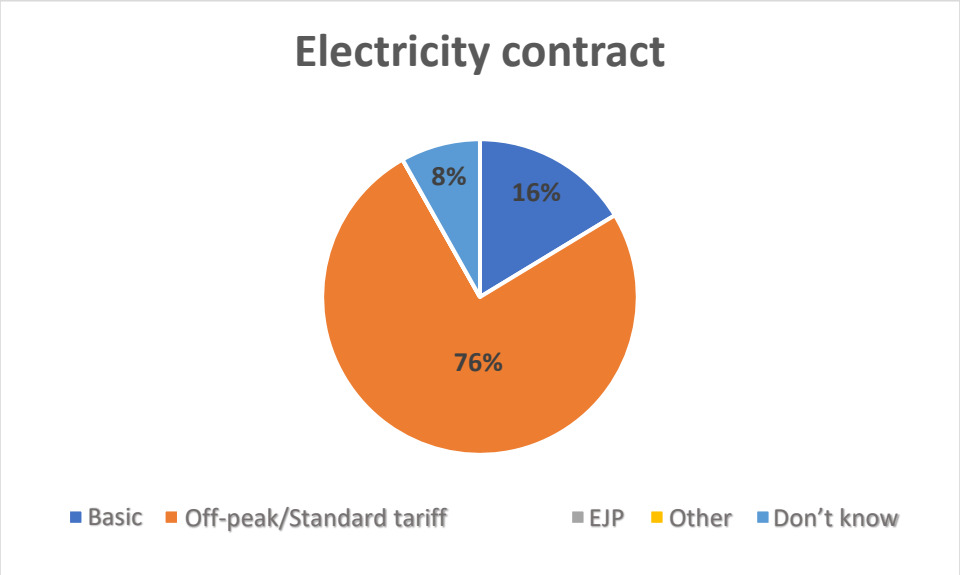


3.2.3.2. The power of electricity meters and the electricity contracts subscribed



9kVA meters were the most common, with 40% of the sample group having meters in this power bracket.

38% of respondents were unaware of the power of their electricity meter, which implies that electricity is arguably not an essential issue for them.

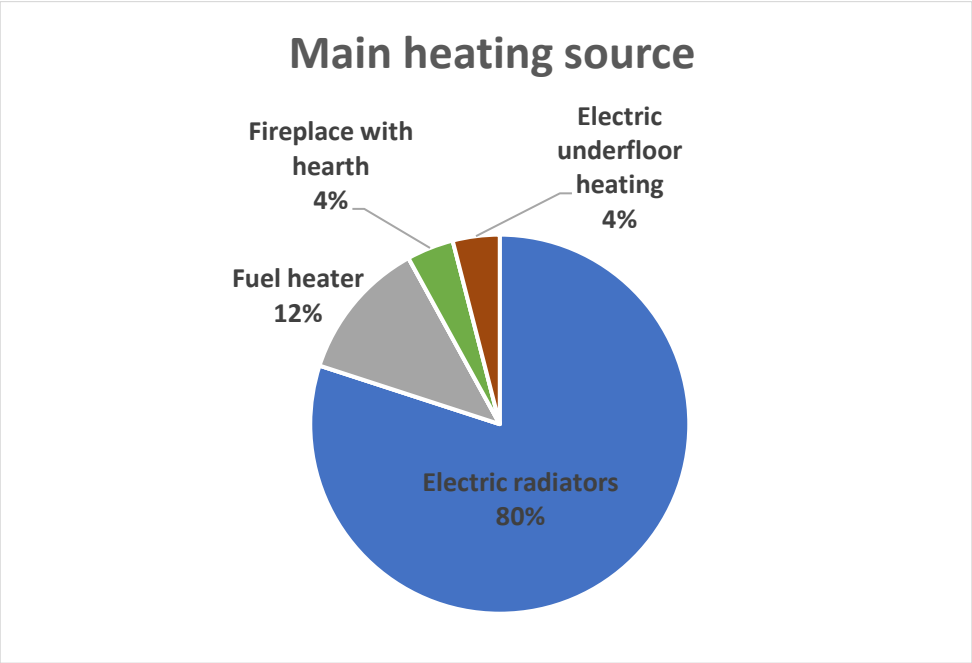


76% of respondents held electricity contracts with a difference between off-peak and standard tariffs.

Only 20% of respondents regularly consulted their electricity use online, and amongst these people, the vast majority used the platform provided by their electricity supplier. Two respondents indicated that they logged in to their Linky platform.

During the surveys, a number of people stated that they felt lost with the new off-peak tariff times. Off-peak tariffs were moved to afternoons and people would like to know precisely which times so as to be able to make the most optimal use of this tariff.

