



An
Phríomh-Oifig
Staidrimh

Central
Statistics
Office

Environmental Indicators in Ireland

UNECE Joint Task Force on Environmental Statistics and Indicators

Annual Meeting, 16-17th October 2023

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Overview of Presentation

1. **Background** – The Central Statistics Office (CSO) Environment and Climate Division, and Environmental Indicators in Ireland
2. **Behind the data** – how environmental data is collected and how indicators are selected
3. **Ireland's Indicators** – ten global and national domains
4. **Communication and Impact**



Background: Ireland's Environmental Indicators

- The Environmental Indicator Report for Ireland was first published in 2012
- Every two years at first, now an annual release
- Prepared independently by the CSO – indicators are decided by CSO without much policy input
- Currently 69 indicators over ten domains – evolving with each year.
- Selection of indicators is data-driven, aiming to provide long time series for each indicator.
- Quality and value of data is key concern.
- Involves a lot of correspondence with other bodies,
- Engaging directly with producers for data
- Promoting awareness of data and availability of sources



Data collection

- Indicators are based on administrative data and survey data
- Key data sources for Ireland include the CSO, Environmental Protection Agency, Sustainable Energy Authority of Ireland, BirdWatch Ireland, Irish Department of Agriculture, and Eurostat
- National data are given in a time series format ideally back to around the year 2000 so as to show long-term trends.
- International data are typically for one year and show how Ireland compares with other countries
- International data are downloaded from Eurostat, United Nations etc. websites



Ireland's Environmental Indicators

Global Context

Air

Environmental
Economy

Greenhouse
Gases and
Climate
Change

Water

Land

Energy

Transport

Waste

Biodiversity



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Environmental Indicators Ireland 2022

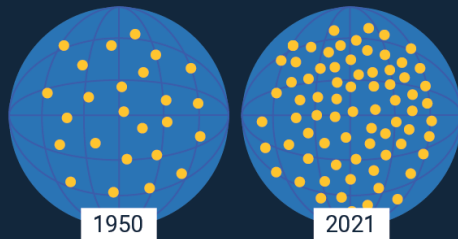
World Population

1950

2.5 billion

2021

7.9 billion



CO₂ equivalent per capita in 2020

11.6
tonnes

7.4
tonnes



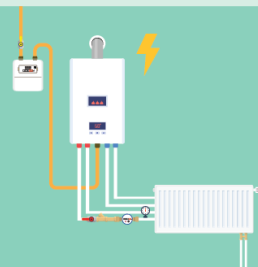
42%

of electricity
generation in
2020 was from
**renewable
sources**



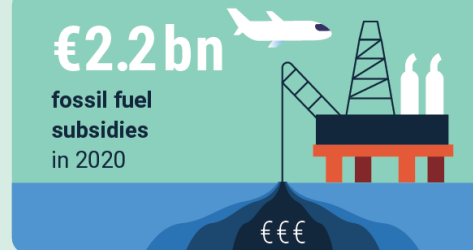
33%

of metered
electricity
was consumed
by households
in 2021



€2.2bn

fossil fuel
subsidies
in 2020



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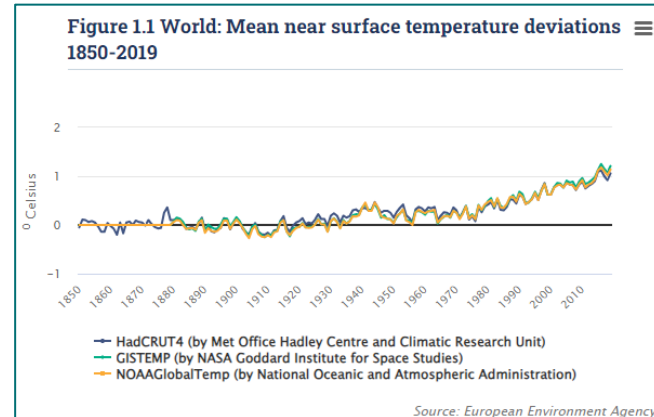
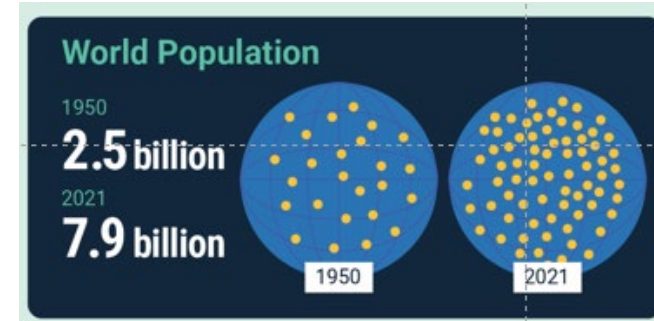
Transport

