

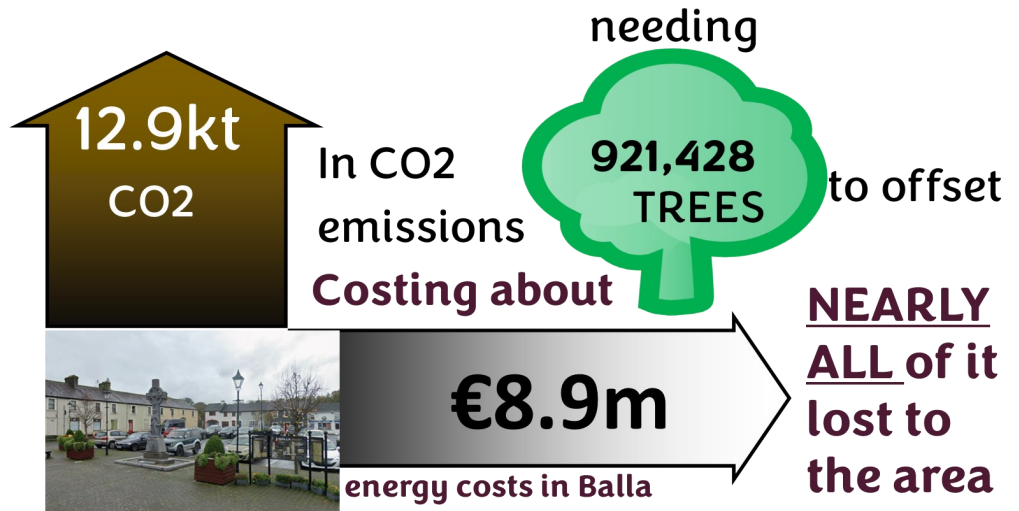
Sustainable Energy Community Master Plan

What is the total cost of energy in Balla?

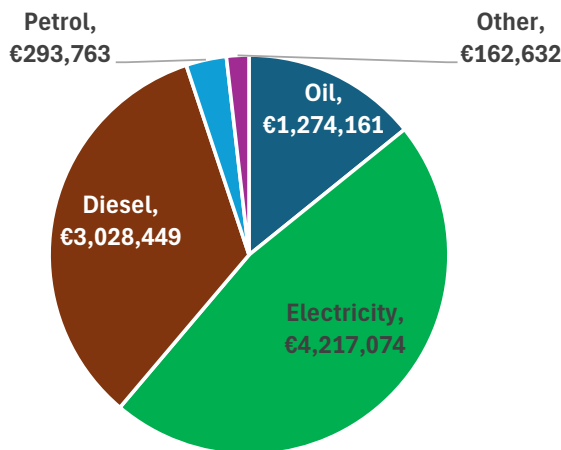
Like most communities in Ireland Balla imports much of its energy. This is largely all in the form of fossil fuels from abroad.

The area loses approximately €8.9m in energy costs: some of which could be kept **here** in the community.

As this energy is in the form of diesel, home heating oil and coal, this also produces a lot of pollution. All these cash and environmental costs can be avoided by following the steps outlined by **The Balla Sustainable Energy Plan 2025-31**.



Balla SEC Energy Balance Cost



If we take action, we can reduce the amount of oil, coal and electricity we use to heat our homes also making them cosier and more efficient, and we can save money, reduce emissions and make them futureproof. We also need to find ways to replace peat burning in our homes. Community buildings and businesses—can also achieve 30% reduction in energy use and costs quite quickly. Most diesel and petrol use can over time be replaced by suitable EVs. Clean green electricity can be produced cost effectively in homes, on our farms and at our places of work and play, protecting our environment and not damaging our natural heritage.



