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No.32 July 2025

Exploring the Perspectives of Householders on Energy in the Home

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RESEARCH PAPER

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This research was undertaken as a review paper to inform wider NESC work on Energy. Through the lived experience of a group of householders in Ireland, the report explores how households access, use and generate energy and heat their homes currently, and how they perceive this may change as a result of the energy transition.

Exploring the Perspectives of Householders on Energy in the Home

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Exploring the Perspectives of Householders on Energy in the Home

1. Overview

This report provides an overview of the perspectives of a small number of households on the use of energy in the home and the energy transition more widely. Based on a series of interviews conducted in September and October 2024, it includes a description of the household context and energy issues of eleven householders around Ireland, along with a narrative overview of their responses to different areas of inquiry around energy, climate, the energy transition and perceived opportunities and barriers arising from that transition. It begins with some background context to the work. There follows an exploration of householders' understanding of energy efficiency, their experience of energy use in the home and an overview of work they have had done to make their home more energy efficient. Interestingly, only one of those who has had work done felt that work had been disruptive – replacing plumbing under the floors – while everyone else found their experience relatively positive. Yet all those who have had work done referenced disruption as a reason for not getting more done. Many people seemed put off by a lack of trusted information. In exploring their awareness of the energy transition and the climate impact of fossil fuels, awareness levels were high, but several people referenced a sense of helplessness or futility in terms of actions they could take. The first reaction from most of those interviewed on the personal impacts of the transition was an assumption that it would be negative – but on further exploring possible benefits and opportunities, most did come up with ideas of positive outcomes. When questions around capacity and control over energy decision-making were explored, differences emerged between owners and renters. Initially most homeowners felt they had a lot of control, while renters did not. On further exploration, there were nuances to both positions. In terms of barriers to change, most people referenced cost as a significant barrier. This is explored further in sections 8.2 and 9.1. Disruption and a lack of accurate information were also often cited, while incentives that might encourage change included innovative forms of financing, and greater access to independent expertise and experience. While some people were using some apps or technology in limited ways to track some of their energy use, very few were accessing smart metre data and none were making use of a full suite of modern technology to control or monitor their energy use. In terms of future intentions, many were hoping to make incremental changes to their energy efficiency and use but no one suggested a complete transformation of their own approach or at a societal level.

2. Background

2.1 Climate Policy in Ireland

Ireland has committed to set of legally binding objectives to reduce harmful emissions by 51% and achieve climate neutrality no later than 2050, as set out in official policy documents and legislative instruments, including the Climate Action and Low Carbon Development (Amendment) Act 2021, multiple Climate Action Plans, the National Energy and Climate Plan (NECP) and the National Dialogue on Climate Action (NDCA).[1] In the Climate Action Plan 2024, the Irish government explicitly recognises that individuals and communities will be at the heart of the low-carbon transition and commits to

[1] Government of Ireland and Department of the Environment, Climate and Communications, 'National Energy & Climate Plan 2021-2030'. Available at: https://www.gov.ie/en/publication/0015c-irelands-national-energy-climate-plan-2021-2030/

empowering individuals and communities to take climate action.[2] They also state that in order to meet the targets and objectives, innovative approaches to financing will be required.[3]

2.2 Ireland's Energy Trends

In 2022 Ireland imported 82% of its energy supply and is currently one of the most energy import dependent countries in the EU.
According to the SEAI, the residential sector accounts for almost one quarter of the energy used in Ireland, with oil remaining the dominant fuel in the residential sector.[4] The Irish government has recognised that maximising our renewable energy potential and flexibility and meeting the climate, renewable, and energy efficiency targets as set out in Ireland's Climate Action Plan are key to ensuring Ireland's national energy security. [5] As part of this, the Irish Government committed to supporting the development of up to 380MW of installed micro-generation capacity by 2030, through the Micro-generation Support Scheme (MSS).[6] Micro-generation is the production of electricity from renewable sources by households and businesses and as a result of the MSS, those who produce excess energy can get paid for selling it back to the grid.[7] As of October 1st 2024, ESB networks reported that there were 109K microgeneration installations in Ireland. [8]

Historically, energy prices in Ireland have been higher than the rest of Europe, in part due to geographical location and demographic factors, with the impact of higher prices being greatest on those with lower incomes, particularly those in, or at risk of, energy poverty.[9] Recent figures from Eurostat show that average household electricity prices in the EU rose from €28.3 per 100 kWh in the second half of 2023 to 28.9€ per 100 kWh in the first half of 2024. Ireland, at €37.4 per 100kWh had the second highest electricity price for household consumers in the EU after Germany. [10] (Interestingly, one of those interviewed who rents in Ireland had previously rented in Germany. She stated that in her experience, most rental properties in Germany had heating included in the cost of rental (R4))
According to figures from the Commission for the Regulation of Utilities (CRU), 12% of domestic electricity customers were in arrears in August 2024 – meaning they struggled to pay their electricity bill. The peak was in November 2023 at 13%.[11] Arrears on utility bills has been proposed as a proxy indicator for energy poverty in several composite measurements, including by the European Parliament.[12]

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[2] Government of Ireland, 'Climate Action Plan 2024'. Available at: www.gov.ie/pdf/?file=https://assets.gov.ie/284675/70922dc5-1480-4c2e-830e-295afd0b5356.pdf#page=null
[3] Ibid, p. 144.
[4] https://www.seai.ie/data-and-insights/seai-statistics/residential
[5] Government of Ireland, 'Energy Security in Ireland to 2030'. Available at: https://www.gov.ie/pdf/?file=https://assets.gov.ie/276471/2d15ce6d-e555-4ada-a3cf-b325a5d7ba20.pdf#page=null
[6] https://www.gov.ie/en/press-release/bfe21-homes-farms-businesses-and-communities-to-benefit-as-minister-ryan-announces-the-micro-generation-support-scheme/
[7] https://www.citizensinformation.ie/en/environment/environmental-grants-and-schemes-for-your-home/micro-generation/
[8] https://www.esbnetworks.ie/new-connections/generator-connections-group/generator-statistics
[9] Government of Ireland, 'Energy Poverty Action Plan'. Available at: https://www.gov.ie/pdf/?file=https://assets.gov.ie/245075/fdebbc43-aba2-4330-9b7d-f0987178ea74.pdf#page=null
[10] https://ec.europa.eu/eurostat/en/web/products-eurostat-news/w/DDN-20241028-1
[11] https://www.cru.ie/publications/28407/
[12] https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/733583/EPRS_BRI(2022)733583_EN.pdf

2.3 NESC work

The National Economic and Social Council (NESC) is a public advisory body that looks at strategic policy issues relating to sustainable economic, social and environmental development in Ireland.
NESC is currently looking at energy in Ireland and the changes underway to make it more sustainable as we move from using fossil fuels. More details on this overall NESC work can be found here https://www.nesc.ie/work-programme/sustainable-development-and-climate-action/energy/. As part of this work, NESC is looking at ways to enhance common understanding of the energy transition and the changes that need to happen to eliminate fossil fuel use from Ireland, thus meeting climate objectives and legal obligations, while at the same time increasing well-being and ensuring a just transition under a programme of work on energy. This report on households and energy transition forms part of that work.

Many people would benefit from living in warmer, more energy efficient homes but may not have that opportunity due to the type of accommodation, fuel costs, income and other circumstances.

People also have different levels of awareness of the changes needed for buildings to meet our climate targets, and what may be involved for them as options, supports and information. This small study of households is intended to provide some insights on what a range of different people living in different types of household think about the energy future for homes. More specifically, this report explores how households access, use and generate energy and heat their homes currently, from the perspective of a small number of householders, and how this may change as we move away from fossil fuels. It examines how different households - varying in age, gender, location, resources, capabilities and tenure and type of accommodation - will manage the energy transition at home. Those who participated in the interview process self-selected, and as such cannot be taken as representative of the population at large. This is expanded on further in Section 3 on caveats.

3. Interview process

An initial online survey was conducted, followed by face-to-face interviews. A link to the online survey was sent to a small number of organisations and contacts in various locations around the country - including a regional energy agency, a social housing provider, NGOs working with members of the travelling community, with people living in energy poverty and with housing and healthcare, and university students. These groups ranged in location across Galway, Dublin, Meath, Cork, Kerry, Clare and the Southeast.

There were twenty-one respondents to the survey online. Of these, thirteen were initially selected to interview, based on geographic and demographic spread and including a range of housing type. Of those invited to interview, five were unwilling or unable to proceed with interviews in the specified timeframe, so a further three were invited. In total, eleven interviews were conducted, three in person and eight online. Interviewees received a small gift token for their participation.

Between September 22 and October 11, 2024, semi-structured interviews were conducted with 11 individual householders, with their households consisting between them of 29 residents and 10 nationalities. With the agreement of participants, interviews were recorded, transcribed and anonymised. Interviewees were assured of confidentiality in their contributions.

Interviews were designed to explore the following key areas from the perspectives of interviewees:
1. Current context of energy use
2. Actions towards energy efficiency and perspectives on changes
3. Awareness in terms of their approach to energy use and of the wider energy transition
4. Opportunities arising from the energy transition – both at a personal and societal level

5. Capacity/ control around decisions on heat and power
6. Barriers or obstacles to changing to more energy efficient/ renewable heating and power and Incentives that might encourage change
7. Perspectives on smart technology for managing and monitoring energy use
8. Future intentions and perceptions on incentives

The guiding questions for interview are available in Appendix 1.

This report includes a description of householders' context and issues, along with a narrative overview of individual responses to each thematic area of inquiry, including a selection of direct quotations relevant to each one. Table 1 illustrates the housing characteristics and demographics of those interviewed. Respondents were assigned a respondent number - R1 to R11 – in the order in which they were interviewed. Where direct quotations are used, they are attributed by respondent number. A longer version of this table, including all online respondents (OR), is available in Appendix 2.

Caveats

This work is a snapshot of the perceptions and perspectives of a small number of people, at a particular moment in time, on energy use in the home. It is not intended to be seen as representative of the population at large.