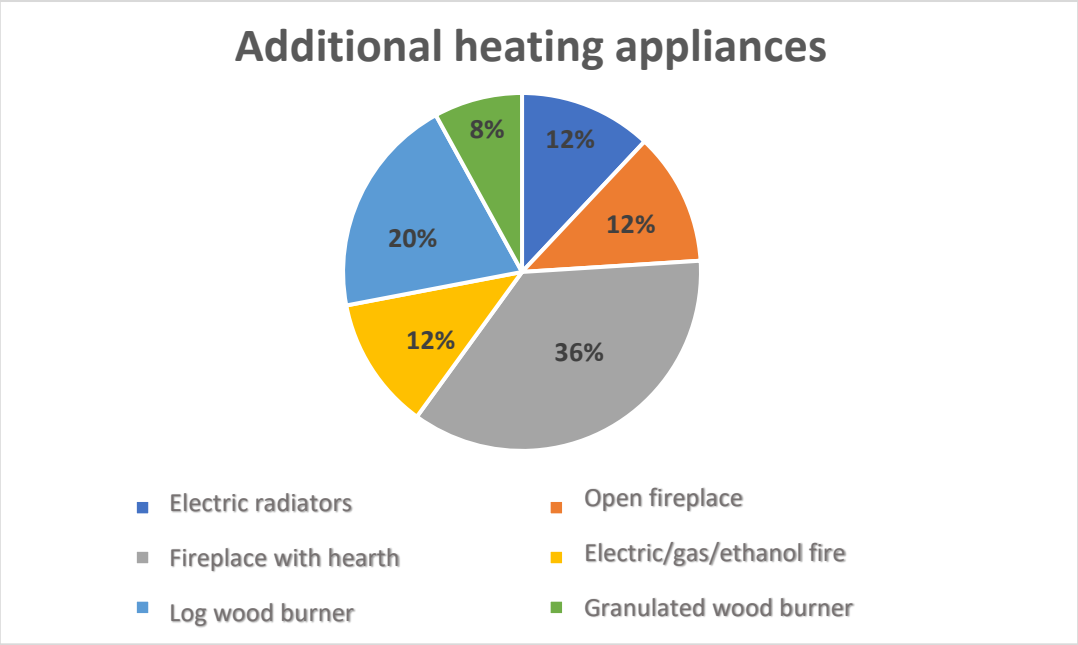
3.2.3.3. Heating and hot water devices



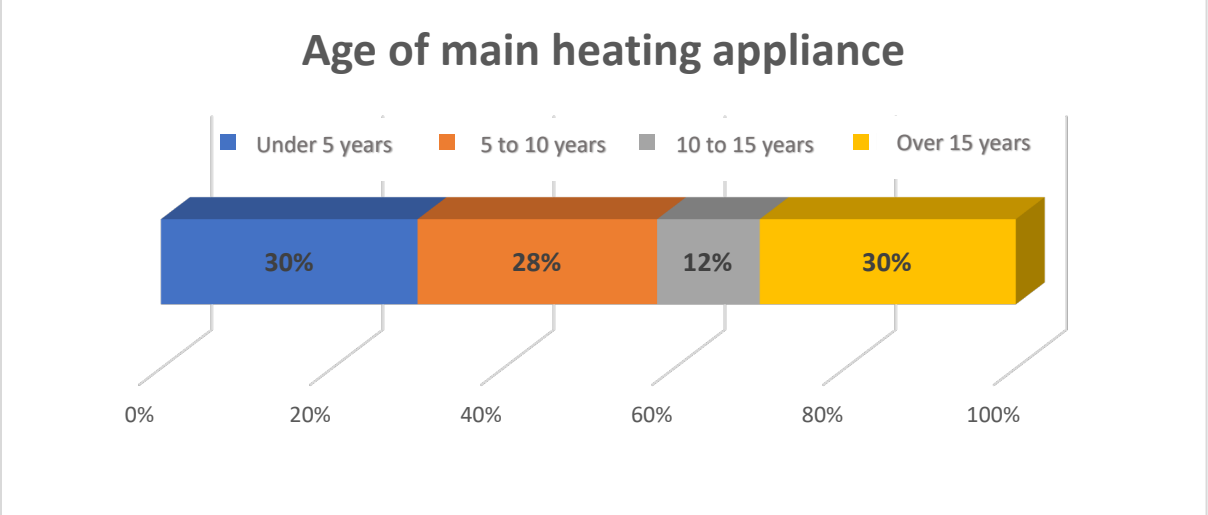
The homes concerned are primarily fitted with **electric heating** devices, with around 80% of homes being heated by electric radiators, 4% by underfloor heating. Other energy sources remained minimal, whether this be domestic fuel, constituting around 12% of the sample, or wood constituting around 4%.

It is worth noting that homes generally did not have any heating **regulation** mechanism. Only 18% of the sample used an ambient temperature thermostat, and 10% a heating timer. We can, therefore, suppose that for the rest of homes, there is no regulation or this is undertaken manually, which is possible for electric radiators.

Secondary heating appliances are present in 50% of the respondents' homes.

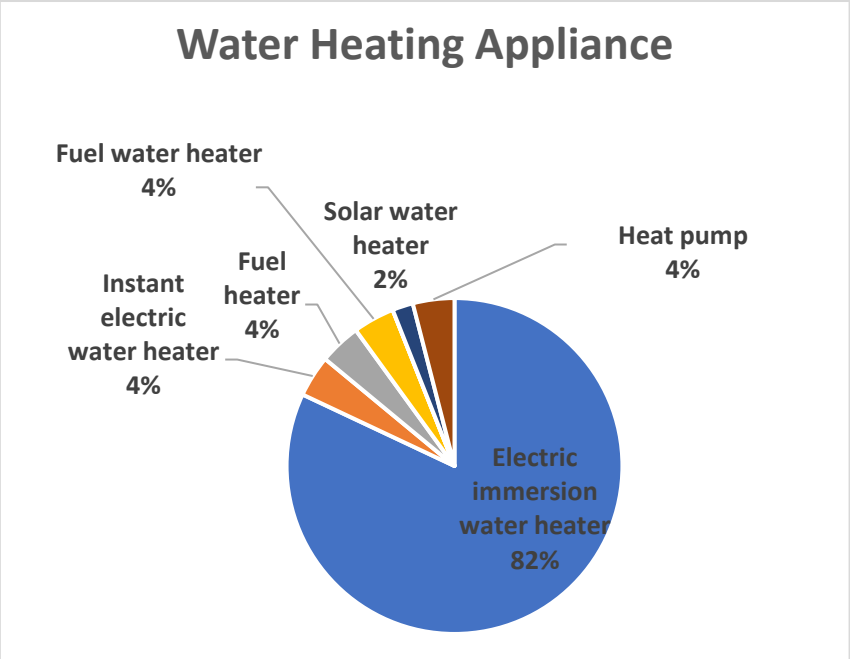


These are primarily wood-based heating appliances (hearth fireplaces, wood burners and open fireplaces). Electric radiators and standalone backup wood heaters are often seen as an addition.



Almost half (42%) of the heating appliances are over 10 years old. A little less than one third are under 5 years old. The high rate of electrical heating appliances means that there is no need for regular supervision by a professional, and only 20% of devices are regularly maintained by a specialist. This then poses the question of anticipating the need for renewal of devices as well as the role played by prescribers such as electricians and plumbers in consultancy concerning energy-efficient appliances. Replacements, often undertaken following breakdown, do not allow for considered reflection. Renewable energies are not necessary disadvantaged in an emergency context.

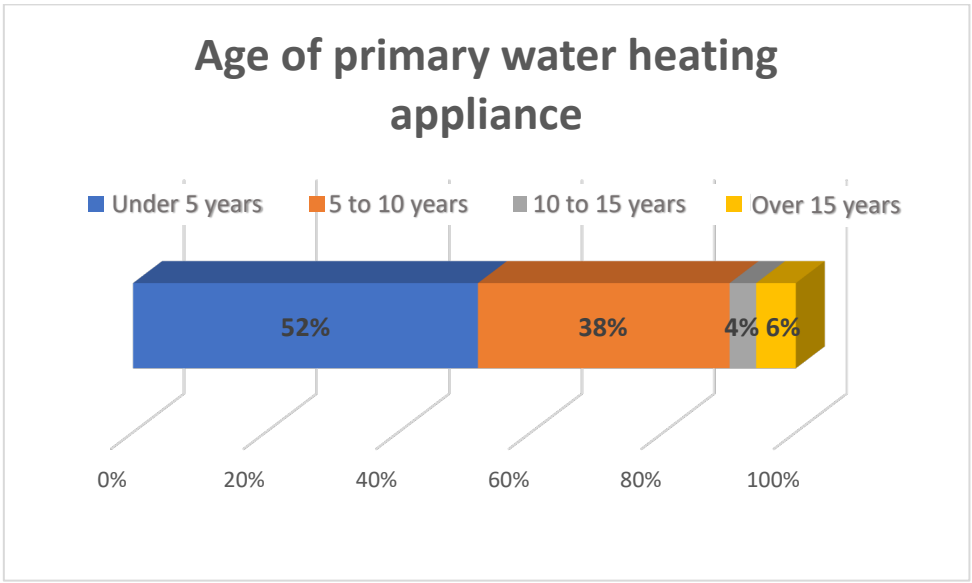
We clearly found the same issue to be present with **water heating appliances.**



The overwhelming majority of houses considered were fitted with electric water heaters (82%). Fuel heaters, often used in relation with the existence of a heating system operating with the same energy source, represent around 8%. Solar water heaters remained rare.

98% of respondents are, on the whole, satisfied with their water heating appliance.

One fact which very largely came out of the surveys is the relatively short lifetime of hot water tanks.



The fleet of hot water tanks is relatively recent since over half of these appliances are less than 5 years old, and 80% are less than 10 years old. By way of a comparison, the average lifetime of water heaters on the continent is 11.7 years (Source: Eco-Systèmes –2012 data).

The island residents questioned spoke of a high rate of renewal of water heaters which they explained by the characteristics of the water which reduced the lifetime of appliances, or the current variations on the electricity grid which affected the tanks.

