

# **King's College London modelling exercise to support Camden's Clean Air Action Plan 2019-2022 and Transport Strategy**

The Environmental Research Group  
King's College London

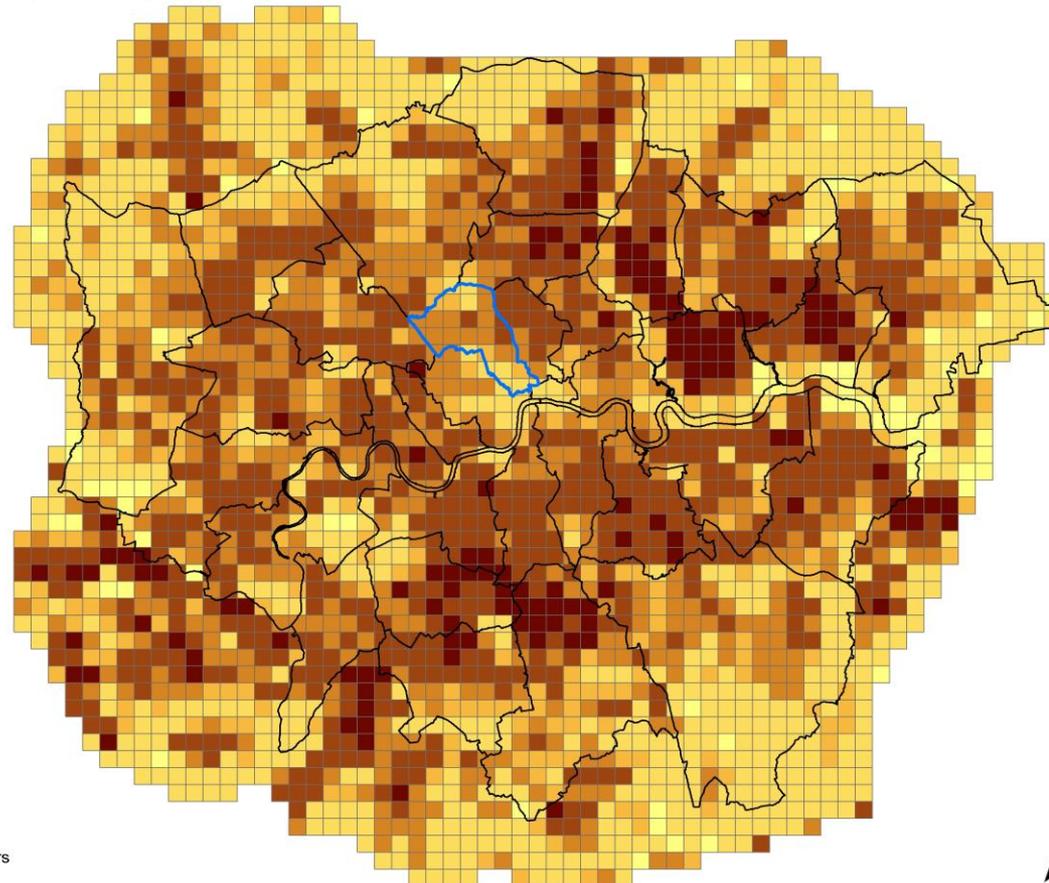
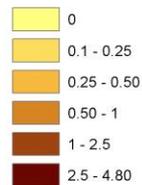
Dr David Dajnak

- Investigate Camden's compliance with WHO guidelines by 2030
- High-resolution air quality maps for Camden in 2030
- Source apportionment outputs
- Interactive online map tool
- Help Camden identify future key pollution sources
- Camden's policy interventions scenario 2030 predictions
- Discussion and conclusions

# Camden Air Quality in 2030

- **LAEI v2013 reference air quality data** (latest AQ at the time of this study)
- **Now superseded by LAEI v2016**
- **2030 BAU (LES) Scenario Air Quality data** (based upon the current extent of GLA/MoL powers and no additional jurisdiction)
- Domestic wood burning modelled as a single background concentration across London in LAEI2013 - replaced by an 'equivalent' emissions total

Wood burning emissions (in tonnes per annum)



# Camden Air Quality in 2030

## 2030 BAU (with LES) Air Quality

### Source apportionment of

- Domestic wood burning
- Road transport
- Commercial and domestic gas heating
- Commercial catering
- Out-of-London background contribution

