

Barriers to developing and implementing local Air Quality Action Plans

J. H. Barnes*, T. J. Chatterton, E. T. Hayes, J. W. S.
Longhurst, A. O. Olowoporoku

Air Pollution XX

20th International Conference on Modelling, Monitoring and Management of Air Pollution

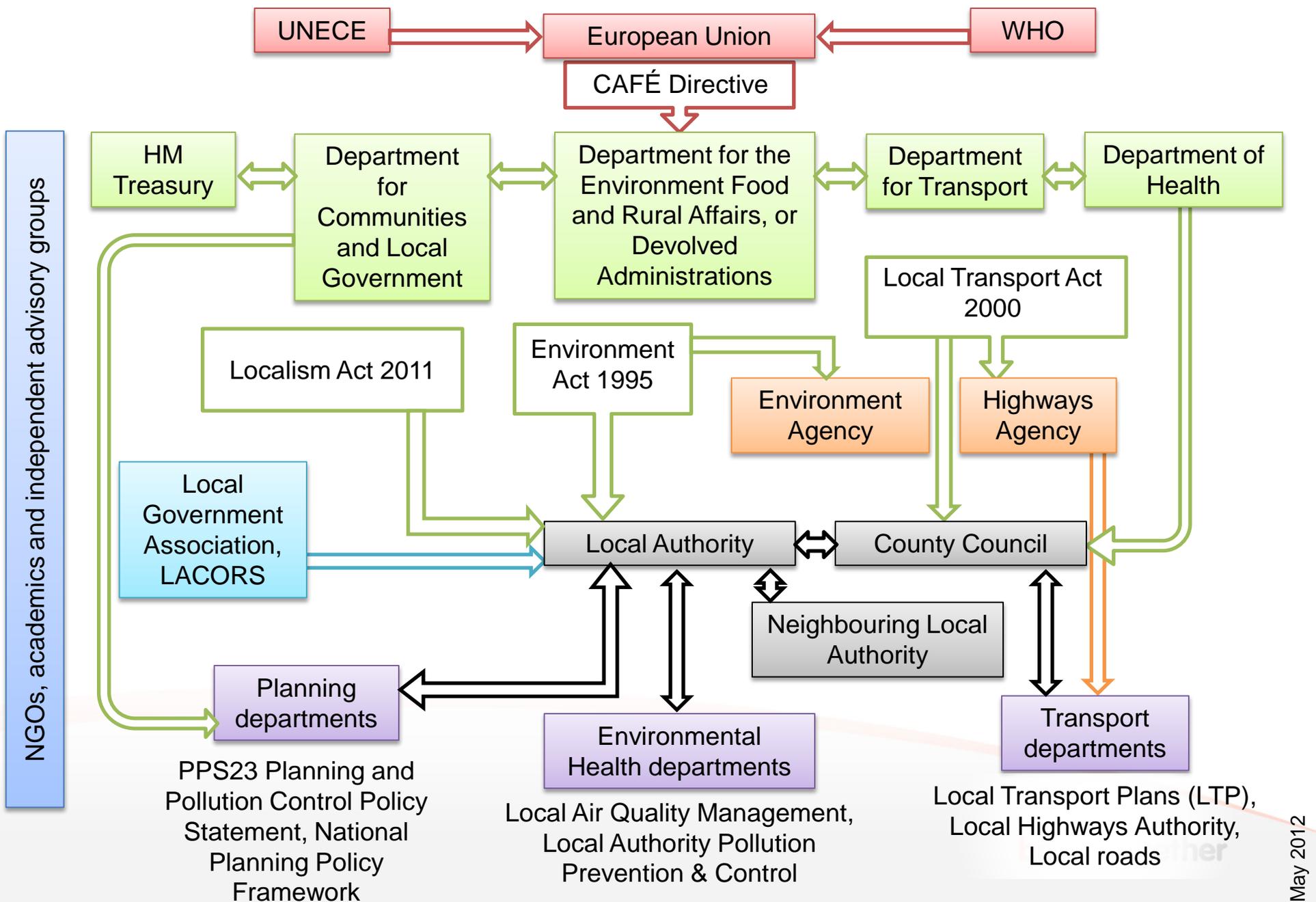
16 - 18 May 2012

A Coruña, Spain

Premise

- Despite 15 years of UK Local Air Quality Management, exceedences of traffic-related pollutants, NO₂ and PM₁₀, are still widespread.
- This presentation examines the UK national and local approaches, with reference to the local authority responses to a questionnaire review.
- Barriers to Local Air Quality Management are highlighted, particularly regarding efforts to remediate poor air quality.
- Some fundamental flaws are identified and opportunities for reconceptualisation of Local Air Quality Management, and in particular Action Planning, are presented.

