

84,231
ROADS

49,213
CROSSROADS

6,664
ROAD DENSITY

38.3
CROSSROADS/km²

GROSS POLLUTERS AND GROSSLY POLLUTED ROADS

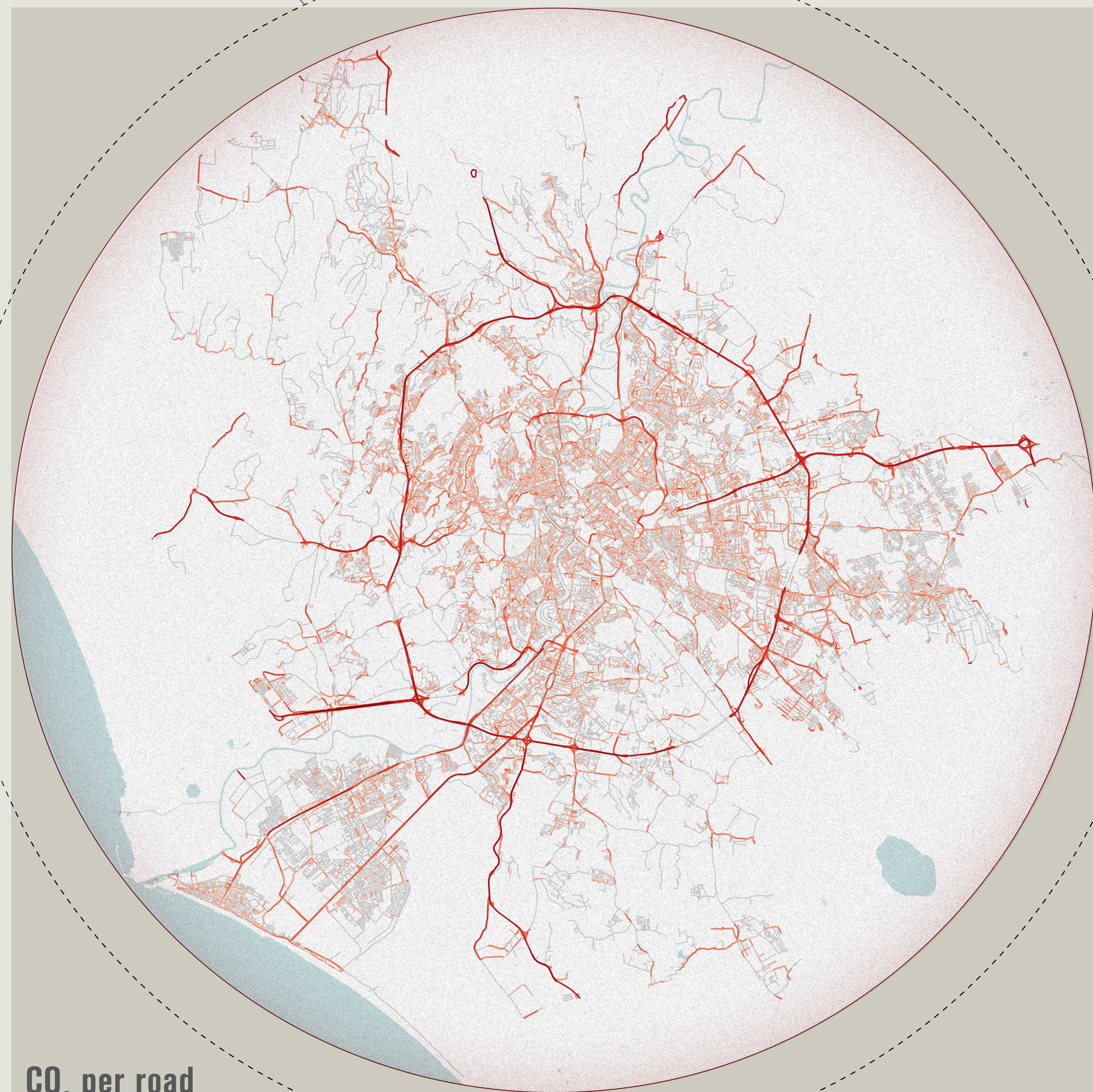
256,391
ROADS

145,441
CROSSROADS

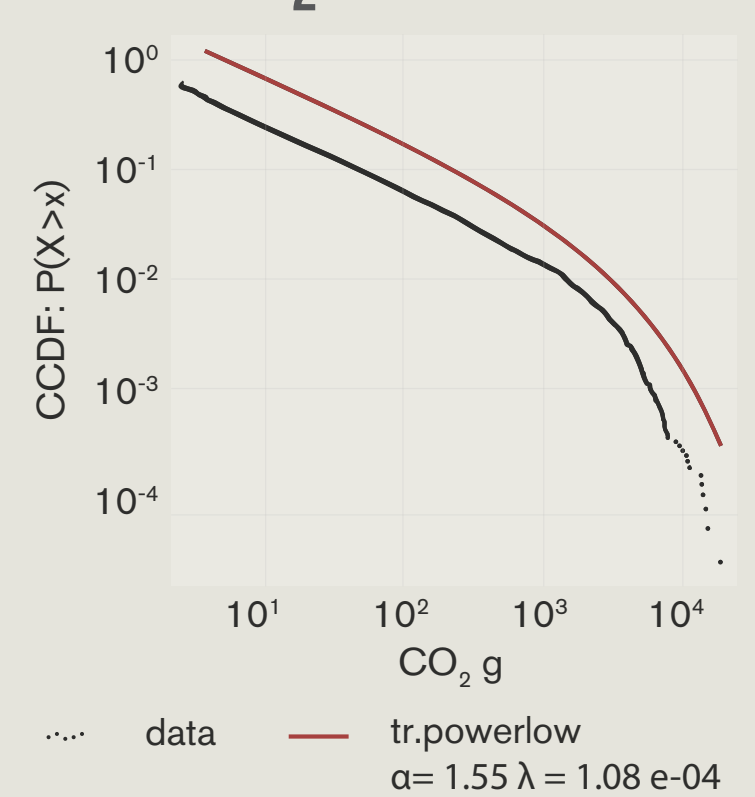
12.152
ROAD DENSITY

92.5
CROSSROADS/km²

A TALE OF TWO CITIES



CO₂ per road



Vehicles' emissions produce a significant share of cities' air pollution, with a substantial impact on the environment and human health.

We use GPS traces and a microscopic model to analyse the emissions (CO₂, NO_x, PM, VOC) from thousands of vehicles in Rome and Greater London.