The link to the online survey was sent to a limited number of organisations and contacts in various locations around the country, with a request to distribute it among householders who might be interested in participating.

Respondents self-selected so may already have had a greater interest in and awareness of their energy use than the general population. This is supported by the fact that six of the eleven interviewed had had some work done on their homes in the previous ten years – either to improve efficiency or to improve their heating system.

While the request to participate was sent to some organisations working with people in, or at risk of, energy poverty, none of those who completed the survey were signposted from these organisations. Three people (R5, R7, R8) were asked during the flow of conversation if they struggled to pay their energy bills, none of them did. Three people referenced the cost of living crisis (R4, R5, R8). Personal economic factors and income level were generally not discussed during the interviews but the impression from those interviewed was that overall they weren't struggling financially. The largest number of respondents came through the Dingle Hub in Co. Kerry, who have experience in engaging people in research projects on energy. As a result, the location of respondents is weighted towards rural areas, and the southwest.

In conducting the interviews, there was some overlap between some sections due to the semi-structured and conversational nature of the interview process. Where a respondent made a point in conversation that had relevance in a different thematic area, this has been reflected in the relevant section below. Some respondents were more talkative than others, while some were also more knowledgeable on issues of climate and energy. As a result, certain respondents feature more often throughout the report. However, in an effort to ensure all voices are reflected, points that were only raised by one person are also included throughout.

For future research, it may also be useful to ask respondents to provide images of their electricity metre and details of energy appliances as a prompt for discussion.

4. Current context of energy use

4.1 Housing Overview

Of the eleven households who completed interviews, five were detached homes; two were semi-detached, one was terraced and three were apartments. Two were urban, three suburban and six in rural areas. Seven of the interviewees owned their homes, while four were renting theirs. Five had oil-fired heating, three of which also had wood fired stoves. Three had gas heating, one used a Stanley range supplemented by small electric heaters, one had a heat pump and one used electric storage heating. Of those who knew BER ratings, one was A3, four were B1, one was C3 and two were D1, though one of these had subsequently had energy efficiency measures completed. Two respondents had solar PV.

The majority of respondents considered their energy usage to be below average, with four considering theirs to be about average and one above average. Four respondents placed themselves in the middle of a scale of 1-5 on how often they think about energy, while five respondents said they think about energy use often, and two said they rarely or never do.

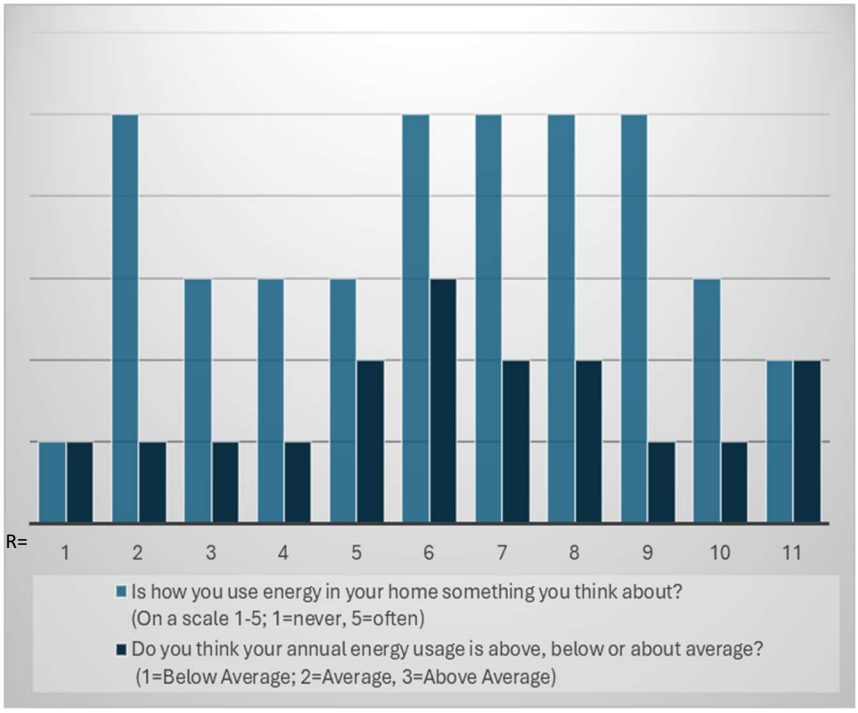


Table 1: Demographics and Housing Characteristics of Interviewees

	Housing Type, Period Built/ Age of House	Tenure	Occupants	Occupants - breakdown	BedRooms (0= Unknown)	Heating	Location	BER Rating (0= Unknown)	Energy Efficient Home (Perception)	Usage*	Changes Made	Thinks about energy use ^
R1	Detached, 1940s	Home owner	1	M, Irish, retired, 86yo	3	Stanley range, gas bottle cooker, small electric heaters	Rural	0	Yes	1	None	1
R2	Detached, late 1990s	Home owner	1	F, Irish publican, 73yo	5	Oil, wood fired stove	Rural	B1	Yes	1	New boiler, solar panels installed.	5
R3	Apartment, new build	Renter	3	2 adults, Irish, American, ages 1-48	3	Heat pump	Suburban	A3	Yes	1	No	3
R4	Apartment, 40+ years old	Renter	2	Ages 31-34, Irish	2	Other Electric Heating	Rural village	0	Middle	1	No	3
R5	Shared semi-detached house, 25-30 years old	Renter	4	25-35, 2 Chinese, 2 Latin American	4 (3+1 added by converting garage)	Oil heating	Urban	0	Yes	2	House refurbished, pipes replaced, radiators serviced	3
R6	Detached house, 30 years old	Home owner	5	2 adults, Irish, ages 9-51	3 (4-1 for office)	Oil, wood fired stove	Rural	B1	Yes	3	Renovated 2015, solar panels added 2020	5
R7	Detached house, 50 years old	Home owner	2	30, 71, Irish, 1 with additional needs	4	Mainly stove, also oil	Rural	C3	Middle	2	2015 - insulated walls, triple glazed windows, changed the oil boiler and insulated cylinder	5
R8	Semi-detached house, 18 yrs old,	Home owner	4	2 adults, Irish, ages 6-43	4	Gas	Suburban	B1	Yes	2	Installed a gas fire. Upgraded front/back doors and patio doors.	5
R9	Detached house, 43 yrs old	Home owner	2	2 adults, 1 Irish, 1 EU, ages 35-45	3	Oil	Rural	D1	Don't know	1	Roof replaced, insulation, plumbing and heating redone, windows replaced	5
R10	Shared duplex apartment, <5 yrs old	Renter	2	2 adults, 1 Middle Eastern, 1 African, ages 32	2	Gas	Urban	B1	Yes	1	No	3
R11	Terraced house, 40 yrs old,	Home owner	2	2 adults, 1 Irish, 1 EU, ages 38-45	3	Gas	Suburban	D1	No	2	No	2

* (Respondent's Perception. 1=Below Average; 2=Average, 3=Above Average)

^ (On a scale 1-5; 1=never, 5=often)

4.2 Understanding of Energy Efficiency

Respondents to the online survey were asked to provide their understanding of the concept of energy efficiency, and interviewees were asked to expand on this during the interview. When discussing their understanding of the concept, respondents provided a range of observations. Most referenced behavioural factors. Several highlighted conserving or not wasting energy as important, while others mentioned reducing energy use.

> *"I am very conscious of conserving electricity in every way. So I turn out lights and I try and turn off plug points at the wall switch and turn off any heating things that I'm not using, appliances or any other thing that I'm not using currently. " R2*

Several discussed minimising use of appliances at peak times and being conscious of switching off lights and plugs. Seven specifically mentioned using more efficient appliances - with four of these referencing using an air fryer rather than an oven to cut down energy use, and three others mentioning they use a dehumidifier rather than a tumble-dryer for drying clothes to reduce energy use. Several people also mentioned only heating rooms that are in use, rather than the whole house.

Others focused on the fabric of the building, with five referencing the importance of insulation, three touching on heat loss, two referencing improved windows and one mentioning inefficient heating systems. Thermal comfort in the home was also referenced by several different people.

> *"an energy-efficient home … would be a home that I could heat well at a reasonable cost, without a lot of energy waste - when I think of energy efficiency, I think of things like triple-glazed windows, very good insulation, solar energy" R8*

Some also touched on the cost implications, suggesting that greater energy efficiency would result in lower energy bills.

Figure 1: Key words associated with energy efficiency

4.3 Experience of Energy Use in the Home

In the online interviews, interviewees were asked to rate how often they think about energy use on a scale of 1-5. Of the eleven people interviewed, five said they think about it often, four said they think about it sometimes and two said rarely or never. This was explored more in the interview with respondents being asked to expand on the ways in which they think about it.

For one who thinks about it all the time, she has solar PV and plans appliance use based on the weather forecast, and if the forecast is bad will use a cheaper night rate. The same person mentioned it is a bone of contention for her as the rest of her household "don't give it a second thought" (R6). For her the financial motivation was just a part of the reason for her approach – she also mentioned the curiosity factor and the challenge in optimising her system to get the best use out of it, as well as the motivation to displace the use of oil.

Another who also thinks about it often stated their reasons as:

> *"one, the economic knock-on effects of using more than we should, and obviously the environmental impacts. … it's all just little things, small mindful moments, … where I would, yeah, be thoughtful of energy consumption." R9*

For one who said she rarely thinks about it, she suggested that while it does enter her head at times, "there are other things that overrule it or kind of the day-to-day busyness so." She doesn't think about it enough for her to change her behaviour as a result, though does sometimes wonder whether her BER rating, which is a D1, is something she should take action on. (R11)

Respondents were then asked about their habits in terms of energy and heat use compared to others, and their motivations. Electric cooking - either by induction cookers or air fryers - was mentioned by multiple people. Several also mentioned switching to LED light bulbs, and using dehumidifiers instead of tumble dryers. Some referenced only switching on heating at particular times or only in rooms that are in use.

Several others mentioned only using high energy demand appliances like washers and dryers during off peak hours, only boiling the amount of water needed in the kettle – or mainly hanging clothes to dry where possible, with several specifying that the main reason for this was cost.