UK Air Quality Organisational Relationships



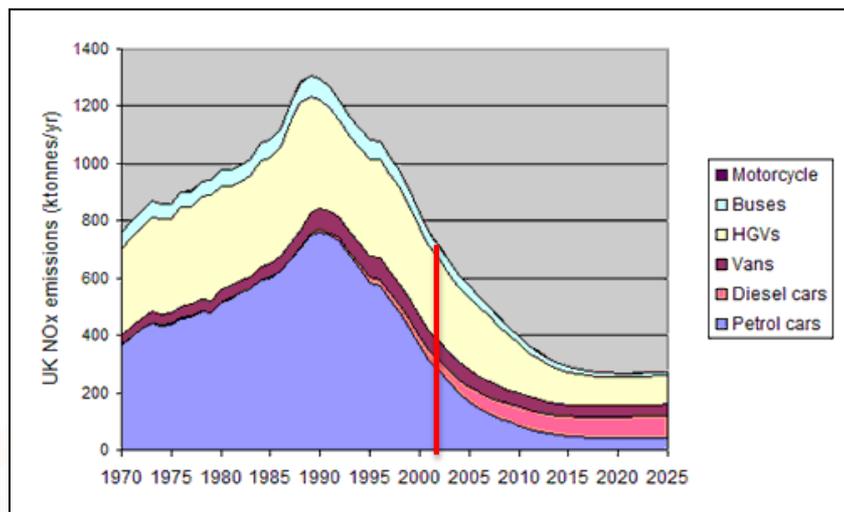
National air quality strategy

- In 1997 the UK Government published the first of three Air Quality Strategies presenting the national approach and setting out the Local Air Quality Management (LAQM) process to manage air pollution.
- Principle of subsidiarity: “Action should be taken to improve air quality at the most appropriate level, be it international, European, national or local”.
- LAQM role was to be in supplementing and “fine tuning” central policies at local hotspots where national measures would be too blunt or expensive.
- The national approach has been reliant on technological improvements/ emissions reduction strategies, e.g. Euro standards.
- Latterly conflicting policies for climate change (i.e. tax incentives for diesel vehicles, Renewable Heat Incentive for biomass burners) may have had a negative impact on NO₂ and PM₁₀.

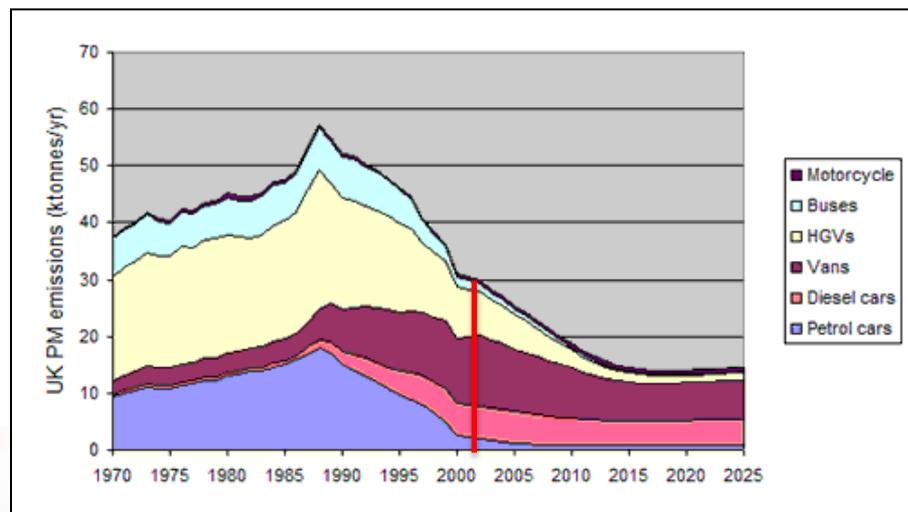


Euro Standards

- Progressively stricter emission standards for new vehicles have been enforced through a series of EU Directives since the early 1990s.
- LDV: Euro 5 came into force in September 2010; Euro 6 standards are due to come into force in September 2014 (<http://www.dieselnet.com>).
- HDV: Euro V came into force in October 2008 and Euro VI standards are due to come into force in January 2013 (<http://www.dieselnet.com>).
- UK road transport emissions were predicted to fall as emission standards got tighter.



