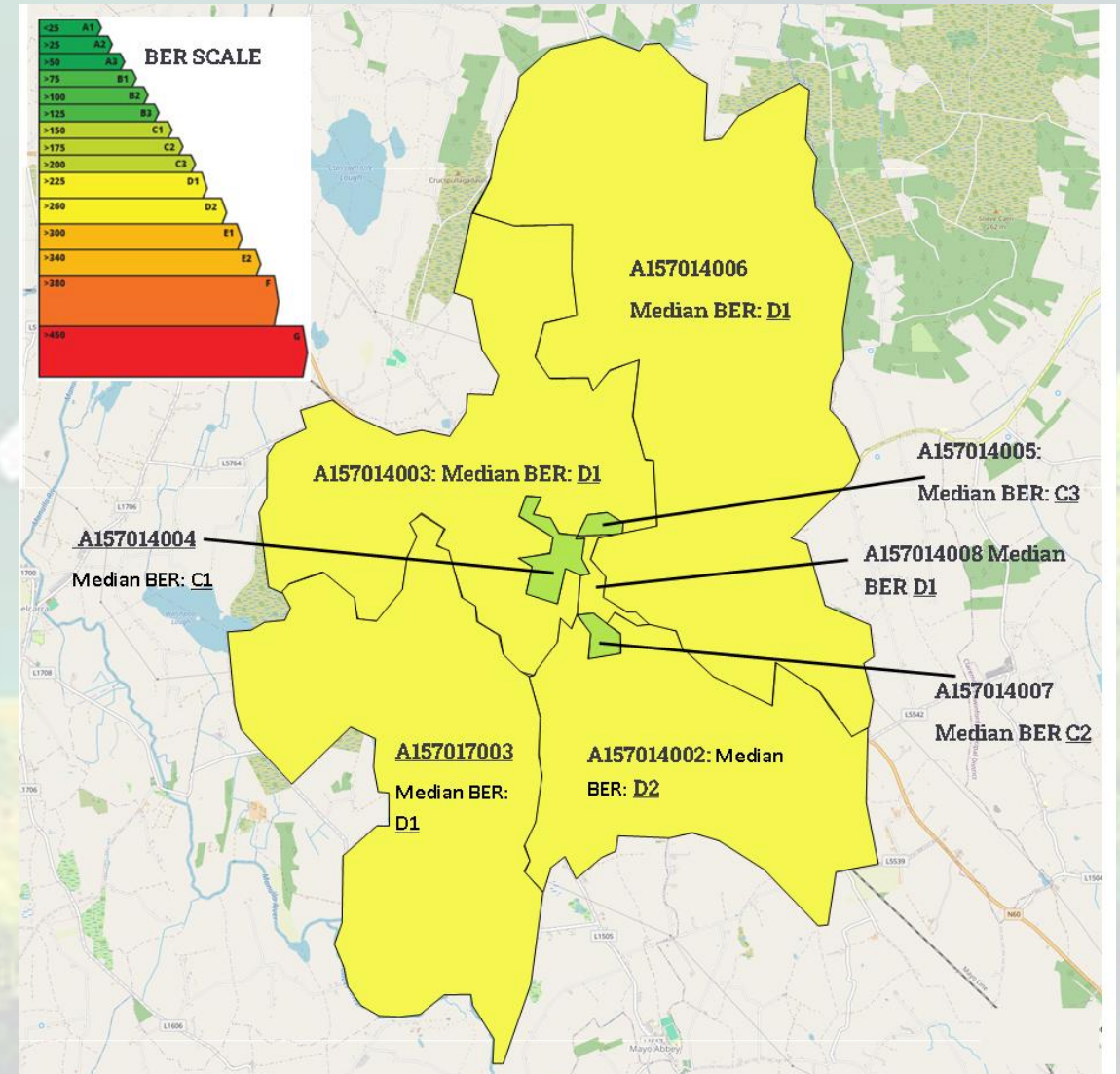


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2025

Energy Master Plan (EMP) for Balla Sustainable Energy Community (SEC)