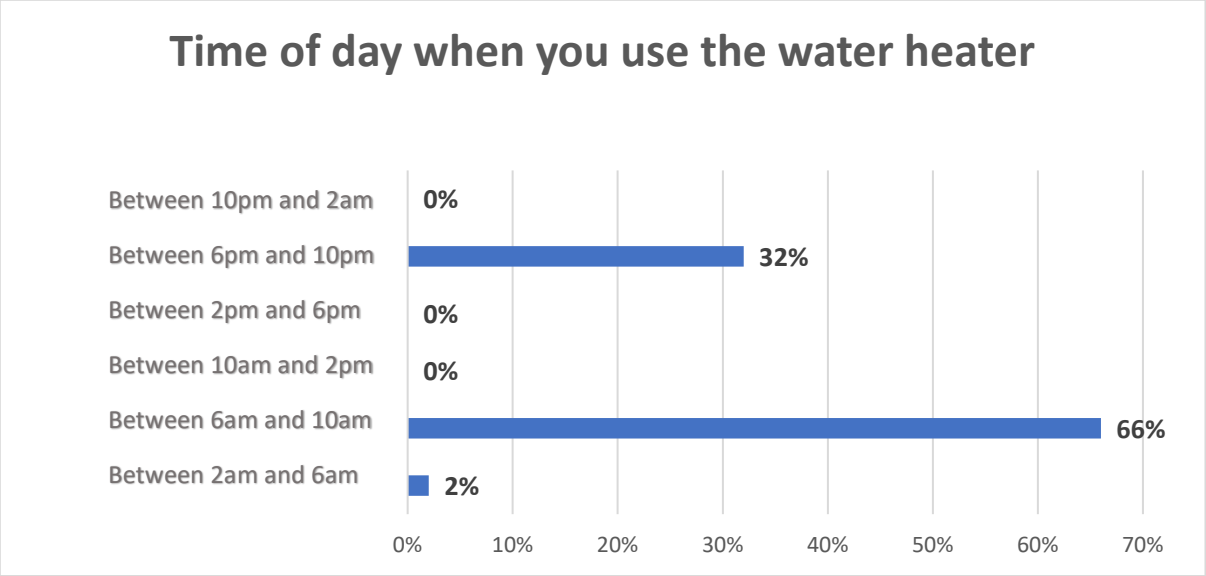
Below are some examples of what people told us:

"We're on our 3rd hot water tank since we moved in 2003, it's a big issue, they don't last, the water quality is not great, there's a lot of mud. We aren't satisfied and, what's more, we are always on alert as we've been told the tank may give up any time even though it's only 4 or 5 years old"

"Our water heater gave up 1 year ago. I think it's due to the water which is very acidic here. Generally, the water heaters only last 5 years on average. And what happens in the majority of cases is that there is a breach in the water heater."

"We have a 200 L tank plus a 50 L backup tank next to a bedroom with a sink unit. Around 3 or 4 years ago, we had some serious water damage in our home because of a breached tank, and since then we have moved the heater into the garage and put this small backup tank in place. Since water tanks do not last here, my husband bought a spare in advance just in case".

Some two thirds of respondents use hot water primarily in the morning between 6am and 10am, and the other third in the evening between 6pm and 10pm.



3.2.3.4. A high number of dehumidifiers and cooling appliances

23 respondents (equating to 46% of the sample group) have a dehumidifier.

This is due to the characteristics of the homes:

- Relatively old homes with one half constructed pre-1919.
- Insulation works on opaque walls and replacement of glazing by double glazing with increased insulating properties. 42% of the sample group stated that they had undertaken insulation works (walls and/or roofing) and 58% of the glazing replacement works in the last fifteen years, but only

half of homes are fitted with controlled mechanical ventilation. The abnormally high number of dehumidifiers can be put down to the works undertaken without the issue of ventilation being considered as caused by the greater insulating level.

The average rate of ownership of cooling appliances (of all types such as refrigerators, fridge-freezers, freezers, etc.) at Ushant stands at 2.36 appliances per household.

By way of a comparison, the average number of cooling appliances per household on the continent is 1.8 (Source: IPSOS 2016 Survey for Eco-Systèmes). The rate of ownership of cooling appliances is, consequently, higher in Ushant compared to the continent whilst the rate of occupancy of accommodation is relatively low.

This specificity should be put into perspective with the Island lifestyle.

By conducting a more advanced analysis of the figures, it appears that this difference is primarily due to over-equipment in freezers, twice as high as on the continent:

Figures for Ushant		**National figures (Source: IPSOS 2016 Survey for Eco-Systèmes)**	
Average number of refrigerators/fridge-freezers per household	**Average number of freezers per household**	**Average number of refrigerators/fridge-freezers per household**	**Average number of freezers per household**
1.32	1.04	1.3	0.5

This over-equipment in freezers can be explained by local practices, with amateur fishing also appearing to be a significant factor in the doubling-up of freezers, including with people who live alone. The majority of fishermen and those people who benefit from amateur fishing prefer to store fish in a separate freezer.

Furthermore, for financial reasons, or indeed due to the availability of certain products, many of the island residents buy food produce in bulk on the continent and then store these in the freezer. If we combine this with a greater desire to manage the risk of any absence of the boat connection caused by inclement weather, we can understand the reasons behind this higher average rate of ownership of freezers than on the continent.

3.2.3.5. Audio-visual appliances and internet access

	USHANT	**FRANCE** (2017 figures – source CSA "Observatory of audio-visual appliances by households in Mainland France")
Average number of screens per household	4.2	5.5
Television	1.92	1.6
Computer	0.9	1.4
Smartphone	0.84	1.9
Tablet	0.54	0.6

The average rate of ownership of televisions is higher in Ushant than the average for France.

However, concerning smartphones, Ushant residents have a rate of ownership some two times lower than on the continent. This is a significant figure to take into account in definition and implementation of methods of participation for residents in the energy transition.

70% of respondents have internet access at home. By way of comparison, in France this figure stands at 85% (Source: CREDOC Survey – November 2016).

4. Perception and Involvement of residents in the energy transition

4.1. Feelings of residents in relation to renewable energy sources

4.1.1. Wind energy

The survey showed, as in the three previous surveys, a **lack of technical credibility** for wind power on Ushant.

This can be explained, inter alia, by the **failure of wind energy projects in the past.** In the 80s, there were attempts to install wind turbines at Ushant. Given the significant consumption of fuel by the power plant and following the oil crisis, elected representatives on the island along with institutional leaders wanted to reduce the dependency on fuel and this led to the installation of the first wind turbine on the southern cost of the island. This was, however, overturned in July 1980, just a few months after its construction. A second turbine was installed in September 1986 with the support of EDF and ADEME. Given the worrying vibrations, the turbine was deactivated and disassembled in March 1990.

The residents of Ushant still remember these failed attempts at harnessing wind power, which led to a poor image of the technology. **20% of respondents talked about these past experiences.** These people asked questions about the safety of the material, and the reliability of machines which must be able to withstand wind speeds of up to 200 km/h.

Today there is a clear plan in place for a wind power project at Ushant. A measurement tower has been installed next to the landfill site and residents know that the wind energy project will only comprise a single turbine, which is not too large.

However, concerning the proposed installation site, some residents have mentioned locations which are today no longer or not at all being considered such as Saint Michel / the former south coast wind turbine site / one person mentioned Le Stiff and another the landfill site.

The observation is, therefore, identical to that which was made during the previous survey. It would appear that information has not been sufficiently relayed or has been miscommunicated.

