



Cratloe Sustainable Energy Community
Energy Masterplan

Document Control Sheet

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Building Energy Rating (BER)	An energy label with accompanying advisory report for homes. A BER makes the energy performance of a home visible to prospective buyers and tenants.
Central Statistics Office (CSO)	The Central Statistics Office is the statistical agency responsible for the gathering of “information relating to economic, social and general activities and conditions” in Ireland.
Deep Retrofit	The Deep Retrofit of a home means carrying out multiple energy upgrades all at once to achieve a B2 BER rating.
Energy Master Plan (EMP)	This is a vehicle to help implement sustainable strategies within a community.
Energy Poor	A household is energy poor, if/when that household is unable to achieve an adequate (i.e., comfortable, and safe) standard of warmth, and supply of energy services at an affordable cost.
Cratloe Sustainable Energy Community (Cratloe SEC)	The Cratloe Sustainable Energy Community (Cratloe SEC) address the many issues that have impacted on the development of Cratloe village. Cratloe SEC has developed and oversees the implementation of a Strategy and Action Plan to revitalise the village. The SEC and its partners and stakeholders are working to deliver numerous projects in the areas of Enterprise, Social Inclusion, Education, Public Realm and the Environment, with many more to come.
Nearly Zero Energy Building (NZEB)	Nearly Zero Energy Buildings’ means a building that has a very high energy performance, in which “the nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby “.
ORS	ORS is a prominent Irish multidisciplinary building consultancy offering design, planning and management advice that is supported by expert guidance in energy efficiency. With a team of highly skilled designers, consulting engineers, planners, scientists, and surveyors ORS’s mission is to design and build a better world by delivering sustainable solutions for their clients and creating a supportive workplace for our people.
Renewable Electricity Support Scheme (RESS)	The Renewable Electricity Support Scheme aims to promote the generation of electricity from renewable sources by providing financial support to renewable electricity projects in Ireland, including communities.
Register of Opportunities (RoO)	A Register of Opportunities is for recording all opportunities for energy savings & renewable energy technologies.
Sustainable Energy Authority of Ireland (SEAI)	Ireland’s national sustainable energy authority.
Sustainable Energy Community (SEC)	A Sustainable Energy Community (SEC) is a community in which everyone works together to develop a sustainable energy system. To do so, they aim as far as possible to be energy efficient, to use renewable energy where feasible and to develop decentralised energy supplies



Introduction - Cratloe

Cratloe is a village in Clare, situated between Limerick and Shannon in the mid-west of Ireland. The present-day community of Cratloe consists of the former parish of Kilfintinan and a portion of the contemporary parish of Killeely.

The N18, which connects Limerick and Galway, passes through Cratloe. This diverges near the parish border, providing local access to Limerick city or direct access to the M7 and Dublin/Cork roads via the Limerick Tunnel. Shannon Airport is located 15 km away from the village.

The Cratloe Community Plan, which was completed by Cratloe Community Council (supported by LEADER) in January 2021, highlighted the community's interest in becoming a more sustainable and resource-efficient community. Registering as a Sustainable Energy Community in partnership with the Sustainable Energy Authority of Ireland in Spring of 2021 was one of the first steps on this journey.

The Cratloe SEC is now a new sub-group of Cratloe Community Council and attends/provides updates at monthly CCC meetings. The Cratloe Tidy Towns Co-Ordinator is also a member of the Cratloe SEC group. One SEC volunteer is a member of the Cratloe Community Solar group, which explored the possibility of a community-owned solar farm project in the region, however this has stalled due to non-viability. The SEC group has direct links to the local school, GAA & Camogie club, scouts, parish council as well as other local clubs and groups.

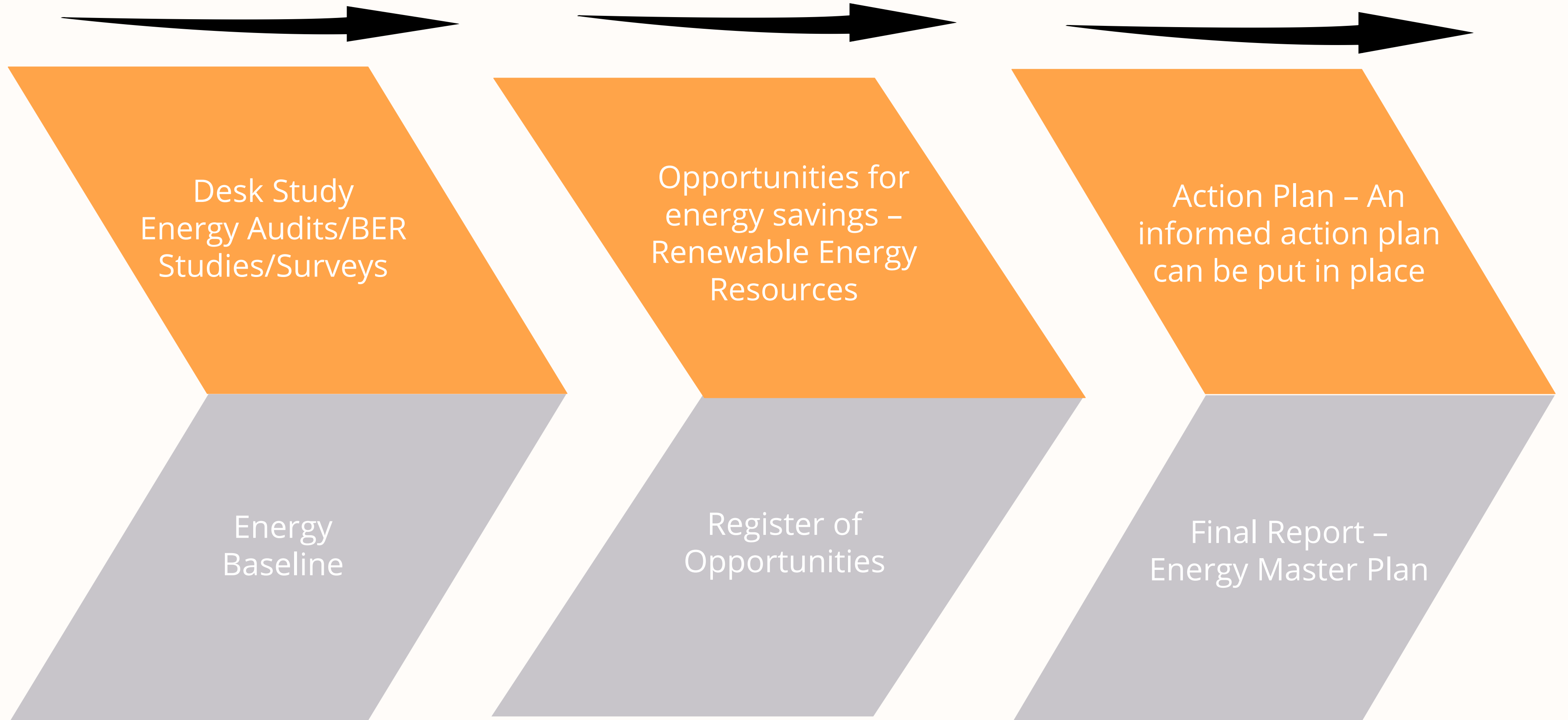
Cratloe SEC publishes information in the community newsletter, which is hand-delivered by volunteers to all households in the community. Cratloe Community Council received SEAI funding to complete an energy retrofit of the Community Hall in 2016, resulting in three new replacement doors, new remotely controlled heating system and upgraded lighting.

Further to the above, there is strong community support for the proposed reopening of the old Cratloe train station, included as a proposed stop in the current National Development Plan (2021 – 2030). Cratloe is currently on the Limerick to Ennis line. A new rail spur is proposed from Cratloe to Shannon.



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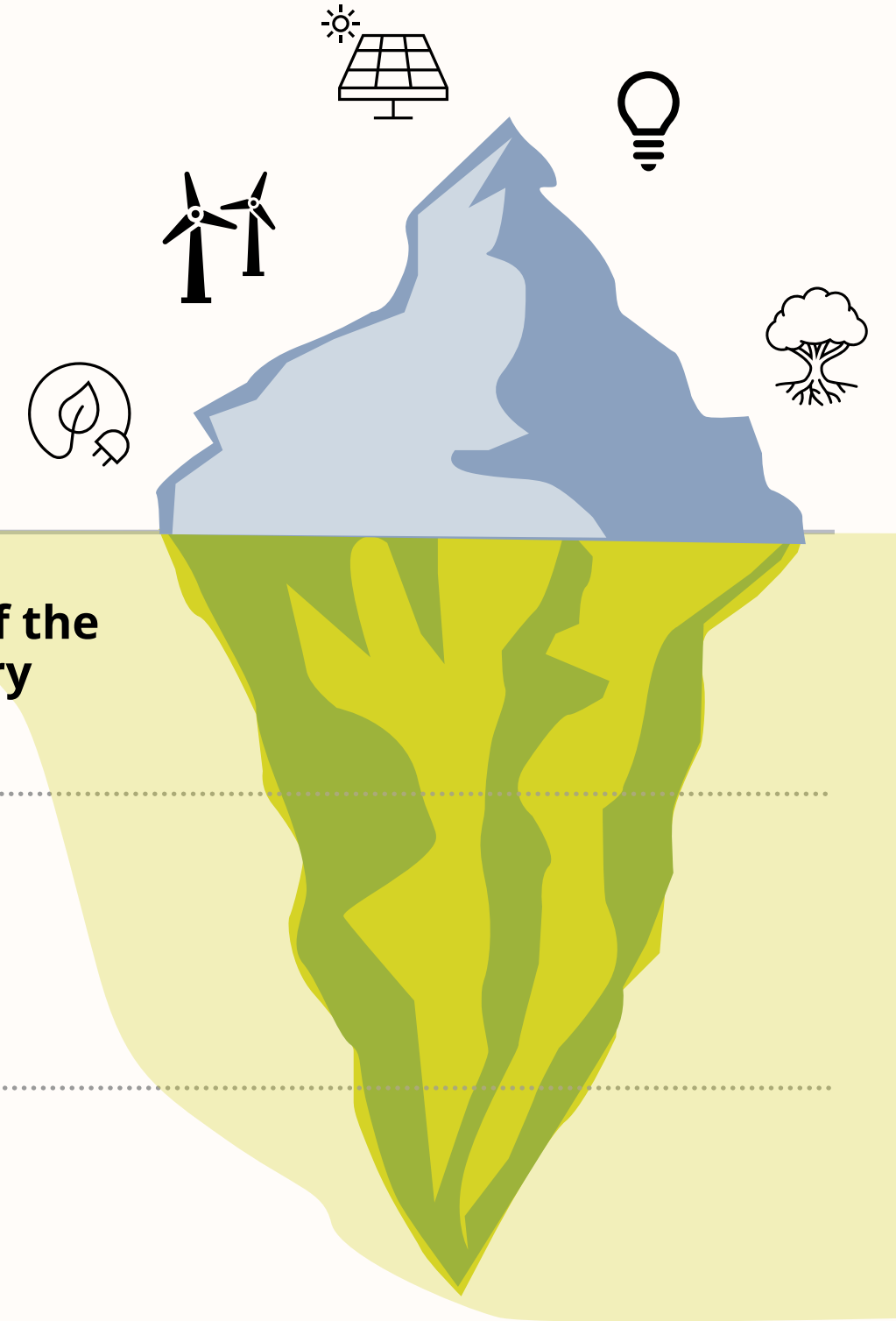
Energy Master Plan The Process



Energy Master Plan The Workplan

Work Plan for **Sustainable Energy Community**, Energy Master Plan

What we see



1. Kick-Off Meeting with Cratloe SEC

2. Development & Implementation of Data Collection & Community Engagement Survey

3. Design and Set up the Baseline Energy Balance

4. Domestic & Non-Domestic/Community Building Energy Audits

5. Design & Set up Register of Opportunities

6. Progress Updates on the EMP

7. Complete 2 Drafts of the EMP Report & Summary

8. Complete Final EMP Report & Summary

To move the community of Cratloe to a space of low carbon emissions, an understanding must first be developed regarding the current energy performance of the area in question. This study will focus on 3 core areas of energy use, consisting of the following:

- 1) Residential
- 2) Community/Non-Domestic
- 3) Transport

In understanding the current energy performance, a baseline is identified. This baseline focused on energy used annually (kWh/yr.), energy spend annually (€/yr.) and carbon emissions annual (kgCO₂/yr.) for all of the above.

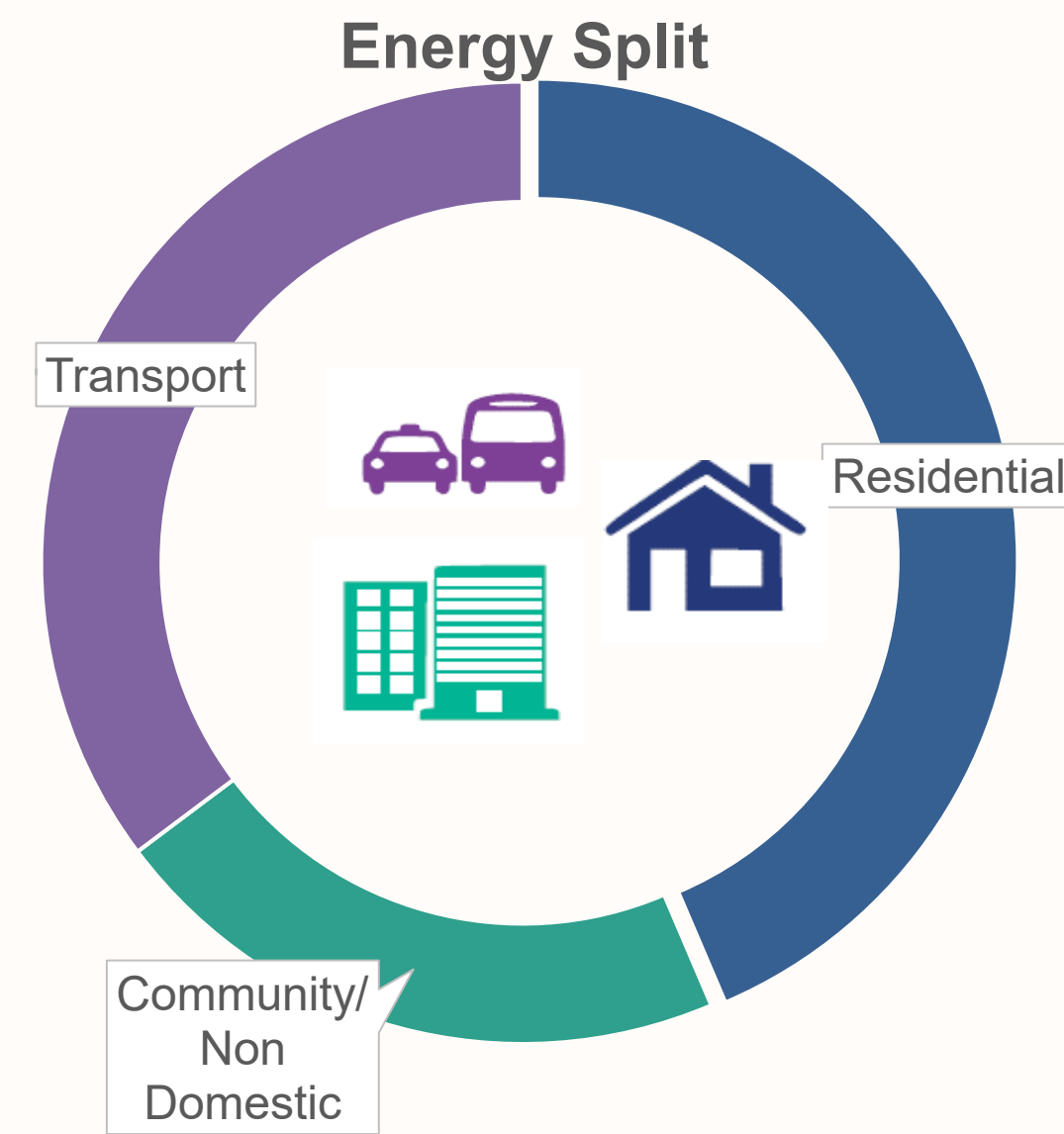
Using various verified sources, such as the National CSO & SEAI BER database, alongside benchmarking and statistics from the NTA, the baseline analysis for Cratloe was complete. A summary of this can be seen in table 1 opposite.

The data presented indicates that the residential sector is the leading energy user within the SEC catchment, contributing toward 44% of the overall energy split for the region. This is followed by the transport sector. The source of fuel used most predominantly within the residential sector is oil.

This information is helpful in understanding where the SEC should prioritise action to ensure the most impact result is achieved. A breakdown of this information is provided in the following pages.

Cratloe Energy Baseline				
Sector	Annual Energy Use (kWh/yr.)	Annual Carbon Emissions (kg CO ₂ /yr.)	Annual Energy Cost (€/yr.)	Percentage Energy Split (%)
Residential	19,052,740	5,205,209	€4,451,787	44%
Community/Non Domestic	9,256,332	2,659,130	€1,807,896	21%
Transport	15,407,862	3,631,787	€6,940,206	35%
Total	43,716,934	11,496,126	€13,199,889	100%

Table 1



The residential profile of Cratloe is typical of many rural communities throughout Ireland with a significant proportion of private housing throughout the countryside and village combined with smaller housing estates developed in more recent times.