Balla SEC





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Process

Supported by



**Committee members & Orla Nic
Suibhne: SEC mentor**



**1500+ SECs all
around Ireland**

Balla CRD SEC

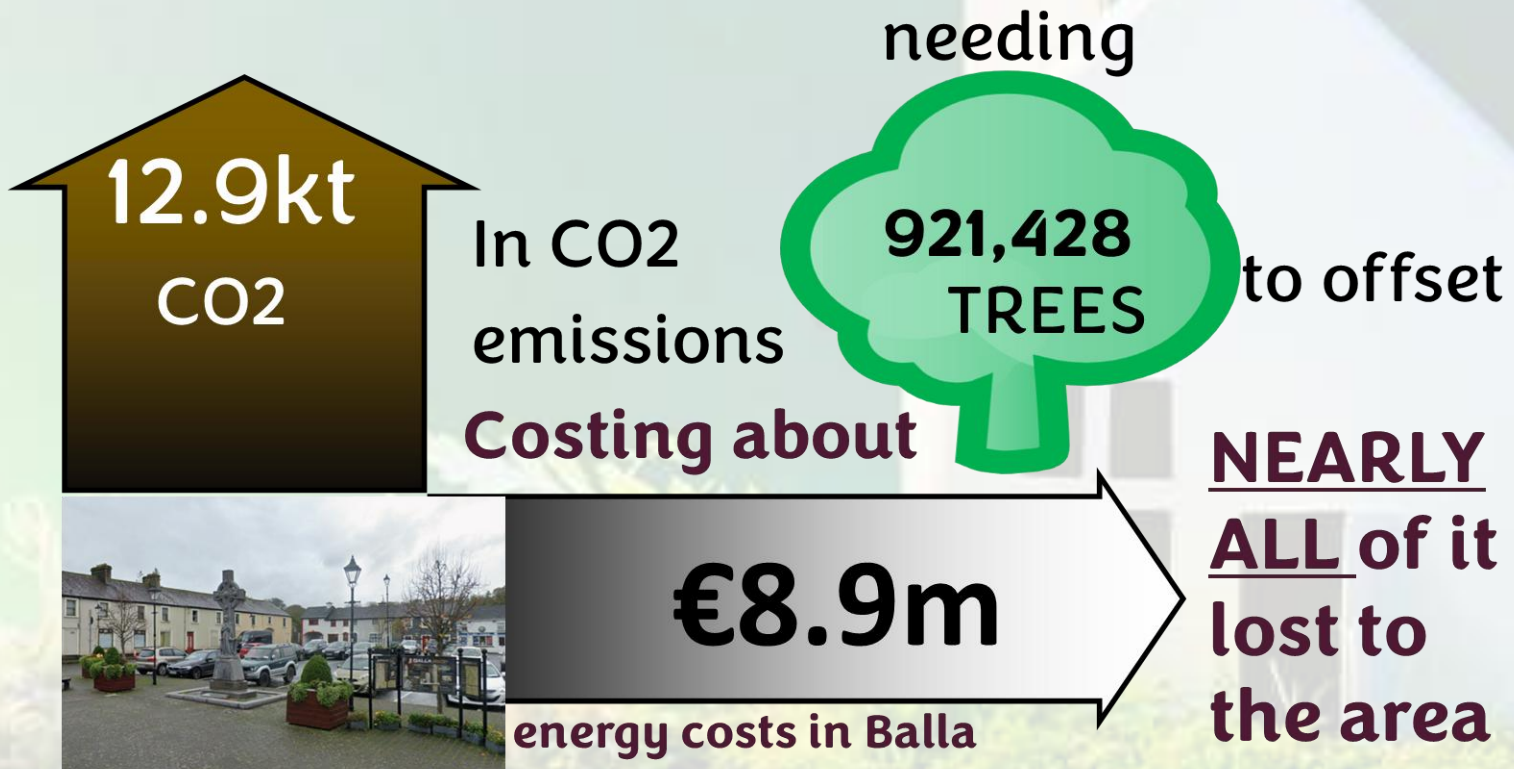
**Request for
Quotations to
conduct EMP**

**Energy Co-
ops Ireland**

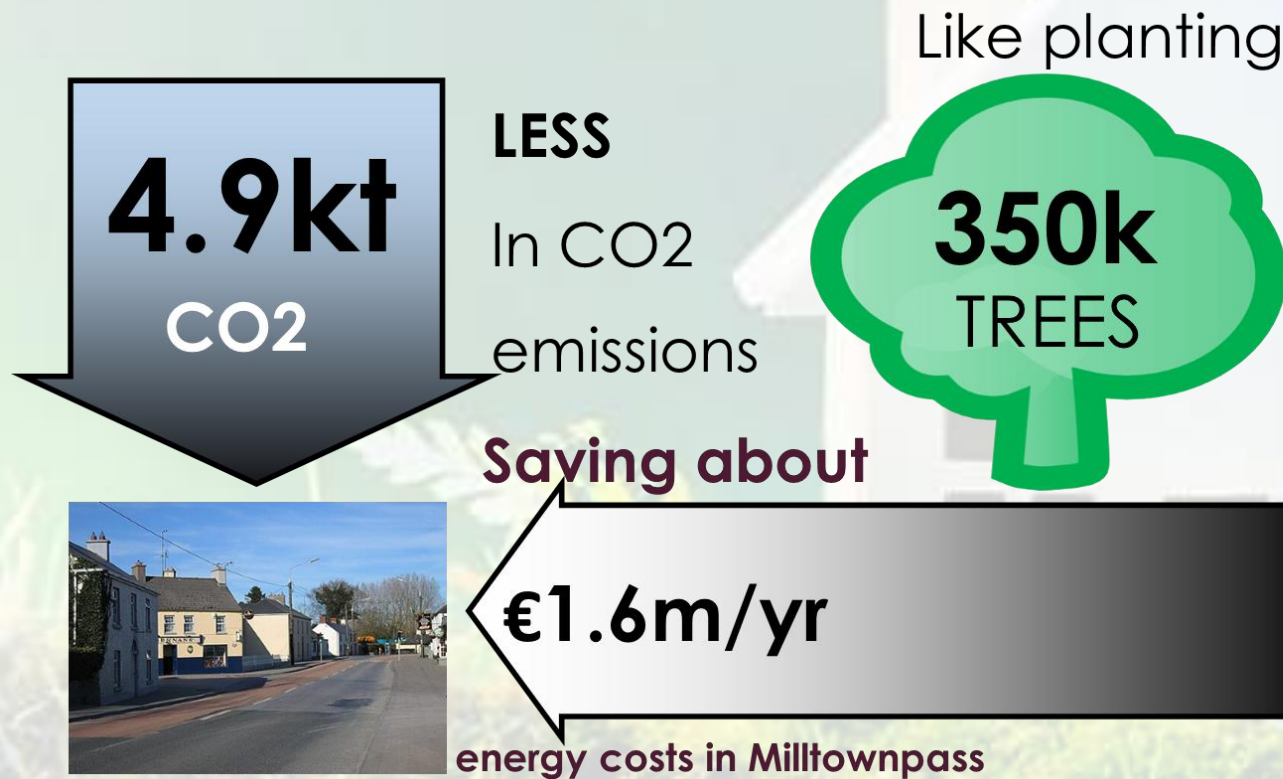
Overall Aims of EMP

1. Quantify the current energy status of the SEC – Baseline of electrical, thermal and transport energy demand.
2. Identify existing renewable energy sources embedded within the SEC.
3. Create a Register of Opportunities (RoO) – list of potential projects for energy efficiency and renewable energy.
4. Select suitable projects for years 1, 2 and 3. Set targets against the baseline figures.
5. Lay out a medium-term strategy for energy sustainability in 2031

