Ireland

IRENA
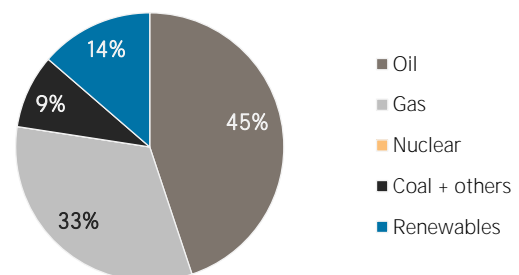International Renewable Energy Agency

COUNTRY INDICATORS AND SDGS

GDP per capita ▬ **8.1.1 Real GDP growth rate**

115.3
-7.1%

7.3.1 Energy intensity

0.9

7.1.1 Access to electricity (% population)
7.1.2 Access to clean cooking (% population)
7.2.1 Renewable energy (% TFEC)

100%
100%
14%

7.a.1 Public flows to renewables

0

7.b.1 Per capita renewable capacity

1,133.3

11.6.2 Air particulate matter (PM$_{2.5}$)

■ Urban ■ Average ■ Rural ▬ WHO safe

8.1   8.3   8.2

TOTAL ENERGY SUPPLY (TES)
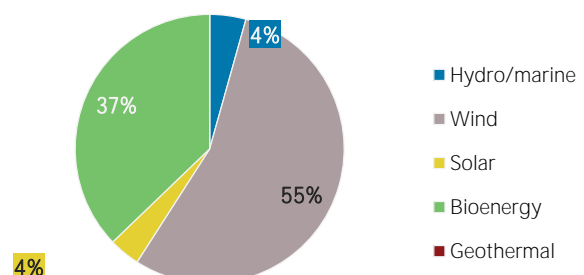
Total Energy Supply (TES)	2017	2022
Non-renewable (TJ)	520 355	495 560
Renewable (TJ)	59 013	78 387
Total (TJ)	579 368	573 947
Renewable share (%)	10	14

Growth in TES	2017-22	2021-22
Non-renewable (%)	-4.8	-2.9
Renewable (%)	+32.8	+5.9
Total (%)	-0.9	-1.8

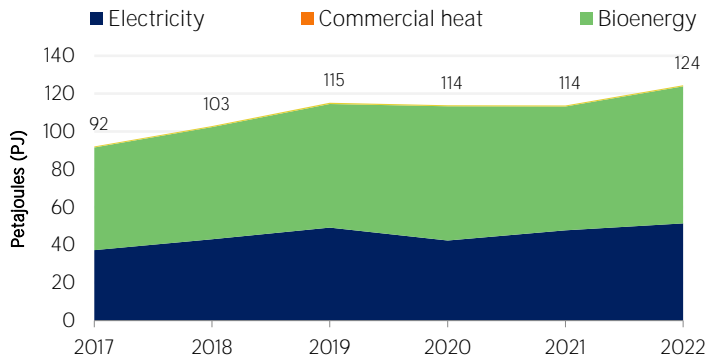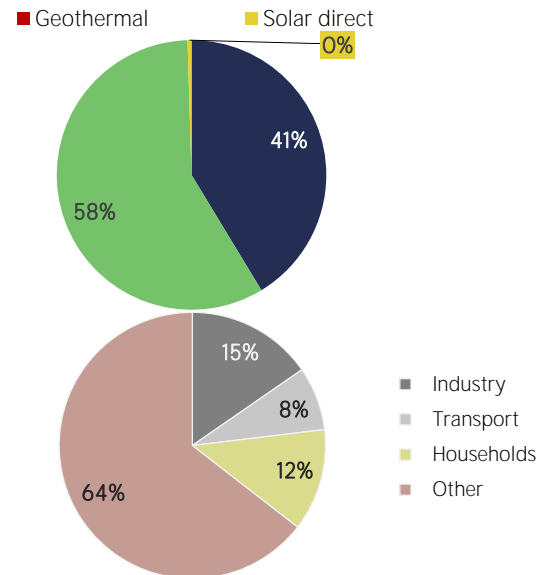| Primary energy trade	2017	2022
Imports (TJ)	504 147	558 419
Exports (TJ)	85 163	67 441
Net trade (TJ)	- 418 984	- 490 978
Imports (% of supply)	87	97
Exports (% of production)	41	51
Energy self-sufficiency (%)	36	23