Re-gridded at 5 m to display higher resolution and enhance analysis

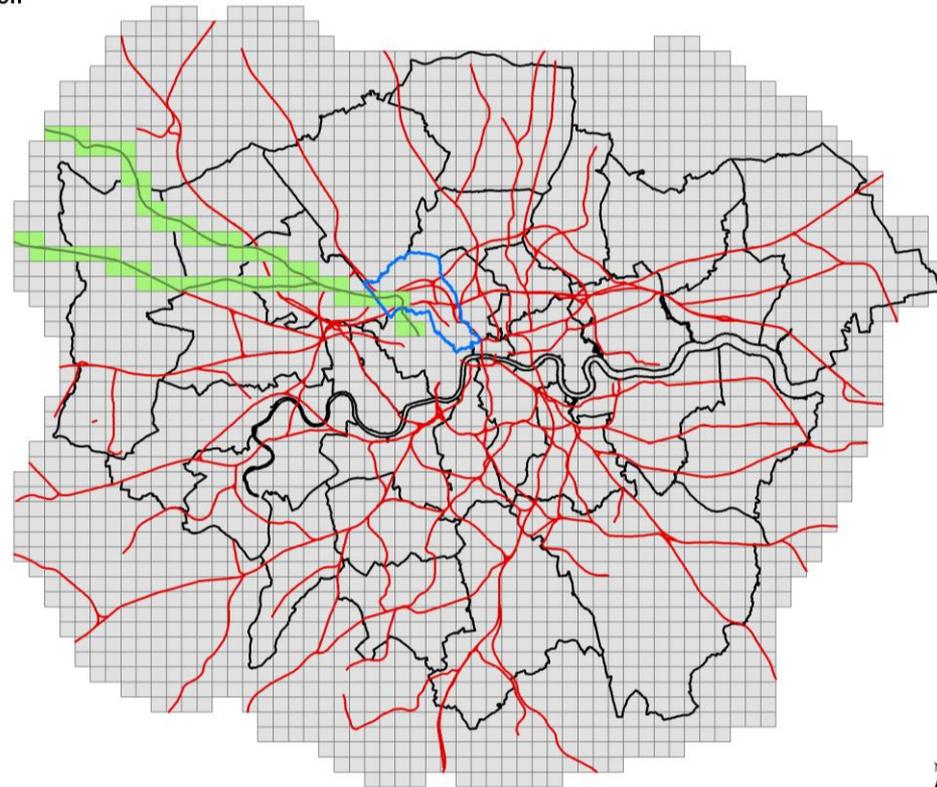
Interactive online tool to visualise and interrogate this data - enabled Camden to analyse the relative significance of different activities in different parts of the borough

# Camden set of policy interventions in 2030

## 2030 Camden Scenario Air Quality

- Based on the 2030 BAU (with LES) air quality in 2030
- 5% road transport traffic reduction on all vehicles (except LT-buses) on all roads within Camden borough
- Removing all domestic wood burning within Camden borough
- Electrification of the Chiltern passenger railway route within London

