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Ballinasloe Energy Master Plan

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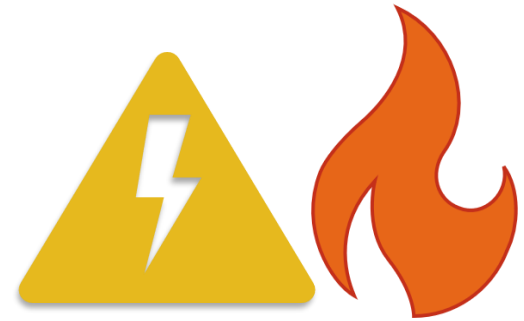


9th March 2023

Energy Master Plan Key Stages



REVIEW OF RESIDENTIAL, INDUSTRIAL, COMMERCIAL AND COMMUNITY LIFE



ESTABLISH ENERGY CONSUMPTION, EMISSIONS, AND COSTS FOR EACH SECTOR



REVIEW OF ENERGY USAGE IN A SAMPLE OF BUILDINGS IN THE AREA



IDENTIFY ENERGY EFFICIENCY AND RENEWABLE ENERGY OPPORTUNITIES



THE IMAGE (FIGURE 1) DEPICTS THE AREA COVERED BY BALLINASLOE SEC. THIS WAS GENERATED USING THE SMALL AREAS AS DEFINED BY THE CENTRAL STATISTICS OFFICE (CSO SAPMAP 2016).

Ireland's Climate Action Plan - Greenhouse Gas reduction targets



29-41%
(2019-2030)

70% Energy from
Renewables by 2030



22- 30%
(2019-2030)

Provide sustainably produced
biomethane for injection to gas
grid by 2030



42-56%
(2019-2030)

600,000 heat pumps and
500,000 retrofits for residencies



-51%
(2019-2030)

Expansion of energy
efficiency programmes



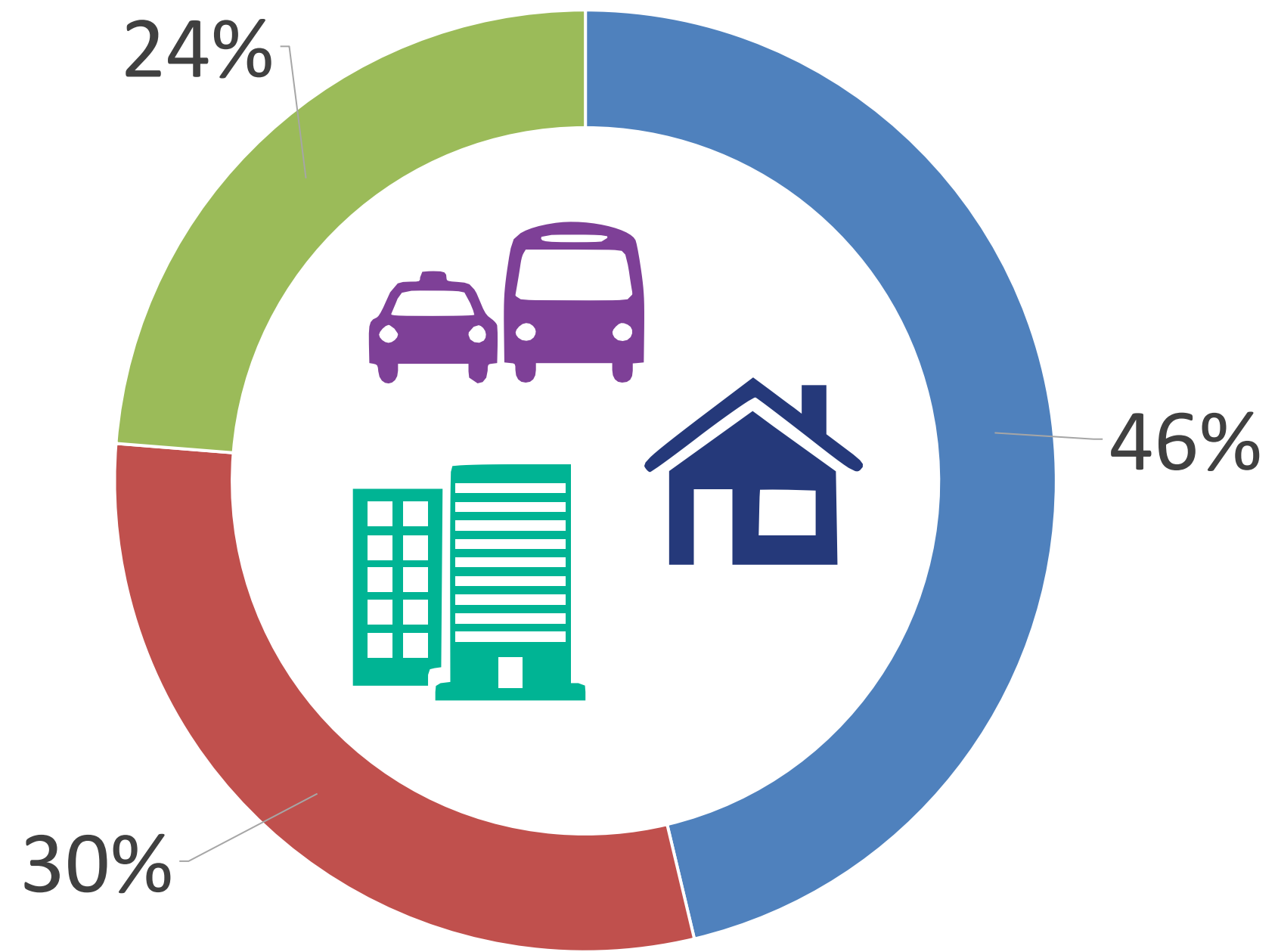
42-50%
(2019-2030)