Waste

Biodiversity

Global Context

- Domain added in 2019
- Five indicators covered:
 - Population
 - *Population 1950-2021 by region*
 - *Child Mortality 1950-2020 by region*
 - *Life Expectancy at Birth 1950-2020 by region*
 - Climate
 - *Mean Near Surface Temperature 1850-2019*
 - *Greenhouse Gas Emissions 1990-2020*
- International sources used and credited
- More people, living longer



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Air

- Currently five indicators
- Data on each for Ireland and EU27
- First indicator for particulate matter
 - PM_{2.5} selected as most informative PM indicator for health and climate change
- Directive 2001/81/EC defines upper limits by member state for four pollutants:
 - Sulphur dioxide
 - Nitrogen oxides
 - Ammonia
 - Non-methane volatile organic compounds (NMVOCs)
- These upper limits put the indicator levels into context when comparing EU member states



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Air

Figure 3.1 Ireland: Particulate matter PM_{2.5} emissions 1990-2020

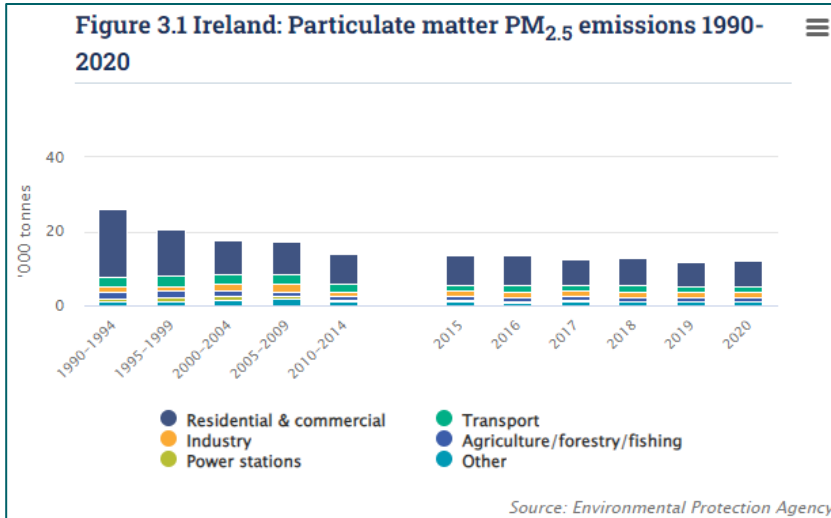
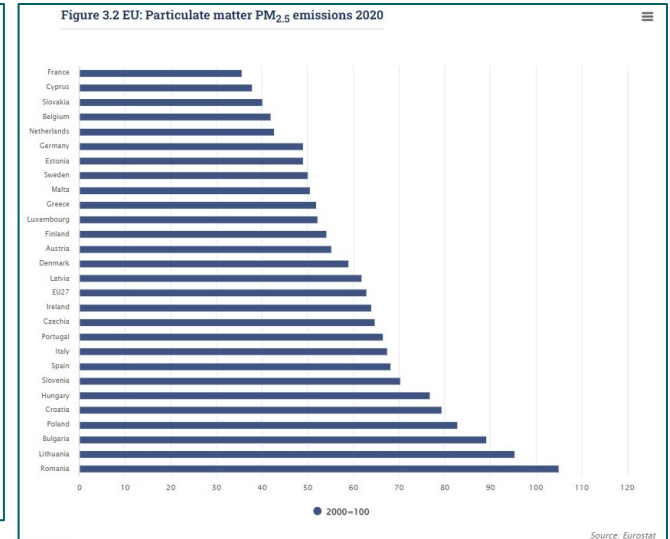


Figure 3.2 EU: Particulate matter PM_{2.5} emissions 2020



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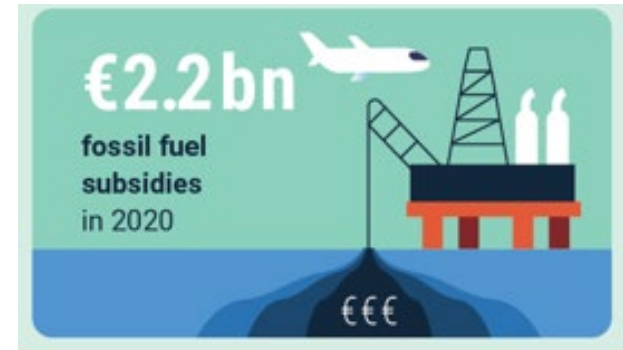
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Environmental Economy