Balla SEC Sustainable Energy Plan

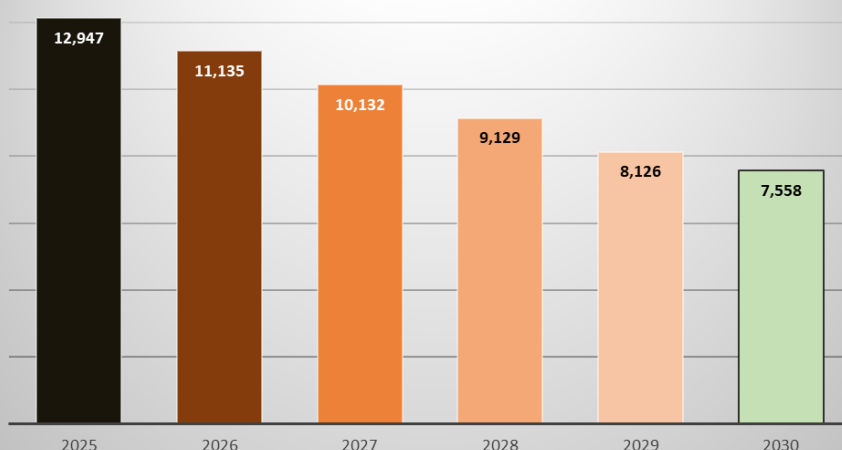
The Balla Sustainable Energy Community (SEC) supported and funded by the Sustainable Energy Authority of Ireland, commissioned a full study of the energy uses of all sectors of Balla. This study also measured the carbon emissions produced by this energy use. Energy Co-operatives Ireland Ltd carried out onsite surveys of homes, community, and other public buildings. The study also examined energy use in business, community and transport.

2025-2031 Sustainability strategy

Action	Energy Use Reduction kWh	tCO2 Reduction Impact	Cost Reduction Euro
Retrofit 15% of G-C3 homes yearly to B2 [1]	4,454,352	1,114	€489,979
20% Non-Domestic Buildings upgraded yearly to achieve 30% energy reduction [1]	2,408,781	603	€445,435
Information campaign to encourage GV owners to switch to EV Vans	450,000	485	€113,400
5% replacement of FF ICE domestic cars with EVs annually	2,350	614	€228,160
Campaign for Tractors, Machinery and HGVs to switch to HVO	6,721,846	1,803	-€248,329
100+ homes with 4kWp installations recruited each year until a target of 590 [3]	2,030,000	475	€574,490
Farms, Businesses and Community buildings install micro-PV at power levels (kW) according to demand	855,685	200	€196,808
Active Travel Campaign to reduce car commutes (People)	113,850	29	€22,275
Total	16,979,939	5,308	€2,059,409

A 5,308 reduction in tonnes of CO2 is equivalent to the emissions uptake from 350,000 trees

Total Emissions Balla tCO2



Under this Sustainable Energy Strategy, emissions from Balla SEC's energy use would be reduced to just 58% of 2025 levels.



The carbon measurements here looked specifically at emissions from Balla SEC energy use and do not include emission from food consumption or air travel. You may want to look at your own total footprint. A good place to start is climateconnected.ie/ecological-footprint

First things first: Simple actions for homeowners

...some quick and easy sustainability 'wins' to save you energy and money as well as reducing carbon emissions

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.

DO YOUR OWN



Step 2: Actions to save 12% of your energy costs and fossil fuel use:

- Turn everything off – don't leave on standby (2%)
- Use a clothes line when possible - no tumble dryer (7%)
- Wash clothes @ 30 degrees (1%)
- Turn off lights when not in a room, replace bulbs with CFLs at least, or with LEDs if possible (2%).

ENERGY SAVING



Step 3: Save energy by thinking about the way you control and use heat

- Keep room temperature at 19°C (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. Turn off your heating when ventilating the house. This can reduce heat loss by 16%.
- Bleed your radiators regularly. If there is air in your radiator your boiler burns longer. Always start with the lowest and end with the highest radiator.