Total energy supply in 2022

45% ■ Oil
33% ■ Gas
■ Nuclear
9% ■ Coal + others
14% ■ Renewables

Renewable energy supply in 2022

4% ■ Hydro/marine
55% ■ Wind
4% ■ Solar
37% ■ Bioenergy
■ Geothermal

RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

Legend: Electricity ■ Commercial heat ■ Bioenergy ■

Petajoules (PJ)

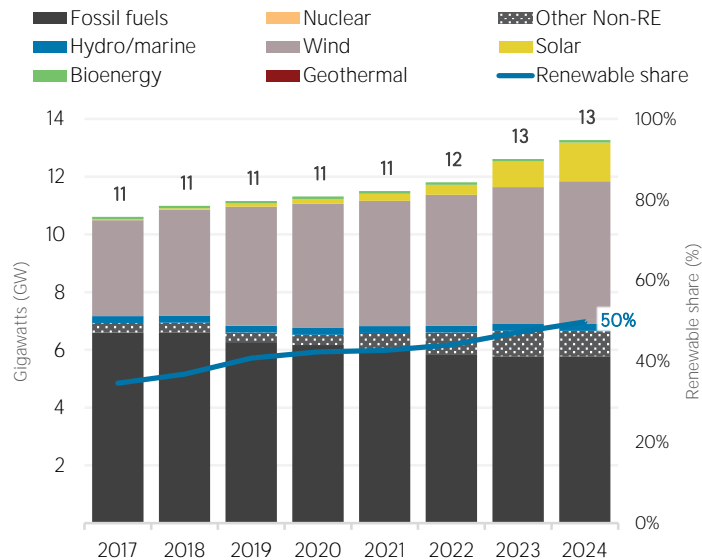| Year	Value
2017	92
2018	103
2019	115
2020	114
2021	114
2022	124

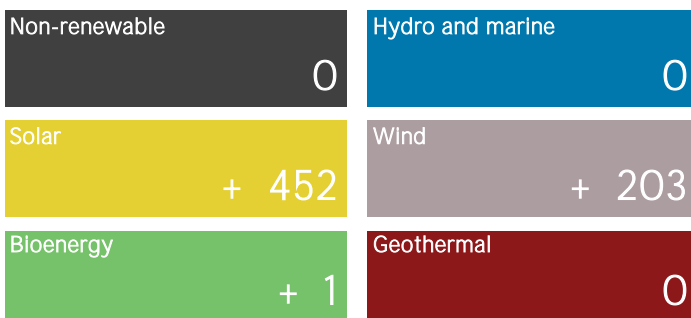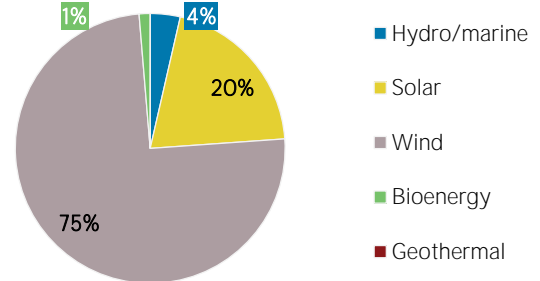| Consumption by sector	2017	2022
Industry (TJ)	17 919	19 124
Transport (TJ)	6 747	9 612
Households (TJ)	12 852	15 438
Other (TJ)	54 586	80 260

Renewable energy consumption in 2022

Legend: Geothermal ■ Solar direct ■

- 41%
- 58%
- 0%

- Industry ■ 15%
- Transport ■ 8%
- Households ■ 12%
- Other ■ 64%

ELECTRICITY CAPACITY

Installed capacity trend

Legend: Fossil fuels ■ Nuclear ■ Other Non-RE ■ Hydro/marine ■ Wind ■ Solar ■ Bioenergy ■ Geothermal ■ Renewable share —

Gigawatts (GW) / Renewable share (%)

Year	Value
2017	11
2018	11
2019	11
2020	11
2021	11
2022	12
2023	13
2024	13

Renewable share: 50%

Net capacity change in 2024 (MW)