The Penarlan site is far from unanimous, as respondents believe that works would be required, trenches would need to be dug, which would harm a natural site, whilst the old site has already been created and could once more be used.

The survey highlighted that:

- **23.1% of respondents are unreservedly in favour of a wind energy project (compared to 24% in the previous survey)**

- **34.6% of respondents are in favour of a wind energy project albeit with some reserves** as to the reliability of turbines, the disturbance that may be caused by such a project on Ushant and generally have a clear idea of the site where they would prefer the turbine to be installed (**compared to 52% in the previous survey).**

- **42.3% of respondents are against a wind energy project on Ushant (this figure has increased by more than twofold since the previous survey – 24%)**

If we focus on the change in acceptance of wind power over the previous three surveys, it clearly appears that there is an increase in the number of people against this technology.

➔Clear acceptance of a wind energy project at Ushant

23.1% of respondents unconditionally accept the installation of a wind turbine on Ushant.

Examples of some opinions gauged:

"Some people are against everything! As long as it doesn't disturb anyone, then it's fine for me! Even more so since it only needs wind to work, not fuel! After all, in some places there are lots of wind turbines, and people complain of the noise, but with only one, in my opinion, it won't be too noisy!"

"I think it's good, there was already a turbine in the past, there's no shortage of wind here! It wouldn't shock me from an aesthetic perspective, they could install 2 or 3 and it wouldn't bother me, I think they're actually quite nice. Would it be installed on the old site?"

"I'm not against it, I don't understand the scandal around this type of energy! My husband event wanted to put one in our garden but he was afraid of what the neighbours might say…"

"I think it's a very well-organised project, we will never have a wind farm on the island. We need to make the most of everything nature gives us, and if it can help us, then we need to use it. Technically, the turbines are nothing like those installed 40 years ago".

➔Acceptance with reservations of a wind energy project on Ushant

People who accept a wind energy project, albeit with reservations, stated as follows:

- **Their clear opinion as to the site of installation, the lack of aesthetics of the turbines, the installation far from homes and the future of the turbine when it becomes obsolete.**

Examples of some opinions gauged:

"I don't really know if it's good for the island because afterwards, when the turbine becomes obsolete, what will we do with it? If it works, then it's really a good thing for our autonomy, so why not?"

"As long as it's far from the homes then fine, at Saint Michel or on the old side. I remember the turbine back in the 80s, we got used to seeing it on the horizon, and then when it went, we found it strange!"

"I heard that they wanted to put the turbine at Penarlan, it's completely stupid, they'll have to dig a trench all the way to the transformer and then build a complete electrical installation whilst it's already more or less in place on the old site, where works were already done, and there was already a whole natural area completely destroyed on that site, so why go and destroy another elsewhere? In short, yes to the turbine, but on the old site"

"Wind turbines are an eyesore and you can't help but see them, won't it scare tourists off? It shouldn't be too close to homes because of the noise, but for sure the advantage is they can be disassembled easily!"

"A wind turbine on Ushant, why not, but it all depends on where; it needs to be far enough from homes, and it depends on the size as well as any noise…"

- **The potential impacts of a wind energy project on animals and telecommunication:**

Examples of some opinions gauged:

"I saw a programme recently, apparently they're really harmful to animals and people, apparently they give off radiation which is harmful for people. For Ushant, there may be a project behind me (Saint Michel), but I'm not sure if it's going ahead or not… I also heard that turbines also disturb TV antenna and internet

reception, so you need to look at the disadvantages. But on the old EDF site it would be best, as there are no houses nearby, and you need to make sure people aren't affected."

➔ Non-acceptance of a wind energy project on Ushant

42.3% of respondents are against a wind energy project on Ushant. This figure has increased almost twofold in relation to the previous survey – 24%.

This drop in acceptance could be explained by circulation of information against wind turbines, or quite simply misinformation which tarnishes the image of wind turbines. People who refuse to accept a wind energy project on Ushant put forward the following arguments:

- The aesthetic perspective which they feel would affect the Ushant landscape, notably due to the small size of the island. These people like the landscape of their island as it is and do not want this to be touched.

- The impacts on wildlife and health

Examples of some opinions gauged:

"It really worries me because there was already a failed attempt at installing a wind turbine in the past. I know that the turbines have evolved but, on our landscape, I think it would be disastrous. Turbines are ugly, it's apocalyptic."

"For me, they're bird-killers! A couple of years ago I was really into the subject, and the more I read, the more I found out about them, the less I could accept them. I read articles from the likes of the Huffpost, with interviews with people in Germany who wanted to get rid of them, in the end it turns out they're a big cause of pollution! What's more, we have been told they're only temporary, but on the continent the nuclear power plants were also supposed to be temporary and they've been around for over 40 years!!!"

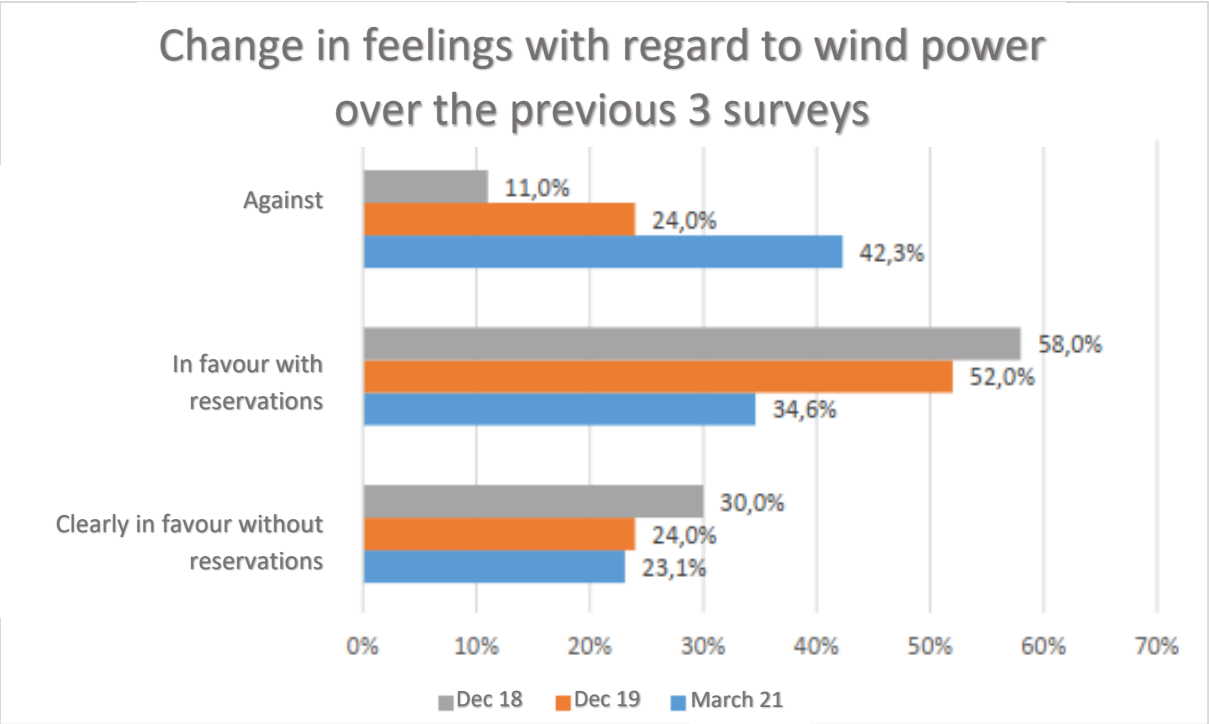
"I'm dead against it on Ushant because of the aesthetics, the island should stay as it is"

"They modify the magnetic field, we've seen the disturbances they can create, even cows are affected! If we can use another method, it would be better because the island is so small, all of the residents would have to suffer these disturbances, and also there would be a negative impact on the landscape and the birds. Or perhaps they could put the turbines out at sea? There wouldn't be an issue then and a lot of power could be generated."