- CSO produced statistics
- Thirteen indicators covering:
 - Environmental taxes
 - 5.5% of total taxes in 2021
 - Environment subsidies
 - Fossil fuel subsidies
 - Material flow accounts
 - Building energy ratings
 - 98% of dwellings from 2015-2021 were "A" rated
 - Utility meter data
 - Large energy users were 23% of consumption in 2021



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Environmental Economy

Table 2.5 Ireland: Domestic material consumption 1995-2019

million tonnes

Year	Domestic extraction	+ Trade imports	- Trade exports	= Domestic material consumption
1995-1999 average	84.5	27.4	11.4	100.4
2000-2004 average	118.7	33.5	13.3	138.9
2005-2009 average	135.1	38.2	14.3	159.0
2010-2014 average	73.9	35.7	15.8	93.8
2015	75.5	39.1	18.5	96.1
2016	83.3	38.7	18.8	103.2
2017	88.5	40.3	18.5	110.3
2018	92.6	43.9	18.3	118.2
2019	98.4	41.5	18.2	121.7

Source: CSO

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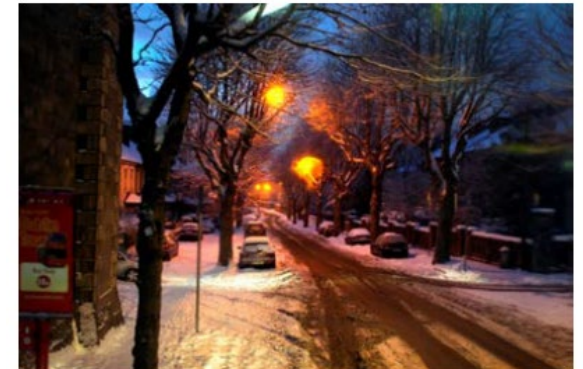
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Waste

Biodiversity

Greenhouse Gases and Climate Change

- Seven indicators covering greenhouse gas emissions, temperature and rainfall
- CO2 equivalent emissions by country, by sector, and per capita
- Using territorial emission principle – emissions produced on territory of Ireland
- Agriculture accounted for 38% of Ireland's emissions in 2021
- Ireland had second worst CO2 equivalent emissions per capita in 2020, at 11.6 tonnes



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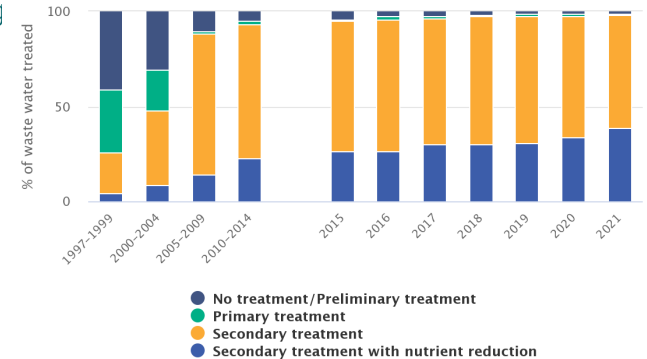
Waste

Biodiversity

Water / Land

- Five Water quality indicators, covering bathing water, drinking water, river water, groundwater, and urban waste water
- Improvements in bathing and drinking water over time, and waste water treatment rates
- Proportion of high quality river water has declined from 27% to 17% since 1990
- Nine indicators for Land, covering:
 - Land use
 - Forest cover
 - 11% in 2020, third lowest in EU27
 - Organic agricultural land
 - Fertiliser sales
 - Livestock
 - In most recent figures for EU, Ireland had 3rd highest number of cattle (8.8% of stock) and fifth highest number of sheep (6.1%)
 - New dwellings

Figure 5.3 Ireland: Urban waste water treatment 1997–2021



Source: Environmental Protection Agency



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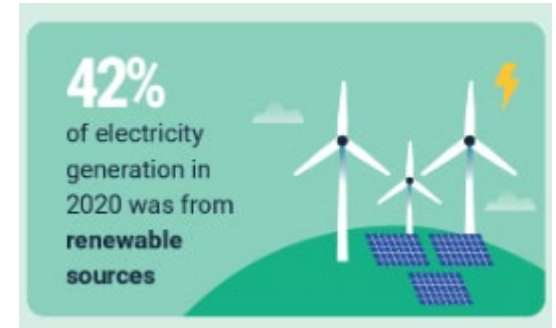
Transport

