

ENERGY MASTER PLAN FOR KILLALA SUSTAINABLE ENERGY COMMUNITY

This Energy Master Plan is supported by the Sustainable Energy Authority of Ireland

Aim of this Energy Master Plan



Conduct domestic and non-domestic energy audits in the Killala area.



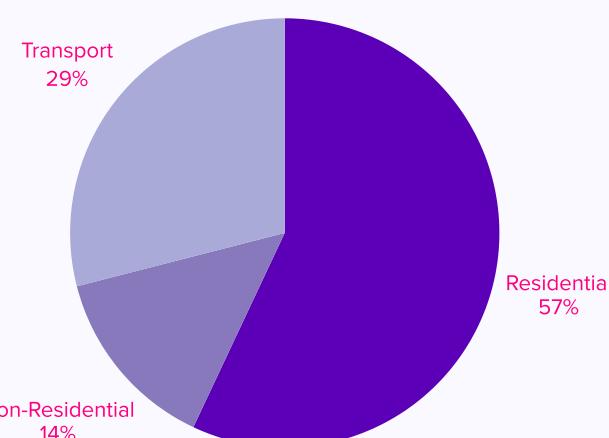
Calculate total energy usage, total CO₂ emissions and total energy spend across 3 sectors.



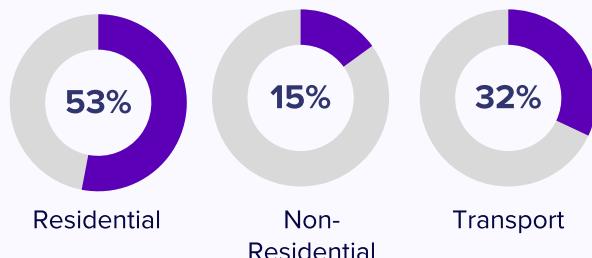
Identify renewable energy potential and define a Register of Opportunities for Killala.

Energy Baseline

TOTAL ENERGY USE (%)



TOP EMITTERS OF CO₂



A tCO₂ (tonne of CO₂) is a way of expressing greenhouse gas emissions in terms of weight.
Using 400 litres of home heating oil produces ~1 tCO₂

A kilowatt-hour (kWh) is the same unit used on your electricity bills.

A modern fridge consumes ~300 kWh/year.

An average Irish home consumes ~4,200 kWh/year

Understanding the Units

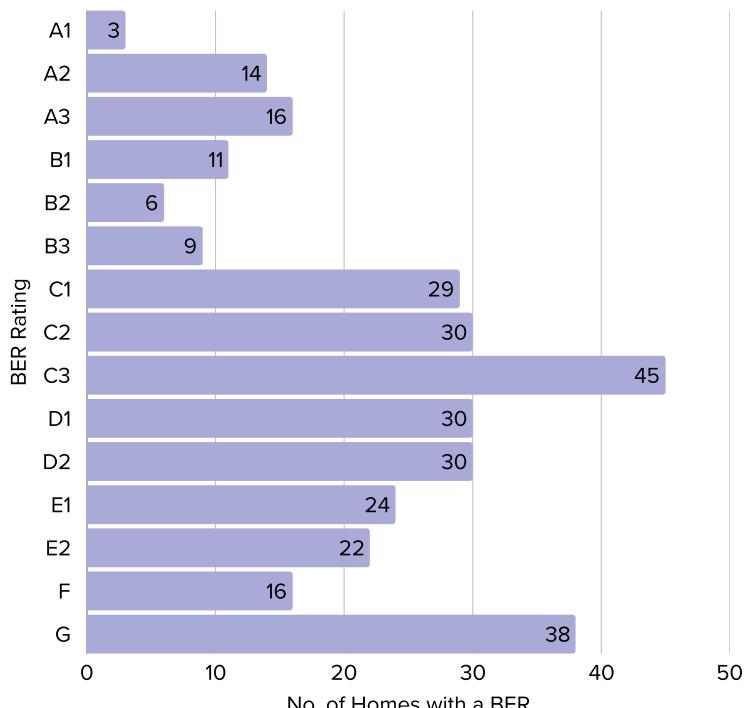
Housing in Killala - Deep Dive

- 10 BERs completed in the SEC area
- 916 houses in Killala
- CSO data mining to find Fuel Mix, Type of House, Build Date
- Oil makes up 62% of Fuel Type



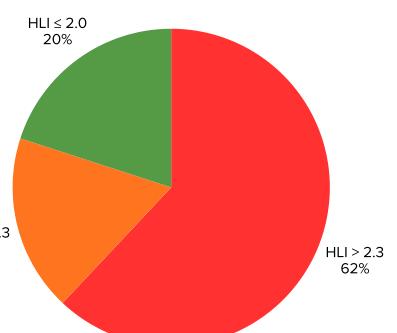
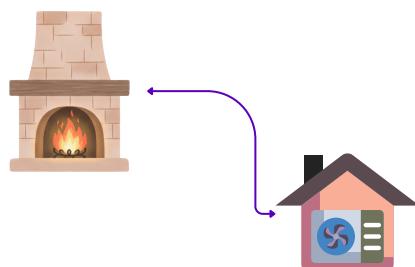
BER Dashboard

- BER Average in Killala ~ D2
- Average Energy Spend €4,011.88/year
- 84% of Housing Stock has a B3 or Worse
- 20% of Homes are Heat Pump Ready



Heat Pump Readiness

The Heat Loss Indicator (HLI) is an important factor in determining heat pump readiness.
The HLI takes into account fabric and ventilation heat loss for homes.



