Cocking

Estimated Parish Level Greenhouse Gas (GHG) Emissions 2017/18

What are we looking at?

The graphs that follow show the estimated 2017/18 greenhouse gas emissions for:

- **Cocking** (Local Authority district: *Chichester*)

The graphs show emissions estimated using two methods:

- Territorial-based emissions: the emissions that come from activities carried out *in* the parish
- Consumption-based emissions: the emissions that come from the production of the goods and services we consume, wherever they are emitted

The per-household emissions for each parish are also compared with the per-household emissions for the district in which the parish sits. This lets us see how above or below 'average' for our district we are.

The data used comes from a University of Exeter/Centre for Sustainable Energy (CSE) project and they combine:

- data that can be measured at parish level (e.g. metered gas & electricity) and
- data that are estimated for each Parish based on the kinds of people that live there (Census data) as well as the local transport infrastructure, land-use and local business/commercial activity.

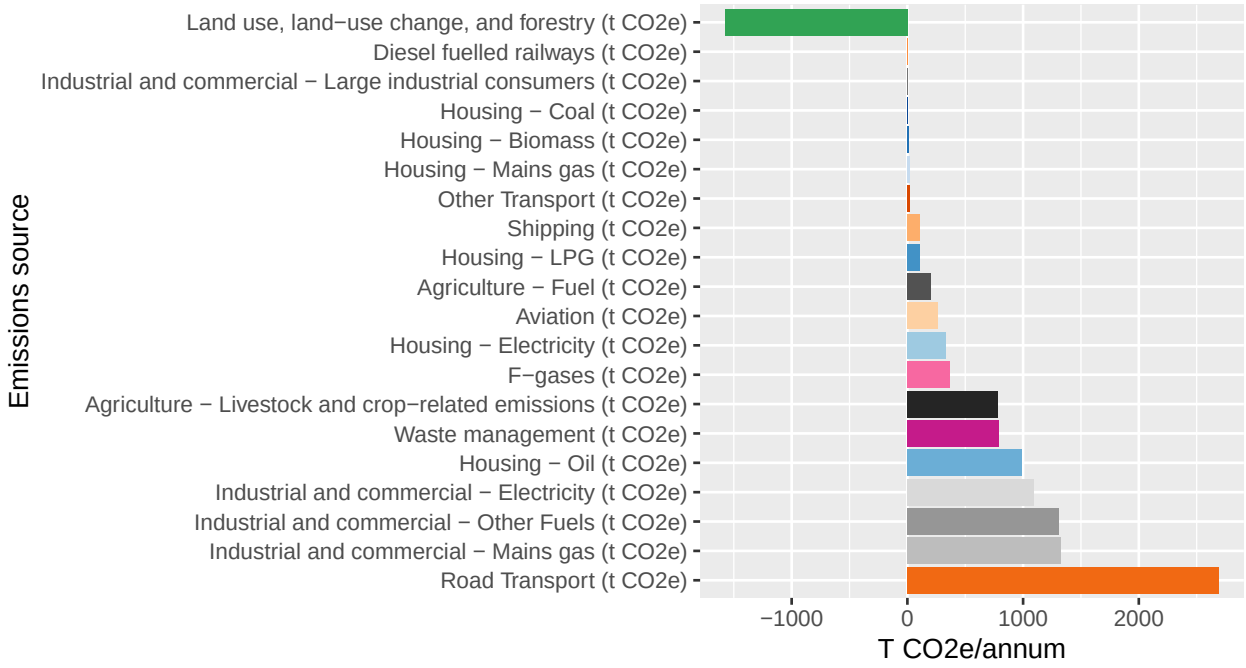
The data are a snapshot of emissions for 2017/18 and so should be seen as a pre-pandemic baseline.

The parish level **territorial** estimates are perhaps best used to paint a broad brush picture of 'the big things' that are *likely* to be the main parish level emissions sources. Sometimes this might highlight major through-roads as large emissions sources which can seem unfair if most of the traffic is from 'out of parish.' It can also identify a local industrial or agricultural activity as a major source. The parish may not think it can influence this but it could lead to constructive discussions with those businesses (for example).