Make your home sustainably future-proof

Homes in Balla use 40% more energy than the average in Ireland

The average home in Balla uses 29,014 kWh of energy each year. This is a good bit above (by 42%) the national average of 20,424 kWh/yr. Some of this is due to the relatively large size of homes in the area (which are also detached houses and so exposed on all sides). Most homes (57.6%) were built before 2000 when energy efficiency regulations were less sustainable. It is now time to future proof these homes for the generations to come.

The financial and sustainability benefits of upgrading a home from F BER to A3 BER

	BER Rating	Energy Value	Co2 Emissions	Potential Energy Savings	Total Annual Space Heating	Space Heating costs per year	Carbon Emissions
		(kWh/m2/yr)	KgCO2/m2/yr)	€/yr	kWh/yr	€/yr	kg CO2/yr
Current Condition	F	386.7	59.4	-	56,261	€6,357	14,459
Post Works	A3	66.2	16.8	€3,079	9,633	€3,278	2,446

Sample Home Costs	Est Costs	Grant	Est Cost Net Grants*
Exterior Doors (2)	€5,000	€1,600	€3,400
Roof Insulation	€2,470	€1,500	€970
Wall Insulation	€24,305	€8,000	€16,305
Windows Upgrade	€14,500	€1,500	€13,000
Airtightness	€1,500	€1,000	€500
HP	€15,733	€6,500	€9,233
Total	€63,508	€20,100	€43,408
Savings			€3,079
Payback Yrs			14

F: 14 tonnes CO2/yr

A3 2.4 tonnes CO2/yr

*Costs are based on 2025 industry levels, grant amounts on 2025 one-stop-shop levels which can be found at

seai.ie/grants/home-energy-grants/one-stop-shop.

Actual costs and grants may vary according to building specifics

Upgrading a typical F-rated home in Balla SEC area to an A3 rating can save up to €3,079 per year in heating costs and reduce CO2 emissions by 12 tonnes equivalent to the carbon uptake of 1,223 trees.

Grant supports for homeowners

Categories of applicants to the SEAI Home Energy Grant

Individual Energy Upgrade Grants

Up to 80% of the cost of the upgrade for a typical family home with SEAI grants

Homeowners manage their own upgrades including:

- contractor selection
- grant application
- contractor works
- pay for full cost of works and claim grants afterwards
- follow up BER

For homes built and occupied before:

2011 for insulation and heating controls
2021 for heat pumps and renewable system

One Stop Shop Service

Based on set grants per measure, this can be grant funded by SEAI 45 - 50% of the cost for a typical family home

A One Stop Shop contractor manages upgrade including:

- home energy assessment
- grant application
- project management
- upgrade to a minimum B2 BER
- contractor works
- homeowner pays for the works net of grant
- follow up BER

For homes built and occupied before:

2011 for insulation and heating controls
2011 for renewable systems

Fully Funded Upgrade

Qualifying* homeowners receiving certain welfare benefits: All home upgrade costs covered by SEAI

Service is managed by SEAI and includes:

- home survey
- contractor selection
- contractor works
- follow up BER

Homes built and occupied before 2006

*Receiving one of:

Fuel Allowance
Job Seekers Allowance
Working Family Payment
One-Parent Family Payment
Domiciliary Care Allowance
Carers Allowance
Disability Allowance

[FIND OUT MORE](#)

[FIND OUT MORE](#)

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There is a waiting list for fully-funded upgrades: if you qualify, you should apply **NOW**

Individual energy upgrades costs and grants, average cost per measure (SEAI 2025)

External Wall Insulation		
HOUSE TYPE	MEDIAN COST	FIXED GRANT
Detached	€23,500	€8,000
Semi-D / End Terrace	€21,737	€6,000
Mid Terrace	€12,900	€3,500
Apartment	*	€3,000

Internal Wall Insulation		
HOUSE TYPE	MEDIAN COST	FIXED GRANT
Detached	€10,000	€4,500
Semi-D / End Terrace	€11,000	€3,500
Mid Terrace	€6,139	€2,000
Apartment	€2,950	€1,500