Analysis of the CSO data alongside general data from the SEAI has been combined to produce a background picture of the housing sector and the surrounding areas highlighted in the map to the right. This data, along with the results of the SEAI's BER Heatmap data, and the community survey, develops a strong understanding regarding energy efficiency in Cratloe for homeowners.

To review the residential sector, national residential data was obtained from the Central Statistics office (CSO). The CSO's Small Area Population Statistics (SAPS) listed the housing stock present in the area by house type and year of construction. 679 dwellings are recorded.

Building Energy Rating data indicates that the average dwelling assessed in Cratloe consumed approximately 236.9 kWh/m²/yr., or a D1 BER when compared against the average dwelling size for Ireland (156m²). BER certificates are present for only 15% of the total dwellings registered within the CSO data. However, further analysis from the registered list of homes within the CSO data, in respect to dwelling age, when analysed against benchmark energy performance for same, estimated the average energy performance within the community to be much higher, at 43,188 kWh/yr., or a D2 BER.

Total residential energy use:

	Electricity	Fossil Fuel	Renewables	Total
Energy (kWh/yr.)	4,572,658	13,527,445	952,637	19,052,740
Carbon Emissions (kgCO ₂ /yr.)	1,249,250	3,955,959	-	5,205,209
Cost (€/yr.)	€1,068,429	€3,160,769	€222,589	€4,451,787

Average household energy use:

	Electricity	Fossil Fuel	Renewables	Total
Energy (kWh/yr.)	6,734	19,923	1,403	28,060
Carbon Emissions (kgCO ₂ /yr.)	1,840	5,826	-	7,666
Cost (€/yr.)	€1,574	€4,655	€328	€6,556

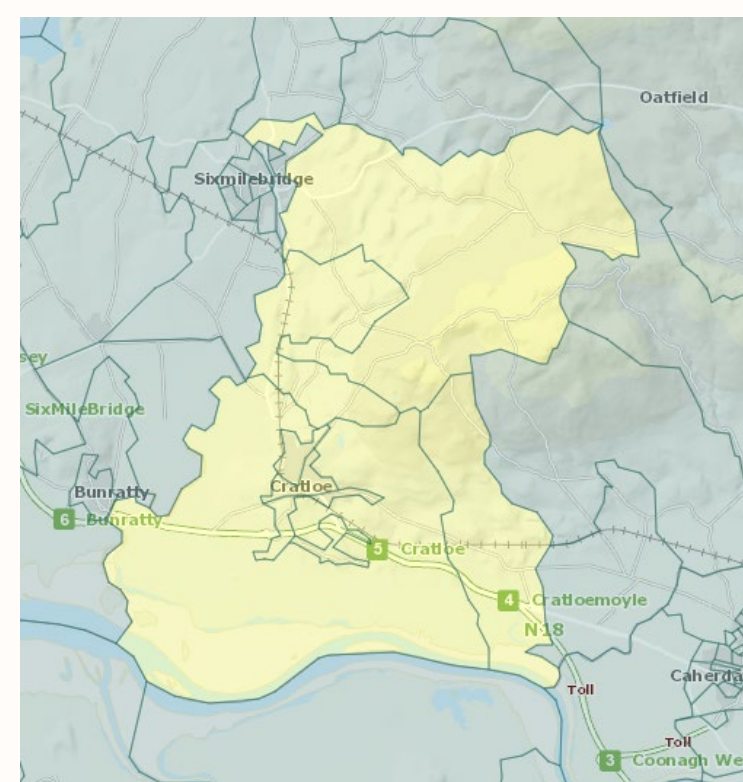
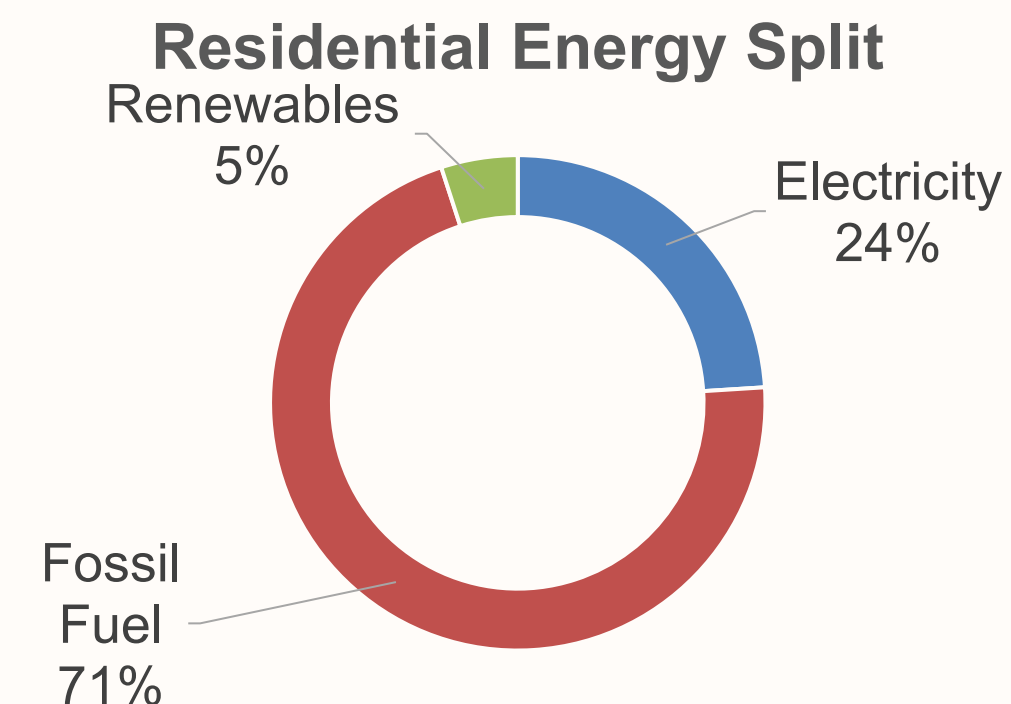


Figure 1



The Cratloe SEC EMP catchment zone combines the village of Cratloe and surrounding areas as shown in figure 1 of the pervious slide. This data reports a total population of 2,031 people and 679 households.

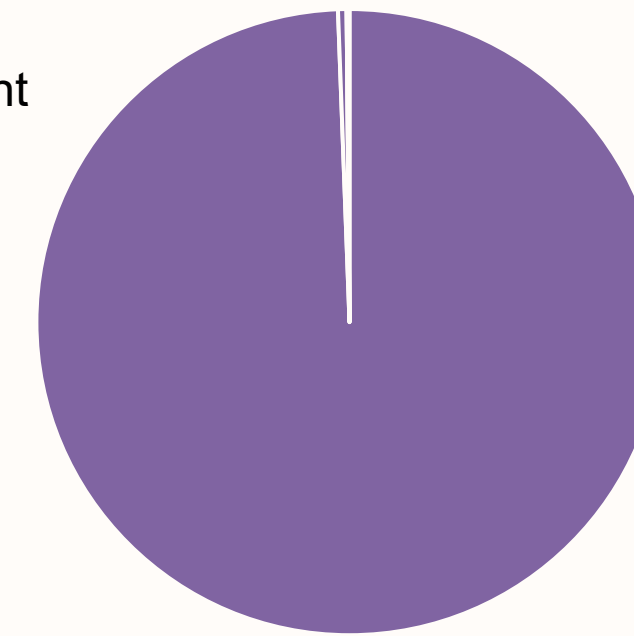
The CSO data analysis for this area indicates the types of homes that are scattered throughout the study area. The largest majority of these, at 99%, are houses and/or bungalows, with 1% registered as apartments.

48% of homes in Cratloe were constructed between 1971 and 2000, which is higher than the national average of 37. Due to lack of Building Regulations, many of these homes have very poor insulation, with external walls containing little to none. Likewise, within roof spaces such as attics, and floors. Typically, basic double-glazed windows were installed, but limiting strategy was applied to reduce draughts, this extended throughout the entire dwelling leading to excessive heat loss from unwanted air infiltration. Homes constructed around this time also used carbon heavy fuels such as oil, gas and/or solid fuel while open fires as secondary heaters were very common.

A smaller proportion of homes, 21%, were constructed pre-1970, compared to the national average of 28%. The types of buildings of older age bands present many challenges due to the historic construction methodologies applied from their era and the materials used, alongside the important significance associated with preserving of heritage of these homes. Specialist heritage audits would need to be complete on each home to ensure the correct measures are applied, which may be very limited due to structural, planning and moisture ingress/egress concerns.

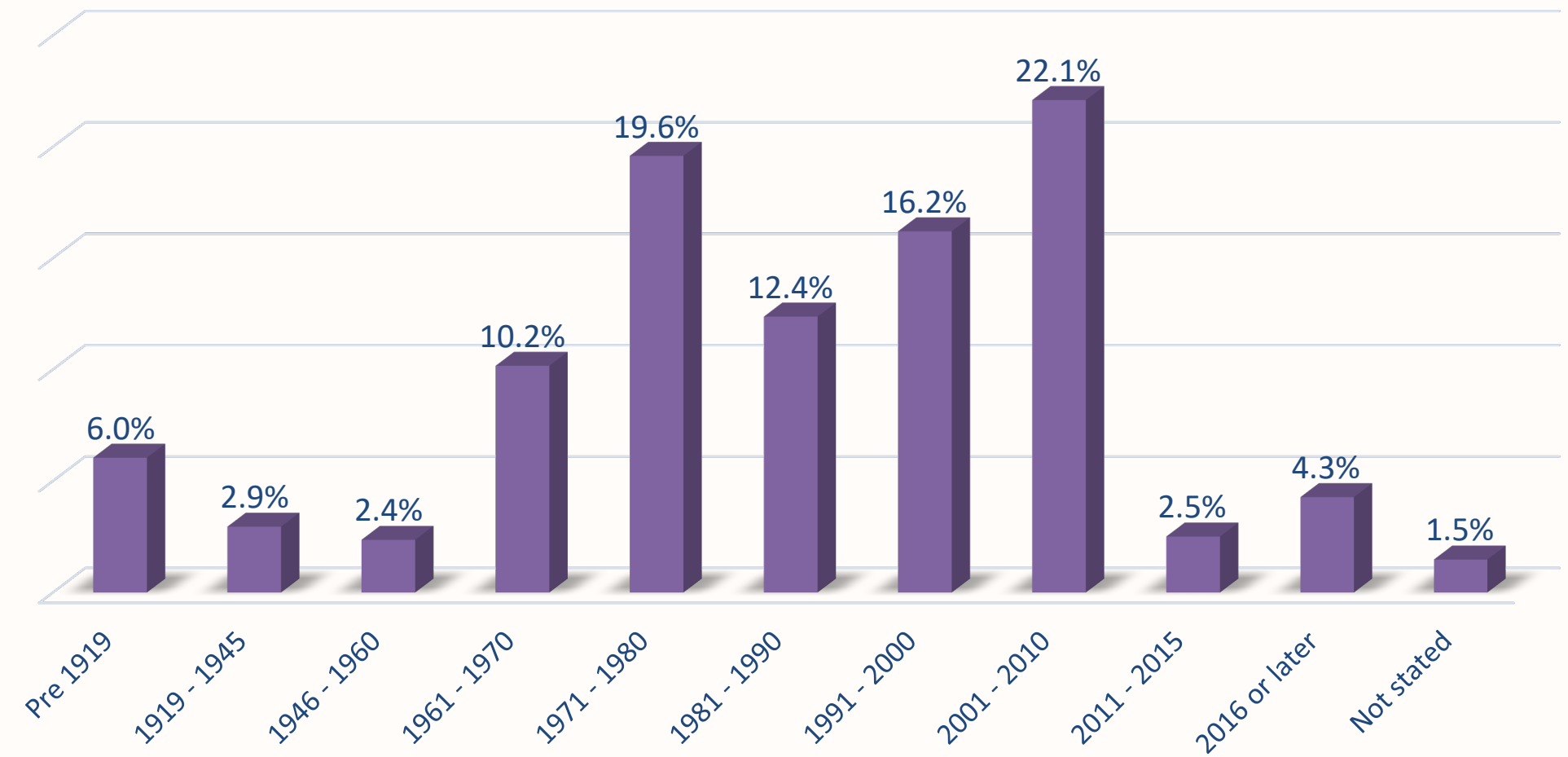
Housing type

Flat/Apartment
1%



House/Bungalow
99%

Housing age

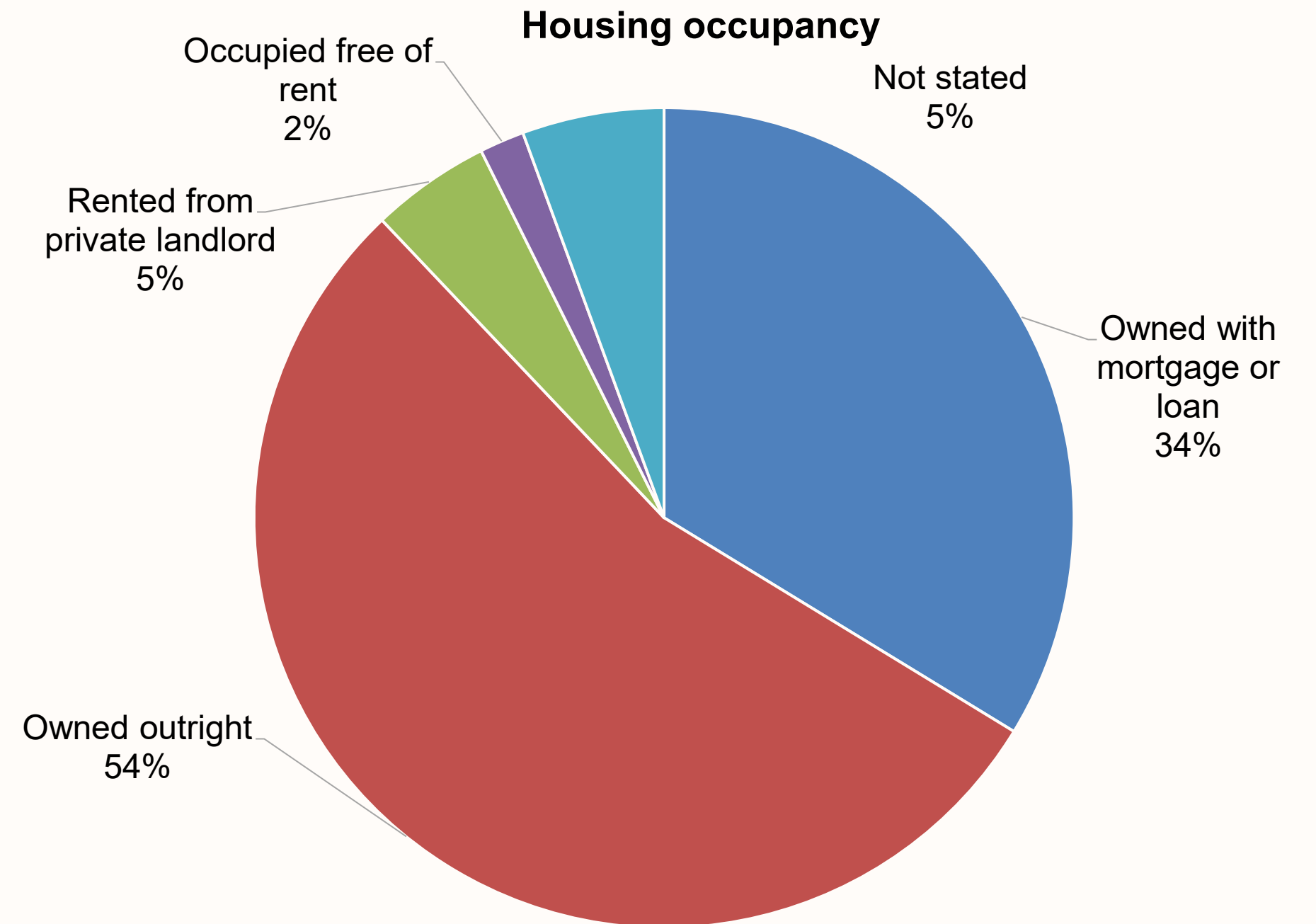


The greatest proportion of homes throughout Cratloe village are owned outright at 54%. Research has shown that owner occupiers have a greater incentive to invest in energy saving measures than landlords or tenants in rented accommodation.

34% of homes are owned with a mortgage or loan, this can imply that the occupants may already be in significant debt but could also suggest that they are young and have a greater appetite for home energy upgrades than those who may be retired or those who are renting accommodation and are faced with the many associated barriers as a result.