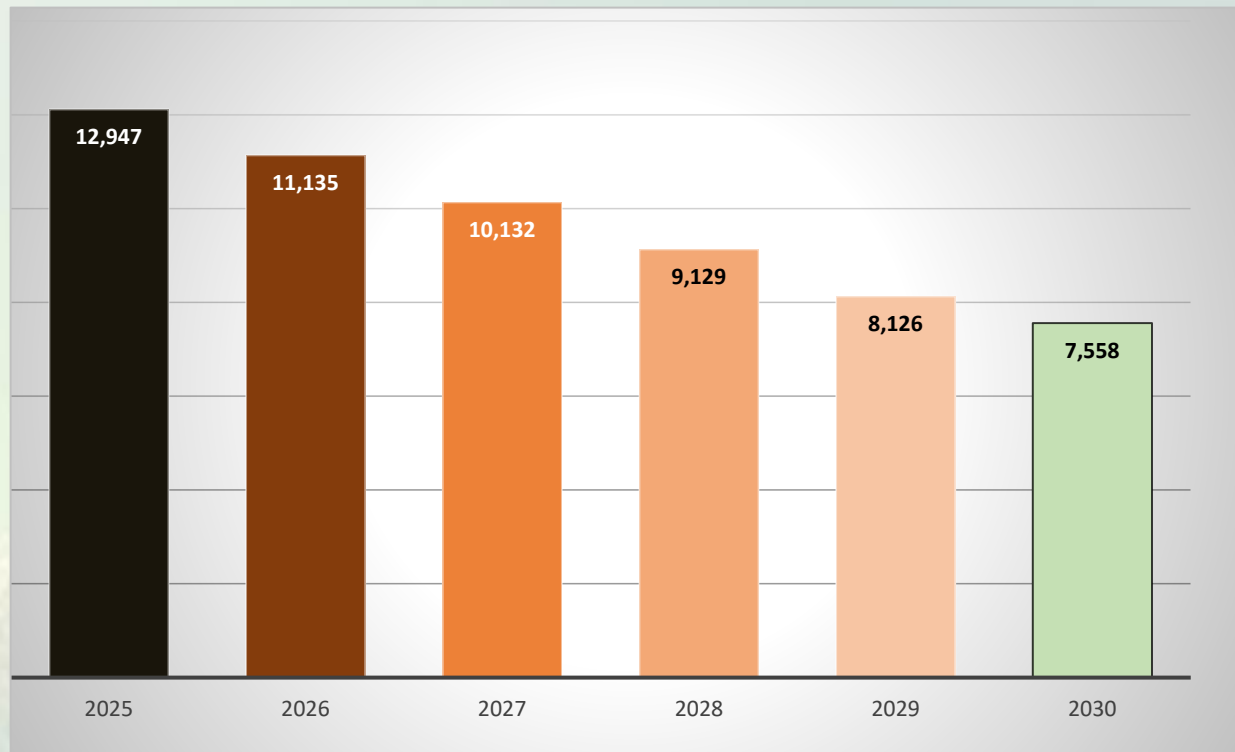
Summary: 2025-2031



Summary: 2025-2031



Summary: Possible position 2031



Under this Sustainable Energy Strategy, emissions from Balla energy use would be reduced to just 58% of 2025 levels, but with considerable amounts of that energy produced renewably and locally



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Survey of Energy Use

Data from a wide range of sources: for example, BER database, CSO

Information on the EMP is available at:

energyco-ops.ie/balla-emp/

There an 8-page summary guide in a PDF

Sign-up forms for locally-based money and energy saving projects

Will be kept up to date with news and information

Basics

Population of 1662 people, in 636 homes

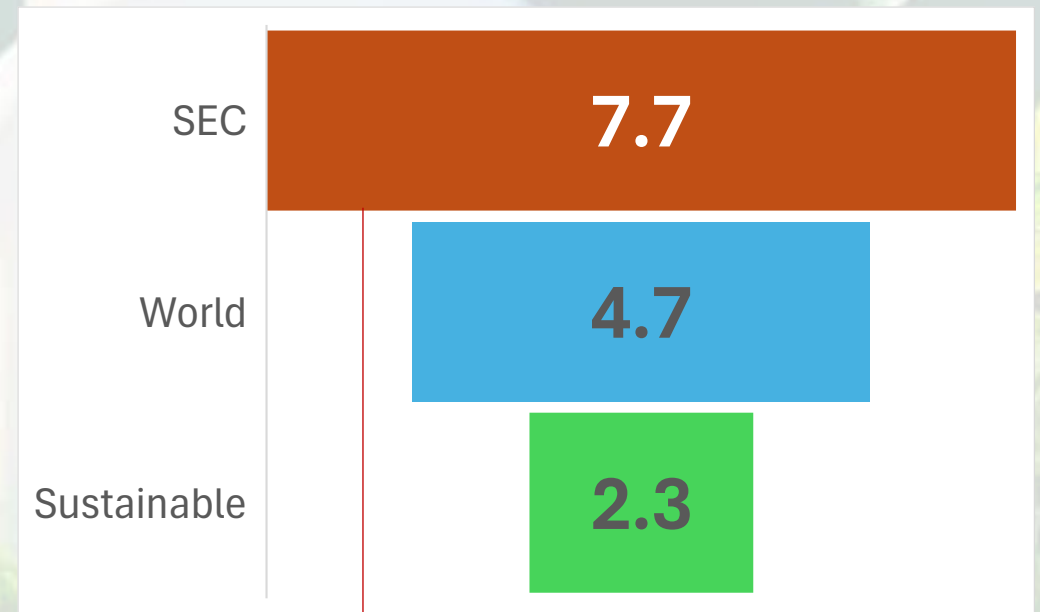
60 Registered businesses and community buildings and 172 Farms

Annual tCO₂ per person in SEC: is 7.3 tonnes CO₂ pp/yr (tCO₂)