Non-renewable	0
Hydro and marine	0
Solar	+ 452
Wind	+ 203
Bioenergy	+ 1
Geothermal	0

Renewable capacity in 2024

- Hydro/marine ■ 4%
- Solar ■ 20%
- Wind ■ 75%
- Bioenergy ■ 1%
- Geothermal ■

Net capacity change (GW)

Legend: Fossil fuels ■ Renewable ■

Year	Fossil fuels	Renewable
2019	- 0.3	0.5
2020	- 0.1	0.2
2021	- 0.2	0.1
2022	- 0.1	0.3
2023	- 0.1	0.7
2024	0.0	0.7
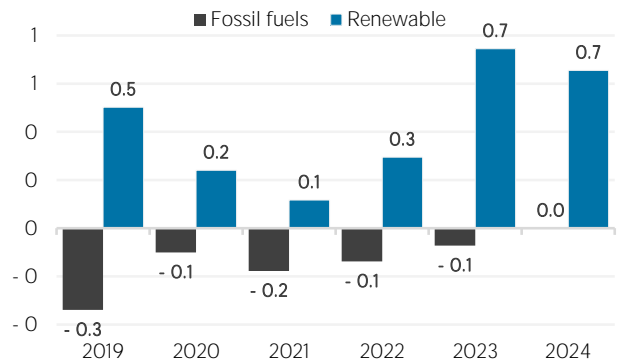
Capacity utilisation in 2023 (%)

Fossil fuels	33%
Nuclear	
Hydro/Marine	45%
Solar	12%
Wind	29%
Bioenergy	100%
Geothermal	
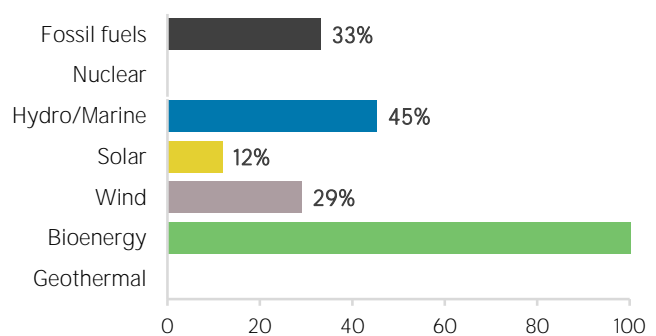
ELECTRICITY GENERATION

Generation in 2023

Generation in 2023	GWh	%
Non-renewable	17 570	55
Renewable	14 283	45
Hydro and marine	943	3
Solar	646	2
Wind	11 863	37
Bioenergy	831	3
Geothermal	0	0
Total	31 853	100