> *"I would be conscious of when I put on my dishwasher, when I put on my washing machine, or my tumble dryer. I wouldn't use peak times. When I'd be putting my heat on in the evening time, to conserve energy and keep the rooms warm, I would pull my blinds and curtains so that the place is warmer and cosier." R7*

Some mentioned those aspects of their usage that they saw as being above or below others – so one woman has a hot tub, an electric car and bakes frequently at home for her business but had solar panels installed to try and compensate for times of high usage, doesn't use the tumble dryer and charges her car on a cheap night rate. (R2)

Three referenced the fact that they work from home as potentially contributing to increased energy use. Another also mentioned the high electricity usage of having an electric car, but pointed out that it is displacing petrol or diesel, which for her is positive. (R6)

One person who uses electric heating observed that while their electricity bill is slightly higher than average, they don't use oil or gas, so overall bills are lower than average. (R4) Another went into a lot of

detail about the air source heat pump and energy recovery ventilation system in their rented apartment along with the various benefits he has found from the system including:

> "I absolutely love not having to think about an immersion - to be back in Ireland and have no immersion and to have an American wife and not have to listen to her complain about it… She had it for six months when our baby was born here and we lived in an old house in Portobello, and we had the immersion then. So she knows all about it." (R3)

One renter who has lived in several different countries compared the experience of renting in three very different environments. In recent years she has lived in an old, listed tenement building in Scotland, which was really difficult and expensive to try and heat. As students she and her flatmates essentially experienced energy poverty, where they would not turn on any heating and would wear lots of extra clothes. She subsequently lived in an apartment in Germany where everything was very efficient, with underfloor heating and all energy costs included in her rent.

"And now coming back to Ireland, I guess it's a bit of a middle ground between the two different systems." R4

Another respondent, who lives with someone from a warmer climate, observed that there are significant differences between their approach and their housemates'. While the respondent would be inclined to wear warmer clothes and not turn the heating on until well into winter, this is less palatable for the other member of the household. (R11)

A renter who shares his house with three others described their approach to energy – they buy their oil in advance of winter, split their bills equally, and together reached an agreement on when to schedule their heating to come on and not to use any form of electric heating – any electric heaters or electric blankets. They use appliances during the day, so as not to disturb flatmates at night. For them electric showers and a tumble dryer are the biggest source of consumption, and they see an increase in bills in the wintertime. (R5)

"you see the massive difference on the bills when you get into the wintertime, and you have to buy the oil to heat the house." R5

At this stage during the interview process, some questions were asked about changes householders have made in recent years and how that experience was for them. There was substantial overlap between the answers here and a later interview section on Habits and Actions, so responses on actions they have taken are combined in Section 5, while short term plans are summarised in Section 7.2.

5. Actions

This part of the interview focused on changes householders may have made, or may be planning in the near term, to make their home more energy efficient or in how they use energy in their home. It also explored their experience of any changes they may have made. Any short-term plans are reflected in Section 7.2, while this section covers changes already made and perceptions of change.

Of the eleven households interviewed, six had made some changes to the fabric of their homes in the last ten years. Only one of these was a rented home. One home had a new boiler, pumped attic insulation and solar panels installed; one had the heating system refurbished, pipes replaced and radiators serviced; one had renovated the house in 2015 and added solar panels in 2020; one had done a substantial amount of

work in 2015, including insulating the walls, triple glazed windows, changing the oil boiler and insulating their hot water cylinder; one had upgraded their front, back and patio doors and installed a gas fire; and another had replaced their roof, put in spray foam insulation, had the plumbing, pipework and heating redone, oil boiler and radiators replaced, windows refurbished and front door replaced. These works are also reflected in Table 1.

Those who had made changes were overwhelmingly positive in their assessment of the outcomes of their experience.

> *"Brilliant – it was brilliant in terms of immediate effects, with heat retention, but also, we changed our mortgage to a green mortgage. We had to get a guy out to do our BER rating for us, and based on all those things that I just mentioned, our BER rating came up to a B1, which allowed us to get a green mortgage, so it had knock-on effects, really positive knock-on effects there as well." R8*

Most people talked about their homes being cosier and more comfortable. Several mentioned a reduction in draughts, and an improvement in air quality. Two homeowners also mentioned reduced sound pollution. (R7, R8)

> *"Much cosier, warmer, less of a requirement to put on the heat as much. When you do turn it on, the heat is retained for much longer. Visually, it's nicer, new doors obviously. Sound – it's had an impact on sound pollution because the doors are more solid so it's changed that. Yeah, the open fire gone is great because the draught from the chimney was huge" R8*

As will be explored further in Section 7.1, several respondents mentioned reduced cost as a likely outcome of improving energy efficiency.

One did reference disruption caused by work they had done – he stated having pipes replaced was expensive and disruptive but still worth it in the end. The same person mentioned the lack of disruption associated with getting roof insulation. (R9)

> *"That was probably the biggest impact in terms of least disruption and it wasn't hugely expensive in terms of other things that we've done." R9*

Another person also referenced their frustration that when their boiler broke down a couple of years ago, the tradesman they used didn't propose alternatives other than a new, replacement boiler. (R2)

The one interviewee who lives in an A-rated home, when discussing his experience versus previous less energy efficient homes, stated:

"It is valuable to me both being … a lighter polluter, … but also, just the living in the space that is well managed like that for it, the energy efficiency does provide a lot of creature kind of comfort … it's comfortable. It's really convenient. You just don't have to think about it. … From a quality-of-life standpoint, yes, I would pay for this type of system" R3

In terms of habit or behaviour changes, as mentioned in section 4.2, several respondents referenced switching to more energy efficient appliances with most people using air fryers rather than ovens, several mentioning switching to more efficient lightbulbs, and three also using dehumidifiers rather than tumble dryers to dry their clothes. Some respondents had changed the times at which they use their appliances and their immersion.

An older respondent referenced stopping burning turf many years ago, and now using smokeless coal instead, though he hadn't noticed a difference in the air quality in his home as a result. (R1) Another person mentioned that they have switched to a time-of-use electricity tariff, as well as installing solar panels, so are far more conscious of their electricity use than they used to be. They also observed that electricity prices in the past were lower and so there is now more of an incentive to be aware of usage. (R6)

Several renters who have changed homes discussed changes in their habits. One had previously lived in shared accommodation where bills were included, whereas now they were much more conscious of energy usage in order to keep their bills down. (R4)

"At the end of the day it is positive, like, no matter how you look at it, you're more environmentally responsible. So yeah, I'd say just positive" R5

Another person who had moved from a smaller apartment to a bigger house was more aware of when and how they used their heating system, and more conscious of maximising its efficiency. He mentioned that the first few months they were in their house was during COVID and with both residents working from home they had the heating on a lot more in the past. Now they used a zoning system to only heat whatever room was in use, rather than the whole house. (R9)

Someone else had moved from a much older rented apartment to their own home. While they felt neither place was energy efficient, the apartment had electric storage heating and because of their rental agreement they were unable to avail of any discounts on bills. In their new home, they have been able to take advantage of offers from the energy companies, and they have a lot more control over when and how they use their heating – so again, they heat rooms as they need them and use a dehumidifier to dry clothes.

"I would say positive. … I definitely prefer having more control over heating the home. … I really prefer that I can pop the heating on for an hour, or you know, I can put some hot water in the tank …. So I think compared to how we were managing things for me anyway, it's been a positive shift." R11

One non-Irish respondent mentioned that the cost of gas in Ireland is higher than his home country, but that he has changed his habits to wear more clothes around the house rather than turn up the heat. He felt this was positive for him from a consumption perspective. (R10)

As was seen with changes to the home, in terms of people's experience of changing their habits and practices, cosiness in the home and reduced bills were frequently mentioned. One person pointed out that the changes they had made coincided with the rise in the cost of living, so it was difficult to pinpoint savings, but thought their bills would be significantly higher if they hadn't made them. (R8)

One suggested that while using energy efficient appliances might be slightly better it doesn't really change very much, but highlighted the physical, as well as environmental, benefits of switching to more active forms of travel, like cycling. (R4) Someone else made the observation that they felt mentally overwhelmed thinking about usage on a constant basis and trying to manage it, but couldn't decide if it was positive or negative for them. (R11) Another felt that this psychological shift to being more aware and more conscious of their energy use was a positive thing. (R6)

6. Awareness

6.1 Climate Impact of Fossil Fuels and the Energy Transition

The next section explored awareness of the concepts of the energy transition and the climate impact of fossil fuels for energy. Again, respondents provided a wide range of responses and perspectives. While only four were familiar with the term "energy transition", most others were able to make a pretty accurate educated guess as to what it might mean.

"If I had to guess what it means, it's the transition from fossil fuels to other power sources, so I assume the obvious ones. I don't know if it includes nuclear, which side of the fence that's on, but it would obviously be wind, wave, tidal, solar. Things like that." R3

In terms of the climate impact, for some it was omnipresent, for others they were aware of it on a theoretical sense but didn't consider it on a daily or personal basis, and for still others it had little importance. The oldest respondent stated: "I'm at the end of my days now sure, why should I be worried about anything like that?"(R1) Three who are parents referenced the future impact on their children. One who uses a wood burning stove suggested her rural location meant lighting it didn't have an impact on others in her vicinity. (R7)

"we all have to do our bit to mitigate what have we've done in the last century" R2

Several respondents touched on the need for everyone to take action.

Others highlighted a sense of personal helplessness or powerlessness when it comes to addressing climate change.

"it feels to me like something that needs to be fixed at a systemic level like that it's more about industry and regulation as in emissions from manufacture and other industries as well as well as you know how we generate our power and all those kinds of things" R3

With regards to a sense of urgency around this transition, the majority of respondents felt there was a sense of urgency.

"there's huge urgency around it. We don't have time to faff anymore. All the major scientific reports over the last five to ten years are telling us we're out of time, almost. So I'm aware of the urgency, but it's just, on a personal level, what can I do? Because that's all I can control and sometimes I'm stuck on that. What can I actually do in my little world?" R8

One who splits his time between the US and Ireland felt it was more evident in Ireland and the EU than in the US. (R3) Again, several highlighted a sense of fatalism or helplessness when it came to their ability to act on that sense of urgency. One suggested there is a sense of urgency communicated in a political context, but that the uncertainty of the transition and the impacts for people at an individual level has contributed to apathy or inaction.