The World Average is 4.7 tCO₂ pp/yr

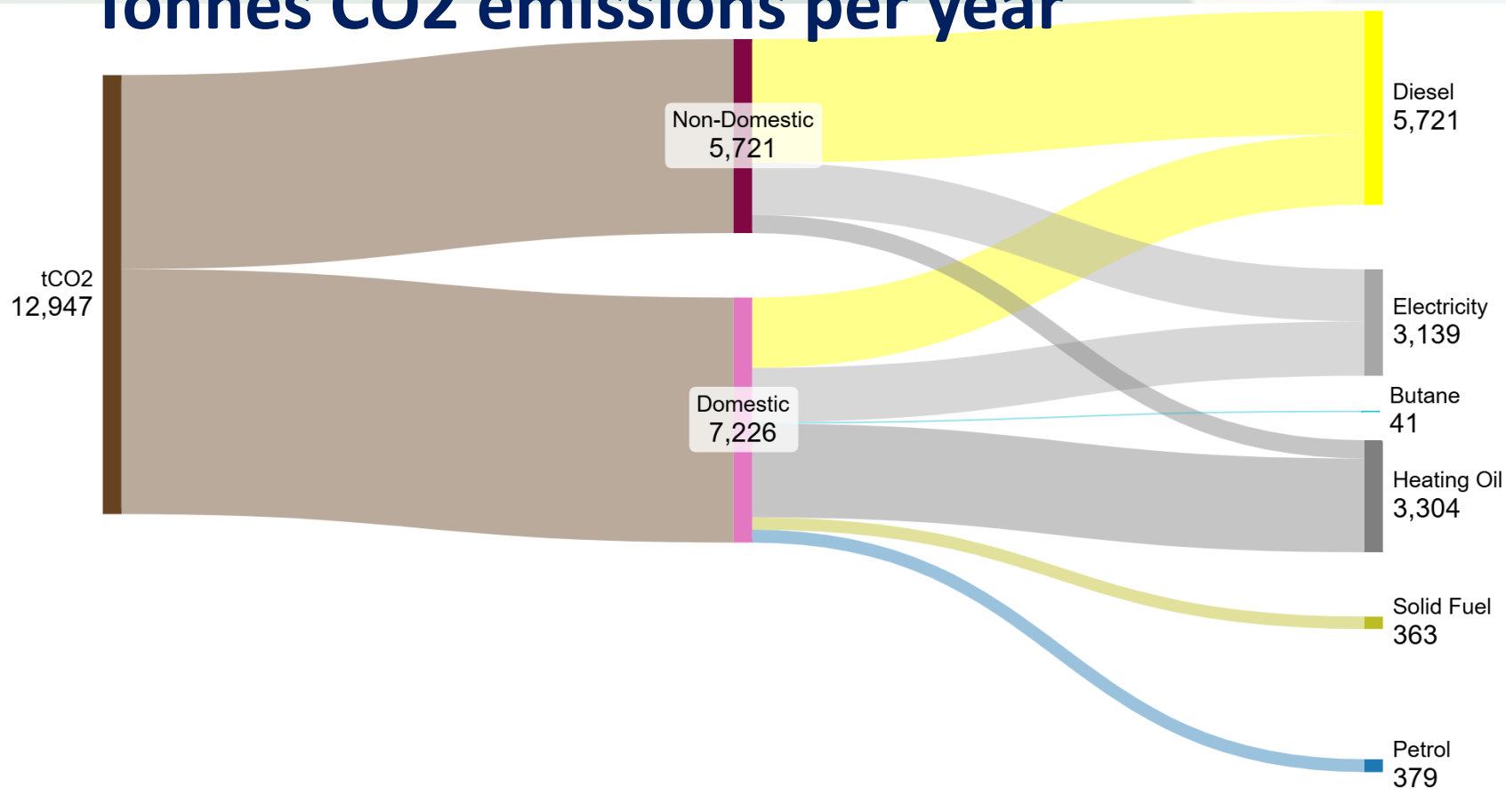
To keep us below 1.5C global warming, this has to be 2.3 tCO₂ pp/yr

Doesn't include Flights (9%), or Food or Purchased Goods and Services (43)%



Findings

Tonnes CO2 emissions per year



Oil
25%



Electricity
24%



Diesel
44%



Quick Tips

Step 1: Do Your Own Audit:

- Check windows, external doors, vents, floor spaces, fireplaces, and stoves with a stick of incense: and track down and eliminate draughts.
- Check insulation levels in attic, basement, walls (including the meter box), and floors
- Check your boiler and stove; what age are they? When were they last serviced?
- Collect energy bills and scrutinise them over a year or 2.
- To save money in the short term see if you need to change your electricity supplier.

Quick Tips

Step 2: Actions to save 22% of your energy costs and fossil fuel use:

- Turn everything off – don't leave on standby (2%)
- Use a clothesline when possible – tumble dryers are energy heavy. (7%)
- Wash clothes @ 30 degrees (1%)
- Turn off lights when not in a room, replace bulbs not all at once but as they go with highest rated LEDs (**A+ check label**) (2%).
- Use central heating to heat water-tank. (10%)
- If you use the immersion, install a timer so it's on at cheaper electricity rate times.
- Use a shower pump NOT a power shower

Quick Tips

Step 3: Control how you use heat

Keep room temperature 19C (this can save up to €350 every year for each degree lower you heat the house)

Close the curtains at dusk to keep heat in the room that would otherwise be lost through the cold windows, and you could save up to 10% of your heating costs.

Consider fitting shelves above radiators as they redirect the warm air that rises from them back into the room.

Air your house 3 to 5 minutes a couple of times a day, instead of opening windows a little bit all day. Shut off your heating, during airing. This can reduce heat loss by 16%.

Bleed your radiators regularly. If there is air in your radiator your boiler burns longer. Start with the lowest and end with the highest radiator.

Retrofits

Make your home cozier, save money and reduce carbon emissions



External doors, Roof and Wall insulation, Windows upgrade
Air-to-Water heat pump and integrated heating controls

6 measures which, when completed in order, will bring the home's energy costs for the home from €6,357 per to €3,278 per year.

Potential 49% reduction saving of €3,079. CO₂ emissions of the home would be reduced by 12 tonnes the equivalent of carbon sequestered by 858 mature trees annually.