"I'm not massively convinced by the land turbines, I think that wind turbines at sea are extraordinary. Our island is small, I struggle to see it fitting in to the landscape on Ushant. Not to mention the harmfulness of turbines. For a conserved place like Ushant, I find it crazy to even consider a wind turbine."

"I'm against it, and totally against it! Turbines are awful! We are on an island, let's not destroy our nature!"

"I'm against the idea, wherever it is installed. Because of the aesthetics, the disturbance and the impact on migrating birds… Out at sea, no problem!"



4.1.2. Solar energy

Concerning the results of the 4th survey, 100% of respondents are in favour of development of solar power on Ushant (this figure is almost identical to that observed during the previous survey), with:

- **65.4% are strongly in favour of the technology without reservations (identical figure to the previous survey)**

- **34.6% are in favour, albeit with some doubts or questions as to the technology (figure from the 2019 survey: 30%)**

- **0% are against. (Figure from the 2019 survey: 4%)**

➔Strongly in favour of solar energy

Respondents who were strongly in favour of solar energy without reservations, often use the examples of photovoltaic panels installed on the gym or the local multi-purpose hall, which they consider to be a success in terms of energy production and integration. These people are in favour of the black colour of panels and would like to see more solar panels on roofs of community buildings and mentioned the large amount of available space.

Some people said that they were willing to install solar panels on their own roof, for energy autonomy and to help participate in the island's energy transition.

Examples of some opinions gauged:

"I think solar panels are good. I've seen some in the town, I think they're amazing."

"There is also a large hangar building at the top of the town with a large south-facing rood, which could be used for panels, and we even heard about renting our roof to a third party"

"Solar power is something I'm interested in. I'd like to be self-sufficient in energy production and inject the leftover into the grid."

"Amazing, solar power should be developed as a priority, it doesn't pollute and disturbs nobody! Even when it isn't sunny it works!"

➔Acceptance of solar energy with some reservations

Respondents with misgivings about solar power put forward the following arguments:

- the issue of recycling at the end of the useful life of panels,

- a perception of the non-aesthetic nature of installations,

- the condition of the type of building on which they accept to see solar panels fitted (these people are against the installation of solar panels on the traditional houses in Ushant)

- the condition of the number of installations on the island, these people cannot imagine all of the roofs in Ushant being covered in panels and fields of panels popping up everywhere.

During the surveys, the example of a house in Ushant was often quoted to provide a concrete illustration of what residents would not like to see on their island in terms of solar installations. It would appear that this particular instance slightly tarnished the image of solar power in Ushant whilst providing residents with an argument of what they are prepared to accept or not in terms of the installation of solar panels.

Examples of some opinions gauged:

"Solar power is great for as long as it works, but at the end of their lifetime this will lead to yet more polluting materials which we don't know how to deal with… When the panels no longer work, what will we do with all of this waste, will we know how to destroy or recycle them? They have mentioned a timeframe of 20 years, what will things be like in 20 years?"

"My word, if it works, why not, each to his own. I personally don't find them very pretty but if it generates energy, then it is one less burden on the power grid!"

"Aesthetically they're not great, but it is less of an eyesore than turbines which completely destroy the landscape, they're the same colour as the roof and so they stand out less."

"Solar power is great on public buildings and is well integrated. But, for private individuals not so much. On some houses for instance, I've seen some on the island which are a horror, they're not very nice at all, and Ushant has a certain image, so putting panels on traditional houses isn't great."

"Solar power is interesting because there's a lot of sunshine on the island, more than on the continent! But, I'm not in favour of covering all the rooftops on our island in panels!"

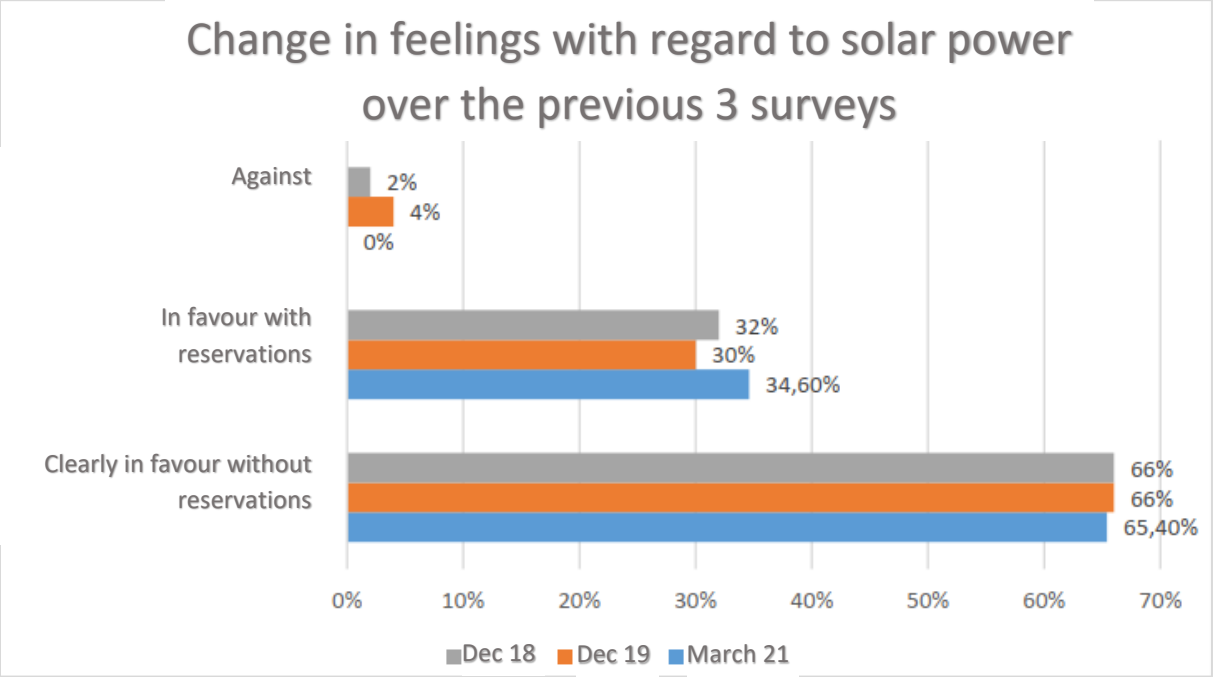
"Yes, as long as there aren't too many. I don't want to see fields of solar panels on Ushant. Panels on the roofs of public/community buildings for sure. But they need to be nice, not like on the house up north."

An important piece of information which did not appear during the previous surveys is that some people (around 8% of the sample group) believe that from an urbanisation perspective, solar panels are actually prohibited on detached houses. It would, therefore, be interesting to organise a meeting between residents and architects and builders around a public discussion on the issue of "Planning rules and renewable energies" for instance to provide more information about what is and is not permitted.