NOx

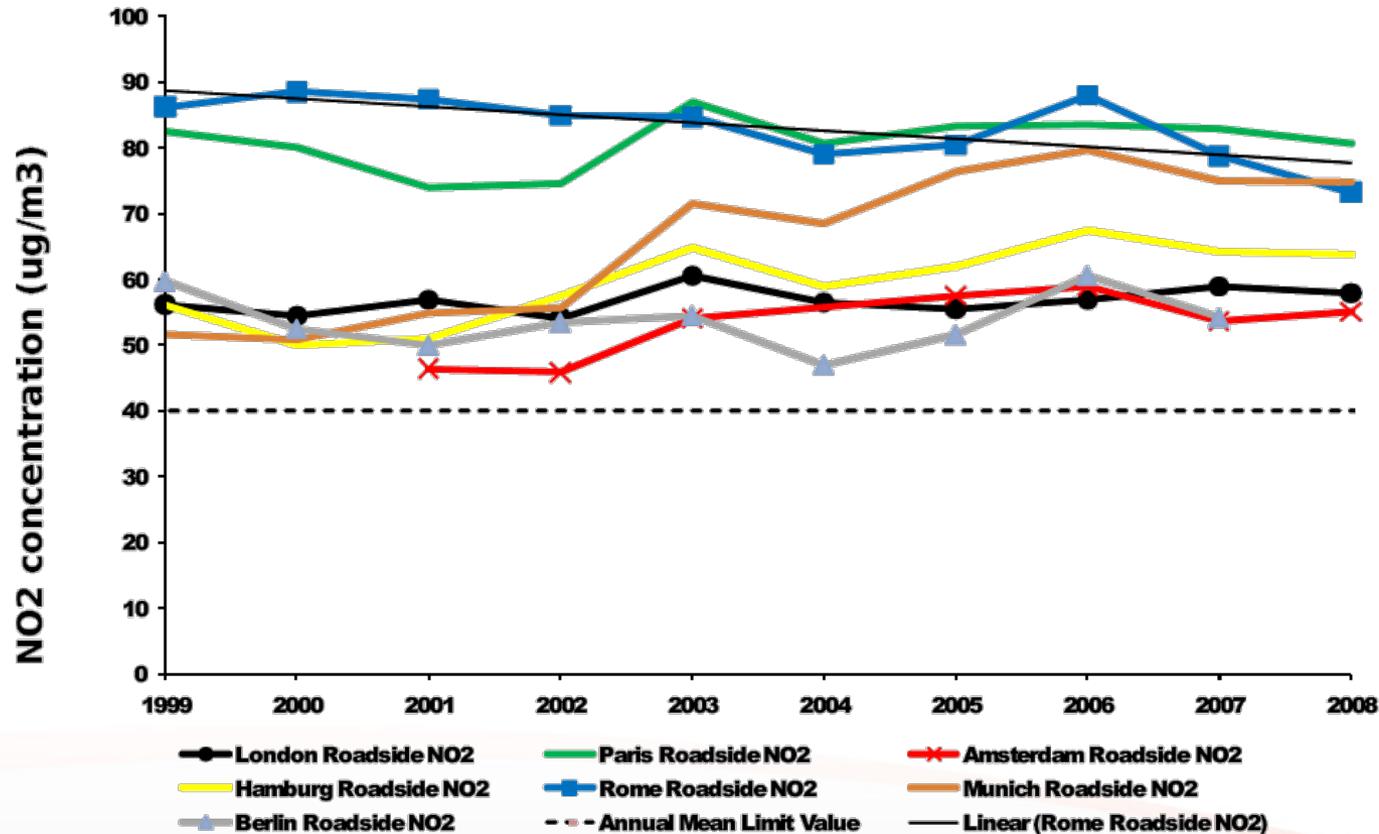


PM₁₀

Projected UK national emissions from road transport (Source: 2002 NAEI projections)

Roadside NO₂ concentrations are not falling

- Forecast transport emissions reductions were not upheld in real-world trials (Carslaw *et al.* 2011), so roadside NO₂ concentrations remained stable.