The **consumption** estimates are best used to show which aspects of the parish residents' consumption are *likely* to be the biggest contributors to overall emissions. This helps us identify a) what we should try to do or use less of and b) how we could deliberately spend in ways that reduce our emissions footprint. It should *always* be remembered that apart from measured energy use, these are estimates and averages - if 100% of the parish never fly and never eat meat/fish then the estimated parish footprints will be wrong...

See the CSE guidance on using the data for more explanation.

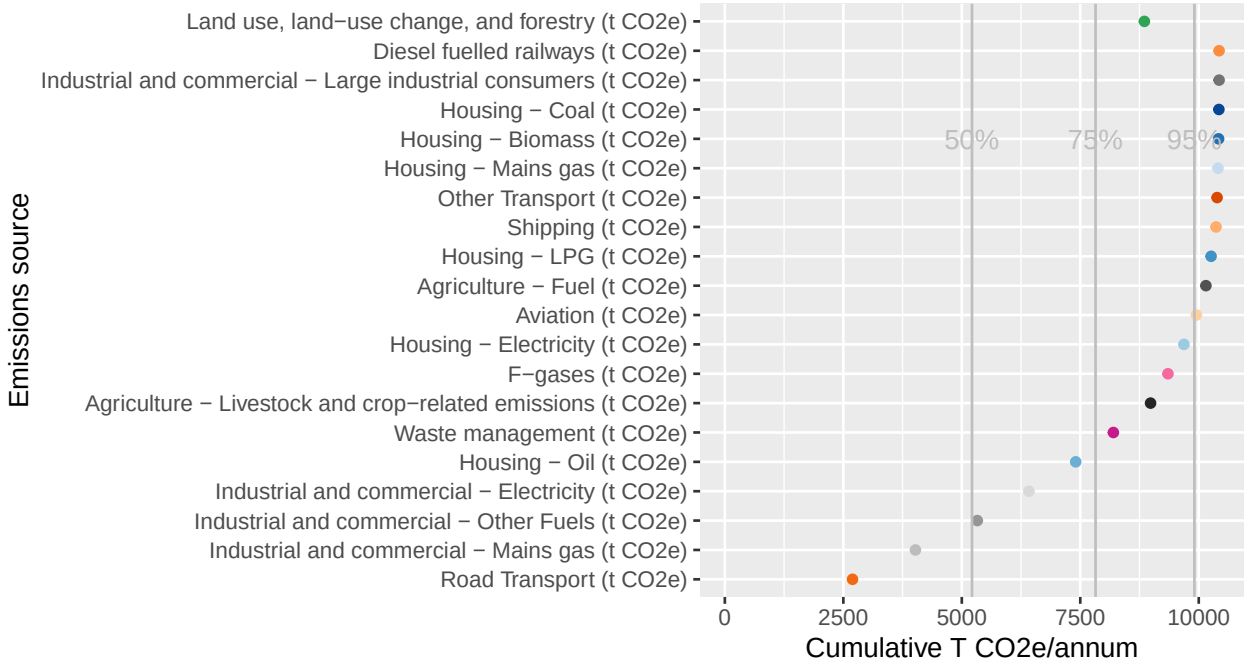
Which are our biggest territorial emissions sources?