"maybe we've got to a point where it feels abstract or we're just desensitised or resigned to it and maybe mixed with that, I guess a lack of understanding by anyone really on what, how this will really impact us" R11

6.2 Sources of Information

When asked about their main sources of information about switching to renewable energy, most people struggled initially to come up with a single obvious answer. Some encounter it at work on a regular basis. Some mentioned general media platforms, such as television, radio or the internet, while others named specific media outlets, including RTE, Financial Times and the Guardian. Several, for whom it was part of their daily work, saw it as almost common knowledge, and regularly seek out information from policy documents, reports, journal articles and specialist websites. Others mentioned hearing about it from news media, but one stated that while she thinks it does get some attention on radio, she was shocked by how little coverage it receives in national newspapers. Some referenced actively looking for information on the internet or on YouTube or watching home improvement shows on television that highlighted aspects of energy efficiency in homes for them. One, who has a heat pump, said he never hears about them in media but does discuss them with friends:

"people would talk about it more, but not really as a change thing, more as a like just a saving money thing" R3

Two people said it is a topic of conversation with certain friends, and others mentioned they discuss it with family members who have had energy efficiency work done at home, or friends who work in the field. Others emphasised the point that it is not a regular topic of conversation for them in everyday life.

"I hear stuff on the radio about how Ireland's gonna make its targets … certainly in my social circle, nobody really talks about - if we're talking politics, like, nobody really talks about climate change and the energy transition" R3

One observed that encountering it in a work context, but not outside of it, reinforces a sense for her that it is something abstract and makes it difficult to translate into her day-to-day reality or life. (R11)

Another person, who works on energy and climate, and has older and younger children, noted a marked distinction between her eldest and youngest – the eldest, who is in their 20s, didn't learn about it in school, shows little interest in her work and doesn't follow media, where the youngest, at 9, learns about it at school and is the most engaged and interested of her household in the work she does. She emphasised the importance of practical information being made available in schools in a non-frightening or anxiety-causing way. (R6)

6.3 Repercussions/ Impacts

"I'd have a lot of renovation to do in my house, which would be hugely expensive. Cost would be a massive factor." R7

In terms of how the transition might affect them personally, more people initially thought of negative rather than positive outcomes. Multiple people referenced the cost of changing to renewable energy as an issue. (R7, R8, R9, R11)

Two others mentioned increasing energy costs as a result of the transition and how this could negatively affect many people, (R4, R6) particularly older people. One of these expressed a hope that longer term, it would still prove positive.

"The next 10 years could be very, very costly and cause hardship for a lot of people. So I do see it as being a difficult transition time … But you'd like to see a brighter future once we can get through this transition and we have access to energy, and we've learned how to use it more efficiently and more effectively" R6

One, who lives in an A-rated home mentioned he is expecting to have much lower energy bills than in the past. He also mentioned the positive benefits of cleaner air and active travel. (R3)

Renters suggested they felt they would be left behind and unable to enjoy the benefits – this was also echoed by a homeowner in a D1 rated home in an urban area. It was only after being prompted that many came up with some possibly beneficial outcomes – these are discussed further in Section 7. One did mention here that they hoped switching to more renewable sources of energy might save them some money.

"when you start looking at how much it's costing individuals and that you can save money, it's kind of one of those double wins. I don't think there's many of those that are really genuine (double wins) within the climate movement, but I think energy. Yeah. Getting out of energy poverty and into energy self-sufficiency would be, yeah, one of the key areas to motivate people." R4

One homeowner, in her 40s, recognised that national level policy is to move away from fossil fuels but thought at a personal level she wouldn't see much of an impact in her lifetime – while she thought her children won't have an option to heat their homes using gas or coal, for her she didn't see her use of gas changing. (R8) One renter echoed this, suggesting it was for government rather than ordinary people to change. The same person suggested that they wouldn't experience short term effects but in the longer term they would see benefits from cleaner and cheaper transportation and lower bills in their home. (R10)

"nowadays I think renewable energy is in the hands of government not the ordinary people, because the scale is so high and also in Ireland, I think using solar energy is not practical." R10

7. Opportunities

7.1 Benefits/ Opportunities From the Energy Transition

As mentioned, the initial reaction from many people about the impact of the transition for them personally focused on increased costs. However, people suggested a variety of potential benefits or opportunities when asked. The one respondent with an A rated home mentioned multiple positives – including an expected reduction in energy bills, cleaner air in the home, particularly for his child, and greater thermal comfort. He mentioned a US study referencing increased asthma rates in children from homes using gas cooking. (R3)

"whatever its systems they have here seem to work really well without much input from me, so there's comfort, there's convenience, cost and health." R3

Another who has had some energy efficiency measures done also mentioned lower bills, while several who haven't yet had them installed, suggested this was a likely outcome.

"I think that's my lived experience of it, you know, particularly in the high cost of electricity at the moment. Certainly the solar PV has made the energy bills manageable for our household." R6

Multiple people referenced the increased level of comfort in the home as a result of energy efficiency measures, while one also mentioned an increased sense of independence and security.

"there's a sense of independence then too if you don't need a lot of energy because your house is running efficiently. That is a level of security I suppose." R6

Another suggested older heating systems in older homes were more likely to cause issues like noise pollution, carbon monoxide emissions and issues with humidity and damp, (R10) while someone else mentioned issues a family member was having with mould in their home.

"if they had the ability to kind of heat their home well, really get that investigated and not have to worry about it - kind of the money, the time and even the health impacts that would have.... There must be so many ripple effects, but I don't feel I'm well versed to speak to them". R11

Several people also raised benefits in terms of broader society. One respondent commented upon their individual contribution to mitigating against climate change and setting an example to others as a positive outcome. (R2) Another referenced a shift to electric transport meaning cleaner air for his daughter to breathe but observed that shift for him personally would be dependent on cost. (R3) Four others also mentioned the health benefits to society of moving to more active and less polluting modes of travel, and one also discussed the health benefits of a more sustainable, local food system.

"if we can get our transport systems right and if we can enable more active travel, you know, and if we invest in that now, we will have much safer, happier communities to live in." R6

One person commented on the benefit to Ireland to be able to stabilise its energy supply by having its own sources, particularly in the context of global conflicts, but observed that for rural areas, scale might be an issue here. (R4) The same person expressed a fear around exponential growth and the need to focus on reducing consumption. Another observed that while they aren't sure of a benefit for themselves individually:

> "I think as a member of a community and as a member of a society, absolutely like if it means we have anything from cleaner air to more sustainable use of things to, I guess, limiting the damage we've done for future generations to enjoy the planet, to enjoy their hobbies, to enjoy how they eat, great. And I am part of that, but on a very individual basis, it's actually not something I've thought about." R11

7.2 Changes in the Next Five Years

There was significant overlap between this section, Section 5 on actions and Section 11 on future intentions. This section combines any references to planned short term changes, while Section 5 covers changes already made and perceptions of change. Where a distinction was made between shorter- and longer-term changes, these have been separated between here and Section 11 accordingly.

Several people in rural areas didn't foresee making any changes in the immediate future – they didn't expect to be in a position to change from oil to electric heating, and didn't want to get rid of their wood burning stove due to power cuts in their areas. (R2, R6, R9)

> *"given the age of the house and the whole aspect of like installing a heat pump or something like that I would have to do quite an expenditure to change my whole heating system and instead of doing that I've chosen to continue with the oil but as minimalist as possible." R2*

Another urban dweller who uses gas saw no reason to change as he considers his system clean and efficient. (R10)

Several respondents who have already had some energy efficiency measures put in place felt they have already done what they can and would focus mainly on being conscious of their usage in the future. One respondent in his late 80s said that while at one point in his life he might have considered making changes, at his age there was no point in doing so, particularly as he is satisfied with things as they are in his home. (R1)

> *"I think I've done what I can now and just being conscious and doing what I can at the moment. I think I'm up to speed as far as I can go right now." R2*

Behaviour change was mentioned by several people as being important.

One thought a new or more efficient boiler might help. One suggested he would like to get a heat pump installed, while he and several others suggested they would like to be able to avail of solar PV, but weren't sure about affordability – this is explored further in Section 9 on barriers. Two said they would love to get their windows and doors refurbished or replaced, and one of these said they would also love to get external wall insulation. As is explored further in Section 9.1, cost was the main impediment to change.

> *Wouldn't change in the next five years, but "If it was fully funded, I certainly would. Yes, I would, yeah." R2*

"I don't want to contribute to climate change … I'd love to have the money to not use gas. I'd love to have solar panels. I would love to have an electrical fire in the sitting room or something that's powered not by gas – obviously we don't use coal. My conscience tells me that I'd love to be able to do these things, but it's just not feasible at the moment." R8

Another thought they might make use of the CODEMA energy kit[13] available from libraries to better understand their energy usage.

Several respondents referenced potential changes in energy use around transport. An urban resident commented on how improvements in public transport and bike lanes in Dublin made him more likely to consider more energy efficient methods of getting around. (R3) Three mentioned they would like to be able to buy an Electric Vehicle, (R3, R4, R11) while two already own one (R2, R6).

8. Capacity and Control

8.1 Levels of Control

When asked about control over decisions about how their home uses energy, there was a distinction between owners and renters. Most respondents who own their homes initially stated they felt they had a lot of, or complete control. Those who rent felt there were many things outside of their control. However, on further exploration, there were nuances to both of these positions.

A homeowner who initially said she had a lot of control over her energy use in terms of making decisions for herself and her children, went on to observe that she can't control things like needing to wash clothes or heat the home. (R8) Another person also pointed out that electricity is essential so there is no choice involved in whether to use it or not. She observed that her control rests around when or if to turn on the heating or whether to put on more clothes. (R7) Others also referenced the control they have over when to turn heating and appliances on or off.