Retrofits

Make your home cozier, save money and reduce carbon emissions



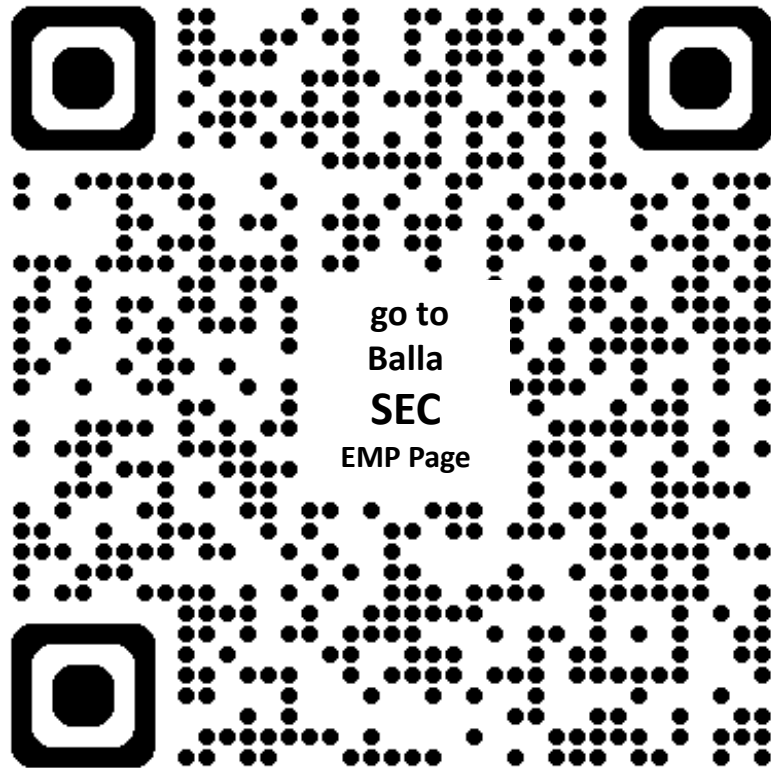
External doors, Roof and Wall insulation, Windows upgrade
Air-to-Water heat pump and integrated heating controls

Sample Home Measures	Est Cost Nett Grants*
Exterior Door	€2,200
Roof Insulation	€500
Wall Insulation	€7,500
Windows Upgrade	€6,000
Airtightness	€500
HP	€9,100
Total	€25,800
Savings	€2,793.32
Payback Yrs	9.2

*Costs are based on 2025 industry levels, grant amounts on 2025 one-stop-shop levels which can be found at [this link](#). Actual costs and grants may vary according to building specifics



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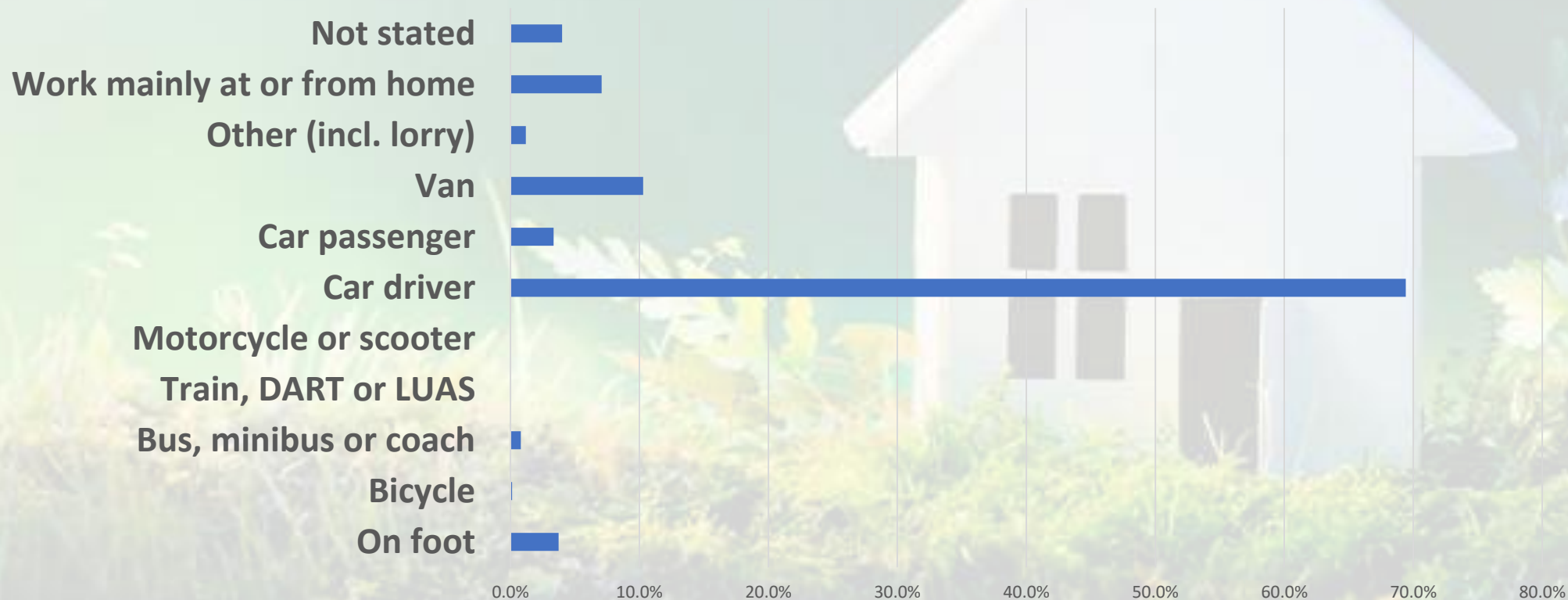


Go to the link to
find out more

Transport

There are about 992 private cars in the SEC .