Provide an additional
500,000 daily public and
active transport journeys

with
additional
measures!



- Residential (46%)
- Non-Residential (30%)
- Transport (24%)



■ Residential ■ Non-residential ■ Transport

Ballinasloe SEC Primary Energy Baseline



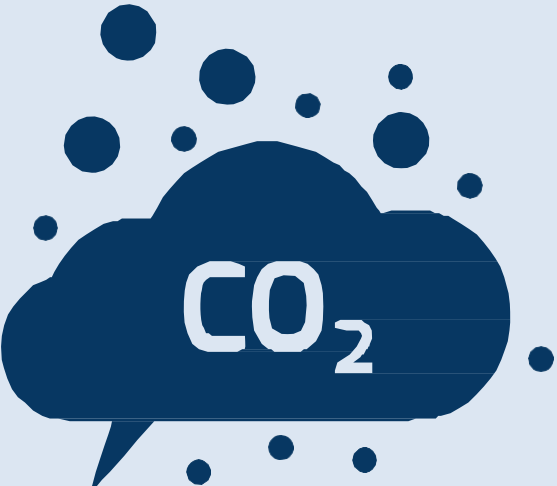
Total Energy Cost

€12,930,961



Kilowatts per Hour

81,894,000kWh



CO2 Emissions

26,659 Tonnes

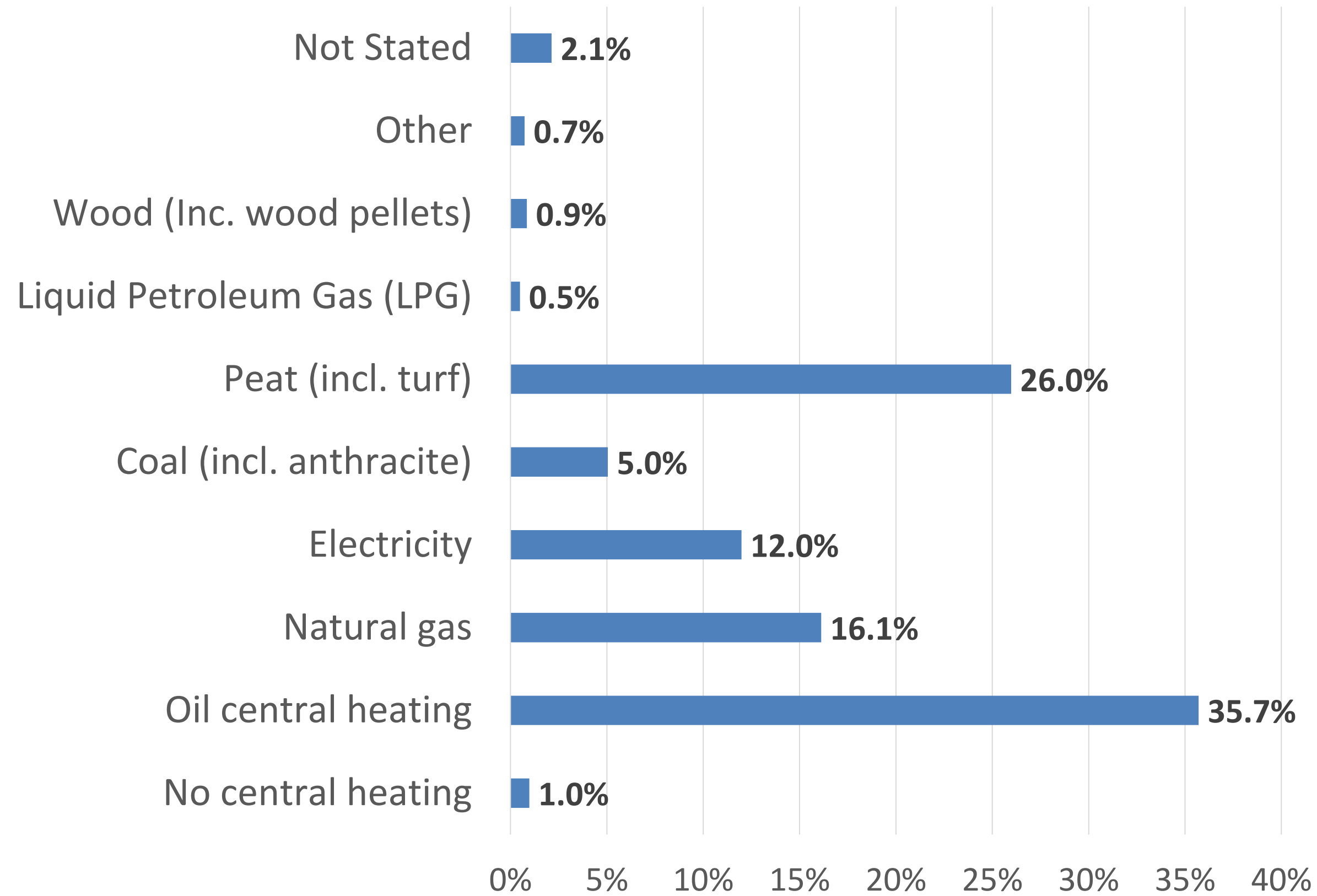
Residential Fuel Mix



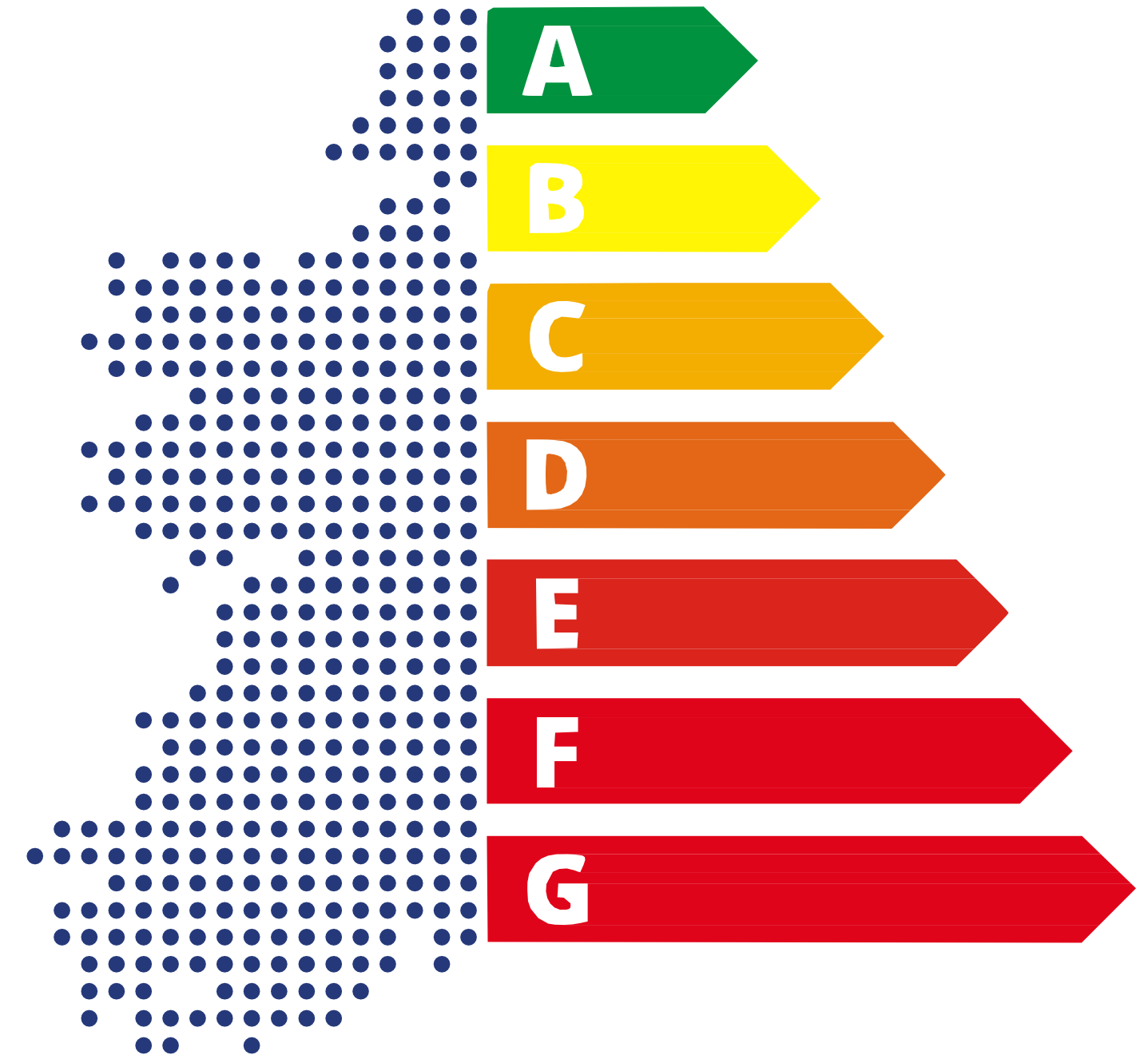
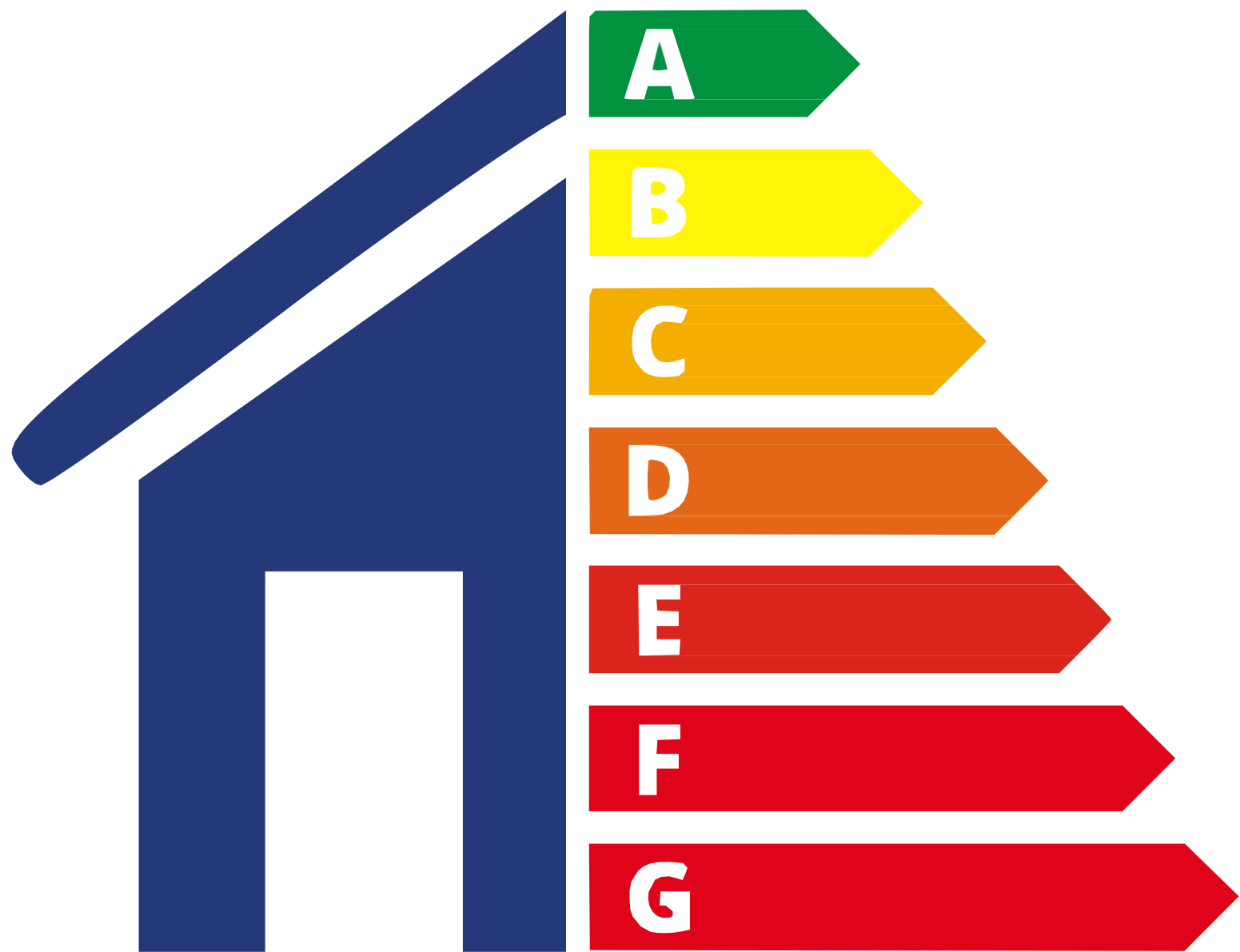
NO. OF HOMES