Cocking: net territorial emissions = 8.9 kT CO2e

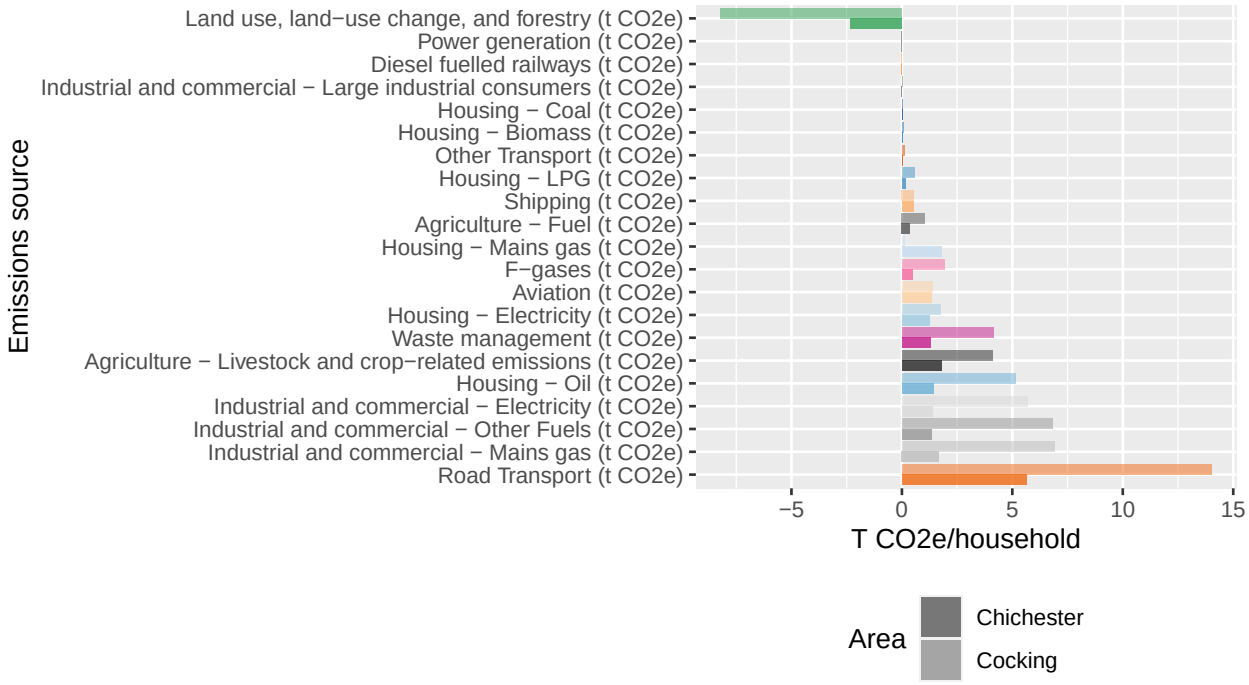
In addition an estimated 0.45 t CO2e are emitted in Cocking due to power generation. This overlaps with the electricity emissions category above which proportionally allocates national power generation emissions to areas. However the level of these emissions in the parish may be of local interest.

Which big sources make up 50%, 75% or 95% of our territorial emissions?