Per capita electricity generation (kWh)
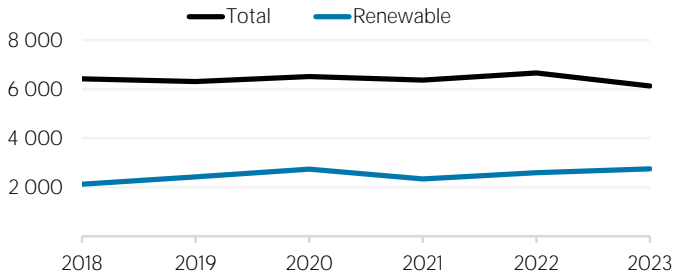

Electricity generation trend
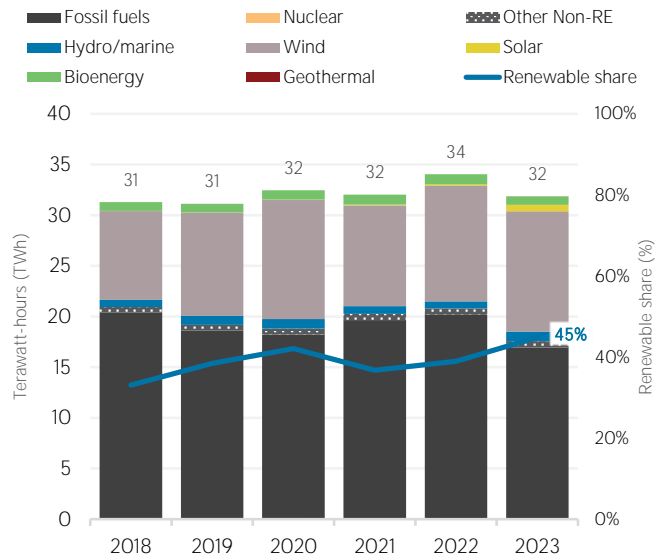

LATEST POLICIES, PROGRAMMES AND LEGISLATION

|		
1	Just Transition in the Midlands counties	**2024**
2	Regulation 2024/573 on fluorinated greenhouse gases	**2024**
3	Climate Action Plan 2023 - Fossil Fuel boilers	**2023**
4	National Gas Supply Emergency Plan 2023-27	**2023**
5	Renewable Transport Fuel Policy 2023-2025	**2023**

ENERGY AND EMISSIONS

CO$_2$ emissions by sector

Elec. & heat generation CO$_2$ emissions in
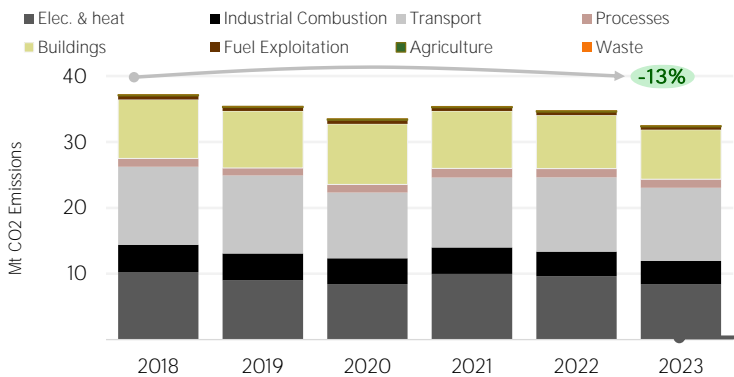
Avoided emissions from renewable elec. & heat
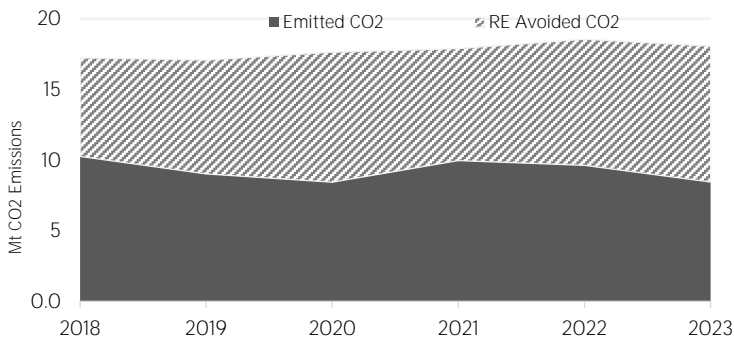
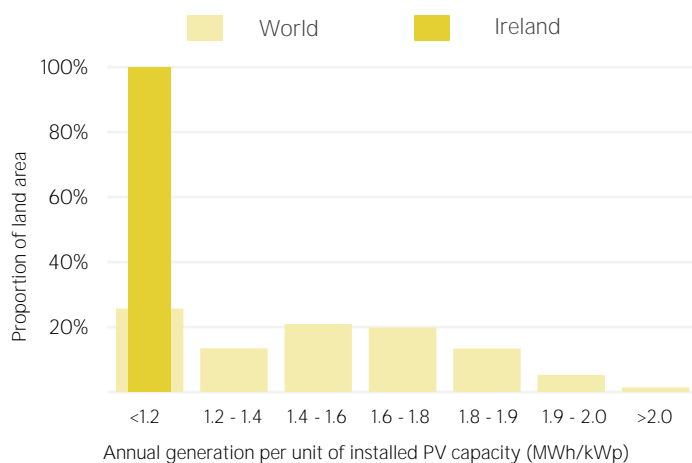*Avoided emissions based on fossil fuel mix used for power*
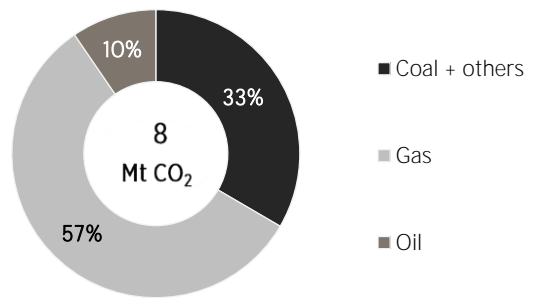
CO$_2$ emission factor for elec. & heat generation
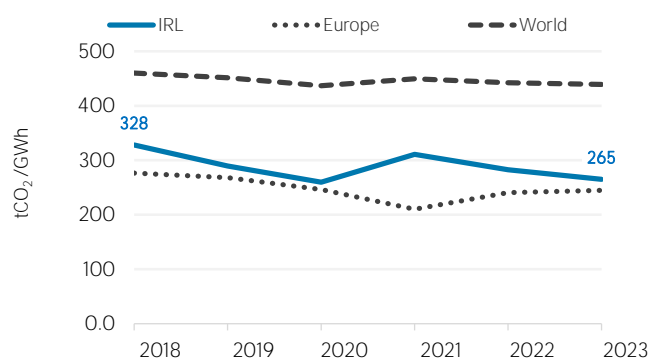
Calculated by dividing power sector emissions by elec. + heat gen.