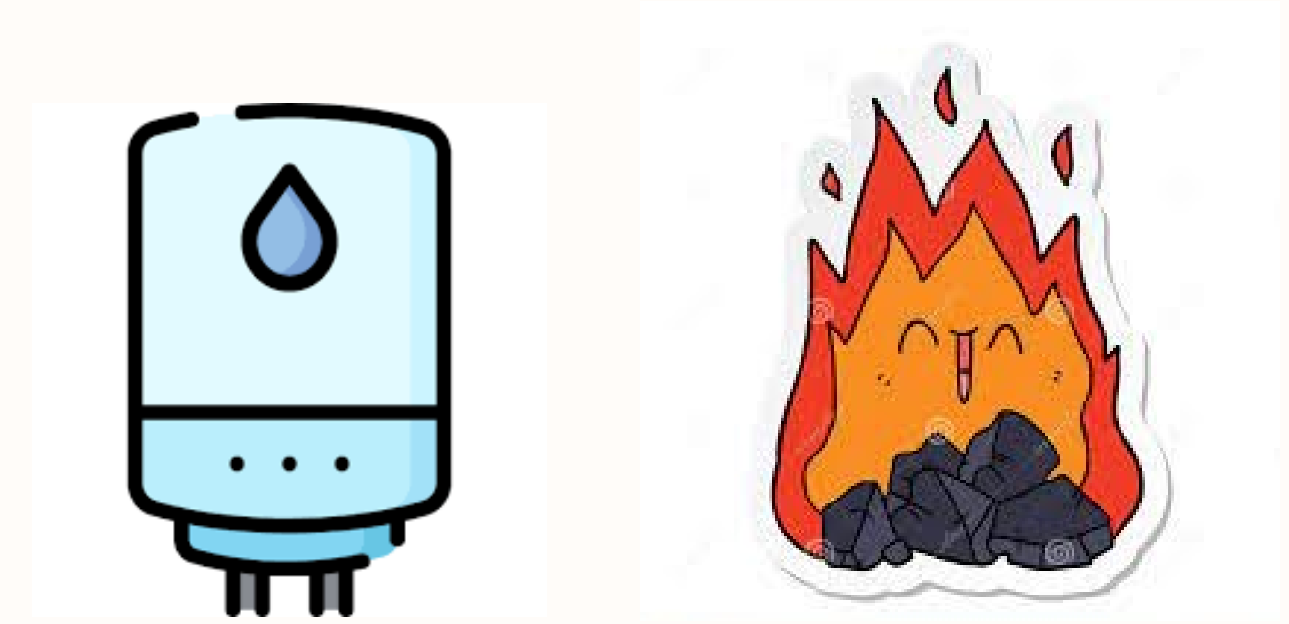
Homes rented from private landlords, at 5% within Cratloe, can suffer from a phenomenon called split incentives where landlords do not feel the benefits from improving energy efficiencies as tenants pay electricity and heating bills. A strong strategy of engagement and encouragement will be required for landlords until obligatory measures are put in place around private rented accommodation upgrades.

There are no registered homes within the catchment that are rented from the Local Authority.

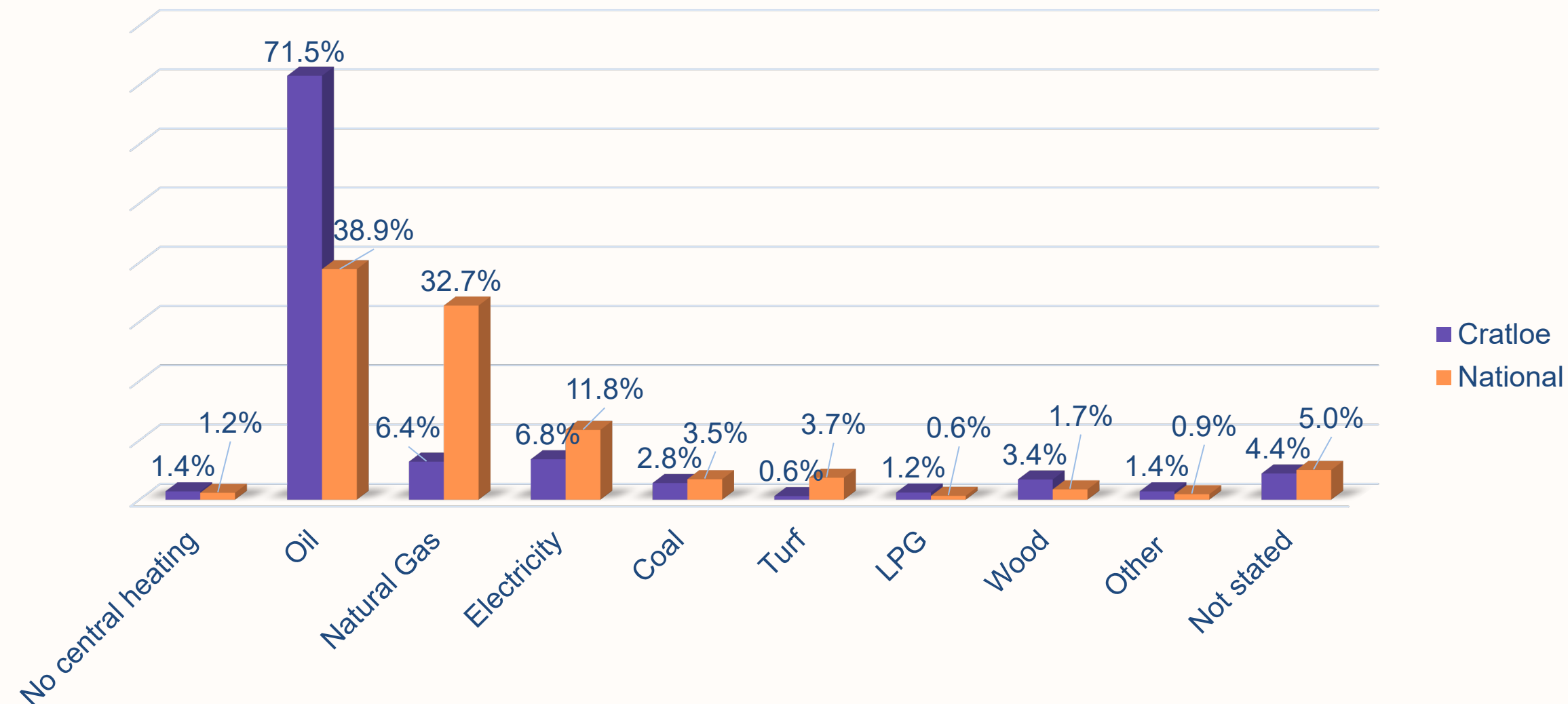


Oil is the primary source of fuel utilised for central heating throughout the Cratloe SEC catchment, followed by Natural Gas and Electricity. Collectively coming in at 85% of all fuels used for central heating systems throughout the study area. Compared to national figures, homes in Cratloe use significantly more oil for heating.

Central heating is defined as a system that provides heat to the entire internal volume of a building from one point to multiple points. The finding of this data, although unsurprisingly, raises cause for concern as these fuels are the most carbon intensive and the most widely used of all the fuels used in the area. However, it also demonstrates the huge level of potential for improvement within the residential sector across the area.



Housing by type of heating



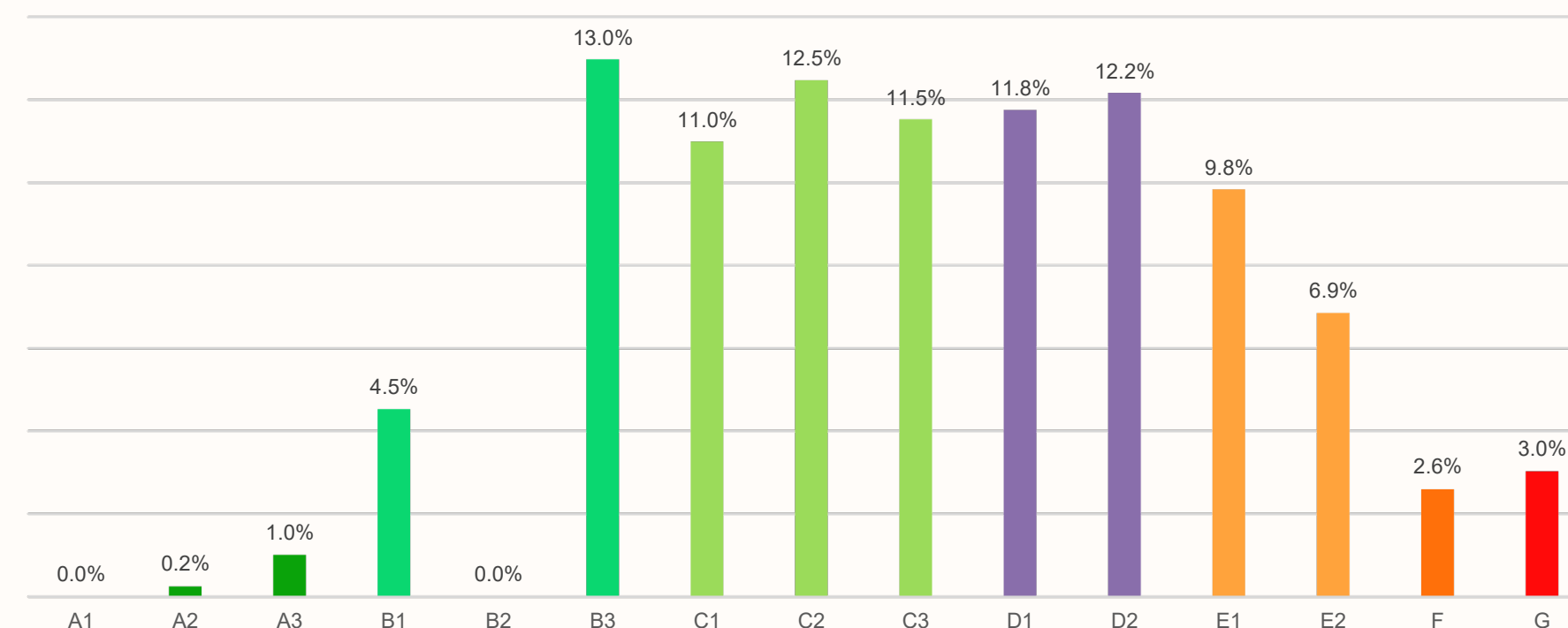
The BER data estimates 15% of dwellings have a valid certificate, and associated data, indicating an average Building Energy Rating in the SEC catchment area to be D1, in-line with the average of C/D ratings reported by CSO for homes nationwide.

Oil is the most common fuel used for heating locally, followed by electricity and natural gas. 15% of the homes with registered BER Certificate data have a heat pump installed while 3% of homes are registered as having solar thermal panels in use. No information is provided on solar photovoltaic (electric) installs. The BER data indicates that most homes in the catchment are detached, at 70%, with 42% of all homes having unfilled cavity walls, while 41% of homes recorded a U-Value ranging between 0.50 – 1.00 W/m².K for walls, suggesting scope for low-cost improvement utilising grant aid.

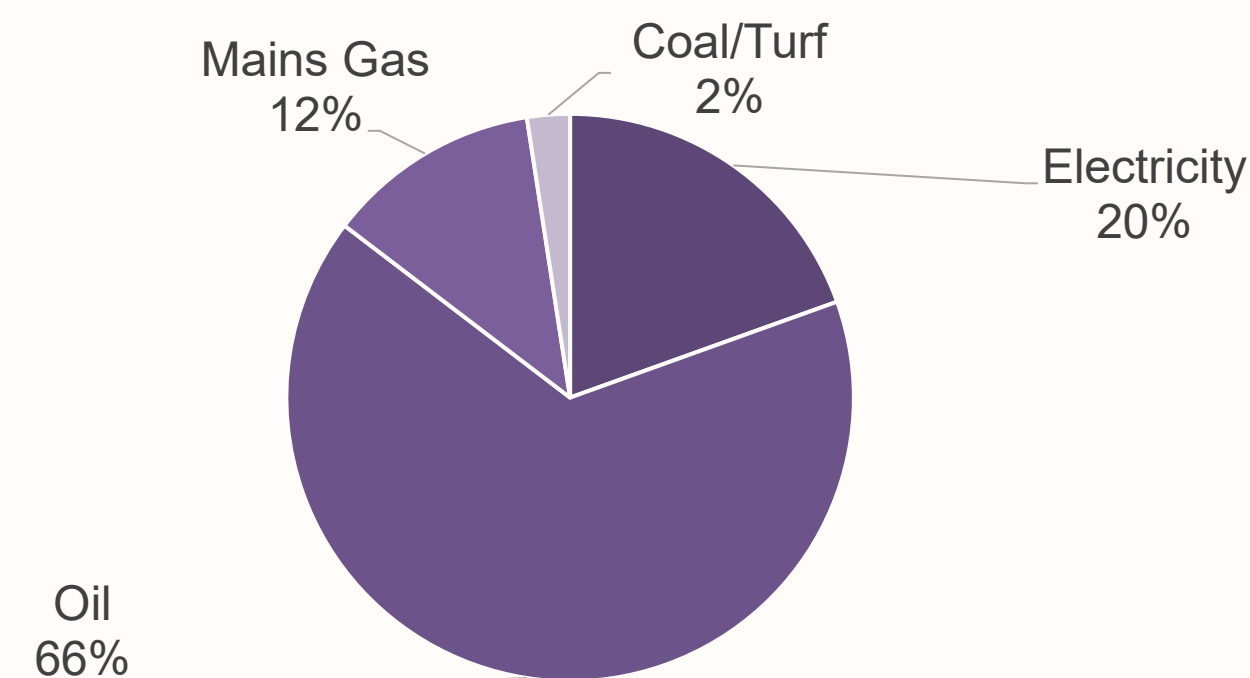
In summary to both CSO & BER data analysis;

- 70% of Homes Built Between 1971 – 2010.
- 21% of Homes Built Pre-1970.
- 54% of Homes are Owned outright by the Occupant.
- 5% of Homes are Rented from Private Landlord.
- 81% of Homes are Fueled by Oil, Natural Gas, Coal & Turf.
- 69% of Homes have BER's Ranging from E1 – C1
- 12% of Homes have BER's Ranging from E2 – G
- Average Building Energy Rating of D1 (D2 via CSO)

Distribution of available BERs



BER Heating Fuels



Community input into the development of an EMP is vitally important to the uptake of many of the core opportunities identified. Community outreach as part of the development of the EMP also provides an opportunity for local community members to voice their own concerns and recommendations for improvements. It is based on this that a local home energy survey was developed and distributed by Cratloe SEC. The findings of the responses are summarised within this section.

The aim of the community input survey are the following:

1. Create an awareness of the Energy Master Plan study & SEC Committee,
2. Provide opportunity for local citizen input into EMP development,
3. Provide SEC with specific information on local home energy issues,
4. Create a register of interested homeowners that may participate in individual, or community led retrofit schemes.

Cratloe SEC and ORS would like to extend our gratitude to all whom partook in this exercise. A total of 80 responses were received, with the findings summarised over the coming slides. Survey response rates provide an indicator of community awareness regarding energy sustainability, and SEC presence within a locality. The response rate associated with this EMP indicate that local SEC awareness is high. Wider community buy-in is an integral requirement of the Cratloe SEC if they are to influence home retrofits and energy sustainability initiatives going forward.

Cratloe Household Energy Survey

Cratloe Sustainable Energy Community (SEC) is asking all households in Cratloe to undertake the following survey, as part of our Energy Master Plan. This Plan will help Cratloe residents to:

- Understand energy usage in the area,
- Create an action plan to help the community increase their energy efficiency and independence,
- Reduce carbon emissions and
- Harness local energy generation opportunities.

The more responses we get, the better our understanding of the domestic energy needs of Cratloe residents. It is hoped that through this project, members of the community may decide to apply for SEAI grant funding towards improving thermal comfort, energy running costs and carbon emissions of their homes, business, transport and community buildings.

All information gathered will be treated with strictest confidence and no identifying information will be included in the final report. For more information please contact Tom Golden of Cratloe SEC:

tomgoldencratloe@gmail.com or Dan Fennell of ORS: d.fennell@ors.ie. The Cratloe Energy Master Plan (EMP) is funded by the Sustainable Energy Authority of Ireland (SEAI) and is supported by Cratloe Community Council. We appreciate you taking the time to complete the survey.

Please complete one survey per household and get as many people in the household involved as possible.