Heat Pump		
HOUSE TYPE	MEDIAN COST	FIXED GRANT
Detached	€15,600	€6,500
Semi-D / End Terrace	€15,705	€6,500
Mid Terrace	€16,500	€6,500
Apartment	€11,500	€4,500

Solar PV 2kWp up to 4kWp		
HOUSE TYPE	MEDIAN COST	GRANT RANGE
Detached	€9,995	€1,600 - €2,100
Semi-D / End Terrace	€8,800	€1,600 - €2,100
Mid Terrace	€8,355	€1,600 - €2,100
Apartment	€6,898	€1,600 - €2,100

Total Solar PV grant is capped at €2,100

Cavity Insulation		
HOUSE TYPE	MEDIAN COST	FIXED GRANT
Detached	€2,220	€1,700
Semi-D / End Terrace	€1,600	€1,200
Mid Terrace	€1,085	€800
Apartment	€930	€700

Roof Insulation		
HOUSE TYPE	MEDIAN COST	FIXED GRANT
Detached	€2,492	€1,500
Semi-D / End Terrace	€1,874	€1,300
Mid Terrace	€1,703	€1,200
Apartment	€1,563	€800

Heating Controls		
HOUSE TYPE	MEDIAN COST	FIXED GRANT
Detached	€3,456	€700
Semi-D / End Terrace	€3,635	€700
Mid Terrace	€3,600	€700
Apartment	€2,200	€700

Building Energy Rating		
HOUSE TYPE	MEDIAN COST	FIXED GRANT
Detached	€260	€50
Semi-D / End Terrace	€250	€50
Mid Terrace	€250	€50
Apartment	€245	€50

You can have the power to change: home PV

A domestic solar PV system has solar panels mounted to your roof (or in your garden or adjacent field) connected to the meter and electrical loads in your home. PV systems are rated in kilowatts (kWp). A 3kWp solar PV system needs about 12 solar panels about 8m² of space. It will generate about 2,900 units of electricity (kWh) a year.

Since you pay about €0.31 per kWh to your electricity provider, a 3kW PV panel system could your electricity supplier (of up to €140 per year in this case). On a system costing €4,800 (nett of SEAI grant) this would achieve a simple payback of 6.1 years.

Full details on grants are available at [this link](#).

SEAI PV Grants for Homeowners: these are reducing every year, so act now.

Value	Example
€700 per kWp up to 2kWp	€1400 for 2kWp solar panels
€200 for every additional kWp up to 4kWp	€1600 for 3kWp solar panels
Total Solar PV grant capped at €1,800	€1,800 for 4kWp solar panels

Unused electricity can be used by a hot water immersion tank or in a battery. It can also be used to power an electric car that is parked during the day at the home. It can also be exported from the house into the electrical network on the road outside your home: you get paid for each unit exported to the electricity grid.

A home installed PV system also reduces CO₂ emissions: our 3kW example would reduce CO₂ emissions by over 909 kgs CO₂, equal to planting 64 trees.

The SEAI has a useful Calculator that shows payback period for typical installations, customisable by county, size of system and retail price of electricity. It is available at

seai.ie/about/tools/solar-electricity-calculator

Economics of a 3kWp System in Balla

System Cost (with grant)

€3,650

Annual
Savings &
Rebate

€777/
year*

Payback Period

4.7 Years

Lifetime** Profit

€15,775

*It is not assumed that the homeowner will consume all the electricity. This is 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 or decrease in cost of electricity over the period which would increase the lifetime profitability.

Time to take charge of your transport

Switching to less polluting cars much easier than you think

There are about 992 private cars in the SEC. An estimated 68% are diesel with 27% petrol and 5% other (probably EVs). The vast majority of journeys travelled by drivers nowadays are within the range of EV batteries many of which now have a greater than 500km per charge.