1644

Primary Heating Source within SEC (%)



Building Energy Rating statistics for Ballinasloe SEC



45% of homes in SEC have a BER



Home Energy Upgrade Assessments

Building No.	Building Size m2	Building Type	Existing BER Rating	Measures No.	Possible BER Uplift
1	228	2 Storey Detached house C.1992	C2	8	A3
2	181	Single storey detached house C.1986	C3	7	A2
3	315	2 Storey Detached house C.1964	B1	5	A2
4	119	Single storey detached house C.1996	B3	7	A1
5	96	Single storey detached house C.1973	E1	9	A2
6	191	2 Storey Detached house C.2004	C2	8	A2
7	224	2 Storey Detached house C.1999	C2	8	A2
8	196	3 Storey Detached house C.2000	B3	9	A2
9	158	2 Storey Detached house C.2003	C2	8	A1
10	129	2 Storey Detached house C.1978	D2	9	A1

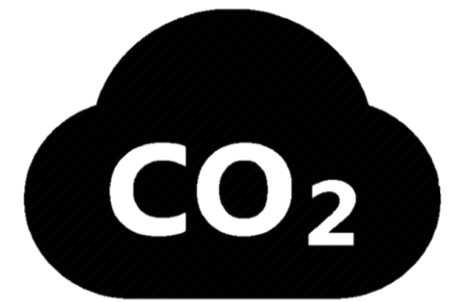
Transitioning to Electric Vehicles

Current Transport Energy Baseline	Electricity	Fossil Fuel	Total
Total Primary Energy (kWh)	30,765	18,483,423	19,790,878
Total Renewable Generation (kWh)	12,306	1,109,005	1,121,312
Total CO2 (tonnes)	5	4,660	4,666
Total Spend (€)	€3,723	€2,389,468	€2,547,670

Transport Energy with 20% of fleet comprised of EVs and 40% less car journeys	Electricity	Fossil Fuel	Total
Total Primary Energy (kWh)	1,538,270	10,388,254	12,727,002
Total Renewable Generation (kWh)	615,308	487,961	1,103,269
Total CO2 (tonnes)	263	2,604	2,867
Total Spend (€)	€186,131	€1,340,802	€1,623,791



7,081,919 kWh of Fuel



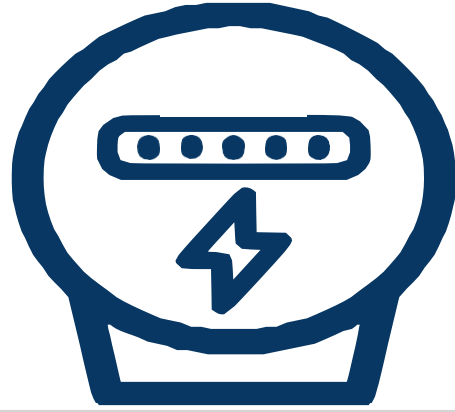
1,799 Tonnes



€923,879 Annual Fuel Spend



Non-Domestic Sector



25,000,000 kWh



10,904 Tonnes



€4,517,200

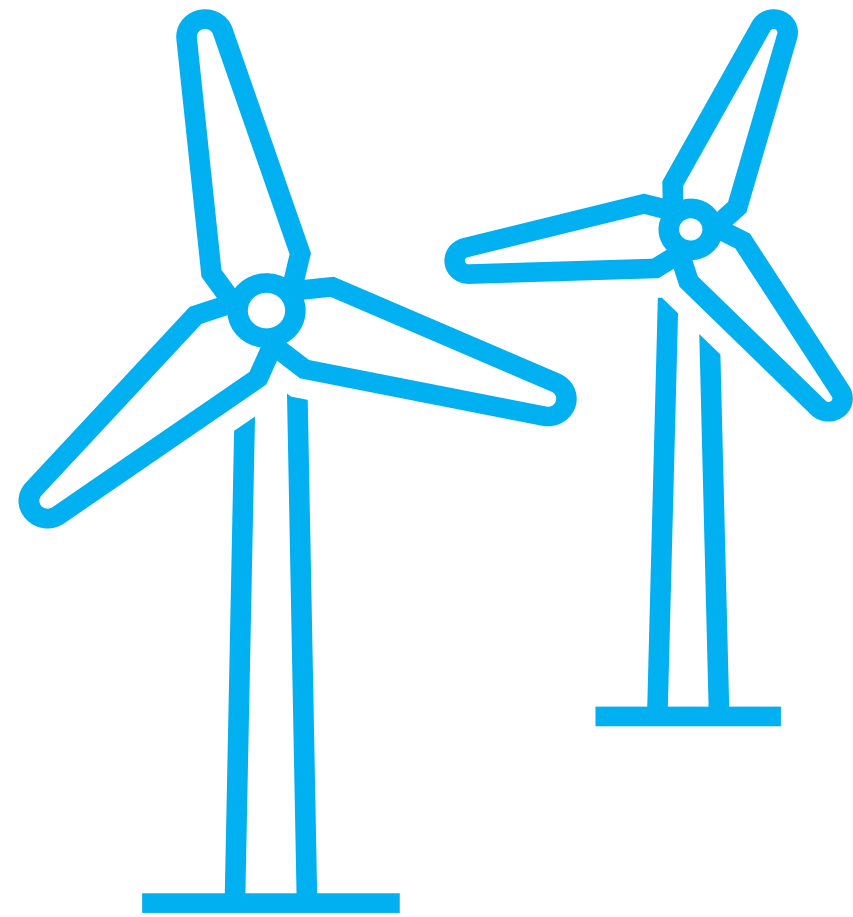
As part of the energy master plan for Ballinasloe four non-domestic premises were audited to identify opportunities for energy efficiency measures. The premises which were audited received a detailed report which was provided to each of the property owners