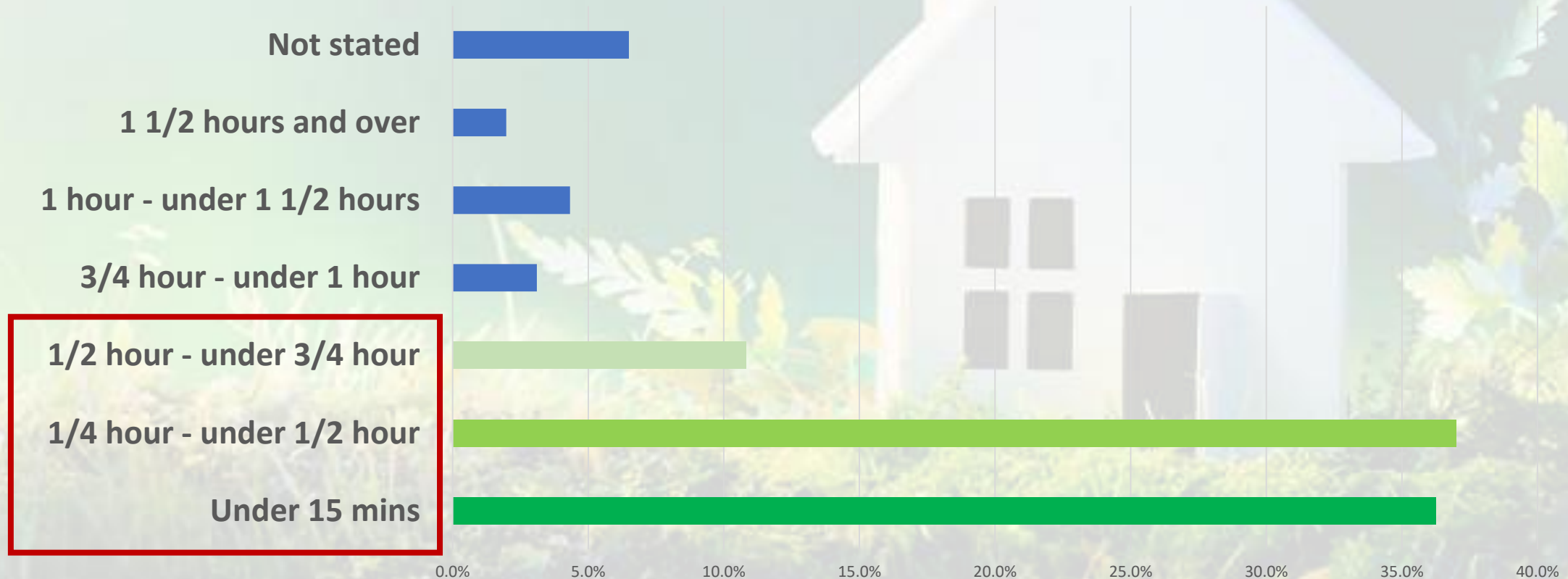
An estimated 68% are diesel with 27% petrol and 5% other (probably EVs).



Transport - cars

% of total Balla SEC Area

Vast majority of commuter journeys are well within the range of EV batteries.