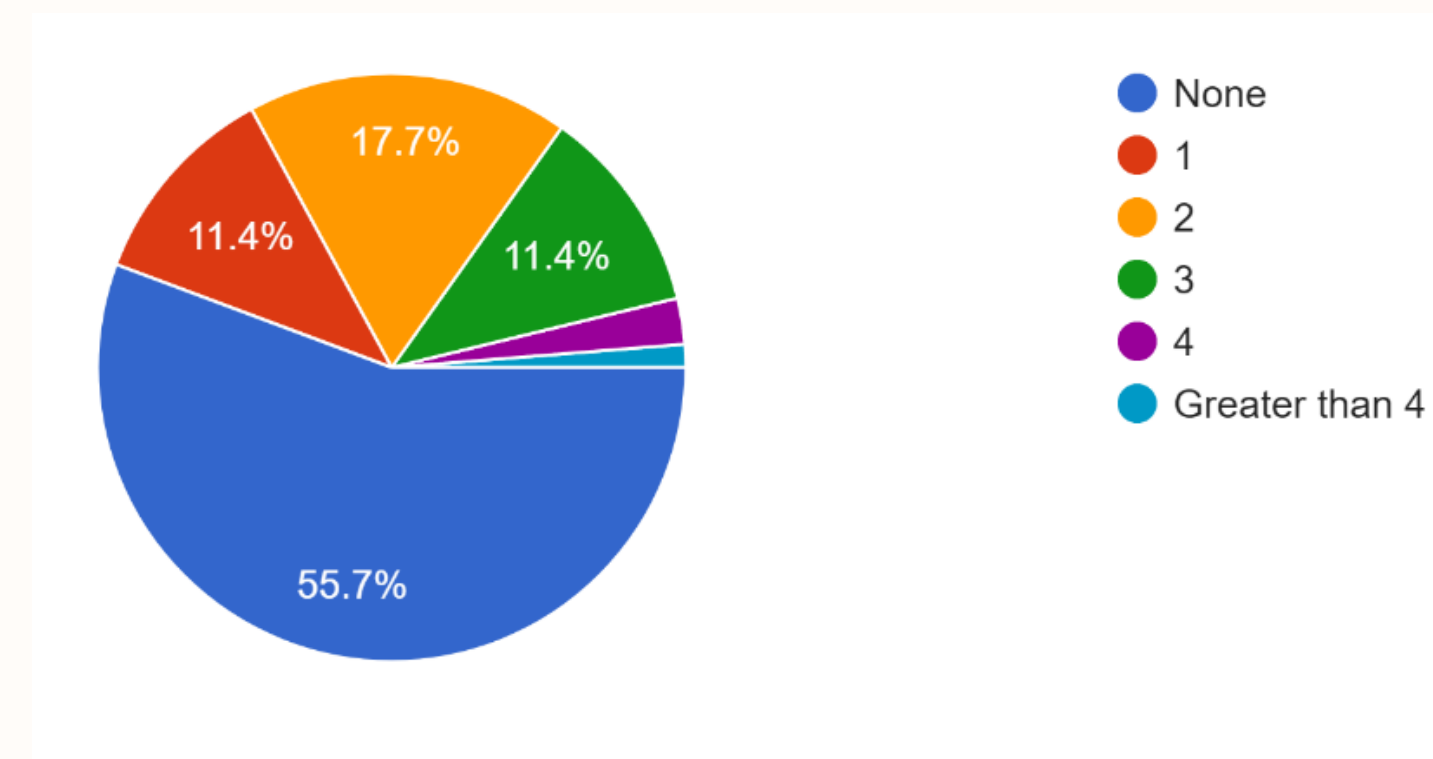
96% of respondents indicated that they own the home they live in, with the remaining **4%** of responses from within the private rental sector.

Of the respondents, **53%** work full time from home. This group includes retired, unemployed and childcare work, but the large group size indicates a higher than typical home energy use. **15%** work 3 or 4 days from home, with **15%** working a combination of 1-2 days from home.

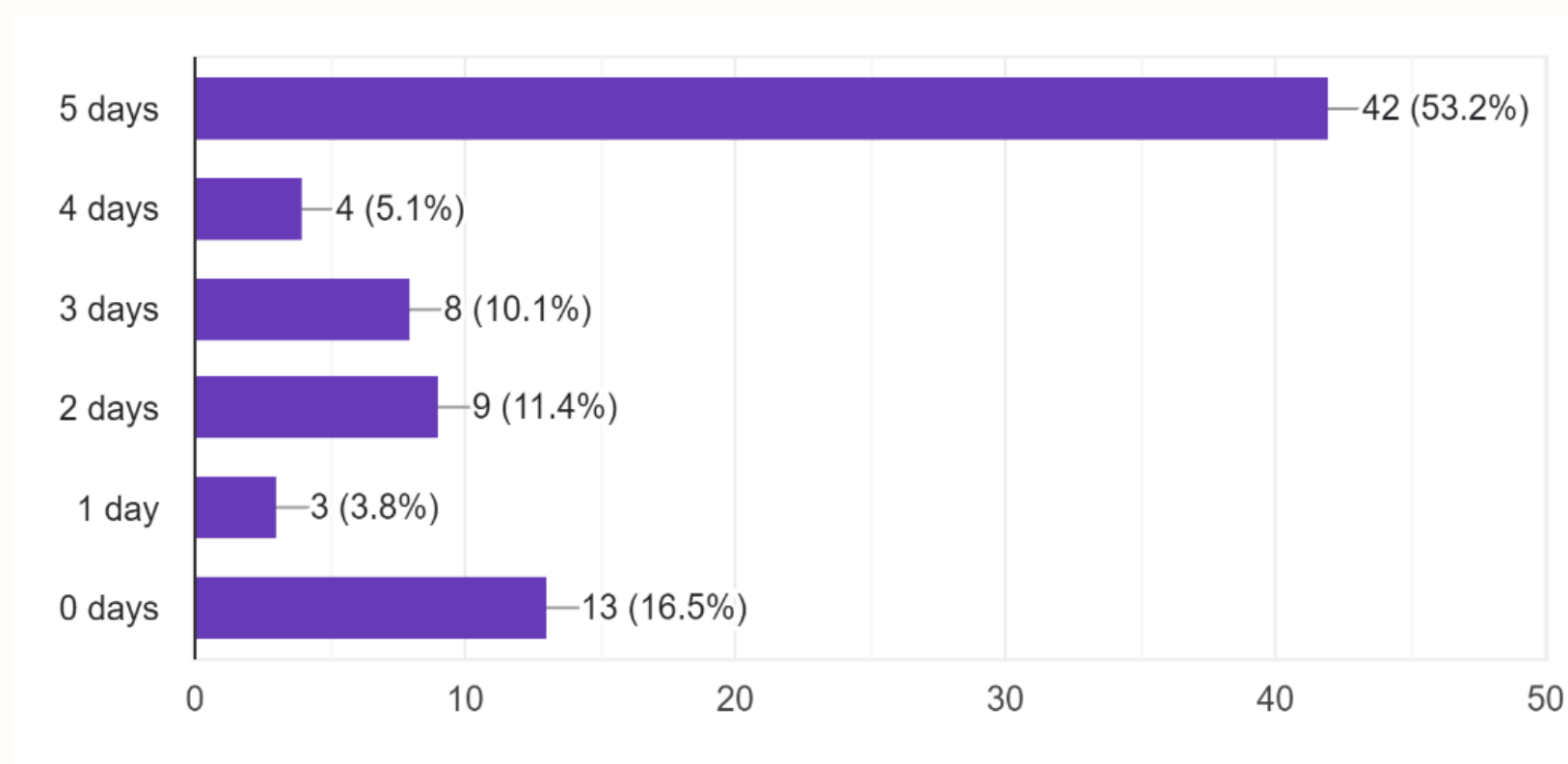
Most homes within the responses are occupied by 2 adults only at **56%**, with **40%** having at least 1 child (under the age of 18).

Over **23%** of respondents report paying up to €300 monthly on electricity and fuel bills, resulting in annual energy bills of at least €3,600. According to the CSO, the average household income in Co. Clare is €42,169, therefore energy use is potentially costing this group over 8.5% of their annual income.

Dwelling Occupants



Number of Weekdays Working from Home



44% of respondents recorded dwelling age ranging between 1991-2011, with another significant count between 1961-1980, and again pre-1920, at a combined **30%**. This would indicate that many homes are built pre-Building Regulations, and without any intervening works regarding energy efficiency such as insulation, air tightness and heating controls.

99% of respondent live in detached houses, with **1%** occupied in apartments.

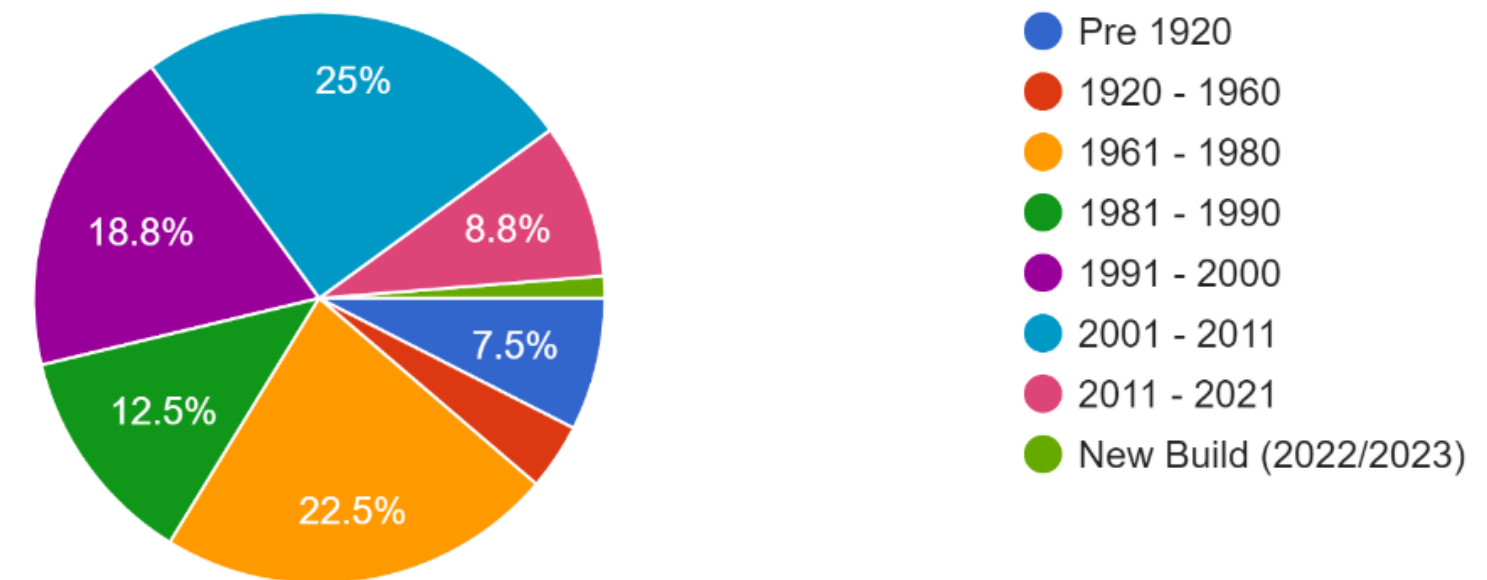
Of these house types, the most prominent external wall construction was twin leaf cavity at **44%**, followed by hollow block (**26%**) and stone (**15%**).

Respondents also provided details on insulation upgrades associated with these external walls. **40%** have pumped bead insulation, **18%** have installed internal wall insulation, and **6%** with external wall insulation. Of particular interest is that **37%** have little, or no insulation in place.

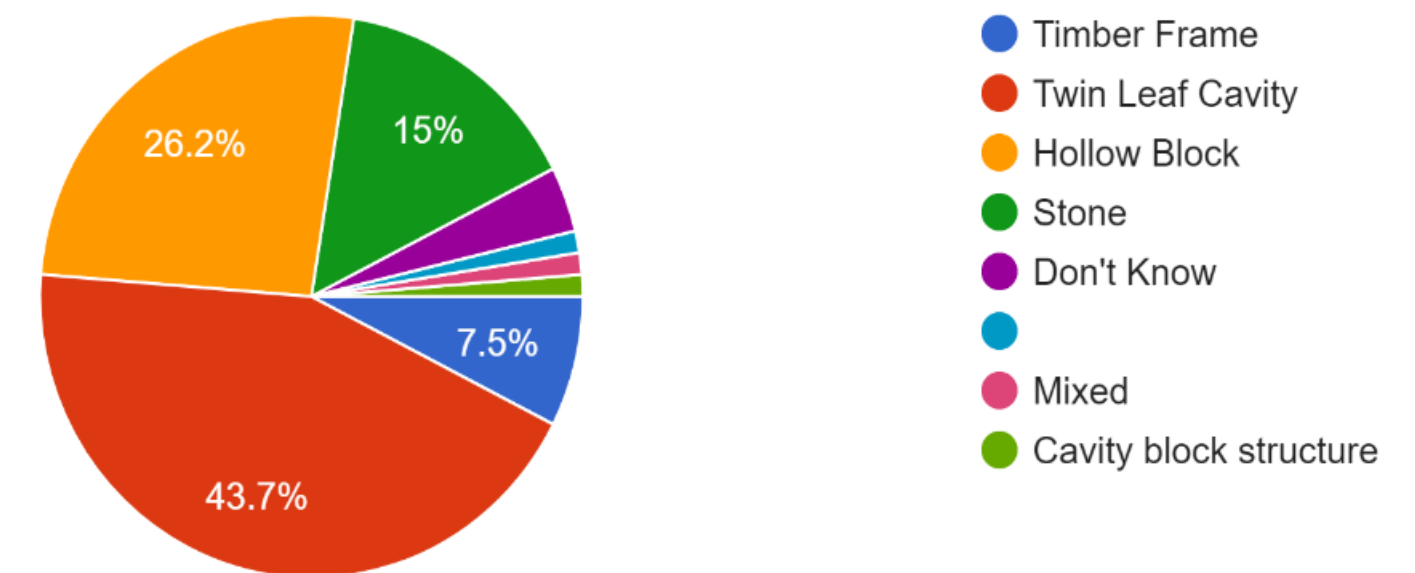
In respect to ceilings and roof spaces, **86%** have a standard pitched roof, with the final **14%** defined as sloped or vaulted ceilings. Similar to external walls, respondents were asked about insulation within roof spaces. **51%** state to have little or no insulation installed within their attic spaces.

54% of windows installed are stated to be double glazed, install pre-2010. **25%** are also double, but post-2010. Newer units, whilst still double glazed, would have higher thermal retention properties when compared with older, pre-2010 for example.

Dwelling Age



External Wall Types



This section of the survey related to home heating. The first question was in relation to home ventilation. **78%** of respondents claim their home to be naturally ventilated, while **12%** have a form of mechanical ventilation which lines up with the use of heat pumps. It is important that all homeowners are aware of their ventilation method, and how it works to ensure a healthy indoor environment is maintained.

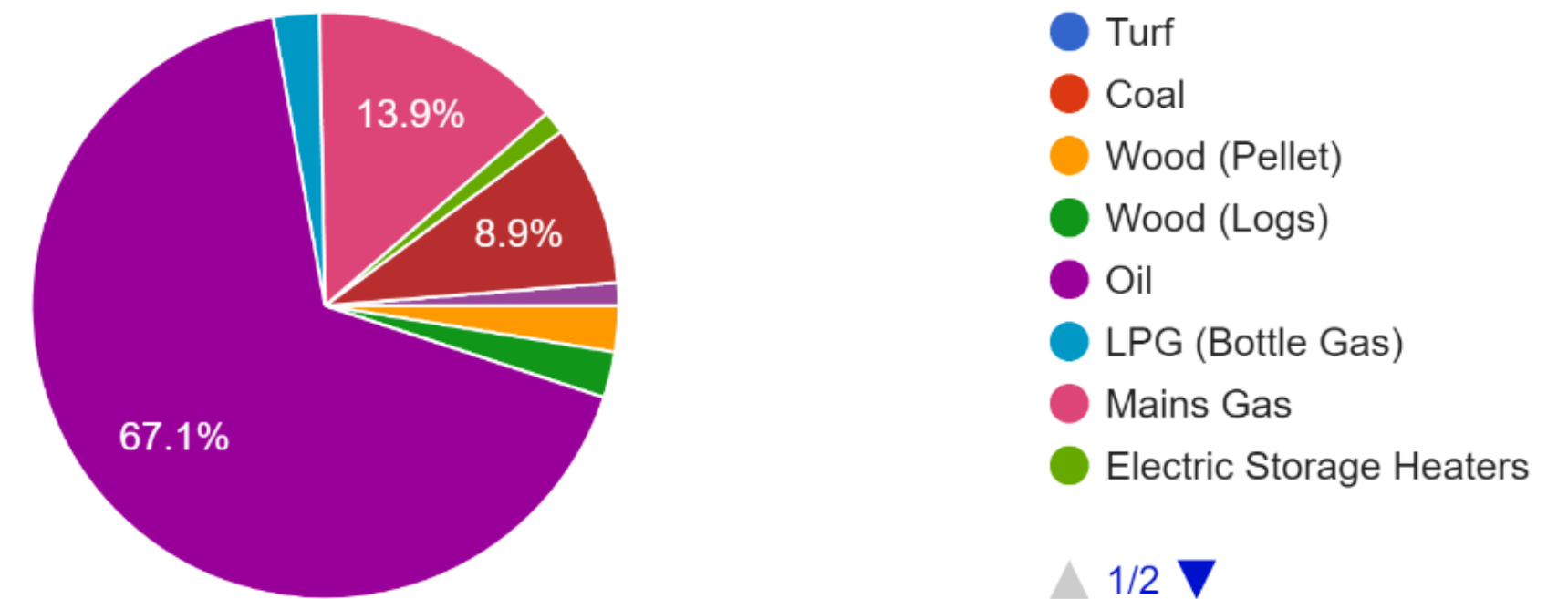
Oil is defined as the fuel source most used to heat home at **67%**, followed by mains gas at **14%**. Only **10%** of heating systems are electrified which presents a large decarbonising opportunity for space heating.