Vertical lines = % of gross emissions

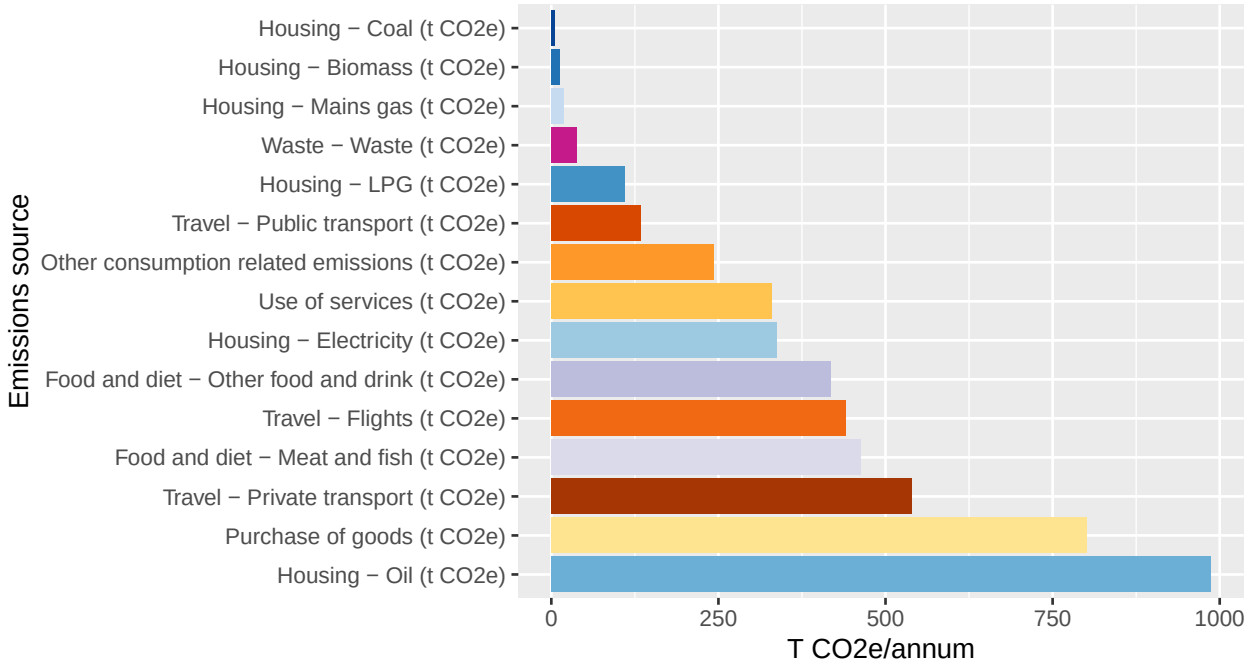
How do our per household territorial emissions compare with our district?



For comparison:

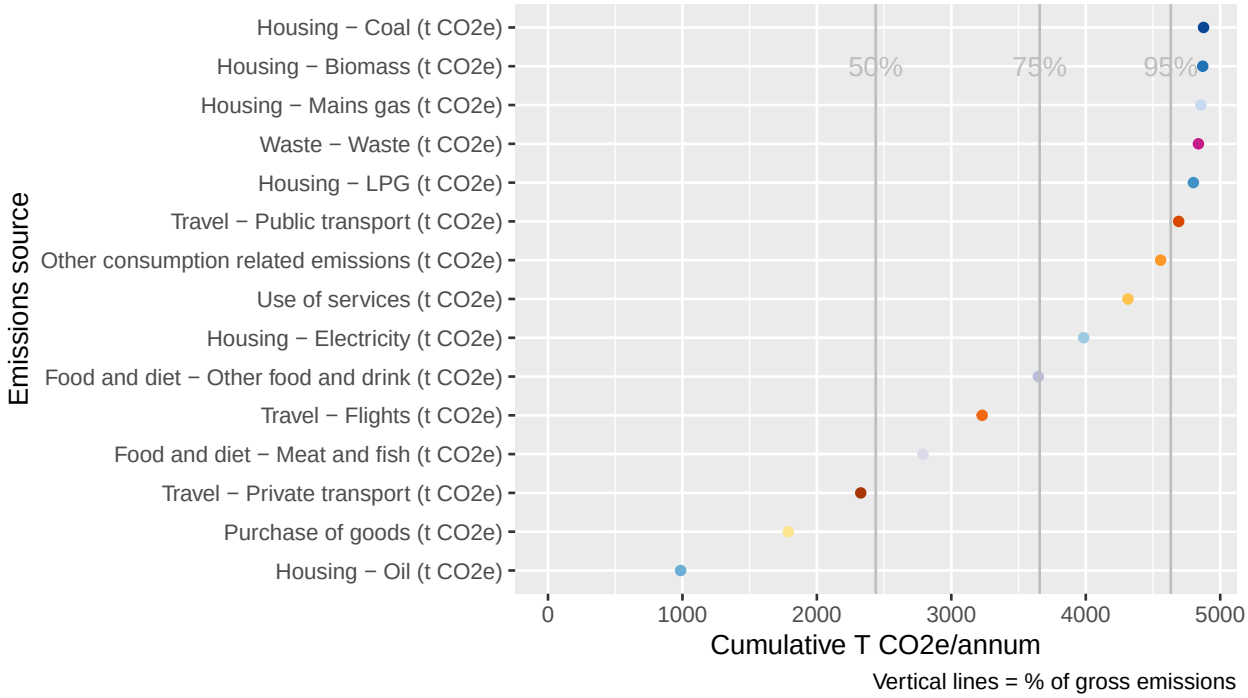
- Cocking total per household territorial emissions = 46.1 T CO2e
- Chichester total per household territorial emissions = 18.2 T CO2e

Which are our biggest consumption emissions sources?