Distribution of solar potential
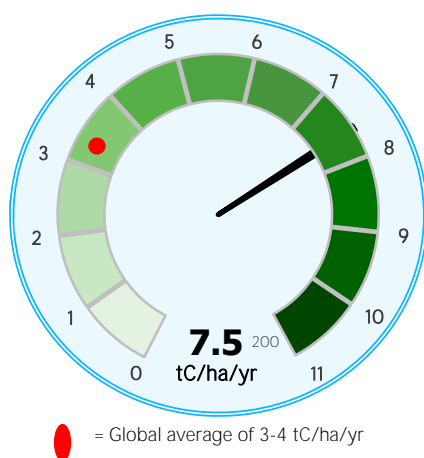
World   Ireland

Proportion of land area

100%
80%
60%
40%
20%

<1.2   1.2 - 1.4   1.4 - 1.6   1.6 - 1.8   1.8 - 1.9   1.9 - 2.0   >2.0

Annual generation per unit of installed PV capacity (MWh/kWp)

Distribution of wind potential

World   Ireland

Proportion of land area

100%
80%
60%
40%
20%
0%

<260   260-420   420-560   560-670   670-820   820-1060   >1060

Wind power density at 100m height (W/m^2)
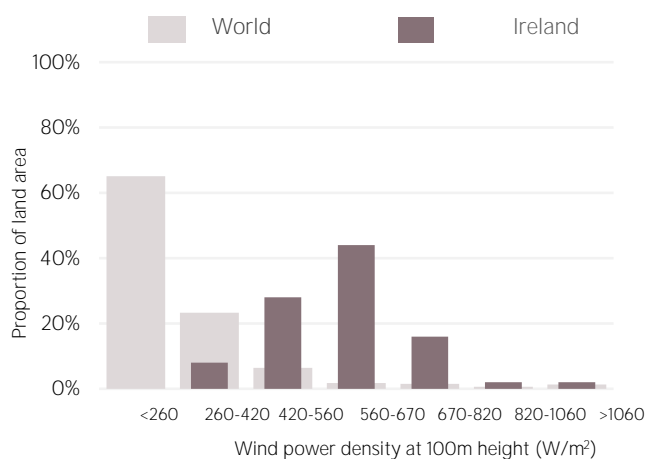
Biomass potential: net primary production

7.5 200
tC/ha/yr

= Global average of 3-4 tC/ha/yr

Indicators of renewable resource potential

Solar PV: Solar resource potential has been divided into seven classes, each representing a range of annual PV output per unit of capacity (kWh/kWp/yr). The bar chart shows the proportion of a country's land area in each of these classes and the global distribution of land area across the classes (for comparison).

Onshore wind: Potential wind power density (W/m^2) is shown in the seven classes used by NREL, measured at a height of 100m. The bar chart shows the distribution of the country's land area in each of these classes compared to the global distribution of wind resources. Areas in the third class or above are considered to be a good wind resource.

Biomass: Net primary production (NPP) is the amount of carbon fixed by plants and accumulated as biomass each year. It is a basic measure of biomass productivity. The chart shows the average NPP in the country (tC/ha/yr), compared to the global average NPP of 3-4 tonnes of carbon

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