Heating system ages range, with the highest proportion greater than 20 years old at **26%**. Meanwhile **20%** of respondents have a heating system less than 5 years old. While **43%** service their boiler annually, **11%** claim to never service their heating system. This can have major impacts on performance and excess fuel consumption. A homeowner's ability to control their heating system can greatly impact running costs. **39%** claim to have an old timeclock only, while **31%** have zonal time control with room thermostats.

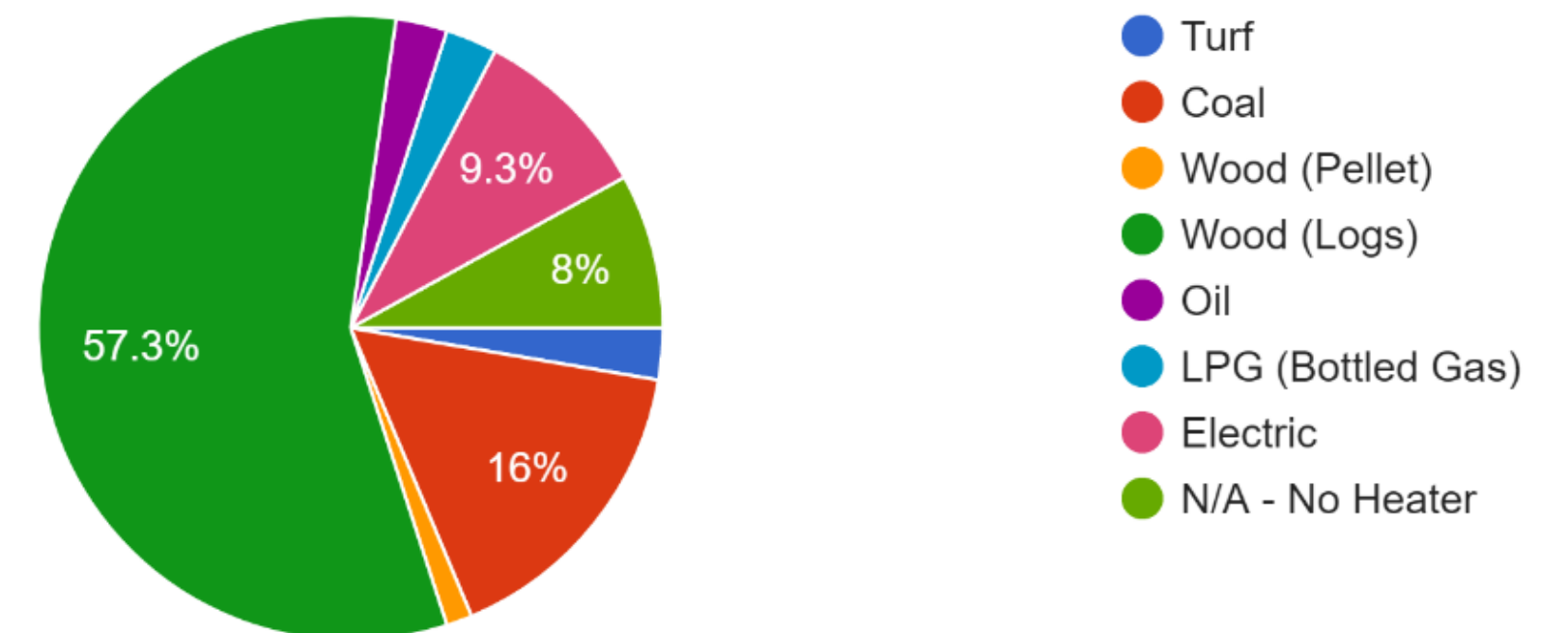
81% of respondents claim to have a secondary heating system, like a living room heater for example. Of these secondary systems, **57%** burn wood logs, **16%** burn coal, and **9%** use an electric heater.

13% of respondents claim to have solar photovoltaic panels (electricity generation) installed, while 5 households have an electric vehicle.

Main Heating System Fuels



Secondary Heating System Fuels



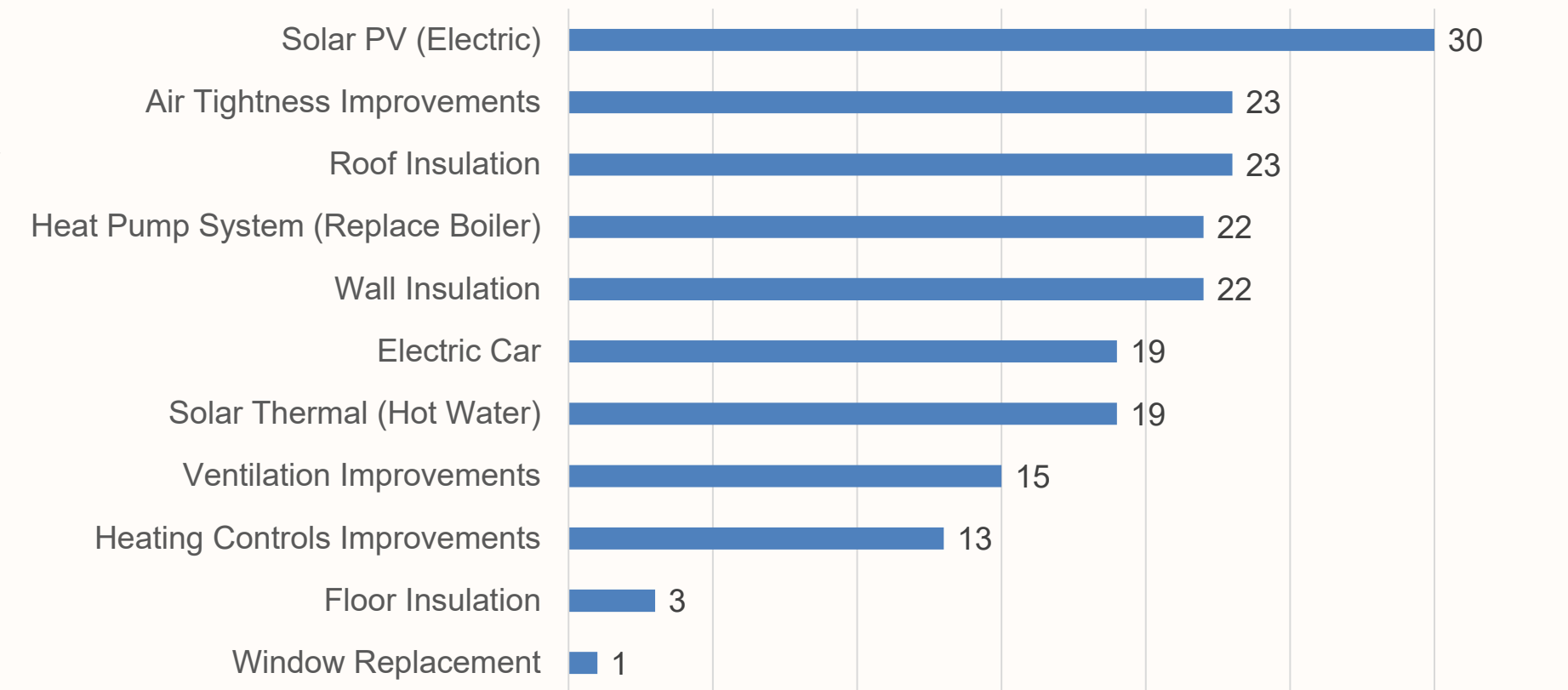
The final element of the survey is aimed at determining the appetite for home energy retrofits. Very positively, **55%** responded *Yes*, and **26%** *Maybe*. This demonstrates an awareness of the benefits, but also a soft commitment that should encourage the SEC to further explore a wider appetite for local retrofits.

Participants were also asked what specific retrofit measures they would like to explore, with multiple choices possible. The results were varied, with a high volume interested in replacing fossil fuels with electric options such as solar PV panels, heat pump systems to heat the home and electric vehicles. Fabric improvements were also high on the wish list, such as roof insulation, wall insulation and air tightness improvements. Many responses after this are broader, requesting a wish list for a deeper retrofit. This, again, demonstrates that a willingness is there to retrofit at a local level, where through dedicated local focus groups, individuals can be collectively brought together to share knowledge, and support in works, led by the Cratloe SEC.

In summary, this online home energy survey resulted in a valuable insight into local energy use, led by community member input. The first step of a decarbonation project is stakeholder awareness, engagement, leading to participation. The Cratloe SEC are advised to run a series of locally led initiatives aimed specifically at the residential sector. The aim of these are to create a consistent communication channel between the community, and the SEC, to support delivery of core home energy saving messages. It is advised that the following are explored, and ran over a periodic basis;

- Home Energy Grant Kiosk (Local Community Centre)
- Home Energy Retrofit Information Day
- Home Energy Grant Application Clinics with SEC County Mentor
- Regular SEAI Home Energy Grant Leaflet Drops (Schools/Community hall/Library/Local Lenders)

Home Retrofit Wish List (number of responses)



ORS Home Retrofit Roadmap

In-person home energy retrofit audits were conducted on 3 properties throughout the Cratloe Area. These properties were select based on the analysis conducted as part of the early stages of the EMP. Utilising the information identified from the CSO and SEAI BER Heat Map data, alongside the findings of the interactive Community Engagement survey, the most common and energy intensive homes could be determined. The principal behind this approach is that the findings associated with common dwelling typologies would inform the highest proportion of local citizens regarding what specific retrofit measures would be required to improve energy efficiency, reduce energy demand, improve thermal comfort and decarbonize the residential sector.

The process of determining each dwellings energy performance was based on the SEAI's Building Energy Rating methodology. ORS energy consultants visited each of the selected homes and conducted these assessments which involved a visual, non-destructive review of each homes geometry, insulation installed, air tightness, heating system and controls. Based on the results of this, appropriate energy retrofit recommendations are made, with the associated energy, carbon and cost savings highlighted alongside the installation cost of each.

These measures are tabulated from a low to high impact. Homeowners may decide to incorporate a single measure, or the collective approach. All recommendations are made with the SEAI's Individual Home Energy Grant, and One Stop Shop grant programme as a funding source. It can be more feasible and cost effective to carry out multiple works at one time. Please review the requirements and criteria for any supports before carrying out any works. Further advice can be found through the SEAI website.

The Cratloe SEC, and ORS, would like to thank all homeowners who participated in this exercise.





Local Home Retrofit Roadmap

Dwelling No. 1

This single-story detached dwelling was originally built in the 1990's and presently demonstrates a BER of an C2. Based on the energy audit carried out, measures to improve the BER have been established.

Currently a non-condensing oil-fired boiler provides all main space heating and hot water requirements in the dwelling with some heating controls present including a timer and thermostatic radiator valves (TRV). Two solid fuel stoves provide a means of secondary heating also. The building is made up of a solid ground floor with pitched roofs with roughly 150mm of insulation installed. The external walls are a cavity wall construction with no retrofit works carried out to the cavity. A section of the house has been drylined. Windows and doors were replaced recently and are now high performing triple glazed units.

The house is naturally ventilated through wall vents and local extract units in the wet rooms. The local extracts were not performing correctly so it was advised to replace with an adequate system capable of extracting the stale wet air from the spaces.

Installing a heat pump will remove the dependency on fossil fuels in the home and a higher efficiency. However, a low level of heat loss and adequate levels of airtightness is needed for the system to work efficiently. Extensive works would have to be done to upgrade the building fabric and possibly the current pipework and radiators would have to be assessed to determine if they are adequate or require replacement. Further advice is recommended from a SEAI Technical Advisor and Heat Pump Expert to determine the viability of putting in the system.

N.B-Low, medium & high-level works are to not be specifically completed in sequential order. A direct quote should be received for each upgrade to guarantee costs. All works should be done by a reputable provider.

Recommended Measures

Low level measures (Approx. €4000) would involve installing additional insulation in the attic space above the ceiling joists to achieve a U-Value of 0.13 W/m²K. Any areas between the joists that are missing insulation should be made good during the works.

A full suite of zoned heating controls to allow for full time and temperature control should be installed including a cylinder thermostat to regulate the temperature of the hot water. All primary pipework should be insulated to reduce heat transfer in the pipework. .

By implementing the above the house will improve to C1 rating with an estimated saving of €315 per year.

Medium level upgrades (Approx. €7,500) would involve the external walls being insulated by pumping insulation into the wall cavity & insulate to achieve a U-Value of 0.33 W/m²K or lower.

The old oil boiler should be removed and replaced with a modern high efficiency condensing oil boiler, with an efficiency of over 95%

This would improve the BER to a B3, saving an estimated €337 per year on energy bills.

Finally, high level upgrades (Approx. €17,500) would involve the install of a solar photovoltaic array to assist in electricity delivery.

It would also involve the installation of additional insulation to external walls to achieve a U-Value of 0.20 W/m²K or better in conjunction with the cavity wall insulation.

These recommendations would move the dwelling to an B1 BER rating with an estimated saving of €1296 per year on energy bills.



Local Home Retrofit Roadmap

Dwelling No. 2

This two-story detached dwelling was originally built in the 1980's and presently demonstrates a BER of an D2. Based on the energy audit carried out, measures to improve the BER have been established.

Currently a non-condensing oil-fired boiler provides all main space heating and hot water requirements in the dwelling. Two open fire provides a means of secondary heating also. The building is made up of a solid ground floor with pitched, sloped and flat roofs with minimal to no insulation installed. The external walls are a cavity wall construction. Windows are original to the building and are double glazed PVC.

N.B-Low, medium & high-level works are to not be specifically completed in sequential order. A direct quote should be received for each upgrade to guarantee costs. All works should be done by a reputable provider.

Recommended Measures

Low level measures (Approx. €2575) would involve upgrading the draught sealing around the attic openings to reduce heat loss and prevent draughts from occurring. It is also recommended that one of the open fires is removed and sealed up, while a stove is installed in the other one in the living room. The installation of low energy lighting throughout the building would also be implemented.

By implementing the above the house will improve to D1 rating with an estimated saving of €514 per year.

Medium level upgrades (Approx. €15,000) would involve fully insulating all the sloped and flat roofs throughout the house by installing insulation to achieve a U-Value of 0.20 W/m²K. This would involve insulating between and below the rafters, and via an insulated plasterboard, and/or between the joist of the flat roof. The attic spaces upstairs would also be insulated between the ceiling joists and above with insulation to achieve a U-Value of 0.13 W/m²K.

The stud walls from upstairs into the attic space would also be insulated and the attic spaces to achieve a U-Value of 0.25 W/m²K or less. This would involve insulating between the studs and an insulated plasterboard installed on the stud wall itself.

The external walls would be insulated by pumping insulation into the empty wall cavity & insulate to achieve a U-Value of 0.33 W/m²K or lower.

The old oil boiler should be removed and replaced with a modern high efficiency condensing oil boiler, with a full suite of zoned heating controls installed to allow for full time and temperature control.

This would improve the BER to a B2, saving an estimated €1801 per year on energy bills.

Finally, high level upgrades (Approx. €74,750) would involve the install of a solar photovoltaic array to assist in electricity delivery. It would also involve the replacement of the current windows and doors in the building and replacement with high efficiency window units which achieve a U-Value of 1.2 W/m²K or better.

It would also involve the installation of a centralised mechanical ventilation system (CMEV), additional insulation to external walls and the installation of a Heat pump system.

These recommendations would move the dwelling to an A1 BER with an estimated saving of €2695 per year on energy bills.



Local Home Retrofit Roadmap

Dwelling No. 3

This two-story detached dwelling was originally built in 1978 and had two extensions added in 1984 and 2000 and presently demonstrates a BER of an C2. Based on the energy audit carried out, measures to improve the BER have been established.

Currently a condensing gas fired boiler provides all main space heating and hot water requirements in the dwelling with minimal heating controls present. An open fire provides a means of secondary heating also but is irregularly used. The building is made up of a solid ground floor with pitched roofs with roughly 100mm of insulation installed when visible. The original external walls are a cavity wall construction with cavity insulation retrofitted in 2000. The extensions are a mix of cavity wall construction and hollow block construction. Windows and doors were replaced recently and are now high performing double and triple glazed units.

The house is naturally ventilated but there are no wall vents or local extract units present. If works are to be carried out to the building fabric and it becomes more airtight, ventilation strategies will have to be examined to provide adequate fresh air within the home.

N.B-Low, medium & high-level works are to not be specifically completed in sequential order. A direct quote should be received for each upgrade to guarantee costs. All works should be done by a reputable provider.

Recommended Measures

Low level measures (Approx. €650) would involve upgrading the draught sealing around the attic openings to reduce heat loss and prevent draughts from occurring. It is also recommended that the open fire is removed and sealed up.

The installation of insulation to the unheated wall into the attic space will help to reduce heat loss in the dwelling. This would involve installing insulated plasterboard to the wall itself.

By implementing the above the house will improve to C1 rating with an estimated saving of €686 per year.

Medium level upgrades (Approx. €6,000) would involve fully insulating all the sloped throughout the house by installing insulation to achieve a U-Value of 0.20 W/m²K. This would involve insulating between and below the rafters, and via an insulated plasterboard. The attic spaces upstairs would also be insulated between the ceiling joists and above with insulation to achieve a U-Value of 0.13 W/m²K.