"when you think about it, I suppose there are just certain things that have to happen so that control is a little bit less than you would think." R8

One person who bought an old, energy inefficient home in the past observed that while they may have had a choice in terms of what they bought, they didn't have the knowledge and awareness around what would be required to make it liveable. The same person made the point that opportunities are limited around big decisions like buying a home, or replacing large appliances with energy efficient options and that cost is a big factor for many people when making these decisions.

"I don't think many people are in the situation where they can review the appliances in their house and go and throw out the ones that aren't energy efficient and replace them with modern dishwashers and dryers and all that kind of stuff. So yeah, I would say some, you know, I don't feel totally powerless, but I also don't feel like I can have a huge impact through what I do." R3

[13] A kit containing tools to help people measure energy use in the home. More info: https://www.codema.ie/our-work/home-energy-saving-kit/

A few people observed that they shop around each year to find the best value from electricity providers. One suggested that this may give an illusion of choice, and that while she chose an option that purports to be 100% renewable, she wasn't sure how accurate that was. (R4) One discussed the element of control people have around decisions to use cleaner methods of travel and several mentioned the importance of behaviour change. (R3)

> "I think in terms of energy use we have all the control so, depending on our behaviour – based on how much we use or don't. In terms of controlling infrastructure, making decisions about transitioning to renewable sources, so installing solar panels or finding a better heating system for the house – that is a factor where we don't have any decision-making power really on that. But we do have power, how we use energy and how we work around that." R5

A renter who lives in an energy efficient home stated that their current position was down to luck, observing that they had applied and been turned down for other places that were older and less efficient. (R3) Another renter stated that they had chosen their current home based on it having a B2 rating, (R10) while yet another said they had considered moving but the higher energy efficiency of their current home was a significant factor in their decision to stay. (R4)

8.2 Factors Limiting Capacity to Make Changes

For homeowners, cost was the primary factor limiting their capacity to make changes.

> "for me, it's cost. If I was given the money tomorrow, I would go and I would research and find out how to do it and just do it." R8

> "Cost would be a huge issue. … disruption would be a part of it, yeah, of course. I mean these big retrofits don't just get done in a couple of days, I mean they're weeks or maybe longer than that." R7

> "We're new homeowners and there's just different costs left, right and centre in terms of the home," R11

One also highlighted the disruption they had experienced having work done previously and felt this was a factor discouraging them from getting further work done. (R7) For those who were renting, the biggest factor was the fact that they rented rather than owned their home so didn't have the decision-making power to change things.

> *"I think the only thing preventing is that we don't own the place, so it's not our own place to make those kind of decisions." R5*

Some people also raised other issues. One renter suggested access to technology was a constraint – he felt they could be more efficient in terms of their energy usage with better access to technology but as they didn't own the house, there wasn't much they could do. Some suggested that knowledge and awareness were key factors.

> "Probably knowledge too - I feel like I have a good overview but I don't know in depth and I think if you work through getting solar or something you become so much more mindful or conscious of all the other behaviours that may be adding to the energy bill, whereas I'm very much thinking infrastructure throughout this probably because I haven't." R4

Several people highlighted the time required to get up to speed with all the options available. One respondent also commented on the gendered element of the mental load involved in making decisions and thinking about changes.

> *"I can't think about these things if I have to factor this into all of these decisions throughout the day, I'll be exhausted. So it's kind of a time and headspace issue as well, I think and maybe invisibly I would suspect a lot of that falls on women who are also balancing 100 other kind of household considerations as well." R11*

Another suggested she has control when she is at home, but that family members tend to change their behaviours when she's not there to control energy usage. (R6)

One renter observed that living in shared accommodation, with people from different backgrounds and with different personalities, complicated his ability to make changes to his energy use.

"when you're living with other people, with different schedules you also have to respect their time - too loud, not worth it. … You can't forget that you have very different demographic profiles, and that's a reality. … you have different personalities, you have different nationalities, you have different cultures and you need to work around that to find a sweet spot." R5

At a broader societal level, one person suggested she feels a sense of frustration and inertia that no matter what she does, it's futile if bigger corporations or industry or the system at large doesn't change. (R11) Another suggested while we might have some control over who we vote for and their policies on energy use.

> *"But really, it's the big wigs, I feel who have the power to change things, corporations, industries. And do I feel have a lot of control over that? No, not really." R8*

While, as has been referenced elsewhere, several people raised the idea of behaviour change being motivated by a shift in social norms, one person did suggest that there is an opposite to this also, and that in some areas or communities, people might be disincentivised from making a change because of perceived social disapproval.

> *"I think there's that sense - and it can be a cultural thing of how much can you present that you are indulging or investing in "yourself", like I think that's something we don't talk about but is definitely swaying our behaviours, whether we realise it or not." R11*

Some of these barriers are explored further in the next section.

9. Barriers and Incentives

This section explored barriers to making changes, how much of an issue cost was for people, and whether there were any measures or incentives that might encourage them to make changes.

9.1 Barriers

As was seen in Section 8.2, the most frequently mentioned barrier was cost, whether that be to install renewable energy, or to invest in more sustainable forms of transport. Some said they would consider an initial outlay, if they knew they would make a return on their investment in the medium term; whereas for others, the initial cost is already unaffordable.

I'd be willing to pay for something if I thought it would pay for itself in five years … but it depends what it costs, and it all seems fairly pricey, you know, all of this stuff seems to be pretty expensive." R3

"we'd need to get more support now because, it's all well and good to say we'd get back what we initially put in in a couple of years … with two small kids … everything is so expensive, I would need to know that I would get the outlay costs back quickly and then more benefits." R8

One person pointed out that from their perspective, social inequality is a major factor in who can or can't afford to make changes and enjoy benefits from doing so.

"it feels like that old habit of people with certain assets or money are able then to do these things and save more money while others can't even entertain that. And then I guess that that gap or that cost comparison gets bigger for different groups of people." R11

Some people also mentioned that making changes might involve disruption to their homes. Two homeowners who already had a substantial amount of work done were put off by the idea of additional disruption. (R7, R9) Two mentioned their age as affecting their desire to make changes. (R1, R7)

"we've already done a huge amount of work in the last four years, so trying to not do a huge amount more because obviously it's quite disruptive that, that's got a knock on effect on how you live as well." R9

Knowledge and awareness, or lack thereof, were referenced by several others also. One respondent mentioned that when they start to think about the most efficient way of heating the home, they get overwhelmed by information and back away. (R11) Another who had changed her boiler felt she wasn't given the best or most appropriate advice at the time. (R2)

Two different homeowners who have made multiple changes already, feel the next logical step would be to get a heat pump. Cost for them isn't the biggest factor, but rather information and available expertise. One was resistant to doing so as she didn't have confidence that installers would recommend the best solution for her needs.

"it's a technical confidence piece. I need to be more reassured that I would get the right system for my home that could work efficiently while still leaving the few bits of draughts that we have, which I believe are quite healthy for us." R6

Another questioned whether there was a greater environmental impact in changing from a system that is currently functioning to installing a brand new system, particularly with rapidly changing technologies which might prove obsolete in five years' time. For him, financial costs are a big factor, but so are environmental costs and he would have to weigh them both up against each other to kind of think about making changes. (R9)

As mentioned in Section 8.2, for many renters, ownership was a key barrier, whereby they felt any changes to be made to the home would need to be made by the landlord.

Ownership of a house, for example. And then secondly, probably it would be financial because to be spending so much of income in rent, … I think that home insecurity, then kind of knocks on to how you can plan." R4

One suggested that at a national level, the housing crisis is a major factor but that it's up to the government to resolve this:

"if you want to do anything with climate, you first have to look at the just transition … I don't know anyone out of my friends or generation that owns a house, unless like a parent has died or something like, that's the only situation." R4

On the topic of shifting to more energy efficient or cleaner modes of transport, several people referenced the high cost of EVs as a barrier and one mentioned that cost would be a far bigger factor for them than environmental impact in influencing them to reduce flying. (R3)

9.2 Incentives to change

Most people suggested that financial incentives were crucial to encourage them to make changes. Several did mention that the current grant system is problematic in some ways. For some, the initial outlay required is already out of reach. One suggested that there should be higher grants for lower incomes, or some kind of means testing. One person who is renting suggested the grants are irrelevant for them:

"I think the grants don't unlock the problem that I'm facing, and if anything they exasperate this wealth inequality of if you can already access the grant and you already have the space and capacity, then you pay less to then have the bigger savings. So for me I have no problem with them, but also I don't think it solves the main issue." R4

For renters, several mentioned that being able to afford their own home would be the first step for them to pursuing more energy efficiency. One recommended the introduction of schemes that would allow those renting to be able to benefit from renewables.

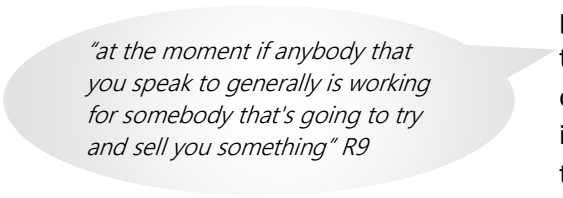
"I would love some kind of scheme that encourages renters to be able to either put pressure on or to do some kind of deal with landlords to be able to, say, bring in solar or something. I think this would be a game changer." R4

if we can get more assistance from the government, from local county councils and grants and things like that, yeah, that would be hugely beneficial and I would do it. R8

Many people suggested innovative forms of financing, whether through tax incentives or through accessible or low cost loans for cleaner energy sources would be helpful.

One suggested they would like to see alternative technologies becoming more readily available – so for example, rather than a heat pump, having access to a district heating network. (R6)

Knowledge and information were raised by multiple people as important. Several highlighted independent, expert advice - two people who had considered heat pumps felt they weren't ready to proceed due to a shortage or dearth of independent technical expertise. (R6, R9)



Another felt non-technical information from a source they felt they could trust was crucial.

"when I'm seeking information, the most useful source is someone who can talk to me as a lay person. … whether that's going to a citizens information centre and someone explaining a form or a process to me, … (or) a friend or a family member goes through a process and then I can pick their brain and understand, "OK, for a day-to-day human, what was involved?" R11

Further incentives and ideas are discussed in section 11.