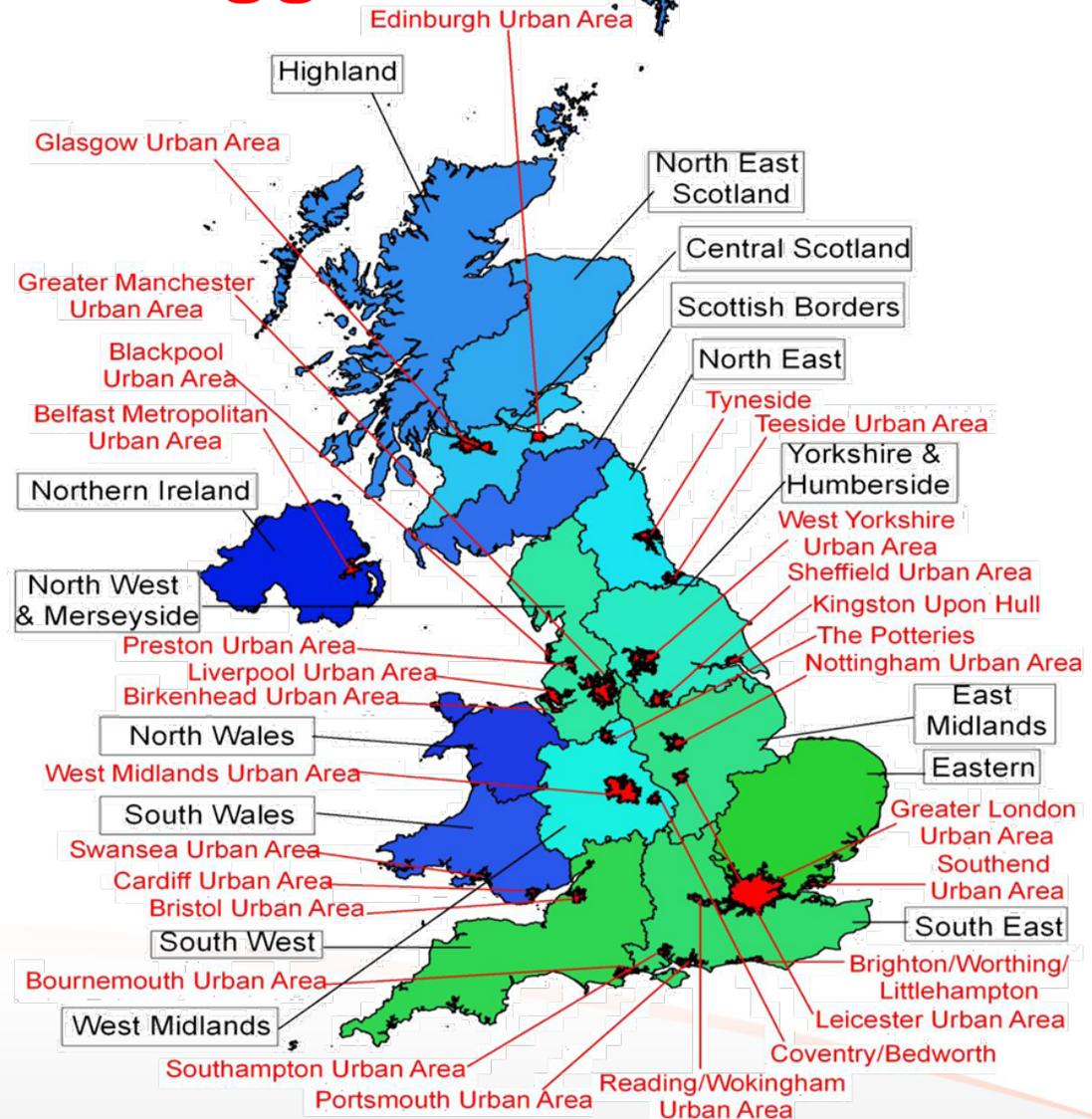


Carslaw, D.C., Beevers, S.D. Westmoreland, E. Williams, M.L. Tate, J.E., Murrells, T. Stedman, J. Li, Y., Grice, S., Kent, A. and I. Tsagatakis (2011). Trends in NO_x and NO₂ emissions and ambient measurements in the UK. Version: July 2011.