- Scoil Uí Cheithearnaigh
- Ballinasloe Social Services Centre
- Ballinasloe Town Band Hall
- Ballinasloe Town Hall Theatre

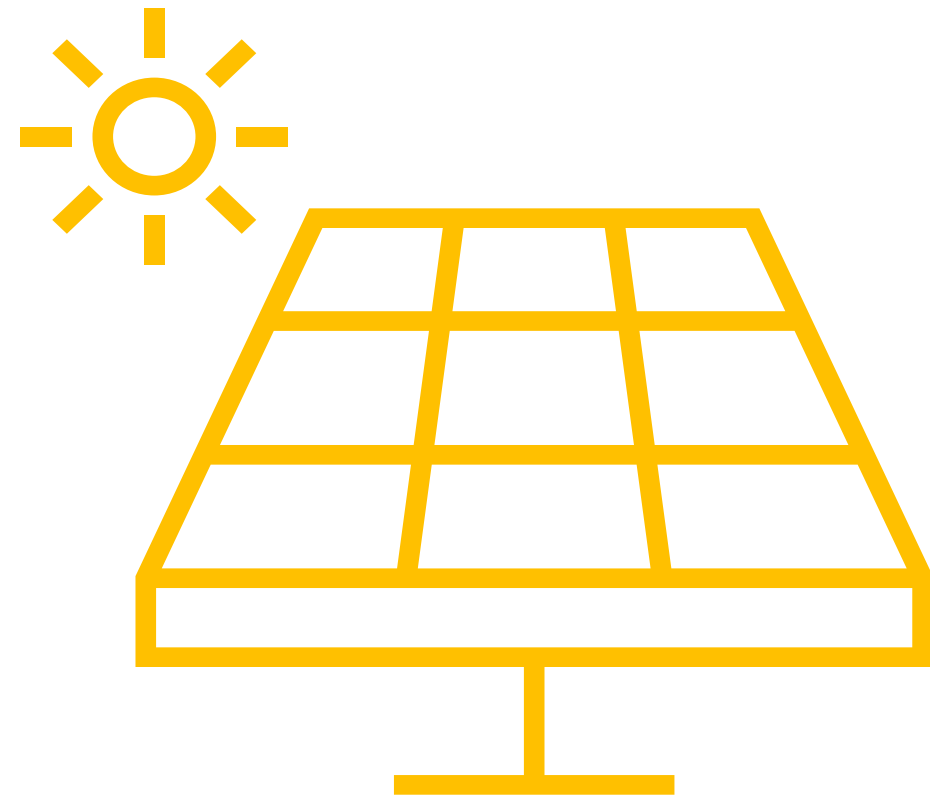
SECs' annual Non-Domestic Energy usage, CO2 emissions and Expenditure