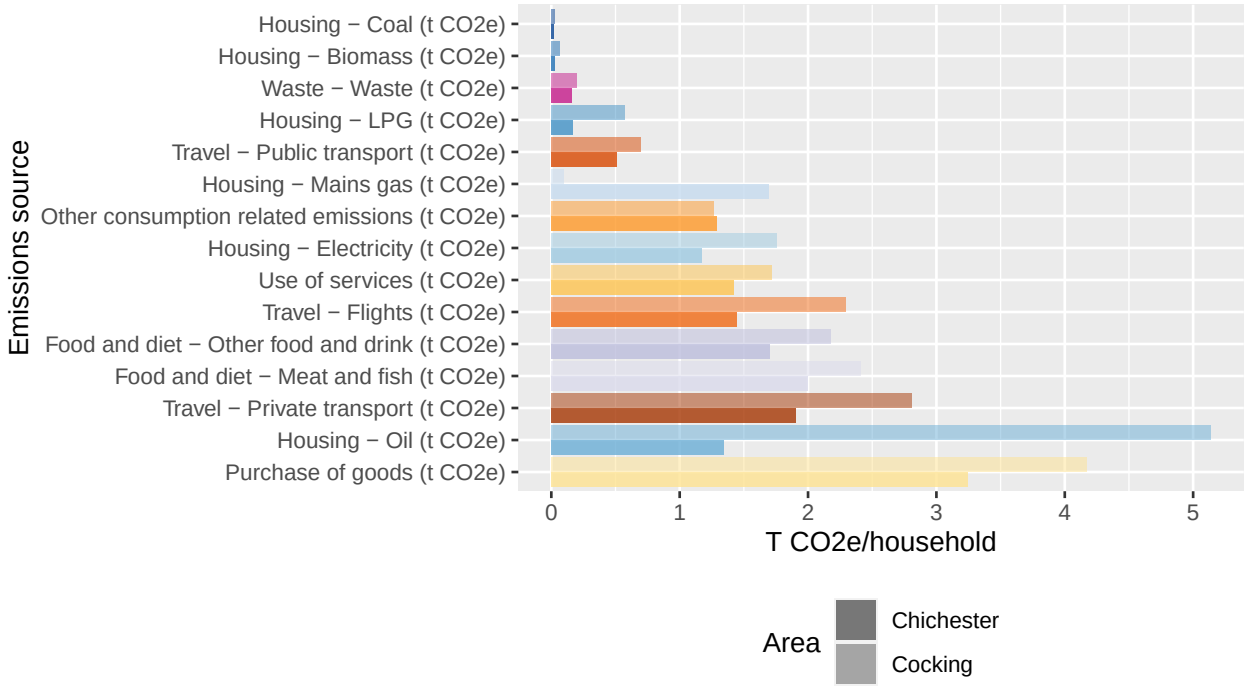
Cocking: total consumption emissions = 4.9 kT CO2e, 55 % of our territorial emissions

Which big sources make up 50%, 75% or 95% of our consumption emissions?



Vertical lines = % of gross emissions

How do our per household consumption emissions compare with our district?



For comparison:

- Cocking total per household consumption emissions = 25.4 T CO2e
- Chichester total per household consumption emissions = 18.1 T CO2e

Data tables

The parish data tables used to create the plots - if you need the numbers.