10. New Technology

During the interview, the topic of new technology was explored with respondents. Of the eleven households interviewed, five have smart metres installed, four do not and two were unsure.

Of those who do have them, none had accessed their smart metre data online, and just two were monitoring their energy usage, using apps for solar panels or electric cars. (R2, R6)

Three are using smart apps on their phones to control heat and/ or hot water. One had used a smart plug to monitor consumption of a tumble dryer versus a dehumidifier for drying clothes and changed their behaviour to use the latter as it proved more efficient. (R9)

"It's great to have them because they're very informative and they certainly make you aware of your usage.... it helps you control what you use." R2

All of those using apps stated the experience was positive for them, with several mentioning greater control as a significant benefit. Three of the households who rent said they believed their landlord has access to usage data but they were not able to access it themselves. One elderly respondent does not have a smart phone and doesn't use smart technology (R1), but all the other respondents saw some benefits to using smart technology to monitor or control the use of energy in the home.

"having technology there could help us to track in real time how you're doing, how you're performing, how you're performing versus the previous month, and what improvement can you take." R5

The most cited benefit was having greater access to data, thereby having more awareness of and control over usage and being able to track usage over time. One respondent highlighted the particular benefit of this for communal spaces or when space is shared between flatmates. (R4) Another highlighted the benefit of being able to turn heating on remotely in cold weather, or off remotely if they left home and accidently left their heating on, (R9) while one also referenced the health benefits of using smart sensors to measure humidity and carbon monoxide levels as well as temperature. (R10) Two mentioned a love of technology as a motivating factor for them to use smart apps. (R6, R11)

In terms of reasons for not using smart apps, several people expressed unfamiliarity with the technology

"energy consumption on a practical day-to-day basis is something I don't understand ... you've got your kilowatt hours in your face and your cubic metres of gas. And for me it's just so abstract. I think actually being able to look at things and going oh, we didn't use that, look how different it was or the day we did use that - wow, that sucks so much more energy ... maybe being able to have that day-to-day understanding practically of "oh, these small changes are actually resulting in kind of energy use changes" R11

and lack of awareness of the benefits it might provide. One suggested talking to people who do use them might encourage her to use them herself. (R11) Two respondents mentioned they feel they are not inclined to make use of it as they tend to be at home the

"I suppose what you'd love to see is one app for your whole house. And very easy ways to programme it to do what it needs to do ... I'd be happy out to let the house monitor itself and figure out how to do it most efficiently and free up my headspace again." R6

majority of the time, and so didn't feel it was necessary to have remote access. Another felt their system was working efficiently enough that they didn't need an app to control it. (R9) One renter said they were unable to gain access to their smart metre due to an existing account being used by their landlord, (R3) while another felt their landlord was disinclined to install smart technology due to them being older. (R5)

Many respondents were initially unable to think of any drawbacks to using smart technology for managing heat and energy usage. Several highlighted wider issues around mobile technology and use – with one suggesting it provided further reliance on your mobile phone and another stating they felt overwhelmed already by how many things they were tracking and monitoring, and energy consumption was one they felt they couldn't deal with right now. (R11) Another person observed that if the power goes out, the apps won't work, and someone else pointed out that if the technology fails, you (the user) "don't know how to manage your system without the technology doing it for you". One suggested it could contribute to family conflict around who is using energy, while another suggested it could lead to users becoming obsessed with tracking their data. Three commented on issues around data privacy. One of these expressed a fear that such monitoring could be used to penalise people in the future for how they use their energy. (R11) Another did state that if they could be guaranteed of the security and accuracy of the platform they were using, this would help address their concerns. (R10)

"the data privacy element, so it depends on who's controlling the data, what they're using it for and potentially who they're selling it to. So that would be the only thing that I would have concern over." R4

Another respondent thought an initial financial outlay to install smart technology might prove off-putting. The same person said that at one point in their lives they would have been put off by being tied to thinking about energy usage but now felt awareness was a positive thing. (R8)

11. Longer Term Future Intentions/ Measures to Encourage Change

This section of the conversation revolved around future intentions, both medium and longer term and around what kind of measures might help them consider making proactive changes to their home's energy use. In terms of changes, the initial reaction from the majority of respondents was that they did not foresee any major changes to their approach to energy use in the home, without some significant incentives or financial assistance.

In terms of using energy within the home, several respondents observed that the only likelihood of a change happening was if the numbers living in the household were to change – so one woman in her 70s living alone suggested, if for some reason more people came to live in her house, usage might increase slightly but she didn't expect it to be substantial, (R2) while two respondents with school-going children mentioned if/ when their children move out to go to college, they would see their usage reducing significantly as a result of there being fewer people in the home. (R6, R8) One person who works from home suggested if she were to go back to work outside the home, it would have a knock-on effect:

"not because of the energy I use when I'm here, but more because I'm not here to monitor everything". R8

Three people referenced the fact that they would like to get an electric vehicle (R3, R4, R11), with two of these recognising this might increase their energy usage at home (R4, R11).

In terms of energy efficiency measures at a wider societal level and changes to the housing stock, there was a mixed level of response. Several people said they would probably have changed to heat pumps in 10 years time.

> *I would say I do think about it. I know it's not sustainable. I know maybe in my lifetime we might still use gas predominantly, but I know for my children, they're not going to be using gas, so I know it's not sustainable either, so I often wonder what will that look like." R8*

One person referenced the idea of a smart home and suggested that would be much further developed in 10 years. Behaviour change was mentioned by several respondents.

"even personal behaviour … I think we need to move towards a more sustainable approach in the way we use electricity and we use energy … there is a lot of options that you can explore and therefore work on to find the right balance in the way you use energy." R5

At a national level, one respondent suggested there would be significant change "as Ireland is a pioneer in the renewable energy", suggesting perhaps "home scale wind turbine to produce electricity" would be available for homes in Ireland. Another referenced offshore wind and the electrification of everything. (R6) Several mentioned the importance of community-owned energy and one also discussed self-sufficiency. (R4)

> *"I would definitely hope by 10 years … more hopefully, community owned groups to be able to take your energy from. I think this would be big. I would love more self-sufficiency when it comes to energy within Ireland. R4*

With regards to what might incentivise people to make changes, longer term measures were very similar to those seen in response to barriers in section 8. Government supports (grants, incentives or tax breaks) were seen as key by most respondents, and one mentioned a fall in the cost of living. (R8) Another suggested a role for ethical oversight in ensuring profits made from renewable technologies were fair rather than exorbitant. (R11)

> *"What would encourage it would be - you know any kind of financial incentive, whether it's with upfront cost or tax breaks overtime to help pay for it or you know, I know with some of the solar stuff you can sell back to the grid …. You know, having the money to spend on the stuff. Or yeah, like even maybe loans … if you were gonna get it back overtime, maybe I'm not sure about that one." R3*

Multiple people said they would be interested in getting involved in local community energy schemes. Several also referenced themes around knowledge and information and the need for reliable, independent advice. One mentioned being able to chat to neighbours or friends who have had work done would be helpful, suggesting talks in their local library involving local community members. (R11) Another thought this was even more important than the availability of grants:

"I think the grants are definitely a help, but I do think … the difference between talking to someone who's gone through that journey or kind of has that mentorship ability or even like one community group that can then give advice I think that would be bigger than grants, although I would really love to see grants based on people's ability to afford also come in." R4

Another suggested having an independent advice service with technical expertise and knowledge of grants available was crucial.

> *"having somebody independent of a salesperson that can give you that information I think would be hugely beneficial. … it needs to be independent because at the moment it's very, very difficult to get any independent advice that doesn't come with the weight of somebody trying to make a sale" R9*

For those living in rental accommodation, one noted a goal of having their own place within 10 years and stated home ownership would encourage them to take a more proactive approach to seeking out greener sources of energy, being more efficient and using technology to help keep track of their usage. (R5) As previously referenced in Section 9, one renter advocated for a scheme that would allow renters to benefit from solar PV.

Another renter stated:

> "if we do end up trying to buy somewhere, if we're able to in Ireland I will be thinking about energy … it won't necessarily be the deciding factor. You know, I wouldn't rule out an energy inefficient/ an older house … the stock isn't huge in Dublin and so it would depend what's out there and what it costs and what we could afford." R3

Another expressed a hope that even if they are still renting in 10 years, that all homes would be better insulated, and having solar would be more of a norm. (R4)

This idea of renewables as a social norm was also reflected by other respondents, with one mentioning their desire to have access to a district heating system and another stating:

> "I would love to see it get cheaper, more widespread, and then maybe as a result, it becomes kind of woven into our social expectations so maybe we feel a little more motivated to get on board the train." (R11)

12.Additional Points

When asked if there was anything else they would like to ask or add, several respondents touched on issues around public awareness and behaviour change, the gap between knowledge and action, and highlighted the importance of media coverage and ongoing conversations. One respondent expressed a hope that the topic is now woven into the education system and as a result the next generation will make better decisions. (R11)

> "It would be interesting to understand more about what is that gap between the intellectual understanding and agreements of why it's important and then taking personal action. And I guess there's so much around social behaviour change that has to happen there … as a country anyway, if we managed to hit that nail on the head, we'd be doing well." R11

> "Shifting behaviour is "the big one, isn't it? You know how do you shift behaviours? How do you reach people's hearts and minds? … finding those different ways to communicate to people, so they'll actually hear, listen, feel and then take action." R6

One touched on the importance of highlighting co-benefits of taking action – not just insulating homes but also making them more comfortable and reducing energy use. Another respondent who has a young child observed that one of the side benefits he has experienced of having a heat pump is the water temperature – while they have hot water on demand, he finds it comforting that it is not so hot that the baby might accidentally get scalded. (R3)

At a broader scale, one respondent referenced the issue of energy security and the importance of being able to produce the energy you require. (R5) Another suggested that people in Ireland are more aware of their energy consumption than his compatriots as a result of very large subsidies on energy in his home country. (R10)

Four of the eleven respondents expressed an interest in seeing the outcome of this research – both from a desire to better understand the issues surrounding energy use at home and also to learn from other respondents' perspectives. One also touched on how just having a conversation about energy use as part of the interview would give them pause for thought and potentially influence their decisions on energy going forward.