Renewable Electricity

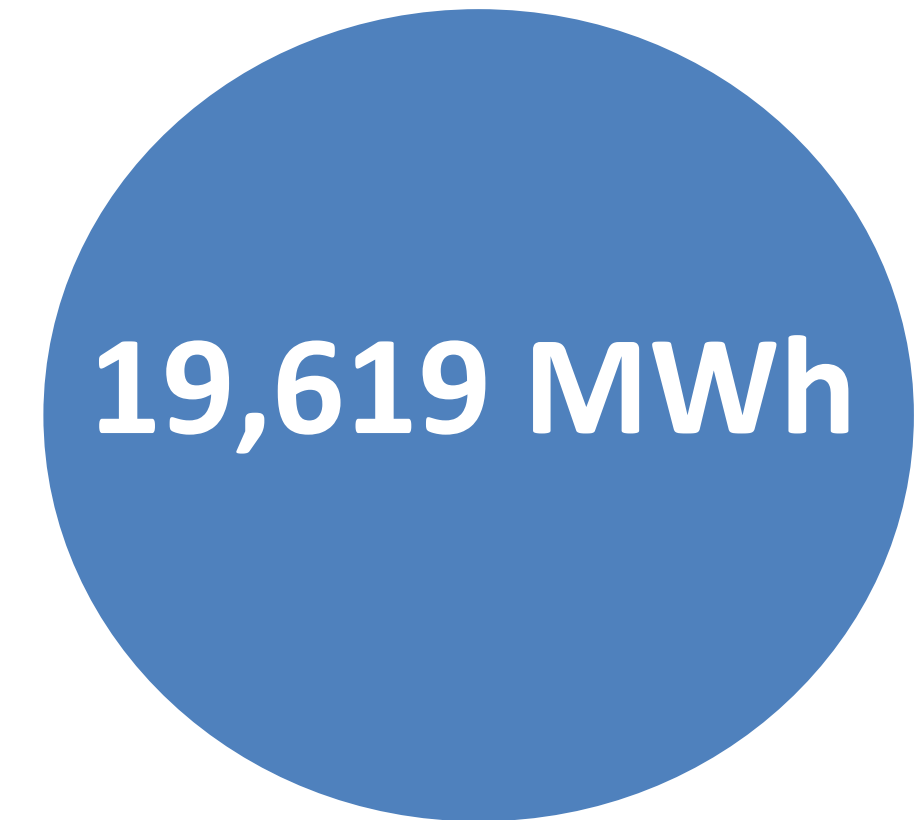
Where a 20% reduction in electricity consumption could be achieved there would remain a residual demand in the Ballinasloe SEC of 21,501 MWh. In order to meet this demand a community/private owned 9.8MW Wind turbine or a 24.5MW solar farm could be used to sustainably offset this demand