It would also include upgrading the current heating controls with a full suite of zoned heating controls installed to allow for full time and temperature control of the space heating and hot water in the dwelling.

This would improve the BER to a B2, saving an estimated €1369 per year on energy bills.

Finally, high level upgrades (Approx. €37,500) would involve the install of a solar photovoltaic array to assist in electricity delivery.

It would involve the installation of a mechanical ventilation system and It would also involve the installation of additional insulation to external walls to achieve a U-Value of 0.20 W/m²K or better in conjunction with the cavity wall insulation already .

These recommendations would move the dwelling to a B1 BER rating with an estimated saving of €1248 per year on energy bills.

Although only a small sample size, the 3 dwellings assessed as part of this study can support some of the earlier findings, also providing more specific, detailed quantities on some relevant values.

The following summarise some of these.

- The average annual energy spend per dwelling is €4,598
- Oil boilers most common system used to provide heating and hot water
- The average BER rating for the three homes assessed is C3
- Common areas that require works are;
 - Attics
 - External Wall
 - Windows
 - Boilers and Controls



Summary of 3 Residential Retrofit Assessments	
Average Potential Energy Saved (Deep Retrofit) (kWh/yr)	24,586
Average Potential Energy Cost Saved (Deep Retrofit) (€/yr)	€3,295
Average Potential Carbon Emission Saved (Deep Retrofit) (kgCO ₂ /yr)	8,891
Average Cost of Works without Grant Funding (€)	€55,158

The table to the right summarises the retrofit roadmaps that were conducted on the homes within Cratloe, indicating that if all specified works were complete, a total of 73,760 kWh/yr could be saved, or the equivalent of €9,886 in annual energy cost, and up to 26,674 kgCO₂/yr in carbon emissions reductions.



Energy Master Plan Non-Residential Retrofit Roadmap

The energy audit process consisted of the following stages:

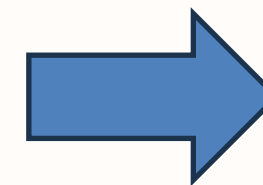
1. Energy audit planning
Defining the scope and objectives of the audit
2. Data & information
Analysing 12 months of energy bills and site plans
3. Site visit
Audit of electrical, lighting, heating and hot water equipment. Analysis of building and equipment use.
4. Analysis & Reporting
A desktop data analysis was completed to ascertain energy and cost savings associated with the recommended measures to be implemented.



Cratloe GAA Club has had previous upgrades done including the installation of Solar Thermal panels on the roof of the club and upgrades to the pitch lighting which has reduced electricity consumption onsite. This was their first energy audit, so the goal of our report was to provide clear information and direction for future upgrades.

Opportunities were identified that would save the club €3,435 per year, representing a 65% reduction on their current energy spend. A full energy audit report was provided to the GAA Club which included advice on available grant supports, such as GAA Green Clubs Programme. An appropriate PV system size was calculated that would generate sufficient electricity to meet the demands of the club, as well as charging the on-site battery, without requiring to export significant amounts. Below is a summary of the register of opportunities provided. Many of these recommendations can be applied to businesses throughout Cratloe.

Description	Cost savings (€ per yr)	Estimated cost of action (€)	Emissions reduction (t CO2e per yr)
Install a 5kWp Solar PV system	€1,891	€6,250	1.44
Install battery storage in conjunction with Solar PV system	€607	€5,000	0.43
Carry Out Energy Awareness days for users and volunteers	€271	Low Cost	0.19
Upgrade remaining lighting to LED or low energy lighting systems	€437	€3,000	0.31
Install Motion Sensors on all indoor and outdoor lighting	€229	€500	0.16



Total Annual Cost Savings €3,435

Total Annual CO₂ Savings 2.53 tonnes

A report from the Department of Transport, 2020 Vision – Sustainable Travel and Transport, states that “Sustainable transport is concerned with the movement of goods and people in a manner, which improves quality of life and ease of access for all. It also aims to protect the environment for future generations and enhance economic competitiveness” (Transport, 2008).

To realise this, many forms of transport options must be maintained, planned, and provided for a region. This ranges from safe and accessible walking and cycle routes to appropriate public transport links serving the needs of the residents, businesses and visitors, to the implementation of appropriate infrastructure to support the electrification of private car and fleet vehicles.

Clare is a largely rural county with many dispersed settlements and communities. The county is strategically located along interconnecting rail lines, with access to the cities of Limerick, Galway and Dublin, along with regional ports and Shannon Airport. It has strategic transport connectivity in the form of national, regional and local road networks, which facilitate the delivery of public and private transportation.

With the 90% vehicle ownership rate per capita in the country, there is an obvious reliance on the private car for transportation. Given that 59% of Clare commuters travel less than 30 minutes to work and school, there are opportunities for a shift to sustainable modes of transport supported by policy, infrastructure investment and behavioral change measures. CSO data indicated there were 1,281 cars within the Cratloe catchment area. Economic and population growth can result in greater demand for motorised transport, if not properly planned. To ensure that this potential impact is reduced, the Council must as a first principle, seek to reduce the need for transport, through compact and plan-led growth, supported by active travel measure and infrastructure.

Cratloe Current Estimated Transport Baseline (Total)				
Transport Type		Energy (kWh/Yr)	Spend (€/Yr)	Emmissions (kgCO ₂ /Yr)
Car	Petrol	4,583,752	€2,060,177	1,048,612
	Diesel	9,516,476	€4,460,508	2,270,359
	BEV	25,231	€1,328	4,316
Motorcycle		3,371	€2,698	773
Van		1,279,032	€415,495	307,727
Total		15,407,862	€6,940,206	3,631,787

Cratloe Current Estimated Transport Baseline (Average per vehicle)				
Transport Type		Energy (kWh/Yr)	Spend (€/Yr)	Emmissions (kgCO ₂ /Yr)
Car	Petrol	8,849	€3,977	2,024
	Diesel	13,772	€6,455	3,286
	BEV	5,046	€266	863
Motorcycle		1,124	€899	258
Van		19,985	€6,492	4,808

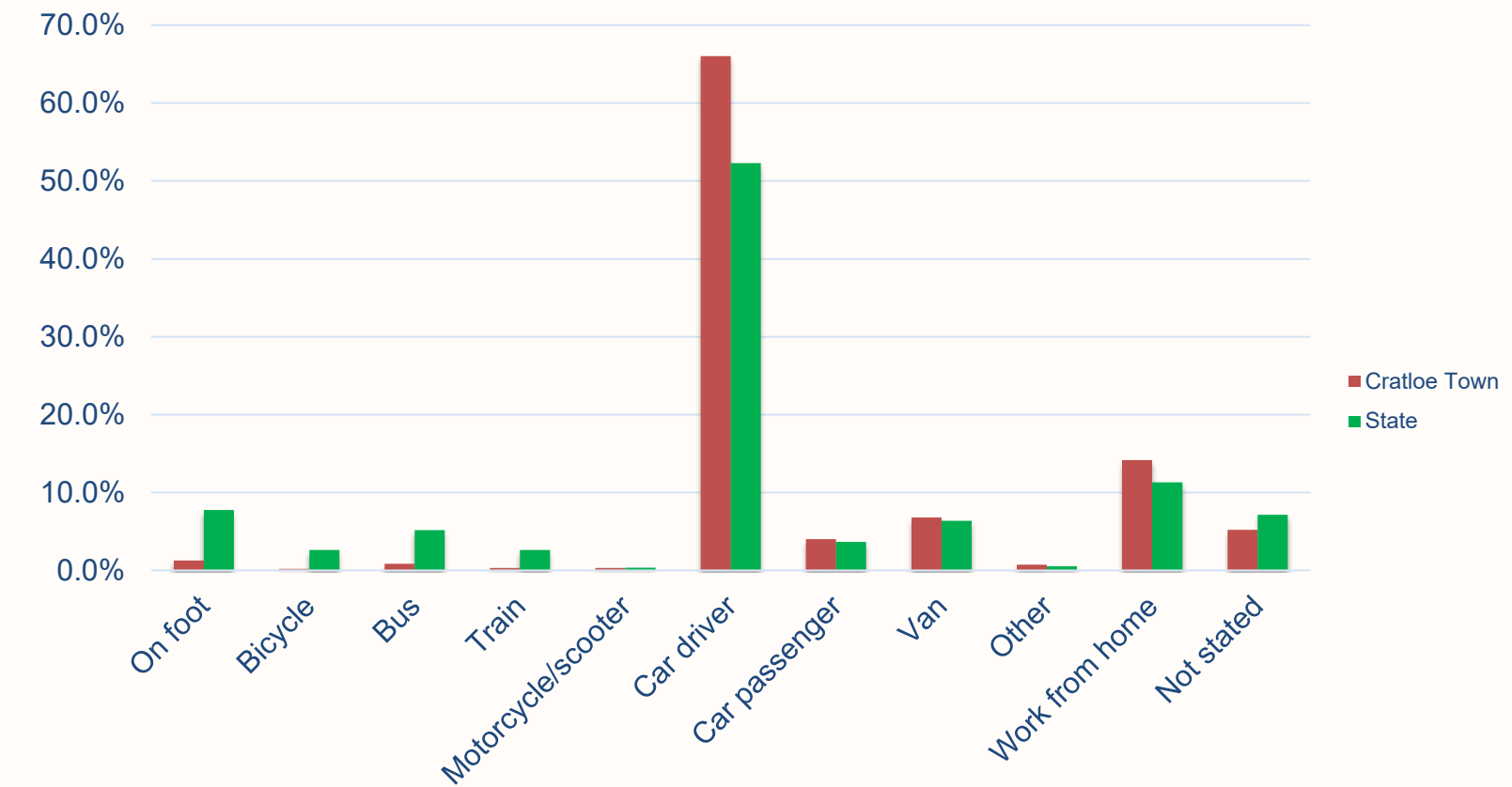
Data gathered from CSO (2022), and as alluded to within the previous slide, indicates that a large volume of people within Cratloe rely on the use of the private vehicle to commute to school, college and work. Compared to the national trend, there is more reliance on cars for commuting and less reliance on walking, cycling, and most notably bus usage.

Cratloe is located on the 343 bus route which connects to Limerick and Ennis and could be used by workers and students for commuting. CSO data however indicates that a very small proportion of residents use this service for work and college. However, the bus only has 3 scheduled stops each day in Cratloe which does not incentivise use. A consultation with a local representative and Bus Eireann should be sought to further establish how this can be increased.

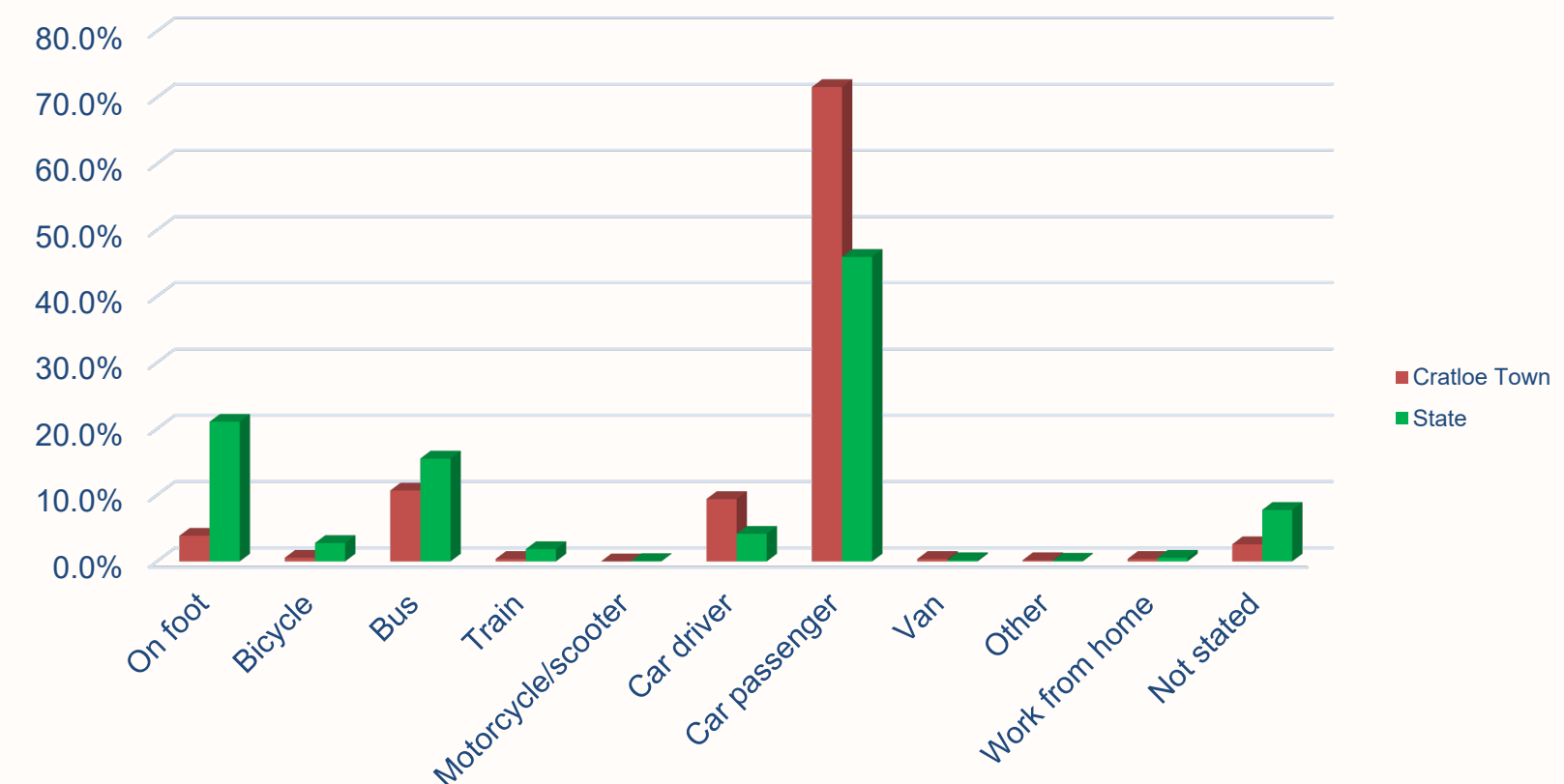
Of all travel modes, cycling and walking have the lowest environmental impact. To successfully promote cycling and walking as realistic alternatives to the private car, it must be a safe and pleasant experience for the locals. Pedestrian and cycle facilities will be most successful where they form a coherent network, place an emphasis on safety, directly serve the main areas where people wish to travel, provide priority over vehicular traffic at junctions, are free from obstructions and have adequate public lighting. An audit by a qualified infrastructure engineer would help identify specific areas for improvement.

In addition, support facilities such as secure parking and changing/showering facilities at places of employment are a key determinant in encouraging people to cycle. The development of a good quality walking and/or cycling network that is legible and provides safe and attractive connections for pedestrians and cyclists, particularly along key desire lines is essential for Cratloe to have a more sustainable transport infrastructure. It should be the aim to get at least some residents, where practical, to change to walking or cycling, reducing car emissions.

Commuting to work



Commuting to school, college or childcare



According to the SEAI, transport is considered the greatest source of final energy demand in Ireland, accounting for up to 42% of our overall national energy use and this trend is growing. Of this, private owned cars are the form of transport which contribute the greatest at around 40%. As highlighted, the CSO data for Cratloe supports this trend, indicating a significant number of citizens opting to drive the private vehicle as their primary mode of transport.

While the fuel used to power these vehicles is unknown, as of 2019, there were approximately 2.10 million cars on Irish roads, compared to an estimated 4,825 electric vehicles (The Irish Times, 2018) (ENFO, 2019). This would indicate that most of these cars registered in Cratloe would also be powered by either petrol or diesel, and subsequently contributing to sustained Green House Gas (GHG) within the region.

The national solution to the above is set through a target of 1 million BEVs in Ireland by 2030, however increased EV infrastructure will be needed to support this, along with increased awareness of BEV, how they operate and how they can contribute towards the mitigation of climate change are all required. To support the uptake of private electric vehicles, the SEAI provide grant funding ranging for €1,500 - €3,500, subject to the value of the car as illustrated on this slide.

Additionally, the SEAI also provides financial support for the purchase of category N1 (light commercial vehicle) EVs for business and public entities. The maximum amount available is €3,800, again subject to the value of approved vehicle.

Applications through the SEAI can now be made for large panel van which SEAI will classify as N1L. The grant amount for these vehicles is €7,600. The grant will be for new large panel vans (BEV only) with a technically permissible maximum mass of exactly 3500kg (N1 category vehicle). Large panel vehicles with a price of €90,000 or less will be eligible for this grant.

It should be noted that these grants apply to new vehicles only and cannot be claimed on secondhand vehicles.