13. Reflection

Given the nature of this piece of work, with a small number of participants and a limited timeframe, it cannot provide silver-bullet solutions to the challenges of the energy transition. However, it can and does serve as a reflection of the lived experience of a group of householders in Ireland, providing a flavour of their concerns and issues.

Many of the elements raised during these interviews have been explored in other research and contexts. For example, in the "Climate Change in the Irish Mind Wave 2 Report 1" for the EPA, O'Mahony et.al (2024) found most people in Ireland support government grants to encourage residential and commercial building owners to install cleaner and more efficient heating systems and helping to pay for energy efficiency improvements in low-income households.[14]

[14] O'Mahony, D., Quinlan, C., Cotter, D., Rochford, M. F., Leiserowitz, A. Regan, A. Carman, J., and Rosenthal, S. (2024). Climate Change in the Irish Mind: Wave 2, Report 1. Johnstown estate, Wexford: Environmental

Similarly, the 2022 OECD "Environmental Policies and Individual Behaviour Change (EPIC) Survey" [15], explored what drives household behaviour and how policies may affect household decisions in nine OECD countries (not including Ireland) on four topics. The resulting report includes a chapter on household behaviour and residential energy use. The key findings of this chapter included a higher likelihood of households practising easily adopted energy-saving actions such as turning off the lights, than actions which are harder to adopt or could reduce comfort, such as minimising the use of heating or cooling. It also found uptake of renewable energy and low-emissions energy technologies was not widespread, and was particularly low for technologies that are costly or not well-understood.

As such, many of the points raised in these interviews resonate beyond this sample. While they may not all be new or unique to the respondents here, their responses provide a snapshot of the perspectives of householders – and capture some of the salient issues on energy in the home at this point in time. This work helps to put them in context.

Key issues touch on affordability, reducing consumption, informed decision making and comfort and security. Many perceived that cost was a significant barrier to making improvements to the fabric of their homes. Several have already made positive changes in appliance use and when and how they use their heating, but most didn't expect to make any significant changes to their consumption in the immediate future. Access to accurate and trustworthy information was raised as an important enabler of making changes. Independence, security and comfort provided by a clean energy supply also came through in different interviews.

The Irish government has committed to ensuring individuals and communities are at the heart of the low-carbon transition[16] and to empowering them to take action, including through support for micro-generation[17]. Many households are struggling with energy bills and the cost of living crisis is still impacting many people. The majority of the people interviewed for this research, while able to pay their bills, did struggle to see how they themselves might afford to participate in or benefit from the energy transition. Interviewees felt that **while grants are helpful, they need to be targeted more towards those who need them, and take into account those who don't own their homes.** They also suggested that greater communication of what was available in terms of financial supports and mechanisms would be beneficial.

A key takeaway from talking to households is that there seems to be a missed opportunity here. The energy transition has the potential to reduce costs, increase security and provide more comfortable, healthier homes and living environments for people across Ireland, but this message doesn't seem to be hitting home. The idea of energy efficiency as a double win resonated particularly – for most people interviewed, financial issues took precedence over environmental issues, while for some both were important. **Along with providing financial support for people to make changes in their homes, the message that the transition is good for the planet and for people's pocket could increase widespread awareness if it is communicated more clearly and frequently.**

Protection Agency. Available at: https://www.epa.ie/publications/monitoring--assessment/climate-change/climate-change-in-the-irish-mind-wave-2-report-1.php

[15] OECD (2023), How Green is Household Behaviour?: Sustainable Choices in a Time of Interlocking Crises, OECD Studies on Environmental Policy and Household Behaviour, OECD Publishing, Paris, https://doi.org/10.1787/2bbbb663-en.

[16] Government of Ireland, 'Climate Action Plan 2024'. Available at: www.gov.ie/pdf/?file=https://assets.gov.ie/284675/70922dc5-1480-4c2e-830e-295afd0b5356.pdf#page=null

[17] https://www.gov.ie/en/press-release/bfe21-homes-farms-businesses-and-communities-to-benefit-as-minister-ryan-announces-the-micro-generation-support-scheme/

Interestingly, and reflective of the OECD (EPIC) Survey[18], among those interviewed, some behaviour changes seem almost embedded – such as switching to energy saving light bulbs or the ubiquity of air fryers. Others that could prove beneficial to many people, like the use of smart apps or tools to control and monitor heating and energy are not yet widespread. As one person pointed out, the information available to the average householder feels quite abstract – everyone pays bills on a regular basis, yet many people struggle to understand their usage. None of those interviewed are making use of their smart metre data. In the UK, smart metre in-home displays have been installed as part of smart metre rollout, with Citizens Advice services helping householders use them to understand and reduce their energy use.[19] **While some energy efficiency measures already prove popular with interviewees, there is an opportunity to increase availability and accessibility of other measures to help householders understand and control their energy use and to see where they can achieve reductions in use and cost.**

On a related note, another key takeaway from these interviews is the need for more easily accessible, trustworthy information around retrofitting homes and energy efficiency measures. Even those who had already had a substantial amount of work done to their homes and seemed informed, felt they didn't know where to go for trusted information. Submissions to Ireland's Energy Poverty Action Plan included a recommendation to introduce local energy advisors to advise people on energy use and on energy efficiency upgrades.[20] While the One Stop Shop services supported by SEAI[21] can provide information and advice, the fact that they are often providing retrofit services at the same time detracts from the perception of independence – as seen in Section 9.2, and Section 11. Based on the desire for clear, independent advice coming through from respondents, it could be worth giving **consideration to some form of easily accessible, independent advice service that can provide a combination of easy-to-understand information, technical expertise and knowledge of grants available.**

Finally, related to the sense of powerlessness expressed by several interviewees - as long as people perceive there is an unfair burden on particular sections of society, or feel systemic issues beyond their control are minimising the impact of any actions they may take, they will be less motivated to take action. In Ireland's Climate Change Assessment (ICCA) Volume 4, published by the EPA, Moriarty et al (2023) propose that prioritising justice and equity within public policies can contribute to garnering societal support for change.[22] As proposed by the report, **a national vision and strategy for Ireland's sustainable energy could help to ensure buy-in for all citizens and drive the transformational change needed.**

08 November 2024

[18] OECD (2023), How Green is Household Behaviour?: Sustainable Choices in a Time of Interlocking Crises, OECD Studies on Environmental Policy and Household Behaviour, OECD Publishing, Paris, https://doi.org/10.1787/2bbbb663-en.

[19] https://www.citizensadvice.org.uk/consumer/energy/energy-supply/your-energy-meter/using-the-energy-monitor-for-your-smart-meter/

[21] https://www.seai.ie/grants/home-energy-grants/one-stop-shop

[21] https://www.seai.ie/grants/home-energy-grants/one-stop-shop

[22] Róisín Moriarty, Tadhg O'Mahony and Agnieszka Stefaniec, Jean L. Boucher, Brian Caulfield, Hannah Daly and Diarmuid Torney, 2023, IRELAND'S CLIMATE CHANGE ASSESSMENT Volume 4: Realising the Benefits of Transition and Transformation, Environmental Protection Agency, Ireland, 284 pp. Available at: https://www.epa.ie/publications/monitoring--assessment/climate-change/ICCA_Volume-4-SPM.pd

Appendices

Appendix 1: Interview - Guiding Questions

Current experience of energy -power and heat

1. Is how you power and heat your home something you think much about? In what ways?
2. Every household is different. Are there particular things you tend to do (or tend not to do) in terms of heat and electricity use (e.g. when you use appliances or put the heating on)? If so, what is your main reason?
3. Are there things you do differently now than you did five years ago in heating or in when and how you use electricity?
4. If you've made any changes, what are they and would you say they have been positive or negative?

Awareness- changes in how they power and heat their homes? Appreciation of the energy transition and changes for households. What information do they have?

5. Is the climate impact of fossil fuels (coal, peat, oil, gas) for energy something you think much about? What do you understand by the term "energy transition"? What have you heard about the urgency of switching to renewable energy? Where did you hear about this?
6. How do you think this will affect you?

Opportunities- are there particular benefits or opportunities they see for them?

7. Do you see any potential benefits or opportunities for your household with the energy transition? (e.g., lower energy bills, improved home comfort)
8. Are there specific technologies or practices you think could benefit your household – what would you like to see in the next 5 years?

Actions- have they undertaken or planned any energy efficiency or technology changes in the near future? If actions taken, such as retrofitting, using solar PV or heat pumps for example, what was their experience of this? Barriers- what are the obstacles they face in changing to more energy efficient, low fossil fuel heating and power?

9. Have you made or are you planning any changes to make your home more energy efficient or in how you use energy in your home?
10. If yes, how was this experience for you?
11. If no, what would you say is preventing you? Is there anything that would encourage you to make changes?
12. How much is cost an issue for you in terms of managing the bills and making changes?

Capacity- How much control/capacity do they feel they have over decisions in what and how they use power and heat? What other capacity concerns do they have?

13. How much control do you feel you have over decisions about how your home uses energy?
14. Do you feel some things limit your capacity to make changes? (e.g., tenancy agreements, financial issues)
15. Are there any other issues that you feel affect your ability to make decisions about your energy use? (e.g. technology, knowledge)

Digital/AI- what do they think about smart meters and smart apps/AI that could help manage heat and power options?

16. Do you have a smart meter? Do you use any other smart apps or technology in your home? What has been your experience with this? What do you think are the main benefits/ drawbacks of smart meters or technology for managing heat and energy usage?

Measures - what, if any, measures would help them make a change in the near future? What do they see for their household in 10 years' time in terms of heat and power?

17. How do you see your/ your home's energy use changing in the next couple of years? How about in 10 years' time? Can you think of any measures that might help you consider making proactive changes to your home's energy use? (e.g., government grants, community programs)

Conclusion:

18. Do you have any questions? Do you have anything else you would like to share about your experiences or thoughts on en ergy use or the energy transition?