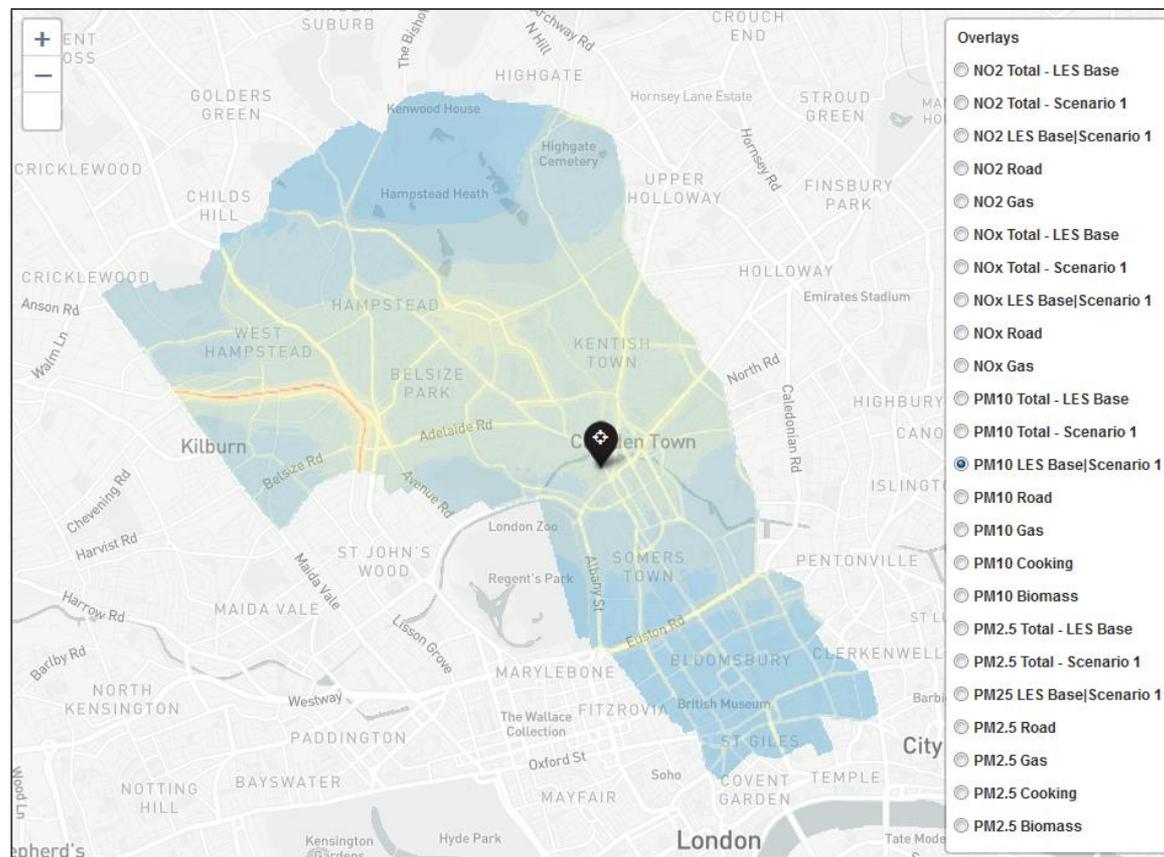
Railway network in London



# Camden set of policy interventions in 2030

## 2030 Camden Scenario Air Quality

- Re-gridded at 5 m to display higher resolution and enhance analysis
- Interactive online tool to visualise and interrogate this data



*Reduction in PM<sub>10</sub> from introduction of Camden AQ measures*

# Discussion and conclusions

**Aim** of the modelling study

- **Support** Camden's **Clean Air Action Plan 2019-2022** and Transport Strategy
- **Help** Camden **identify** future **key pollution sources**
- Explore the extent to which Camden could **meet WHO objectives** by 2030

A large proportion of Camden's air pollution is coming from **outside of Camden**

**London background**  
(LAEI sources)

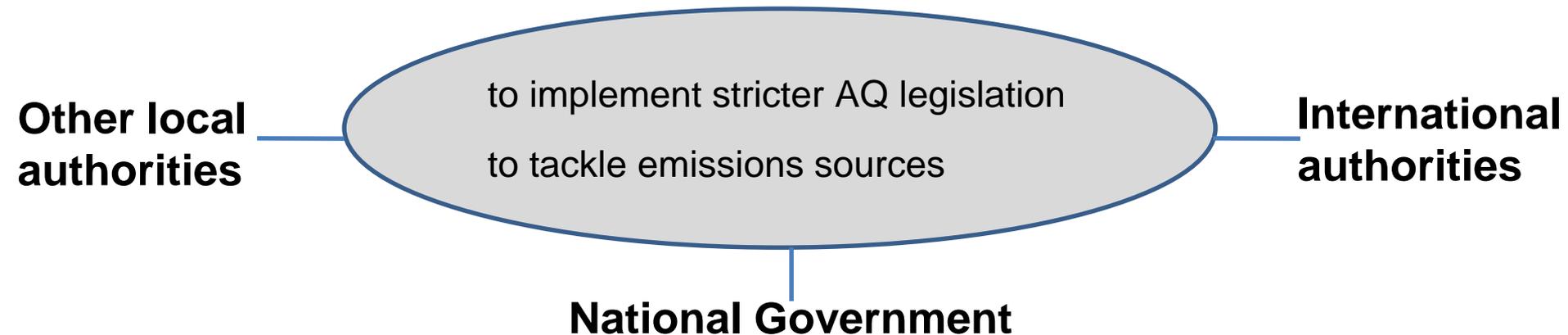
<b>Rural background</b>		
NO <sub>x</sub>	PM <sub>2.5</sub>	PM <sub>10</sub>
8.5	0.5	0.8

µg/m<sup>3</sup>

<b>Regional background</b>	
PM <sub>2.5</sub>	PM <sub>10</sub>
9.7	16.6

µg/m<sup>3</sup>

- **Camden cannot act alone**
- Important: **setting a good example** of best practice in air quality management
- **Adopting strong lobbying positions:** to influence



# Discussion and conclusions

2030 modelling based on existing London-wide policies and Camden's interventions indicates that

- **Camden's interventions** were **effective** in **reducing localised pollution**
- **Limit values** for **NO<sub>2</sub> / PM<sub>2.5</sub> / PM<sub>10</sub>** (40 / 25 / 40 µg/m<sup>3</sup>) will be **achieved**
- **WHO guidelines** for **PM<sub>2.5</sub> / PM<sub>10</sub>** (10 / 20 µg/m<sup>3</sup>): **more difficult to reach**, based upon LAEI v2013
- PM from outside of London are highly sensitive to the prevailing meteorology

## LAEI v2013 Versus LAEI v2016

- This study used the LAEI v2013: best data available at the time
- Since this study has been completed, TfL and GLA released LAEI v2016
- New LAEI v2016 shows that reaching the **WHO guidelines** for **PM<sub>2.5</sub>** by 2030 is **now within a range of possible outcomes**
- Policy makers must remain vigilant and use a range of possible future scenarios

Findings reinforce the need for Camden to

- **implement the best set of policies** in the borough to help toward achieving WHO guidelines by 2030
- **Aim for the lowest air pollution** (benefit health of all residents)
- Whilst **lobbying** national Government and other stakeholders



Thanks for your attention...

Thanks to colleagues in the ERG modelling group:  
Sean Beevers, Gregor Stewart and James Smith

Transport for London and the Greater London Authority

Camden Council

# 2013 NO2 concentration (LAEI v2013)