Private BEV Grant

List Price of Approved EV	BEV
€14,000 to €15,000	€1,500
€15,000 to €16,000	€2,000
€16,000 to €17,000	€2,500
€17,000 to €18,000	€3,000
€18,000 to €60,000	€3,500

Commercial BEV Grant

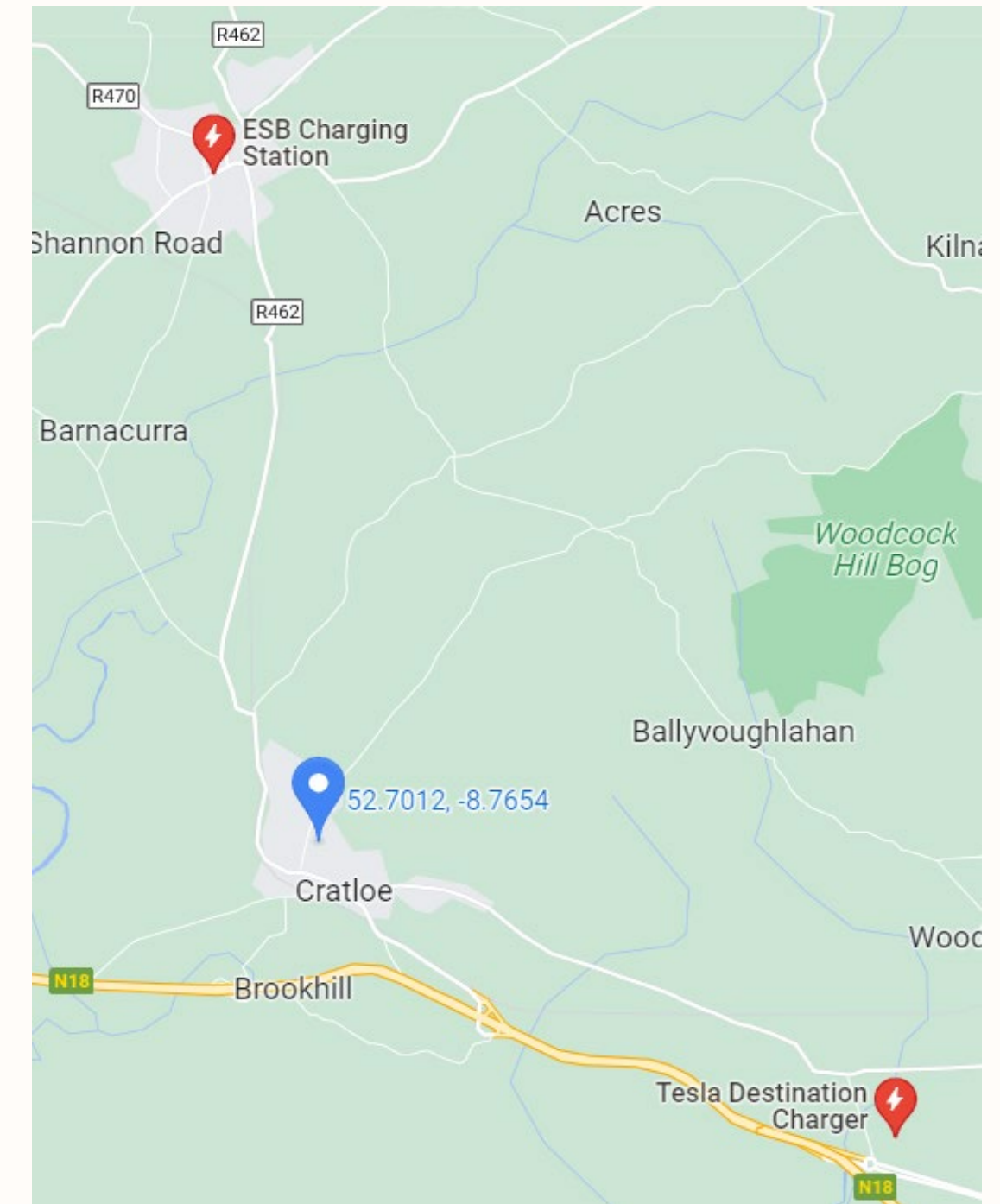
List Price of Approved EV	BEV
€14,000 to €15,000	€2,000
€15,000 to €16,000	€2,500
€16,000 to €17,000	€3,000
€17,000 to €18,000	€3,500
€18,000 to €60,000	€3,800

In addition to the capital funding of BEVs, the SEAI alongside others provide grants for the installation of the EV chargers. The SEAI Electric Vehicle Home Charger Grant provides up to the value of €600 towards the purchase and installation of a home charger unit. This grant is currently open to homeowners to apply, whether they own an electric vehicle or not. This charge point can also be used for visitor use or at rented accommodation.

Additionally, the EU JTF Community Facilities EV Charging Scheme provides funding for the cost of installing electric vehicle charge points at community facilities across the island of Ireland. Community Centres, Not for Profits and businesses may also apply to the SEAI Communities Energy Grant (CEG) to receive funding toward EV chargers alongside many other measures that recue energy use. Government supports to improve EV charging infrastructure are regularly updated through Zero Emissions Vehicles Ireland (ZEVI) .

In terms of local public EV Chargers, 2 locations have been identified within in the Cratloe SEC catchment. These are as follows;

1. Raddison Blu Limerick, Ennis Rd, Cratloemoyle, Co. Clare (6 mins from Cratloe)
1 No. 22 kW Tesla Destination Charger
2. The Green, Sixmilebridge, Co. Clare, V95 D2C5 (8 mins from Cratloe)
2 No. 22 kW ESB Charging Station



Cratloe Area Public EV Charger Locations

There are many barriers impacting the uptake of BEV across Ireland. An all-island survey on attitudes toward BEV in 2023 established several of the core barriers to access for EV ownership to be;

- Cost
- Lack of Chargers
- Range Anxiety

With many industry and state led initiatives ongoing to overcome the above, it is vitally important that the Cratloe SEC Team support the delivery of this through information supply to help break down these barriers. SEC led events with expert EV Speakers/Dealers can be a first step in helping local citizens overcome many anxieties, growing local confidence in this technology that will see an impact into the near future.

SEAI/ZEVI led clinics coordinated between local SEC and SEAI County Mentor with information sessions on the above 3 topics relative to EV performance and accessibility is an actionable item for Cratloe SEC in the short term. The SEC is encouraged to invite local BEV dealers alongside EV charger installers.

As part of the analysis conducted by ORS, the potential impact of increasing the local BEV use to 40% and reducing the use of petrol and diesel cars relative to this on local energy use, carbon emissions and fuel spend annually was assessed. The results of this, illustrated between the 2 tables on this slide, indicate a potential annual energy saving of 3,102MWh, cost saving of €2,407,016 and a carbon emission reduction of 880 tonne/CO₂.

Cratloe Current Estimated Transport Baseline				
Transport Type		Energy (kWh/Yr)	Spend (€/Yr)	Emmissions (kgCO ₂ /Yr)
	Petrol	4,583,752	€2,060,177	1,048,612
	Diesel	9,516,476	€4,460,508	2,270,359
	BEV	25,231	€1,328	4,316
Motorcycle		3,371	€2,698	773
Van		1,279,032	€415,495	307,727
Total		15,407,862	€6,940,206	3,631,787

Cratloe Potential Estimated Transport Baseline (40% BEV Uptake)				
Transport Type		Energy (kWh/Yr)	Spend (€/Yr)	Emmissions (kgCO ₂ /Yr)
	Petrol	2,436,796	€1,095,223	557,458
	Diesel	6,171,493	€2,892,667	1,472,341
	BEV	2,415,025	€127,107	413,096
Motorcycle		3,371	€2,698	772
Van		1,279,032	€415,495	307,727
Total		12,305,717	€4,533,190	2,751,397

Potential Savings				
Transport Type		Energy (kWh/Yr)	Spend (€/Yr)	Emmissions (kgCO ₂ /Yr)
Total		3,102,145	€2,407,016	880,390

Local Community Energy Awareness Training

Developing partnerships with local Hubs, Local Authorities, PPNs and Education Training Boards, who are key in the delivery of relevant educational material related to the necessary areas of developing a successful SEC. Along with the support of the SEAI SEC Mentor, Cratloe SEC should complete an update of the SEC Competency Matrix task. This exercise will help understand what skills are lacking, and for supporting material to be developed through the above referenced stakeholders. As an example, the SEC may consider running an Energy Champion training course for a select number of active representatives across the community. With technical assistance from the SEAI and ETB, upskill the Energy Champions in areas of renewable energy technologies, energy efficiency, smart finance, and sustainable transport. This can be used as a means of filtering the message of the SEC and the EMP to the wider community and increase both awareness and activity in retrofits within the locality.

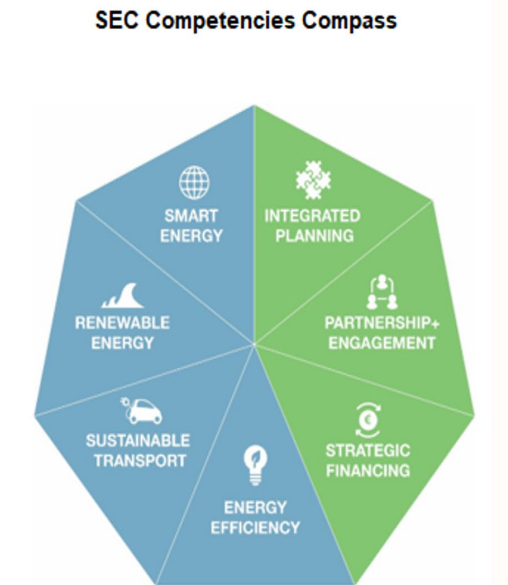
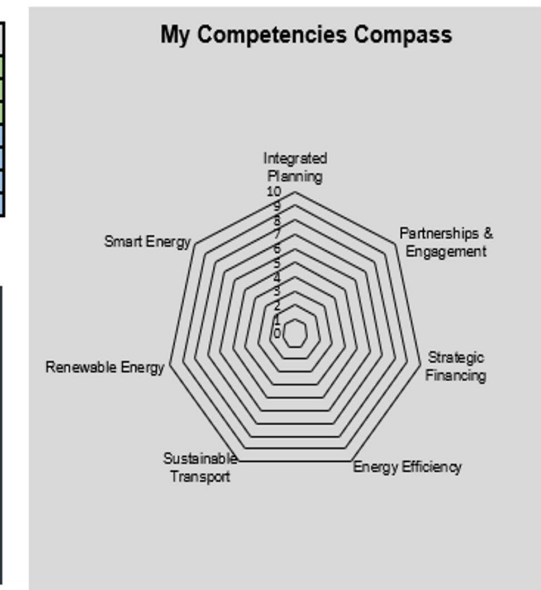
Local Contractor Upskilling

Locally driven energy related retrofits, across all sectors and relevant services provides opportunity of skills to be enhanced, and demand fulfilled by known and trusted contractors. This also supports rejuvenation in the economy for the region, increasing employment rates. To support the development of skills in this area, many highly funded training programs are available in areas such as;

- NZEB Fundamental Awareness
- Retrofit Insulation Skill
- NZEB Ventilation

There are many more training programmes which can be found on both the [LCETB Green Skills](#) and the [Mount Lucas Training Centre](#) webpage. Cratloe SEC is encouraged to engage with the local construction sector and identify if training via the above providers can be arranged and complete.

COMPETENCY	SCORE
Integrated Planning	0
Partnerships & Engagement	0
Strategic Financing	0
Energy Efficiency	0
Sustainable Transport	0
Renewable Energy	0
Smart Energy	0



Retrofit Insulation Skills
QQI L5 Award
Thermal Insulation Installation

Practical modules covered:

- Airtightness
- Internal Insulation
- External Insulation
- Floor Insulation
- Attic Insulation

7 Day Duration
Week 1: 15th - 17th Aug
Week 2: 22nd - 24th Aug
Week 3: 29th Aug

bkennedy@loetb.ie
 0858049519
 National Construction Training Centre,
 Mount Lucas, R35 XW10



A scheme to support the deployment of small-scale renewable electricity generators was identified as a key action to deliver on the [Climate Action Plan 2023 \(CAP23\)](#) target of up to 5GW of solar by 2025, and 8GW by 2030, as well as at least 500 MW of local community-based renewable energy projects and increased levels of new micro-generation and small-scale generation.

The Small-Scale Renewable Electricity Support Scheme (SRESS) aims to provide an easier route to market for community projects than the competitive RESS auction process, without any competitive auction, while also enabling farmers, businesses and others to maximize their participation in the energy transition.

Export-led Community projects will be eligible for further enabling supports. These will be similar to those developed under the SEAI's RESS Community Enabling Framework. This is a package of enabling supports including technical, and financial services which it is proposed will be available to Community projects under the SRESS.

A high-level analysis was conducted as part of this EMP, in regard to the potential return on a community owned wind farm. Based on 2 No. 2.5MW turbines, the farm, is anticipated to cost €7,000,000, generating an estimated 11,170,000 kWh annually. A project such as this could pay for itself between 6-10 years, depending on grid connection costs.

It is advised that a scoping exercise be carried out by the SEC. Public consultation be sought, and the most preferable technology explored (i.e., wind or solar). Through the SEAI's Community Enabling Framework (CEF), the SEC should submit an Expression of Interest to have a feasibility study conducted. This will assess grid capacity locally, potential yields and high levels on return of investment.

The SEC is also advised to spend time on the CEF Toolkits which can be accessed on SEAI's website found [here](#).

There is also potential to install solar panels on some of the buildings in Cratloe that have large rooftop spaces. The solar panels would provide great benefits for building owners, with lower energy costs and reduced emissions.

Each dwelling will also have potential to house solar panels, the Register of Opportunities for the Cratloe SEC defines the potential of up 7 PV panels, on average, per dwelling, generating a potential of 1,569,305 kWh annually.



Business Planning and Procurement



Stakeholder and Community Engagement



Community Groups and Governance



Financing Projects



The Electricity System



Onshore Wind



Energy Master Plan

Sustainable Energy Roadmap

A summary of the recommended actions discussed in this report is provided below, with the total energy and CO₂ saving potential. The calculations for these figures are contained in the Register of Opportunities Appendix spreadsheet.

Sustainable Energy Roadmap to 2030			
	Number of projects / initiatives	Primary Energy saving (kWh)	CO₂ saving (tonnes)
No. houses to be refurbished to a BER B2 or equivalent	550 (*82% Dwellings C1 or Worse BER)	9,526,370	2,628
3 Dwelling Retrofit Pilot	3	73,760	9.89
Renewable Energy Potential	2 (Community Wind Farm & Domestic Rooftop)	12,738,942	6,611
Switching from ICV to EV	490	3,102,145	880
Total saving potential	N/A	25,441,217	10,129

ORS

SEC Strategic Roadmap

Stage 1 – Community Engagement

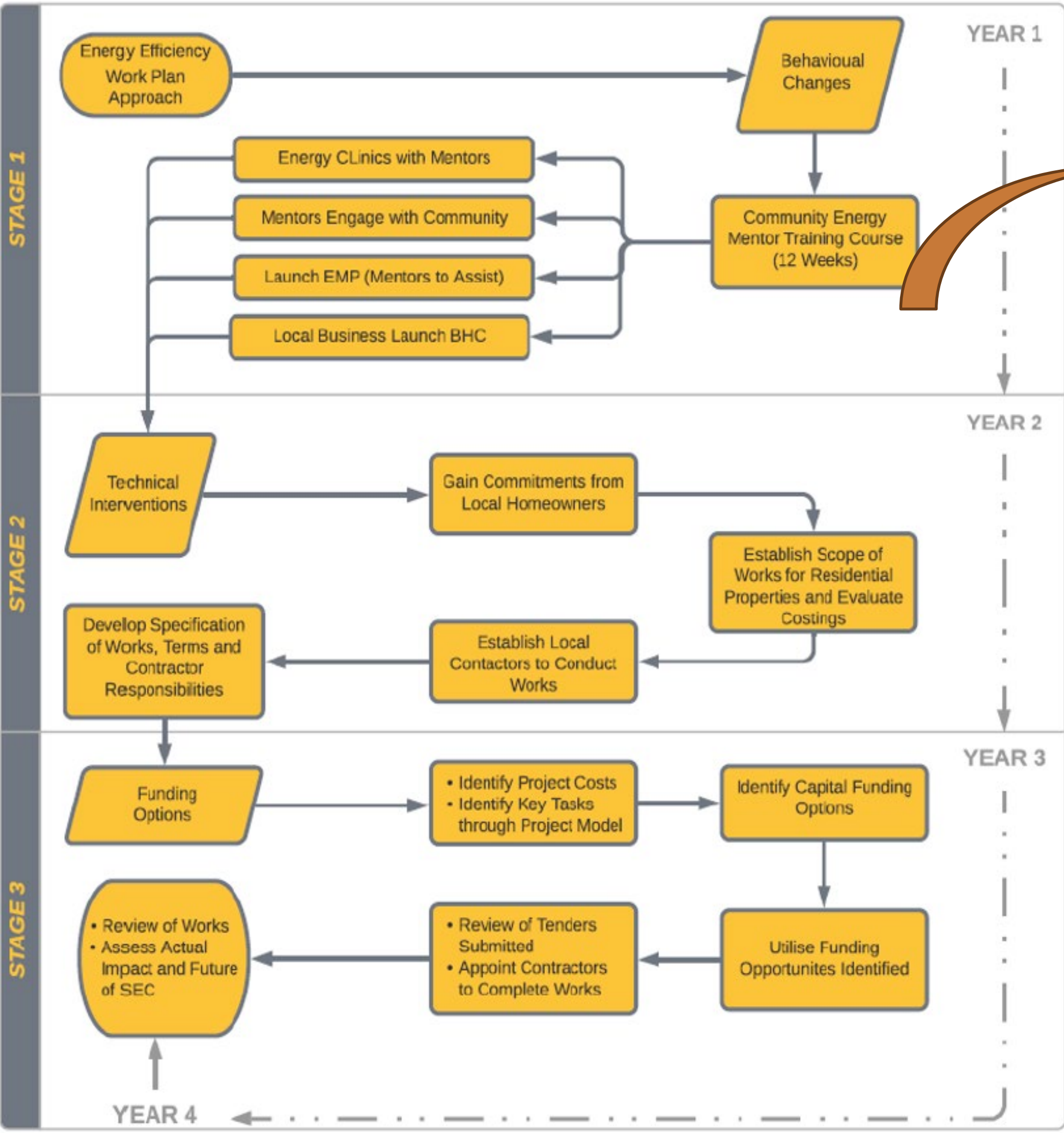
The core objective of **Stage 1** of the roadmap is engagement. The aim for the SEC is to ensure the fundamental messages of the Energy Master Plan are communicated to the entire community, and that this message stays relevant. By communicating this throughout the community, the SEC can be in the position to inform its people in an efficient manner, increasing the target audience reached.