	Housing Type, Period Built/ Age of House	Tenure	Occupants	Occupants - breakdown	Bed Rooms (0= Unknown)	Heating	Location	BER Rating (0= Unknown)	Energy Efficient Home (Perception)	Usage*	Usage (Can you provide details on your energy usage? (e.g. monthly bill costs, units used)	Changes Made	Thinks about energy use ^	Understanding of energy efficiency
R1	Detached, 1940s	Home owner	1	M, Irish, retired, 86yo	3	Stanley range, gas bottle cooker, small electric heaters	Rural	0	Yes	1	No, don't get bills anymore, someone used to come and read the metre but hasn't for several years.	None	1	Not to be wasting energy
R2	Detached, late 1990s	Home owner	1	F, Irish , publican, 73yo	5	Oil, wood fired stove	Rural	B1	Yes	1	Not provided	New boiler, solar panels installed.	5	That I use energy as efficiently as possible
R3	Apartment, new build	Renter	3	2 adults, Irish, American, ages 1-48	3	Heat pump	Suburban	A3	Yes	1	Yes	No	3	Power home with minimum wasted energy.
R4	Apartment, 40+ years old	Renter	2	Ages 31-34, Irish	2	Other Electric Heating	Rural village	0	Middle	1	annual consumption is 6581 kWh in but we only have electricity (no gas, oil etc) and it's on a 100% green scheme	No	3	Having good insulation as a start, being responsible with amount you use energy / for what, exploring leaks or high intensity use machines or where standby continues to needlessly consume energy etc
R5	Shared semi-detached house, 25-30 years old	Renter	4	25-35, 2 Chinese, 2 Latin American	4 (3+1 added by converting garage)	Oil heating	Urban	0	Yes	2	350 euros	House refurbished, pipes replaced, radiators serviced	3	Energy efficiency in the home refers to the practice of using less energy to perform the same tasks
R6	Detached house, 30 years old	Home owner	5	2 adults, Irish, ages 9-51	3 (4-1 for office)	Oil, wood fired stove	Rural	B1	Yes	3	Annual consumption is 8429kWh. This includes EV charging. Approximately 66% of our usage is at night time	Renovated 2015, solar panels added 2020	5	Reducing energy use where practicable (kettles, lights, appliances); maximising use of solar generated energy; running appliances out of peak times
R7	Detached house, 50 years old	Home owner	2	30, 71, Irish, 1 with additional needs	4	Mainly stove, also oil	Rural	C3	Middle	2	Electric Ireland 140 monthly	2015 - insulated walls, triple glazed windows, changed the oil boiler and insulated cylinder	5	Having my home insulated and up to date technology
R8	Semi-detached house, 18 yrs old,	Home owner	4	2 adults, Irish, ages 6-43	4	Gas	Suburban	B1	Yes	2	No	Installed a gas fire. Upgraded front/back doors and patio doors.	5	How much energy is generated, retained and used at the lowest cost
R9	Detached house, 43 yrs old	Home owner	2	2 adults, 1 Irish, 1 EU, ages 35-45	3	Oil	Rural	D1	Don't know	1	2001kwh electricity in 2023 6210kwh of oil used Oct 23- Oct 24	Roof replaced, insulation, plumbing and heating redone, windows replaced	5	How much energy potential is lost due to inefficiency in the heating systems / insulation values unit the property
R10	Shared duplex apartment, <5 yrs old	Renter	2	2 adults, 1 Middle Eastern, 1 African, ages 32	2	Gas	Urban	B1	Yes	1	150 Euros monthly bill costs	No	3	the effective periods of turning on the heating system to reduce billing
R11	Terraced house, 40 yrs old,	Home owner	2	2 adults, 1 Irish, 1 EU, ages 38-45	3	Gas	Suburban	D1	No	2	Most recent bill was 598 kWh	No	2	Understanding and decreasing how much energy is used in the home to do home tasks
OR12	Detached, unknown	Home owner	2	1 adult, Irish, ages 14-50	0	Gas	Urban	E1 (2017)	No	1	No	Attic insulation, smart meter installed	0	reducing energy by using less or doing more to the house so it needs less to keep us warm
OR13	Semi-Detached, unknown	Renter	3	2 adults, Irish, ages 24 - 41	0	Oil	Rural	0	Yes	1	€200 every three months	No	0	less drafts, warmer house
OR14	Semi-Detached, unknown	Renter	4	2 adults, Irish, ages 6 mo-43,	0	Gas	Urban	0	No	2	Our yearly electricity and gas combined bill is around €1700 for a three bed semi detached house with two adults and two kids. This includes the government payment. This figure is roughly the same as last year.	No	0	I would relate it to conserving energy on a personal level but also the ability of your home and your situation to be able to achieve this.
OR15	Detached, 50 yrs	Home owner	4	4 adults, Irish, ages 26-61	4	Gas	Urban	C1	Yes	3	€400+ per quarter for electricity, average of €50 per week for gas	House was recently insulated and wrapped	5	How well the heating is retained and how little energy used to heat and power the home
OR16	Apartment, 30+ yrs	Renter	4	4 adults, ages 22-31	4	Oil	Urban	0	No	3	Each two months the electricity bill is around 500 euro + 2-3 times refiling the oil tank about 300 litres and around 400 euro cost in each case	No	1	Consuming energy as low as possible and with the least carbon emission
OR17	Apartment, 16 yrs	Renter	2	2 adults, ages 33	2	Gas	Suburban	0	Yes	1	€50 per month Gas bill	Not specified	4	
OR18	Semi-Detached, 40 yrs	Renter	1	1 adult, age 39	1	Other electric heating	Urban	0	Yes	2	Not provided	Not specified	3	
OR19	Detached, 30 yrs	Renter	2	2 adults, age 33	2	Oil	Urban	0	Yes	3	Not provided	No	3	
OR20	Detached, 99 yrs	Renter	1	1 adult, Irish, age34	4	Oil	Rural	0	No	0	Approximately 30 euro per month for electricity. 275 euro per month on average for oil.	I added a thermodynamic panel on the roof for heating water but it broke	5	Minimal usage of energy for maximal heating and appliance usage. No wasted energy.
OR21	Semi-Detached, 20 yrs	Home owner	3	2 adults, Irish, ages <1-38,	3	Oil	Rural	B3	No	2	Not provided	Updated oil burner, insulation, stove	4	To use the least amount of energy possible using sustainable methods

Household Energy Use Survey

Thank you for considering taking part in this research on households and energy, which is being conducted on behalf of the National Economic & Social Council (NESC). This short study is exploring the perspectives of a small number of people on how they heat and power their homes, now and into the future. NESC is public advisory body that looks at strategic policy issues relating to sustainable economic, social and environmental development in Ireland. NESC is currently looking at energy in Ireland and the changes underway to make it more sustainable as we move from using fossil fuels. More details on this overall NESC work can be found here: https://www.nesc.ie/work-programme/sustainable-development-and-climate-action/energy/

Taking part in this study is completely voluntary. Should you choose to participate, please complete this short questionnaire on your household and your energy use. The survey will close on 23 September. All questions are optic All of the information you provide will be kept confidential and anonymous and will be available only to the researche the NESC project manager.

A small number of households will subsequently be invited to take part in a one-to-one interview with the researcher. Each interview will last approximately 45 minutes to 1 hour. There is no obligation to participate, and should you choose to do so, you can refuse to answer specific questions, or decide to withdraw from the interview at any stage.

1. Email *

Please describe your home (please tick all that apply)

2. Building Type

Tick all that apply.

- [ ] Apartment
- [ ] Semi-Detached
- [ ] Detached
- [ ] Other:

3. Tenure

Tick all that apply.

- [ ] I own my home
- [ ] I rent my home
- [ ] I live in shared accommodation
- [ ] Other:

4. How old is your home?

5. How many bedrooms does it have?

6. Location

Tick all that apply.

- [ ] Urban
- [ ] Suburban
- [ ] Rural

7. Which county do you live in?

Your Household

Please provide details about the people in your household

8. Number of people

9. Ages

10. Occupations

11. Ethnicity/ Race

12. Any other details:

Home Energy

13. Do you know the BER rating of your home?

Mark only one oval.

- ◯ Yes
- ◯ No

14. If Yes, please provide it:

15. How do you heat your home?

Mark only one oval.

- ◯ Oil
- ◯ Gas
- ◯ Stove
- ◯ Heat pump
- ◯ Other electric heating
- ◯ Other:

16. What do you understand by "energy efficiency" in the home?

17. Do you consider your home to be energy efficient?

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ I don't know

Average Energy Use

For information, the Commission for Regulation of Utilities (cru.ie) estimates that the average Irish household uses 4,200 kWh of electricity and 11,000 kWh of gas annually.

18. Do you think your annual energy usage is above, below or about average?

Mark only one oval.

- ◯ Above average
- ◯ Below average
- ◯ About average
- ◯ I don't know
- ◯ Other:

19. Can you provide details on your energy usage? (e.g. monthly bill costs, units used)

20. Have you made any recent changes to how you heat or power your home? If so, please briefly describe:

21. Is how you use energy in your home something you think about?

Mark only one oval.

	1	2	3	4	5	
Never	◯	◯	◯	◯	◯	Often

22. If so, please provide more detail.

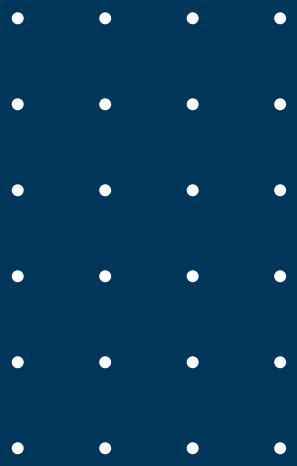
Follow on interview

Following completion of this survey, a small number of households will be invited to take part in a one-to-one interview with the researcher. Each interview will last approximately 45 minutes to 1 hour. There is no obligation to participate, and should you choose to do so, you can refuse to answer specific questions, or decide to withdraw from the interview.

23. Please provide your contact details below if you are willing to participate in a follow on interview.

Thank you

Thank you for completing this survey.



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