➔Non acceptance of solar energy

Nobody took a clear stance against the development of solar energy on Ushant, contrary to the previous survey where 4% of people stated that they did not accept this technology. It is possible to put forward the hypothesis that acceptance of solar power is on the rise in this survey.

The change in feelings to solar power over the course of the 3 follow-up surveys is represented below. Overall, the positions concerning solar energy remained stable over the 3 surveys, which represent around 150 different people (50 people per survey).



4.1.3. Tidal power

A tidal power experiment has been in progress since June 2015 at the “Fromveur passage” between Ushant and Molène. This energy could eventually be used to cover up to half of total energy requirements on Ushant.

It should be noted that this industrial-scale operation benefited, at the very outset, from widescale communication both in local and national press outlets, as well as information issued by Sabella who has developed the prototype. When people talk about the project, they have quite solid technical information to be able to argue their opinion, and this is no doubt less the case for other energy sources.

The D10 hydraulic turbine was returned to the water on 16th October 2018 by Sabella after two years of testing and improvement works.

A public meeting was held in Ushant on 13th November 2018 to discuss subjects related to the energy transition in Ushant, and the turbine’s reinstallation in the water.

During Q1 2019, an issue was observed on the cooling circuit of the turbine. On 4th April 2019, a public meeting was organised at Ushant to inform residents that the turbine would be removed for repair. On 11th April 2019, the turbine was lifted from the water and transported to Brest Port.

On 5th October 2019, the hydraulic turbine was reinstalled and almost immediately removed as the tide tipped over the turbine and damaged the electrical cable.

After being re-immersed on 8th September 2020, the hydraulic turbine was once more lifted out of the water after another technical issue affecting the connection sling.

All of these issues combined, no doubt, with reduced communication contributed towards a "loss" of some of the residents of Ushant who, whilst still accepting the project, have complained of a lack of information.

The results of the 4th survey can be broken down as follows:

- 50% of respondents accept the project without reservations (compared to 70% in the previous survey)
- 38.5% of respondents are in favour of the project albeit with some doubts as to the overall success of the project and have concerns regarding the technology (compared to 28% in the previous survey)
- 11.5% of respondents do not believe in the success of the tidal power project (compared to 2% in the previous survey).

When we look at the change in level of acceptance of a tidal power project over the course of the last 3 surveys, it appears that there is a clear drop in the overall perception of this technology by the residents of Ushant.

The overall percentage of people who did not accept the tidal power project has increased in the latest survey from 2% to 11.5%.

Clear acceptance of tidal power

People who clearly accept the tidal power project without reservation spoke of the fact that there is no visual pollution and that it is an innovative project which leads to people talking about Ushant.

Examples of some opinions gauged:

"Fantastic project, really interesting. We are lucky to have this project at Ushant."

"I've followed the project a little, it appears to be really smart, a great idea at the outset, really clever! If it works, it will be something that's specific to Ushant!"

"I think it's really very good, a project like this that can meet all of our energy requirements at Ushant really interests me. I hope it succeeds."

➔Acceptance of tidal power with reservations

People who accept tidal power albeit with reservations spoke of their doubts as to the success of the project, but at the same time they hoped that the project would succeed and preferred this technology to wind turbines. These people spoke of the fact the technology is still experimental.

Examples of some opinions gauged:

"It would be amazing if it works, but I'm not totally sure it will work one day… 2 years ago it should already have been working, it's not a criticism, since it's only a prototype, we didn't travel to the Moon overnight."

"Concerning the tidal power project, we are following it, but are a little sceptical, it's long and there are a lot of issues. Anyway, we do hope it succeeds one day…"

"I get the feeling there are a lot of issues, I live just opposite the site and I'm pretty sceptical. The lab tests and experiments seem to be quite different to reality! Anyway, I hope the project succeeds, I prefer this to wind turbines."

"Yes, it's a great project, but I am not sure it will work since they've already had to bring it up and reinstall it so many times! I think that it should be approved but it really has to work! We are following the project closely anyway."

➔Non-acceptance of tidal power

The number of respondents who indicated that they were not in favour of this technology sharply increased in relation to the previous surveys. The vast majority of these people did not believe in the project, faced with the number of technical issues affecting the turbine. A new dimension appeared in the statements and the feelings of some of the respondents: whilst up until now, a portion of the population simply didn't believe in the project, now, there is a clear disregard in speaking to these people, they don't believe in it and, moreover, they want it to end now, as they believe too much money has already been spent (which could have been used on more mature and more effective projects). These people spoke about having the courage to stop the project at a given time, simply ending it, and gave the example of large groups having already given up on this technology (Naval Group, EDF, etc.).

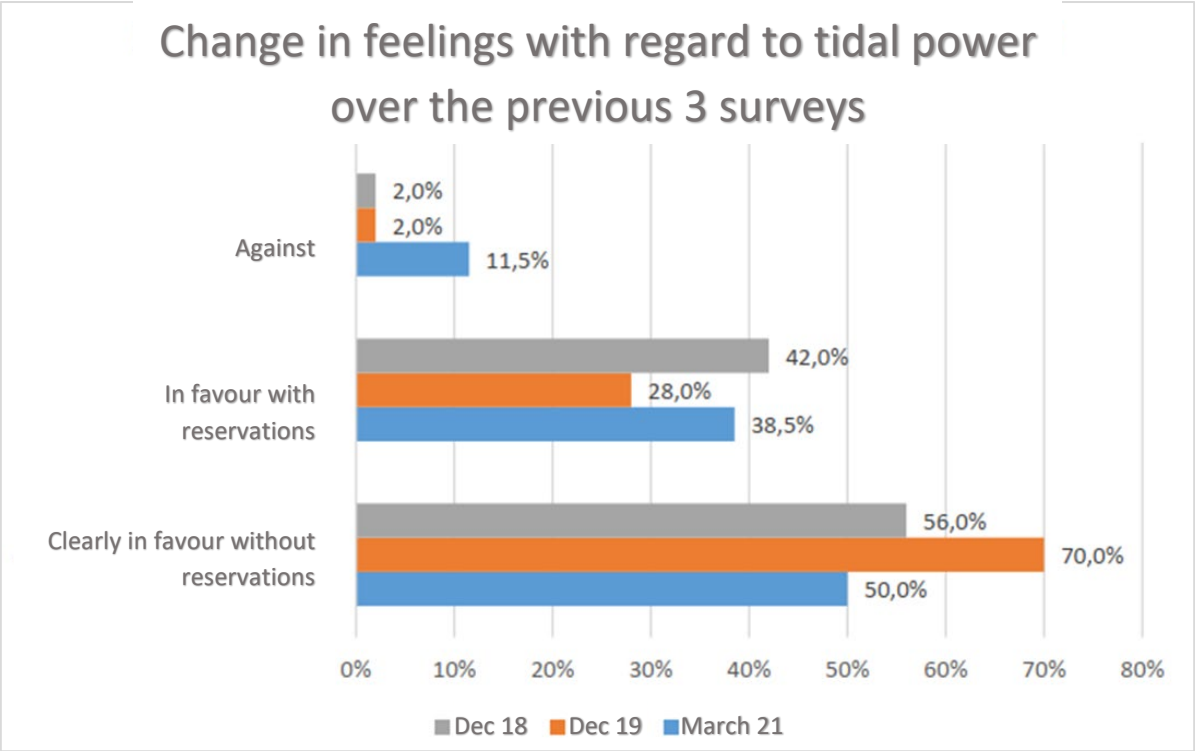
Examples of some opinions gauged:

"I find this project totally inacceptable! To start with, this is France, how is it that a Norwegian or Swedish boat be commissioned, which costs a lot of money, why can't we have our own boat for this? Furthermore, since Sabella has been working on this project, a crazy amount of money has been spent, the majority coming from the State and which could simply have been used to fund more effective projects; we've had enough, it doesn't work, let's stop! DCNS, Naval Group, EDF have all given up!"