- Homes with less than optimal roof insulation
- Homes with less than optimal wall insulation
- Homes with less than optimal window units
- Homes with less than optimal floor insulation



Non-Domestic Sector - Deep Dive

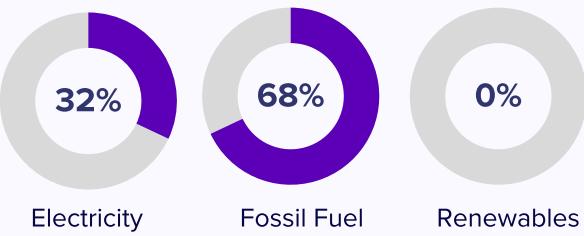
4 Commercial/ Public Buildings Energy Audits Complete
Bill Analysis Completed
Analyse Significant Energy Users (SEUs)
Identify Energy Savings Opportunities

Key Findings:

- Total Energy Usage - 5,033,497 kWh
- Total Emissions - 1,853 tCO₂
- Total Energy Spend - €872,316.73



KILLALA TOP ENERGY USERS (KWH)



Potential Energy Savings

357,689 kWh ~ 7% Reduction
122.96tCO₂ ~ 7% Reduction
€47,523 ~ 5% Reduction

Commercial Business' Audited
Killala National School
Lacken Cross Secondary School
Killala Motors
The Acres Bar

All measures outlined in the non-domestic energy audits have potential projects that can reduce energy costs, decrease CO₂ emissions, and provide businesses with better control over their energy use.

Potential Project Scenario: Lacken Cross Secondary School

- Reduction in emissions by 76% and an annual energy spend of €19,647
- Investment Est ~ €132k
- Simple payback 6.7 years



Taken from SSEA Audit!

Opportunity	Fuel Type	Energy Savings [kWh]	Cost Savings [€]	Carbon Savings [tCO ₂]
50 kWp Solar PV System	Electricity	43,649	€11,349	14.16
LED Upgrade	Electricity	9,595	€2,782	3.12
Heat Pump to Replace Oil Boiler	Oil	149,307	€5,133	40.85
Electricity Monitoring System	Electricity	5,955	€1,727	1.93
Thermal Imaging Survey	Oil	Cost and payback are variable depending on required upgrades		



Home Energy Upgrades

The following energy upgrade is an example of a deep energy upgrade on their home. For Killala, collective action across households will make a measurable difference, helping the community reach its climate goals while delivering long-lasting benefits for residents.

Current Dwelling Condition:

BER Rating - **D2**

Space Heating Cost - **€3,035/year**

Carbon Emissions - **4.2 tCO₂/year**

Investment - €50/60 k

Proposed Dwelling Condition:

BER Rating - **A3**

Space Heating Cost ~ **€600/year**

Carbon Emissions - **0.8 tCO₂/year**

Energy Upgrades (Grant Funded) BER Uplift Per Stage

Mechanical Ventilation System	D1
Roof & Wall Insulation	C3
Low U-Value Windows and Doors	C2
Close off Open Fires and Flues	C1
Install Heat Pump	B1
Install 2 kWp Solar PV	A3



Meeting Targets:

84% of Homes in Killala are < B3 BER.

If we bring 50% of those homes up to a B2 rating, we would see substantial energy and carbon savings across the community.

- 273no Houses
- Up to BER of B2



**Energy Savings - 1,763,746 kWh
Carbon Savings - 452 tCO₂**

Register of Opportunities

Transport

- **10% Switch to BEV** → 77 Car Drivers
- **723,396 kWh** → 7% Saved
- **170 tCO₂** → 8% Saved



Grant Funding for Homeowners: Claim up to **€300** towards the purchase and installation of an electric vehicle home charger unit.

Killala District Heating Plant

- A 50 MW Killala data centre has planning approval requiring a district heating system using heat pumps and on-site solar PV to reuse waste heat and generate renewable electricity.
- The system would provide low-carbon heating to local homes and businesses, reduce fossil fuel reliance, cut emissions, and lower heating costs by up to 30%.
- The project supports Ireland's Climate Action Plan and National Heat Study, with a proposed feasibility study to assess adding a biomass facility for year-round, low-carbon heat supply.



Renewable Energy Potential

- If we installed Solar PV on 30% of Homes in Killala:
 - **2 kWp** → **462,626 kWh** Saved
 - **4 kWp** → **925,251 kWh** Saved
 - **6 kWp** → **1,387,877 kWh** Saved



By working as a group, households benefit from reduced installation costs through bulk buying, stronger bargaining power with suppliers, and access to trusted installers.

Next Steps

Lots done and lots more to do!

1. **Learn** → Forming of SEC, Community Discussions & Engagement.
2. **Plan** → Develop Baseline Energy Usage, Develop ROO and Roadmap.
3. **Do** → Retrofitting domestic and non-domestic, installing renewable energy systems, improving public transport efficiency.

Grant Schemes to Focus on:

- One Stop Shop
- Warmer Homes Scheme
- DMG/NDMG (Solar PV)
- Home EV Charger Grant
- Communities Energy Grant
- Business Energy Upgrade Scheme
- Free Energy Audit (Commercial)



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About Watt Footprint



Watt Footprint

Watt Footprint is a leading end-to-end energy management company. Take control of your energy today. With Watt Footprint, you'll see your usage, costs, and savings in real time, and get expert guidance to reduce waste and lower bills.