Rome's road network is definitely sparser and has the highest share of motorways between its roads (0.4%), London's one is denser, with a lower share of motorways (0.02%).

In both the cities we find:

- Gross polluters: a small number of vehicles responsible for the greatest quantity of emissions
- Grossly polluted roads, which suffer the greatest amount of emissions.

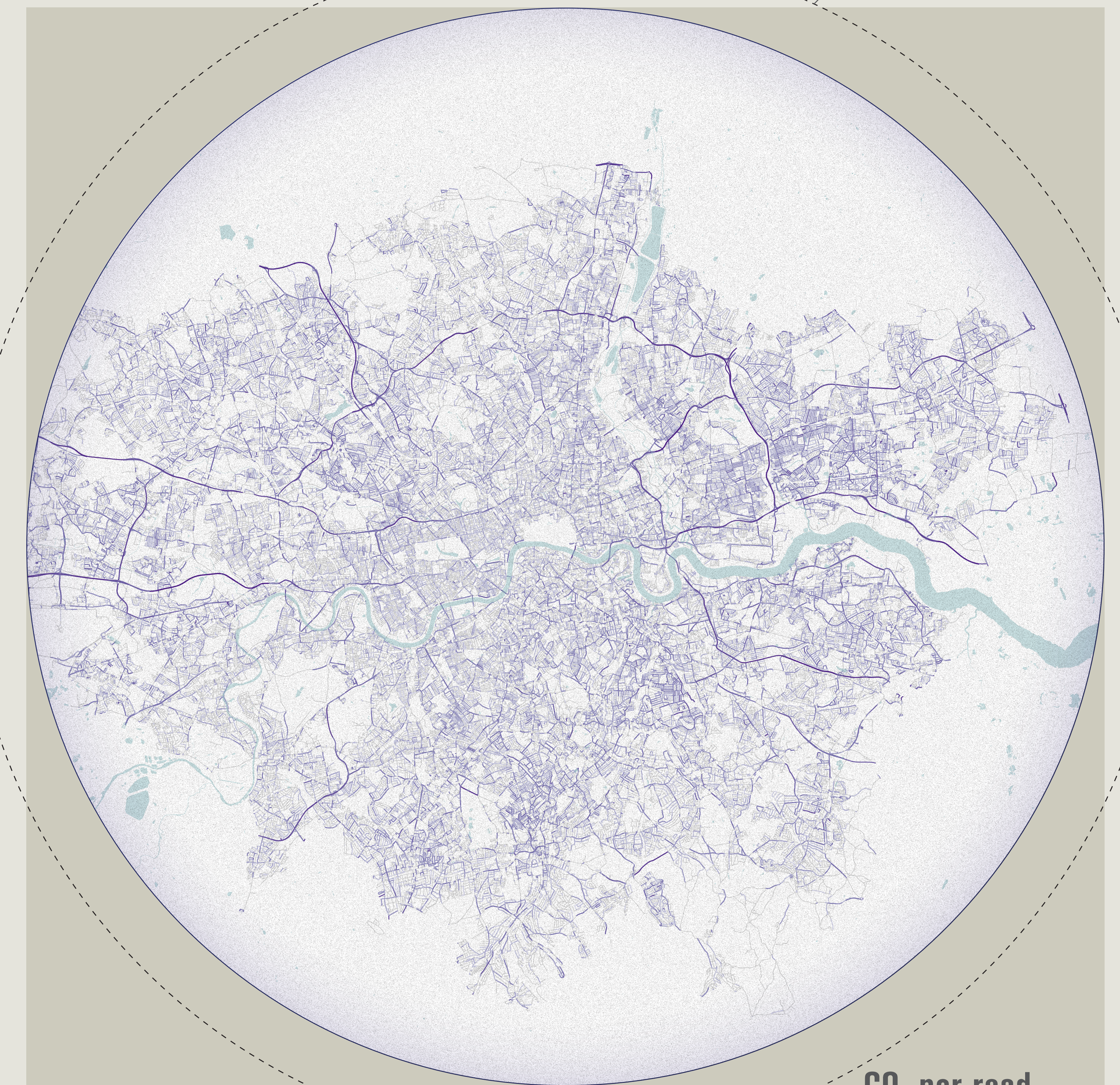
The distributions of emissions during a month across roads and vehicles are well approximated by a truncated powerlaw.