"It's not going to work! Sabella is on borrowed time… If it breaks once more, they'll have to give up. And a lot of partners have invested in this project and for 10 years we've seen no results. It's time to stop now. It would be great if the system worked, but it doesn't."

"It's never worked properly. What's more it's affected by the environment, the tides, it breaks with bad weather, I think it's a huge risk. Anyway, we seem to be making a lot of progress in these areas now, but I can't see it working."

The change in feelings to tidal power over the course of the 3 follow-up surveys is shown below. Overall, the positions concerning tidal power remained stable over the 3 surveys, with a slight increase in those who do not believe in this in the final survey.



4.1.4. Energy from waste: recycling the island's waste wood products

This project is a relative newcomer to the energy transition process of the Island of Ushant, which is why it was only discussed during the 4th survey conducted with residents. The current observation is that on the one hand fuel is imported to the island to produce high-carbon emitting energy; and on the other, the waste collected on the island is exported to the continent for processing. The idea would, therefore, be to identify which waste stream could be recycled for use as energy on the island using gasification technology, as part of a circular economy. To date, the project is focusing on waste wood products collected (from pallets, construction waste, etc.), as well as biomass residue from the maintenance and upkeep of natural areas on Ushant, or the wood produce (wood, branches) from garden waste produced by residents.

The survey highlighted that:

- **73.1% of respondents unreservedly accepted the project**

- **26.9% of respondents accepted the project but issued reservations** as to the wood resources and disturbances which the installation could bring about.

- **0% of respondents were not in favour of the project.**

➔Clear acceptance of a pyrogasification project at Ushant

Almost ¾ of respondents believed the project to be interesting for the island as it would allow for reduced consumption of fuel by the power plant and a reduction to the amount of waste being transferred to the continent.

Examples of some opinions gauged:

"If it's possible, then sure, we need to find solutions to use less fuel!"

"Excellent! It means we won't need to send waste to the continent!"

"The idea's a good one, it costs a lot to get rid of our waste"

➔Acceptance with reservations of a pyrogasification project at Ushant

Residents who expressed reservations about the project stated as follows:

- **the lack of wood or waste wood products on the island**, indeed, they indicated that the small amount of wood there is, is already collected by the residents for their fireplaces. Some preferred the idea of burning cardboard instead.

Examples of some opinions gauged:

"It is great, but apparently we would run out of wood soon so we need to see if it is really a good solution/pay attention to our wood resources."

"I don't really know, there isn't a lot of wood here, even if there is waste, there would never simply be enough of it. I think it's good, but it means large investment for not a lot of energy. At the same time, a lot of people directly take wood from the landfill for their own heating. It's a circular economy, and prohibiting that would be a bit silly. I know if I had a wood burner, I'd regularly visit the landfill to stock up!"

"Well, there isn't a great deal of wood on the island, but when you see the tonnes of cardboard which come onto the island, it would be a waste not to make use of them. So, why not use cardboard instead."

"In my mind, wood is already taken by residents for their own heating. My neighbour takes all the pallets he can find, he even goes to the landfill, cuts them up and burns them in his wood burner. Maybe the idea is to sort the wood, put clean wood into a skip so residents can freely use this? Given the price of imported wood, it would represent a cost saving for residents."

- **fears concerning toxic emissions caused when burning**.

Examples of some opinions gauged:

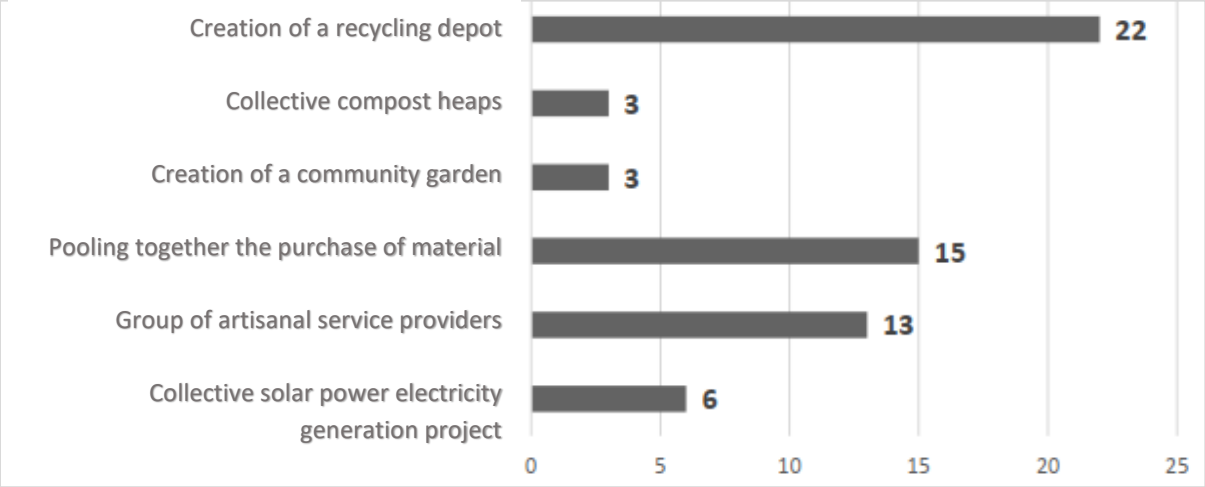
"It's good but will there not be toxic gases and pollution? I am against pollution as it is, boats pollute a lot, I can see this when I dry my washing and the wind comes from a certain direction, there's grey soot on my clothes."

"When pallets are burning it really smells, people near me burn pallets, and they stink, it smells toxic."

"Yes, but will this installation create smoke? The last thing we need is another means of creating pollution! It needs to be discreet and quiet."

4.2.Active participation in the energy transition

4.2.1. Participation in think tanks/citizen's projects



Recycling depots:

Even though the vast majority of respondents need explanations concerning the term recycling depot, 22 people found this concept to be very interesting for Ushant, notably the more elderly who don't like to throw things away. However, these people were asking questions as to the island's capacities and the local authorities finding a suitable site for such an initiative.

Examples of some opinions gauged:

"It's amazing, I often empty out my attic, there are things I don't want to simply throw away as they're in good condition and are still useful, I also collect things and do DIY, notably with furniture. But you can't keep everything! So, it's a really good idea! I would certainly take part! At the landfill there's a space where you can deposit what is in good condition, there is crockery and knick-knacks but it's not sheltered! I have some electrical appliances which I no longer use but I can't leave them there."

"At the landfill, people already take what they can, it's not really allowed so something a bit more regulated would be good."

"It's amazing, I like it! It could be called "The island's attic"!"

"Yes, it's very good for Ushant as there are young people coming to the island without the money to buy furniture. I have a niece on Ushant, she's just put up posters for furniture, she's unemployed and doesn't have much money."

Groups of services and material:

This proposal was of particular interest to the respondents who were seeking to offset the additional cost of island life and increase their spending power.

Examples of some opinions gauged:

"Yes, rather than people just doing their own thing, there would be less travel by suppliers and costs would be lower for us."