Volkswagen Golf
2.0 TDI 115HP Life

Transport

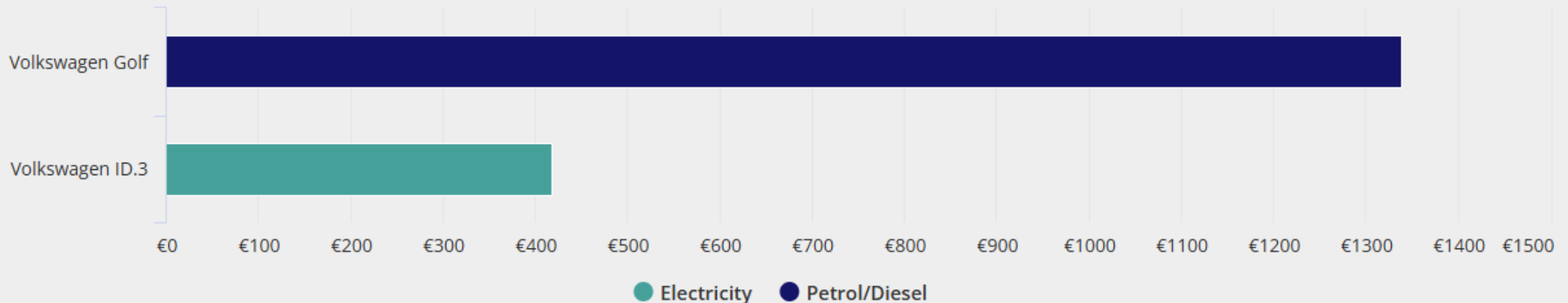
Balla – Dublin = 259km

Balla – Dublin – Balla = 518km



Volkswagen ID.3
GTX 79KWH

Annual energy costs



Range = 380-500km

Cold weather Motorway Driving



Volkswagen Golf
2.0 TDI 115HP Life

Transport

Balla – Dublin = 259km

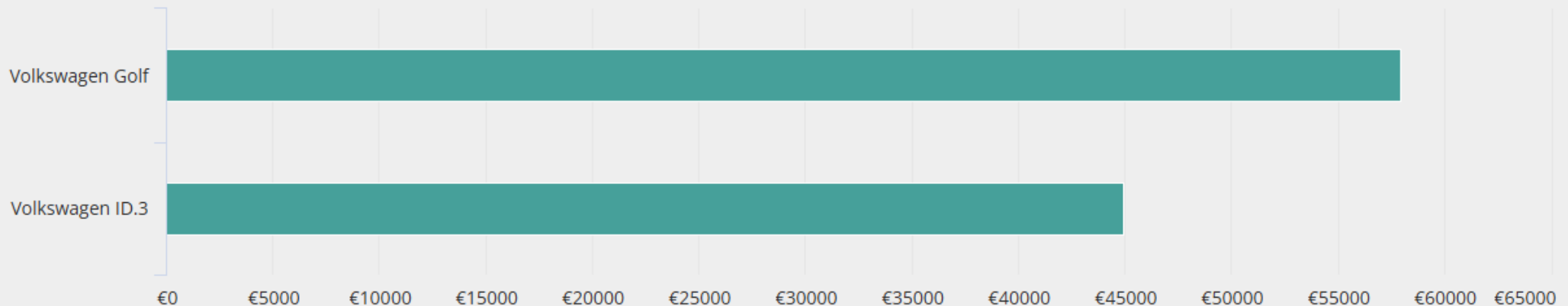
Balla – Dublin – Balla = 518km



Volkswagen ID.3
GTX 79KWH

Range = 380-500km

10 year total cost of ownership Cold weather Motorway Driving

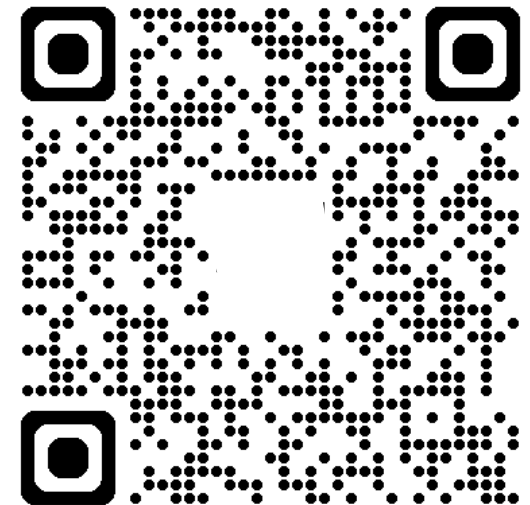


Businesses

Most SMEs and Community Buildings can save approximately 30% of energy costs and emissions relatively easily

- Grants available for audits and recommended actions. A €2,000 energy audit voucher.
- Solar Thermal and PV.
- Building Fabric Upgrades
- Heat and Cooling
- Building Management and Controls
- Design Assistance

Scan and
Save –
SEAI page





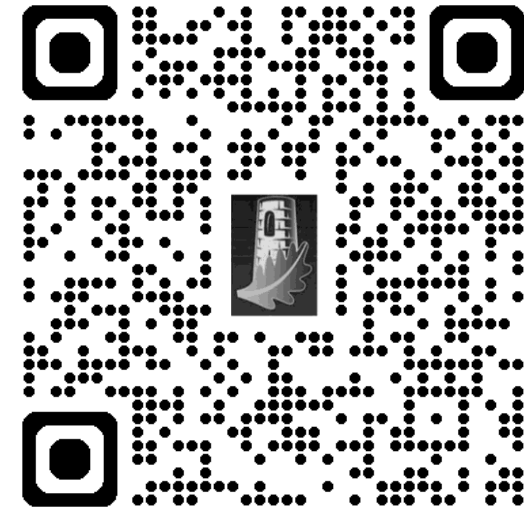
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Businesses and Community

- **Business Supports**
 - **Summary 10-page document on supports at link**
- **Community Building Supports**
 - **Climate Action Fund**





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Farms

172 farms in the Balla SEC area

ED	Holdings	Tot Area (ha)	Cattle	Sheep
Balla	130	3,058	3,807	4,845
Half Ballinafad	42	903	1,296	1,150
TOTAL	172	3961	5103	5995

Farms can be in
Community
Energy Grant
Applications

Total Energy Use (excluding tractors and machinery) approx.
253MWh per year

PV and Cattle?

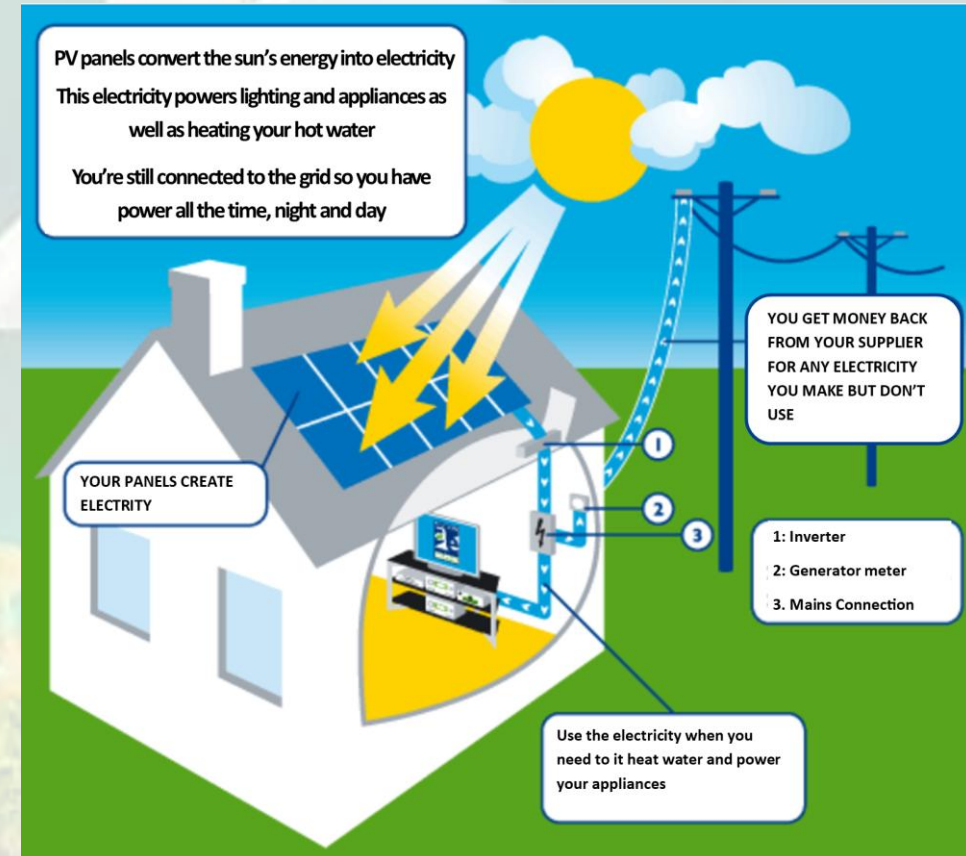
- Lower costs and carbon footprint with medium scale onsite PV: now includes dairy as well as sheep farmers.
- Grid payments for excess generation, but you will need to consume at least 20% of the power you generate.
- Dave Foran's dairy farm in Co Waterford uses a bifacial 27kW PV system.
- 74% of the energy generated consumed on the farm: payback in just four years
- Avoiding nearly 9,000 tCO₂, equivalent to planting 636 trees



PV in the home

A number of solar panels mounted to your roof (or in your garden or adjacent field)
Connected into the electrical loads within your building.