http://uk-air.defra.gov.uk/reports/cat05/1108251149_110718_AQ0724_Final_report.pdf

UK Zones and Agglomerations

- The UK is currently exceeding EU Limit Values for:
 - NO₂ annual mean in **40 out of 43** zones and agglomerations
 - NO₂ 1-hour mean in 3 out of 43 zones and agglomerations
 - PM₁₀ 24-hour mean in the Greater London agglomeration
- Exceedences are primarily traffic-related.



Key:
Agglomeration zones (red)
Non-agglomeration zones (blue/green)

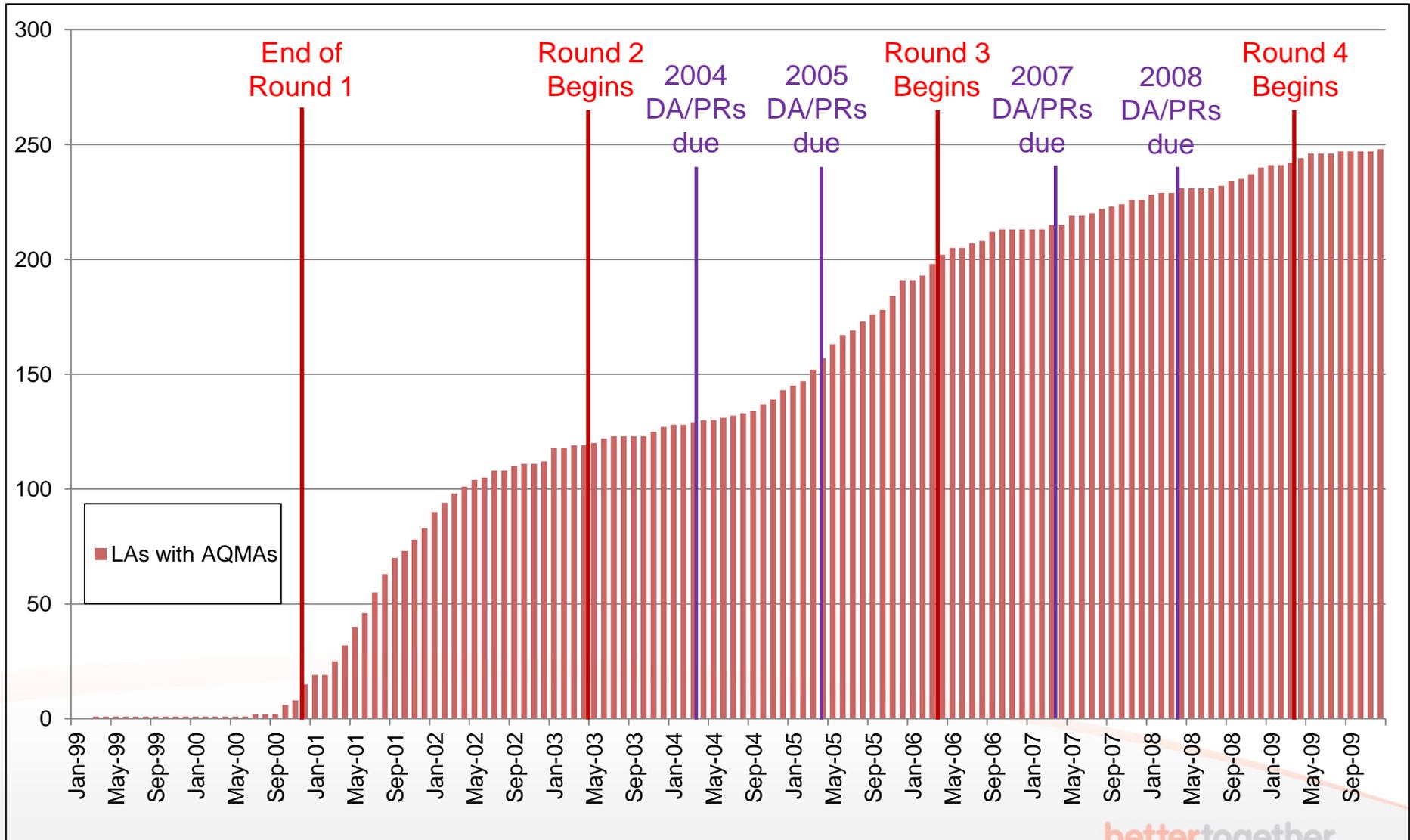
Time Extension Notifications and Action Plans