Road network data **Open Street Map**
GPS Data **Octo Telematics** Jan 2017 ~11k vehicles

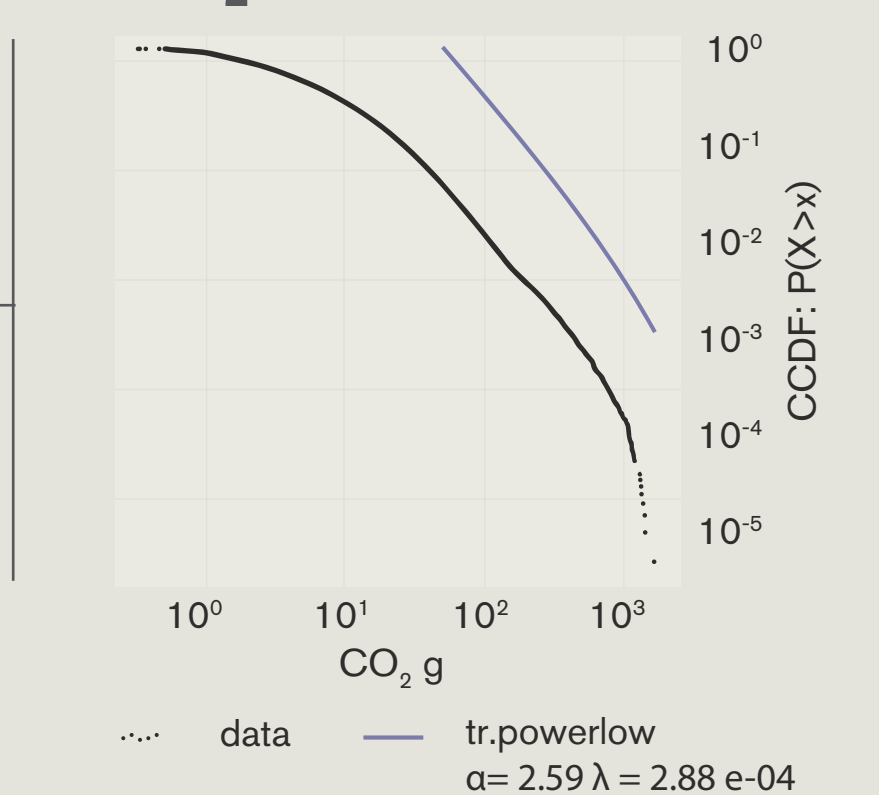


TARGETED ELECTRIFICATION

The electrification of just the top 1% gross polluters would lead to the same reduction of the CO₂ emitted overall as electrifying 10% random vehicles in Rome and 6% in London



CO₂ per road



ROME & LONDON