The SEC is encouraged to organise community and contractor energy related training. The SEC should also liaise with their local SEAI County Mentor and run regular energy clinics and workshops using the already available material from the SEAI's SEC Team.

Furthermore, the community should aim to collaborate and engage with local SMEs. This is in respect to the SEAI SSEA SME Energy Audit voucher of €2,000 for eligible parties.

The SEAI's Support Scheme for Energy Audits (SSEA) offers SMEs a €2,000 voucher towards the cost of a high-quality energy audit. In most cases, this will cover the total cost of the audit. Application to the scheme is easy, with automatic approval for eligible businesses. Further information on this grant, and the application process can be found on SEAI's website.

The SEC have a stable and structured committee to oversee projects and initiatives which will be important in implementing the opportunities highlighted in this report. The committee should take advantage of local skills, meet on a regular basis and be seen as a local point of contact for energy projects. This structured team will be very significant as the SEC progresses towards more ambitious projects over the coming years.



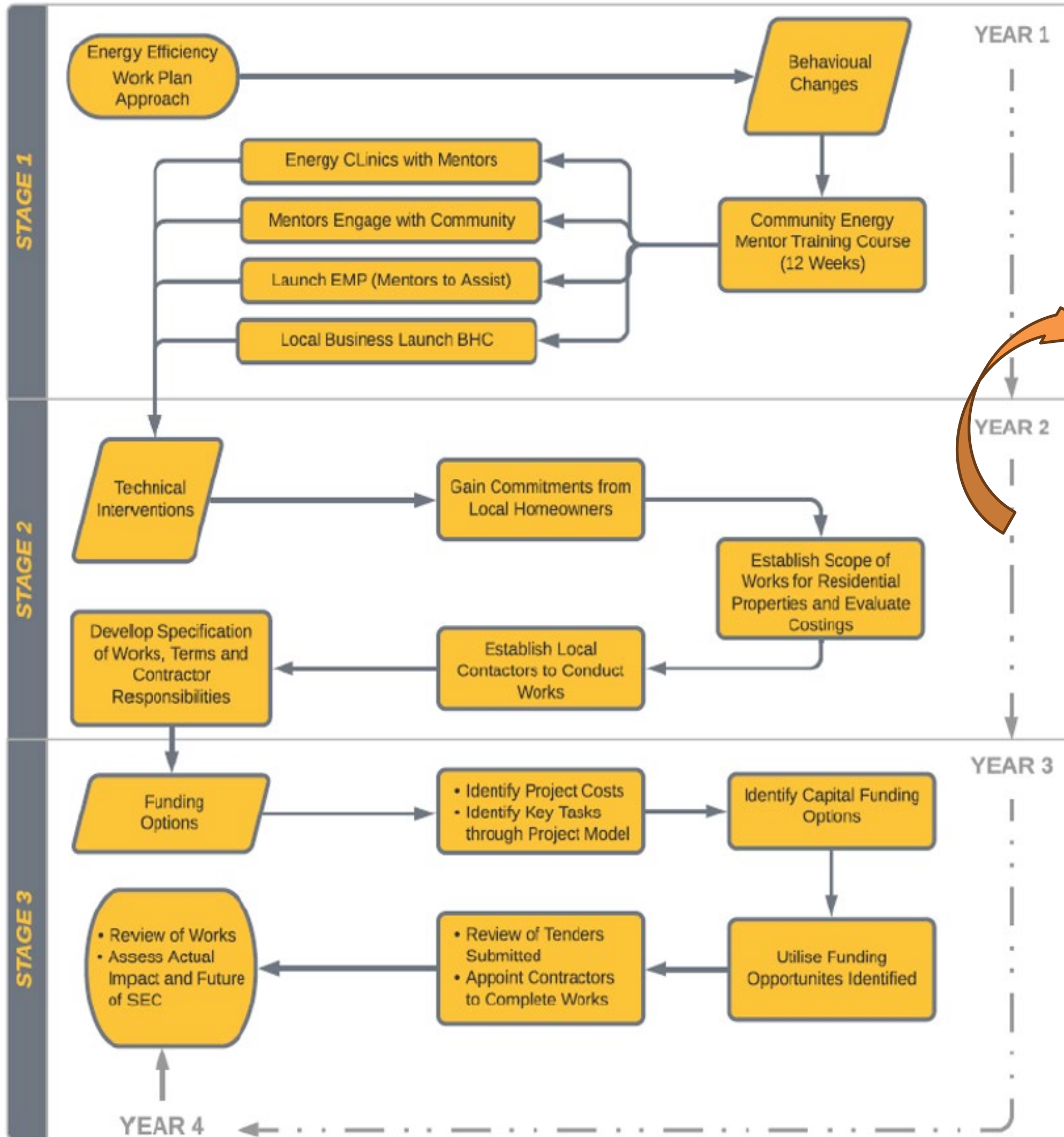
Stage 2 – Build Engagement

Stage 2 of the strategy looks to build on the awareness, training, and engagement developed throughout Stage 1, to begin collecting expressions of interest and commitments from local home and business owners, including local club and committee members in respect to energy projects and retrofits. Using the funds available via grant programmes, the SEC should help coordinate contact with a retrofit contractor to elaborate on actual scope of works and costing that would align with the current market.

These should be complete using the various funds available, such as the SEAI's One Stop Shop (OSS). The SEAI OSS scheme offers €350 against the cost of a residential Home Energy Assessment (HEA). This report provides a roadmap for achieving a B rated dwelling, including what each retrofit measure would be, alongside side costings and expected energy savings. Recipients can also rest assured that there is not obligation to commit to these projects once the HEA is complete.

For non-domestic & not for profits, the SEC should expand beyond SEAI funding and look to both national and EU programmes to support financing. A relationship should be developed with a local lender to ensure green finance can be acquired for these projects.

Vacant/derelict properties can be upgraded also to help increase housing stock, but also improve the general aesthetic of the community. The updated Vacant Property Refurbishment Grant can provide up to €70,000 for upgrade works to such buildings. This fund can be used alongside SEAI retrofit grants.



Stage 3 – Secure Funding

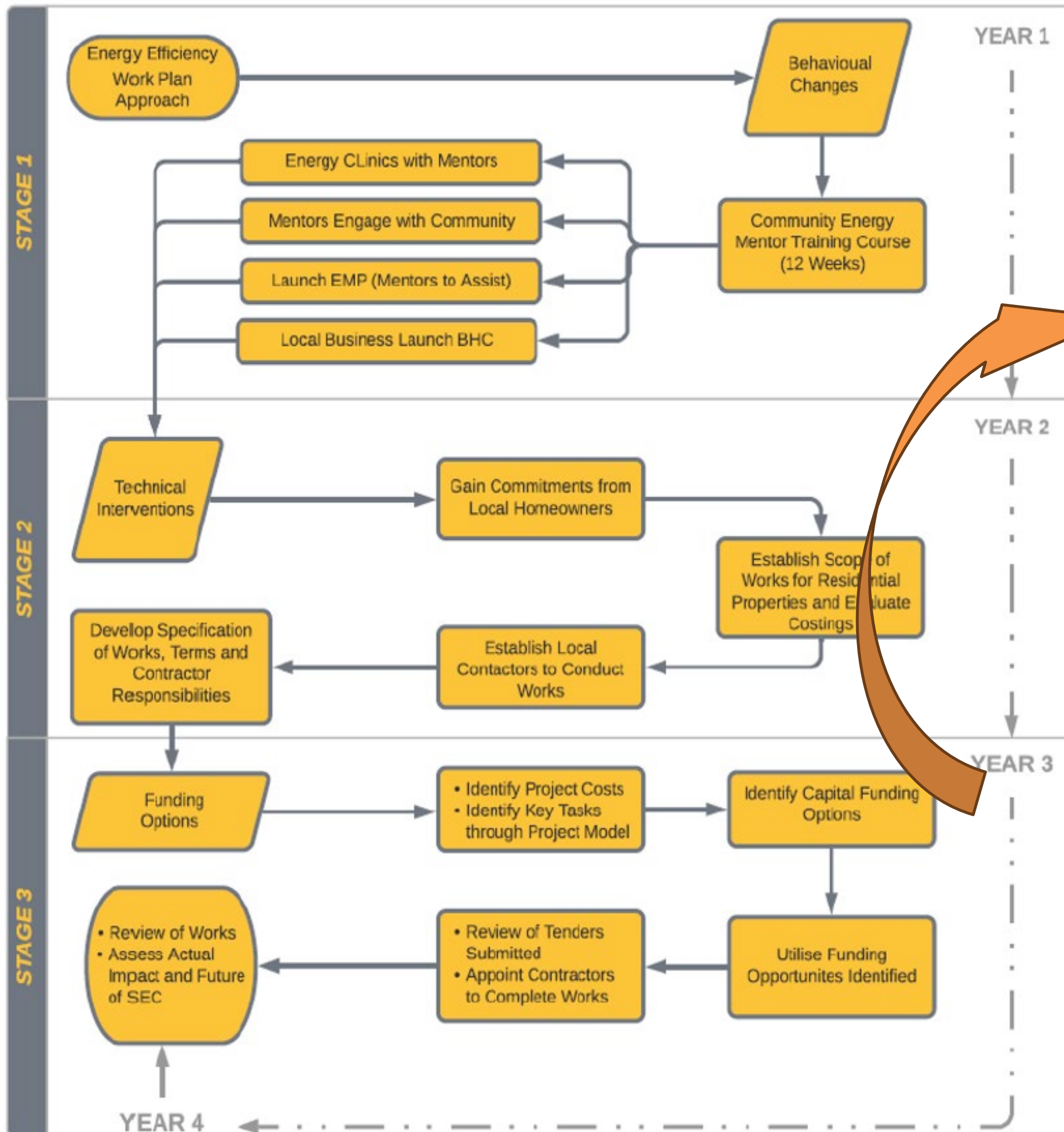
Stage 3 involves submission of grant documents and application forms, securing of funds and appointment of contractors to complete works. This should be coordinated by the SEC group, with support from home and business owners. The primary funding used to deliver projects would be the following:

- SEAI One Stop Shop
- SEAI Individual Grant Scheme
- SEAI Fully Funded Scheme
- SEAI Communities Energy Grant
- Local Enterprise Office - Green for Micro

The SEC is also advised at this stage, after forming a solid and structured committee, to explore alternative sustainable initiatives such as community renewable energy generation through wind technology, or a new solar project. Technical support is provided under the SEAI Community Enabling Framework,

Cratloe SEC has already formed a Renewable Energy Community (REC), which should be used to identify potential sites that could house a new solar or wind project. A 100% funded feasibility study should be conducted. This will demonstrate the viability of the project, identify the pathway for completion, and help in the progression of same.

This type of initiative can support funding for community projects into the future, while also decarbonising the electricity supply for energy use, further supporting Ireland's carbon reduction targets. The committee is advised to visit an up and running community renewable energy farm, such as Templederry Community Wind Farm to support learning to help solidify the concept and begin the community buy-in process.



1. Individual Energy Upgrade Grants

(Formerly Better Energy Homes and Solar PV schemes)

Who this is for?

Homeowners and private landlords who want:

- Individual energy upgrades
- To manage their own project
- To apply for the grant themselves
- To pay the full cost of works and claim grants after

Criteria for Homes?

For homes built and occupied before:

- 2011 for insulation and heating controls
- 2021 for heat pumps and renewable systems

What's included?

Homeowners manage their upgrades including:

- Contractor selection
- Grant application
- Contractor works
- Follow up BER

2. One Stop Shop Service

A complete home energy upgrade solution

Who this is for?

Homeowners and private landlords who want:

- Multiple energy upgrades
- To upgrade to a minimum B2 BER
- A fully managed solution including grant applications
- To pay for the works net of eligible grant

Criteria for Homes?

For homes built and occupied before:

- 2011 for insulation and heating controls
- 2011 for renewable systems
- All homes must achieve a minimum BER rating of B2

What's included?

Homeowners manage their upgrades including:

- Home energy assessment
- Grant application
- Project management
- Contractor works
- Follow up BER

3. Fully Funded Energy Upgrade

(Formerly Warmer Homes)

Who this is for?

- Qualifying homeowners in receipt of certain welfare benefits

Criteria for Homes?

For homes built and occupied before:

- 2006 for insulation and heating systems

What's included?

Homeowners manage their upgrades including:

- Home survey
- Contractor selection
- Contractor works
- Follow up BER

The SEAI's Communities Energy Grant is Ireland's national retrofit initiative aimed at upgrading building stock and facilities to ambitious standards of energy efficiency and renewable energy usage, thereby reducing fossil fuel usage, energy costs and greenhouse gas emissions. The Communities Energy Grant is designed to engage all members of SEAI's Sustainable Energy Community (SEC) network who wish to participate in delivery of energy efficiency works.

Measures Supported:

The following energy efficiency upgrades are eligible for funding as part of a Communities Energy project.

- **Technological improvements:** Technological improvements, such as boiler replacement or controls upgrades, which boost energy efficiency significantly, are eligible.
- **Fabric upgrades:** This includes insulation upgrades to the walls and roof, as well as upgrades to the windows and doors. In the case of insulation work on homes, an optimal whole-element solution must be implemented. Partial solutions will not be eligible for grant support without prior agreement.
- **Renewable energy solutions:** Renewable energy solutions like wind turbines, biomass plants, and photovoltaic systems are eligible where included as part of a broader retrofit.
- **Energy efficient lighting:** Lighting projects for buildings are only eligible as part of a broader retrofit. Public lighting projects, not street lighting, are eligible where 'Energy-smart' lighting is proposed. This can be simple approaches or more complex systems.

Energy Master Plan SEAI Business Grants

Microgen Scheme

Grant towards the installation of solar PV for a business, farm, school, community centers, or other non-profit organisation.

Provides financial support to help businesses move to renewable heating such as heat pumps.

Support Scheme for Renewable Heat

EXEED Certified Grant

The EXEED grant scheme is designed for organizations who are planning an energy investment project. Grant support of up to €3,000,000 is available.

Support Scheme for Energy Audits

A €2,000 voucher towards the cost of a professional energy audit.

While the EMP focuses more so on SEAI funding for energy related projects, many other schemes are available that can be used to co fund, or outright fund more of the energy saving initiatives the SEC wish to follow. Below is a list of a few, alongside links. The SEC are advised to contact the relevant body to establish exact conditions around said funds.

- [Pobal Sports Club EV Charging Scheme](#)
- [LEADER](#)
- [Local Enterprise Office](#)
- Local Authority Community Climate Action Fund (Contact Clare County Council)
- [Local Authority Vacant Property – Conservation Advise Pilot](#)
- [Local Authority Vacant & Derelict Property Grant](#)
- [Community Centre Investment Fund](#)
- [Sports Capital](#)
- [GAA Green Clubs](#)
- [Renewable Energy Farm Community Benefit Fund \(Subject to proximity to wind/solar farm\)](#)



COMHAIRLE CONTAE AN CHLÁIR
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The Register of Opportunities is included as part of this report. It is a working document in Excel that can be updated as new opportunities arise by the group. This register will include potential approaches to reduce energy use in the study area and can be used as examples for further opportunities.

This will be a guiding document that will be updated as new applicable opportunities arise and can be amended as circumstances change. The opportunities highlighted within the RoO are technical in nature, involving a range of energy efficiency, smart energy, and renewable energy technology systems. However, the foundation of sustainable energy will develop from behaviour change, increased awareness, and whole community engagement.

In parallel with the completion of the identified technical opportunities of the RoO, Cratloe SEC are encouraged to progress energy awareness through continued outreach within the wider community. As identified within this report, this can be through a range of initiatives from basic workshops, an increased presence on social media, developing partnerships with existing public and private entities and through the identification and upskilling of Energy Champions, utilised as a voice to articulate energy efficiency and support a range of community queries to support in its growth.

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