- PM_{10}
 - The UK Government has received approval from the EC for its PM_{10} short-term action plan, which grants immunity for exceedences up to June 2011.
 - Further exceedences will not be permitted.
- NO_2
 - An action plan to request time extension for compliance with NO_2 Limit Value to 1st Jan 2015 was submitted in September 2011.
 - The plan relies heavily on the implementation of Low Emission Zones (LEZs).
 - Response from EC expected June 2012.
- Failure to comply with EU Limit Values may incur penalties ~€300m as well as ‘unlimited’ daily fines.
- UK Government will be seeking amendments to the NO_2 Limit Value as part of the current EU air quality policy review.

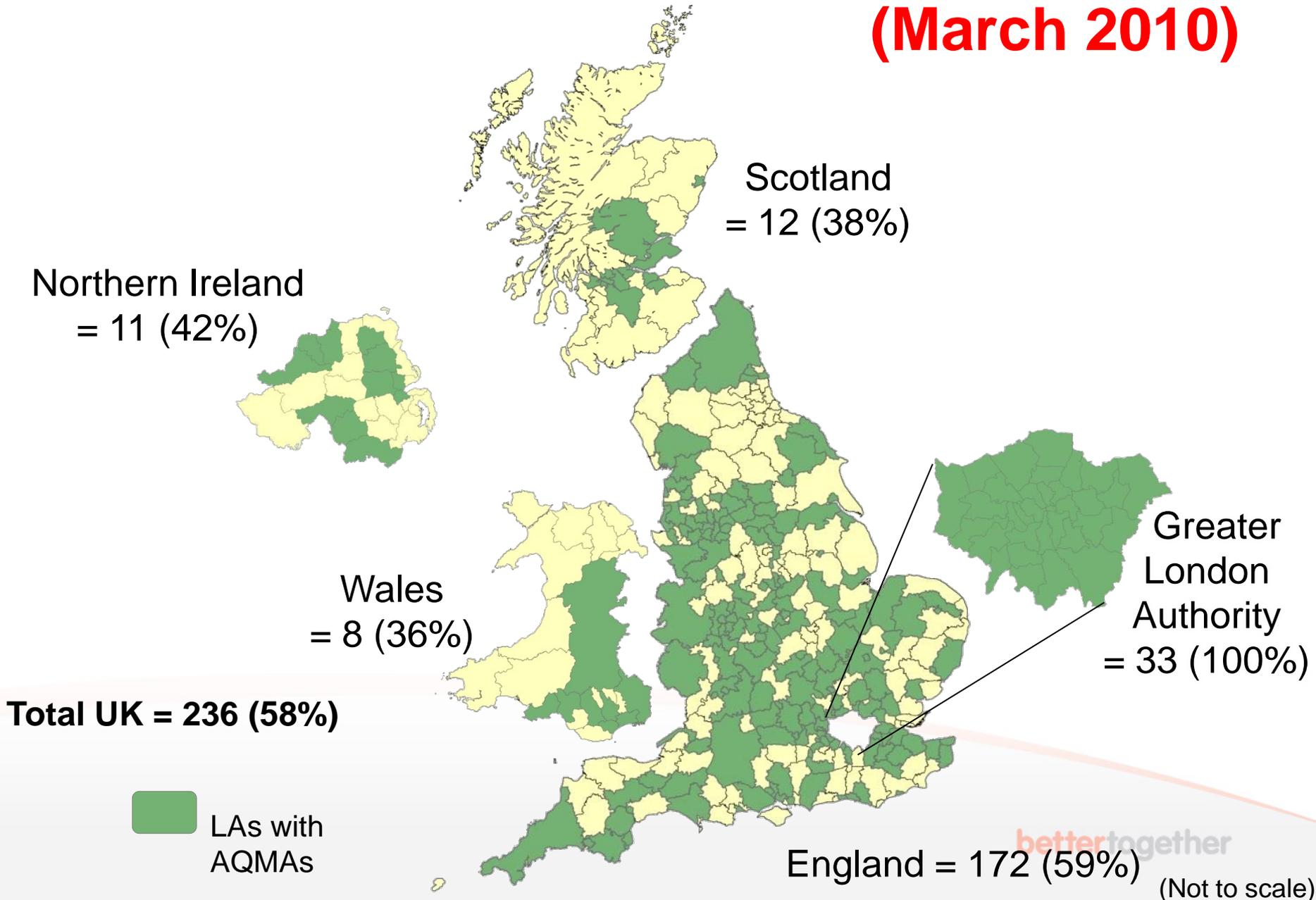
Local Air Quality Management

- The UK Air Quality Regulations 1997 introduced Air Quality Objectives (AQOs) for LAQM, which were comparable with, but sometimes stricter than the EU Limit Values.
- Failure to achieve an AQO means the Local Authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP).
- Local Authorities required to *work towards* meeting the AQOs in their AQAPs as it was recognised that local air quality was not only a local issue.
- LAQM has focussed on addressing pollution ‘hotspots’ as PM wasn’t recognised as a non-threshold pollutant.
- ~59% (~238) UK Local Authorities declared AQMAs, primarily for NO₂ and PM₁₀ from traffic (2011).
- But as yet no traffic-related AQMAs have been revoked on the basis of Local Authority measures implemented in AQAPs.

Number of Local Authorities with AQMAs



Local Authorities with AQMAs across UK (March 2010)