PV systems are rated in kilowatts (kWp).
A 4kWp solar PV system would require about 16 solar panels on your roof needing about 10m² of space
In this area that will generate about 3520 units of electricity (kWh) a year.



PV for the community?

- **Severe grid restrictions**
- **RESS scale PV difficult locally at present**

Distributed PV potential in homes

- 491 homes are houses with 3 bed rooms or more
- These would be very suitable for 4kW+ home PV system
- This would generate about 1,718 MWh of electricity annually.
- Equivalent to a grid scale PV farm
- And is more 'profitable'

Economics of a 3kW System in Milltownpass

System Cost (with grant)	Annual Savings & Rebate	Payback Period	Lifetime** Profit
€6,200	€909/year*	6.8Years	€19,250

*Based on a cost of €0.31/kWh unit electricity and a price for supply to grid of €0.25 per unit electricity with half used in the home and half exported.

**A typical PV System has a 25-year lifespan. This does not include any increase in cost of electricity over the period which would increase the lifetime profitability.



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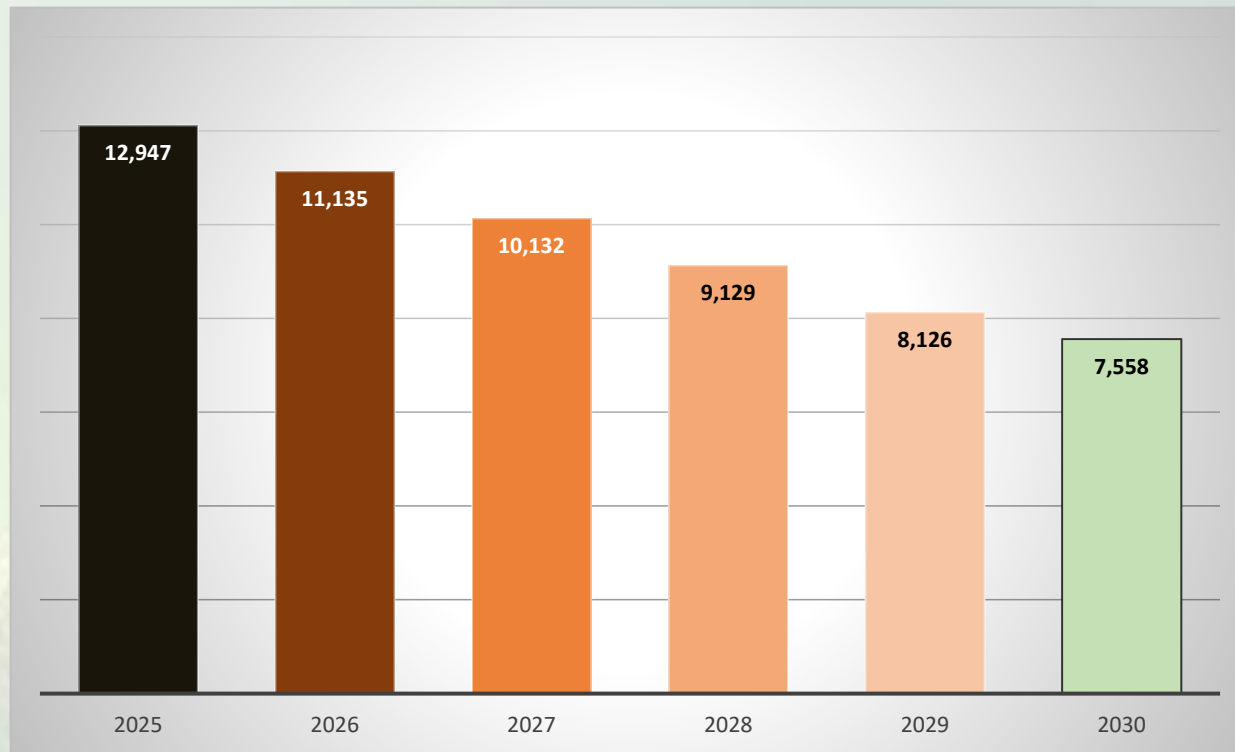
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Total Sustainability Actions

- Retrofit 15% of G-C3 homes each year to B3
- 20% ND Buildings upgraded each year achieving 30% energy reduction
- Information campaign to encourage GV owners to switch to E Vans
- Information campaign to encourage PSV owners to switch to EVs
- 5% replacement of FF domestic cars with EVs annually
- Campaign for Tractors, Machinery and HGVs in SEC to switch to HVO
- 40 homes with 4kWp installations with 116 additional homes recruited each year until a target of 400
- Farms, Businesses and Community organisations to install micro-auto consumption PV according to onsite demand

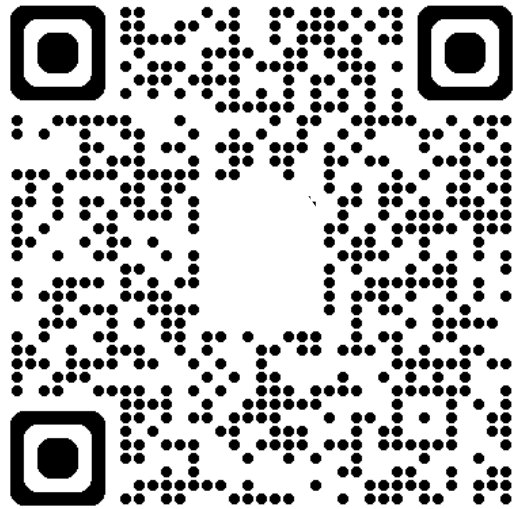
Total Sustainability Effects

Reduction in tonnes CO₂



Estimated Annual
Costs Savings by
2031: €1.6m/yr

Tonight's Actions



Help one friend, neighbour, or family member register for the Fully Funded Retrofit Scheme

Each time you do, you could save 12 tonnes equivalent to the carbon uptake of 1,223 trees