Waste

Biodiversity

Energy / Transport

- Seven indicators for energy, under:
 - Primary energy production
 - Final energy consumption
 - Renewable energy production
 - Renewable energy accounted for 42% of electricity generation in Ireland in 2020 up from 5% in 1990
 - Fuel imports
- High frequency (half-hour) energy production statistics available this year
- Six indicators for transport
 - Private vehicle ownership
 - Public transport usage
 - International transport



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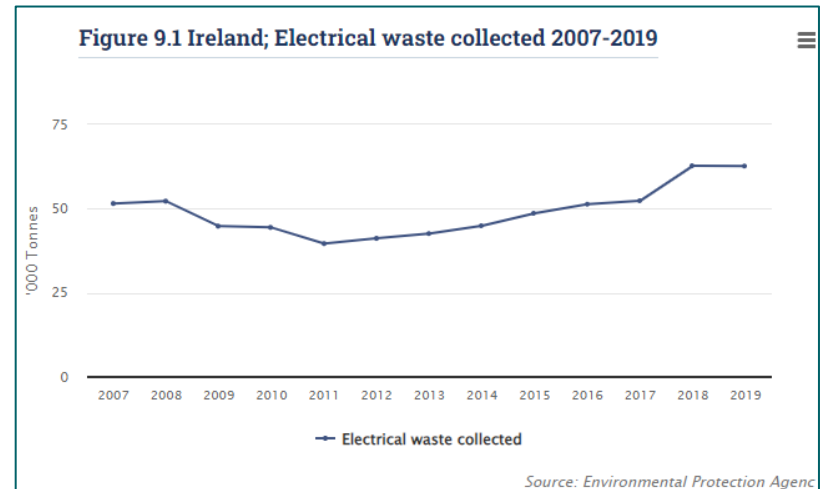
Transport

Waste

Biodiversity

Waste

- Four indicators for waste
 - Municipal waste generated
 - Municipal waste sent to landfill
 - Decline from 84% in 2001 to 16% in 2019
 - Recovery of packaging waste
 - Electrical waste



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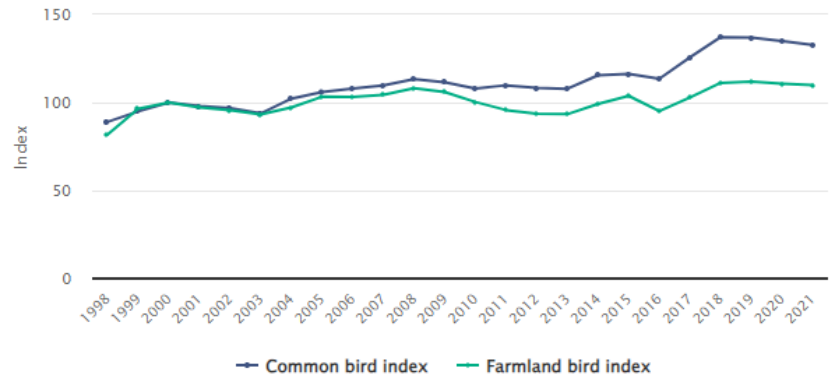
Biodiversity

Biodiversity

- Four indicators covering
 - Special Protected Areas under EU Birds Directive
 - Special Areas of Conservation under EU Habitats Directive
 - 10% of Irish land designated, compared with 33% in Slovenia and 7% in Denmark
- Index of common and farmland birds



Figure 10.3 Ireland: Common and farmland birds 1998-2021



Importance of Environmental Indicators Ireland

- The annual Environmental Indicators release is a broad overview of work being done by several departments, including the CSO
- It provides a snapshot of landscape over time for general reader
- Important to direct people to sources of more detailed statistics
- The use of visuals such as infographics allows better communication
- Some media interest in release every year



Conclusion

- The release has evolved over time, with new indicators being added as data becomes available. Choice of indicators is independent by CSO
- Allows a general overview of Ireland's environment at a particular point
- Provides context with comparisons to past, to world and to other EU Member States
- Data reflects work done in CSO and by other departments – requires communication with several entities
- Important to provide full sources and explain meaning of indicators in Background Notes. Promoting awareness of data availability
- Most recent release:
<https://www.cso.ie/en/releasesandpublications/ep/p-eii/environmentalindicatorsireland2022/>
- Thank you for your attention!
 - kevin.hunt@cso.ie / environment@cso.ie