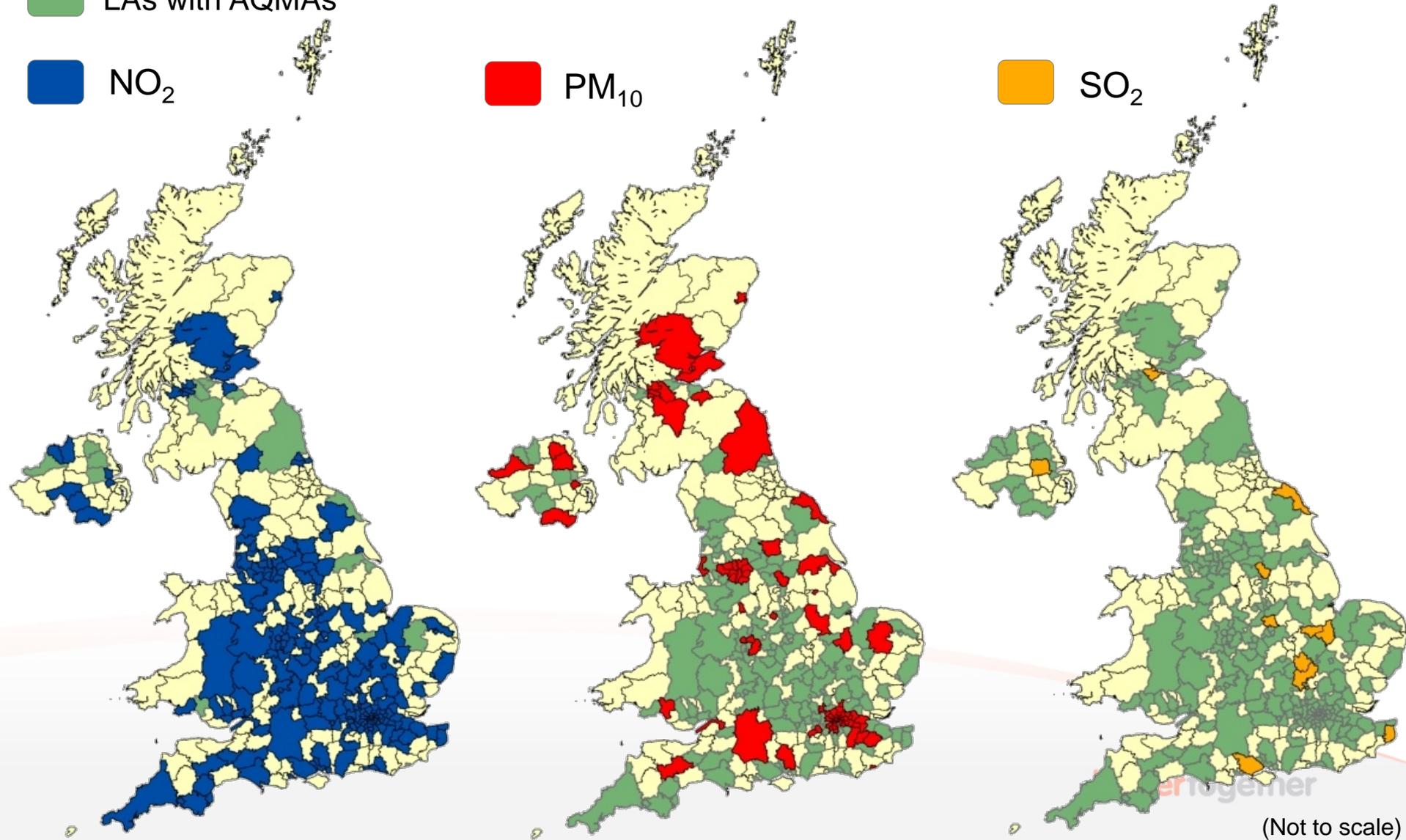
UK AQMAs by Pollutant

■ LAs with AQMAs

■ NO₂