9 Megawatt wind power



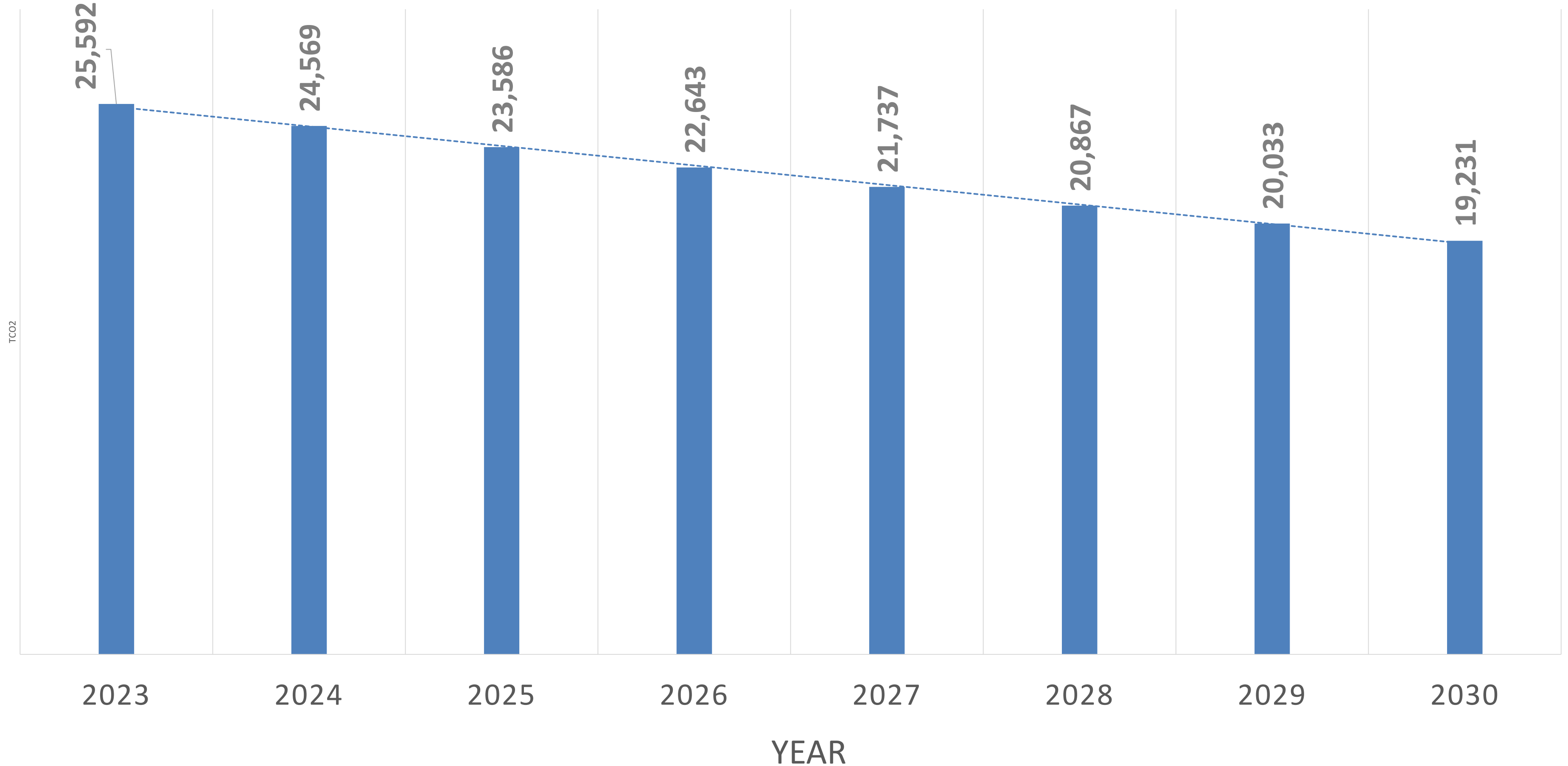
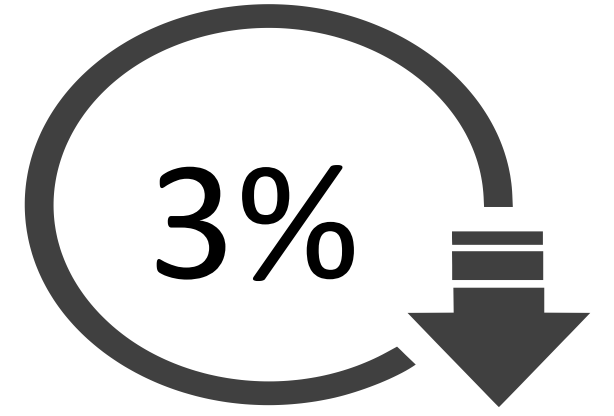
22 Megawatt solar power






Residual Energy demand

However – grid capacity locally means a smaller project of 6 Megawatts or less is more suitable right now

Annual Reduction in the Carbon Footprint for Ballinasloe SEC



Ballinasloe SEC plan to 2030

	Number of Projects	Primary Energy Savings (kWh)	CO2 Savings (tonnes)
 <p>No. of homes to be refurbished to B2</p>	350 x 100m2 Buildings	5,621,000	2,032
 <p>Renewable Energy Potential</p>	22 MW Solar Power	19,618,691	5,803
 <p>Electric Vehicle Potential</p>	20% Battery Electrical Vehicle	4,009,669	970
Reduction in Car Journeys	40% reduction in work commutes	7,542,786	1,799
Total saving potential		36,792,146	10,604

Cost of basic home energy appliances

Appliance	Energy (Kilowatts per hour)	Hourly Cost (Assuming €0.43 per kWh rate)	Average Daily Usage	Average Daily Cost (€)
Immersion	3kWh	1.29	2 hours to fully heat 120-litre tank	2.58
Fridge/freezer	0.18 kWh	0.07	24 hours	1.68
Tumble dryer	3 kWh	1.29	1 hour of drying	1.29
Desktop Computer	0.2 kWh	0.08	8 hours of use	0.64
Oven	2.4 kWh	1.03	1 hour of use	1.03
Electric shower	9.5 kWh	4.08	15 minutes of use	1.02
Dishwasher	1.8 kWh	0.77	2 hour cycle	1.54
Washing machine	0.8 kWh	0.34	2 hour cycle	0.68
Iron	2.5 kWh	1.08	Half an hour	0.59
TV	0.2 kWh	0.08	4 hours of use	0.32
Laptop	0.1 kWh	0.04	8 hours of use	0.32
Kettle	0.7 kWh	0.31	10 minutes of use	0.05
Lightbulb	0.06 kWh	0.03	6 hours of use	0.18
Hair Dryer	2 kWh	0.86	15 minutes of use	0.13
Vacuum Cleaner	0.7 kWh	0.31	20 minutes of use	0.06
Toaster	1.5 kWh	0.65	5 minutes of use	0.13
				Daily total
				€12.24

Thanks for listening

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