Territorial emissions

Table 1: Parish territorial emissions

Source	T_CO2e	%
Road Transport (t CO2e)	2,694.0	25.8
Industrial and commercial - Mains gas (t CO2e)	1,328.0	12.7
Industrial and commercial - Other Fuels (t CO2e)	1,305.6	12.5
Industrial and commercial - Electricity (t CO2e)	1,089.3	10.4
Housing - Oil (t CO2e)	986.8	9.5
Waste management (t CO2e)	795.1	7.6
Agriculture - Livestock and crop-related emissions (t CO2e)	784.6	7.5
F-gases (t CO2e)	367.1	3.5
Housing - Electricity (t CO2e)	336.8	3.2
Aviation (t CO2e)	264.0	2.5
Agriculture - Fuel (t CO2e)	200.2	1.9
Housing - LPG (t CO2e)	109.3	1.0
Shipping (t CO2e)	105.2	1.0
Other Transport (t CO2e)	21.3	0.2
Housing - Mains gas (t CO2e)	19.1	0.2
Housing - Biomass (t CO2e)	13.0	0.1
Housing - Coal (t CO2e)	6.0	0.1
Industrial and commercial - Large industrial consumers (t CO2e)	4.7	0.0
Power generation (t CO2e)	0.5	0.0
Diesel fuelled railways (t CO2e)	0.0	0.0
Land use, land-use change, and forestry (t CO2e)	-1,577.4	

% = percent of gross emissions

Consumption emissions

Table 2: Parish consumption emissions

Source	T_CO2e	%
Housing - Oil (t CO2e)	986.8	20.2
Purchase of goods (t CO2e)	800.9	16.4
Travel - Private transport (t CO2e)	538.9	11.1
Food and diet - Meat and fish (t CO2e)	462.6	9.5
Travel - Flights (t CO2e)	440.3	9.0
Food and diet - Other food and drink (t CO2e)	418.2	8.6
Housing - Electricity (t CO2e)	336.8	6.9
Use of services (t CO2e)	329.4	6.8
Other consumption related emissions (t CO2e)	243.0	5.0
Travel - Public transport (t CO2e)	134.3	2.8
Housing - LPG (t CO2e)	109.3	2.2
Waste - Waste (t CO2e)	37.5	0.8
Housing - Mains gas (t CO2e)	19.1	0.4
Housing - Biomass (t CO2e)	13.0	0.3
Housing - Coal (t CO2e)	6.0	0.1

Further information

- On the differences between territorial-based and consumption-based emissions
- Use the CSE's online visualisation tool
- A guide to using the tool online
- Details on the methods used to estimate the emissions
- Alternatively download the data for yourself

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Acknowledgements

The code used to generate these graphs draws heavily on Dr Tom Rushby's Local Authority Emissions explorer.

Code

This report was built using Rmarkdown in RStudio. The code is available for inspection and re-use. Changes to the code are logged so you can see how older version of this report may have been updated (and when).

R packages used:

- data.table (Dowle et al. 2015)
- flextable (Gohel 2021)
- ggplot2 (Wickham 2009)
- here (Müller 2017)
- knitr (Xie 2016)
- rmarkdown (Allaire et al. 2018)

References

Allaire, JJ, Yihui Xie, Jonathan McPherson, Javier Luraschi, Kevin Ushey, Aron Atkins, Hadley Wickham, Joe Cheng, and Winston Chang. 2018. *Rmarkdown: Dynamic Documents for r*. https://CRAN.R-project.org/package=rmarkdown.

Dowle, M, A Srinivasan, T Short, S Lianoglou with contributions from R Saporta, and E Antonyan. 2015. *Data.table: Extension of Data.frame*. https://CRAN.R-project.org/package=data.table.

Gohel, David. 2021. *Flextable: Functions for Tabular Reporting*. https://CRAN.R-project.org/package=flextable.

Müller, Kirill. 2017. *Here: A Simpler Way to Find Your Files*. https://CRAN.R-project.org/package=here.

Wickham, Hadley. 2009. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. http://ggplot2.org.

Xie, Yihui. 2016. *Knitr: A General-Purpose Package for Dynamic Report Generation in r*. https://CRAN.R-project.org/package=knitr.