Diesel Vehicles

These are vehicles powered by fossil fuel use (petrol or diesel). They are due to be phased out from the European market from 2035.

Diesel engines emit high levels of pollutants from significant amounts of nitrogen oxides (NOx), particulate matter (PM), and sulfur dioxide (SO2), which contribute to poor air quality. These pollutants are associated with respiratory problems, cardiovascular diseases, and other health issues.

Older diesel vehicles may lack proper emission control technologies altogether. The emissions for a diesel SUV are approximately **200 g CO₂/km**



Hydrotreated Vegetable Oil (HVO)

HVO is a type of renewable diesel fuel that is produced by hydrotreating vegetable oil. It can be used as a direct replacement for fossil diesel in diesel engines.

Emissions for HVO are deemed to be lower than those of diesel and can be used in trucks and tractors. However, it should be noted that HVO is a short term solution which will need to be replaced by other solutions in the future: from newer biofuels, to high performance EVs, to fuel cell heavy duty vehicles.

Removing Carbon and NOx from transport



Battery Electric Vehicles (EV)

These are vehicles powered by a battery that does not include any fossil fuel use (petrol or diesel). Even cheap EVs have a range of 400km or more and cost from **about €30,000 new**. We recommend **an information campaign to increase take-up of EVs**.

Emissions relating to an EV come from the carbon intensity of the local electricity supply. If the EV is charged at home from PV panels, the CO₂ emissions are effectively zero

An EV can save you money AND reduce your carbon footprint

Comparing an EV costing €43,585 (with a 500km cold weather range) with a similar diesel car costing €35,785 shows that the **EV is cheaper to run by €900 per year**. Over a 10-year lifetime, **you could save €12,737 by choosing the EV (including purchase cost)**. You can compare costs and savings for a range of EVs over Diesel vehicles at seai.ie/about/tools/compare-and-calculate/

PV for businesses that are ready to go

The natural heritage and beauty of Balla is something that must be protected when it comes to proposing to generate power here. Owing to grid access issues, it is not currently feasible that all the energy the area needs can be produced locally by the community. But there is a case for smaller, community-led generation that suits the environment here to meet some of the energy needs renewably.

A more *distributed* approach to PV roll-out in Balla will be well suited to the SEC. This means PV on homes, community and commercial buildings, and on farms. These will add up to a very substantial money and carbon savings and could go ahead right now without relying on grid upgrades or time-consuming planning applications.

Commercial and Community PV

Based on our survey of the built environment in the SEC area, between homes, farms, SMEs and community buildings, we have identified an achievable target of **1080 kW** of local energy generation capacity on the roofs in the SEC.

The PV opportunity for domestic users is explained on the next page. Here we look at the opportunity of the SEC's businesses, community buildings and farms to benefit financially and sustainably from PV installations.

Planning is not generally needed for rooftop installations of under 50m²—on farms, businesses, schools and community buildings (if they take up less than 50% total roof area). This would provide for between 8-10kW for each building—enough to reach the SEC sustainability targets on page 2.

There are grant supports for these type of installations and the payback period at 4-5 years for PV is very favourable:

seai.ie/grants/business-grants/commercial-solar-pv

Solar PV system	Grant value
1kWp*	€900
2kWp	€1,800
3kWp	€2,100
4kWp	€2,400
5kWp	€2,400
6kWp	€2,400
7kWp - 20kWp	€300/kWp
21kWp - 200kWp	€200/kWp
201kWp - 1000kWp (1MWp)	€150/kWp

PV and Cattle?

There are huge opportunities for farms to lower their carbon footprint by medium scale onsite PV: this now includes dairy as well as sheep farmers. There are grid payments available 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 was consumed on the farm: guaranteeing considerable cost and carbon emissions savings, achieving payback in just **four years**

Targeted Agricultural Modernisation Scheme (TAMS) provides a 40% grant on a solar PV investment



Dave Foran with PV installer contractors Sunstream