"Depending on what is on offer, we are already involved in the Chicken/Chicken barn and Refrigerator programmes."

Shared gardens and community compost heaps

Very few people were in favour of these initiatives. Indeed, the vas majority of residents already have gardens and compost heaps at home. For the 3 people interested in these initiatives, they believe they should be done jointly. According to those respondents interested in the project, the location of the community compost heap should be carefully selected to reduce disturbance for residents. This project requires a lot of research, information and a high level of civic duty to work well.

4.2.2. Involvement in experiments

81% of respondents would be interested in experimenting with "Connected smart devices"

This percentage saw a sharp rise in relation to the previous survey (78%), which can be understood given that during the surveys, people had a clear opportunity to see what the tool would look like as well as its functions, which was not the case during the previous survey.

➔INVOLVEMENT IN THE EXPERIMENT

People wishing to participate in the experiment found it interesting to be able to view a history of electricity use over the last four days. For people who are not au fait with the internet and want to keep an eye on their electricity use, the Linky and EDF websites are often deemed too complicated to use, and people struggle with them.

The tool was deemed as easy to handle and mobile by future participants: this is a positive aspect for people who considered moving the object into various rooms of the house, notably to see the humidity or CO_2 levels. One person even asked if he/she could move this into a gîte just a few hundred metres from home to be able to educate tenants.

Indication of CO_2 levels was very much appreciated. For those who have hearth fireplaces or open fireplaces at home, such a tool would offer reassurance as to pollution and the proper operation of their wood burners.

The object is seem as amusing and fun, especially by children. People found it interesting to know at certain times of the day they were using electricity primarily produced by renewable sources.

Examples of some opinions gauged:

"The humidity reading is interesting for houses. In any case, personal information about our energy use is really clear because the online energy site is complicated and difficult to use, at least with this you have information immediately. And knowing that sometimes you are using "green" electricity is also really good to know and interesting!"

"We will put it in our living room as we would like to check that our hearth is working correctly and not giving off pollution. And what's for sure is that kids will love it!"

Several proposed improvements and questions by respondents:

- People wanting to have some idea of their electricity use at home to see if they are in the standard range (e.g.: 40% - 60% humidity for a healthy home)

- People asked that the tool be able to provide the equivalent cost of electricity used – People would like the times of off-peak supply to be displayed on the tool (some people were completely lost!)

- 2 people mentioned a similar tool for water use.

- Some people wanted reassurance as to the communication method used by the tool to ensure no harmful waves were emitted.

All respondents welcomed **use of the tool displaying complete information about the Ushant electricity grid status as well as information about their home.** All of the respondents welcomed **the colour displayed at the top of the tool** (rather than a flashing white light). They find the direct colour display to be more eye-catching and that with a flashing light, they wouldn't necessarily look at the screen each time. In such instance as the tool has a flashing white light, some people asked how to stop it from flashing, and whether they could press the top.

Examples of some opinions gauged:

"When you've got an object at home which shows red or green, it really affects how you behave. If I am about to turn something on, I know in advance and will look at the tool and might wait a while! This is really something I like! In an emergency sometimes you do things without thinking, without reason, but when you're guided, it's much better! It makes us slow down and leads us to think in how we use energy."

N.B.: 3 people were interested in the experiment, but 2 others did not have a Linky meter and the third did have a Linky meter which wasn't transmitting (a call-out is soon to be scheduled in to fix this defect).

➔NON-INVOLVEMENT IN THE EXPERIMENT

People who said they were not interested in the experiment mentioned that the tool did not offer them anything more than what they already had and would not adopt the reflex of consulting it. Others felt this would be an unwelcome restriction.

4.2.3. Development of renewable energies by citizens

4.2.3.1. From an individual perspective:

Survey no. 1 showed that **12 people (equating to 24%) stated that they were interested in using renewable energy at home**, 10 people said they would happily install solar panels, and 2 said they would install a heat pump.

However, these people stated they had no guarantees as to the reliability of such devices, and were afraid of fraud and suffering architectural and building restrictions.

Those people who were not interested in renewable energy in their homes underlined that accessing such an energy source was too costly, and also, 12% of respondents were tenants (this figure is close to that indicated by the INSEE which has indicated a total of 12.5%), and therefore they had no decision-making power over the works that could be undertaken on their homes.

On the whole, respondents did not believe they had sufficient information as to the existing techniques, applicable regulations and energy contracts for solar power.

It is, however, interesting to note that **wood energy is used by 42% of the respondents**, as a primary or secondary heating source.

On the continent, the percentage of households using wood as a source of heating is 26.6% (source: ADEME 2013 survey "Domestic wood heating: market and supply").

Although there is no wood on the islands and residents have to order this by boat at a much higher cost

than on the continent, it would seem that these factors do not constitute an obstacle to the development of wood as a source of energy on the island which is seem as more comfortable than electric heating and also a better manner of controlling electricity use. The Public Aid Programme (PIG) was no doubt also useful in helping residents to buy wood burners.

4.2.3.2. As a collective citizen project

Alongside the ICE project, the Association des Iles du Ponant [*The Isles of Ponant Association*] launched a 2-year project on the theme of citizen involvement in the ecological transition for the 3 islands not connected to the Finistère power grid: Ushant, Molène and Sein. The ide ais to set up think tanks or action groups amongst citizens.

For example, this consists of pooling together to purchase wood for heating (pellets or logs) to reduce shipping costs and to make savings for quantities purchased.

With regard to a collective solar power group, survey no. 4 highlighted that:

- 6 people are interested in the idea and primarily by a project launched by the local authorities.
- 2 people are interested in use of their roof for a solar power project.

5. Summary

A total of four surveys were conducted in the framework of the ICE project with residents of Ushant concerning their perception of the island's energy transition.

An initial survey was used as a basis for comparison for project follow-up. This survey focused on the wider energy context on Ushant. Three "follow-up" surveys were then conducted, with 50 residents, all different on each occasion.

Given the population size of Ushant, it was not possible to undertake statistically significant surveys. However, the surveys were conducted with 200 people representing around 25% of the permanent population.

The surveys enabled a solid measurement of perception of the energy transition of Ushant's population, in the particular context of the island, such as for instance the tariff equalization for electricity which leads to a prevalence of electrical heating, and electricity as the primary power source.

The insular nature of Ushant means that residents are very well-informed of the way electricity is produced, as the fuel-powered power station is in their close environment. Whilst some people are not against this production method, a vast majority of people are well aware that the use of fuel crates large levels of pollution.

The perception of renewable energies is very positive on the whole with 100% of respondents stating they were in favour of solar energy; 80%-90% of respondents stating they were in favour of tidal energy which was, however, under-developed, but where Ushant is a pilot site.

Around 50% of respondents were in favour of wind energy in 2021, however, there was a drastic drop compared to 2018 where around 80% of people were in favour of this. This drop can be explained by the emergence of the project led in conjunction with a private company, which provides three energy sources (wind, solar and tidal), and which was developed in 2020-2021 and led to a much more marked opinion with residents as to the subject of wind power.

The high cost of electricity production on the island makes it easier to launch pilot programmes on the issue of energy (savings, production, change in uses). Several residents expressed a clear interest in such pilots, with a view to being involved in the energy transition of their island.

An initiative allowing residents to be involved in collective citizen projects is currently being launched, at present focusing on group purchases (fuel, appliances) and with the aim of moving towards collective citizen projects for the production of renewable energies, notably using solar power.