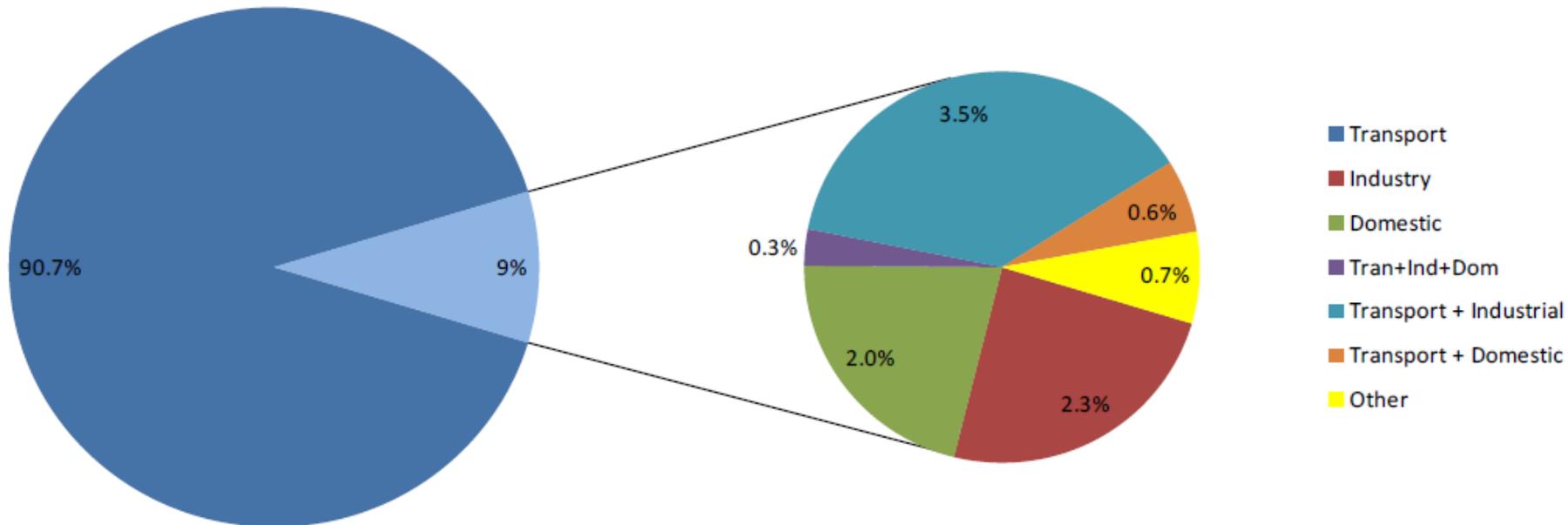
■ PM₁₀

■ SO₂



(Not to scale)

AQMAs by source

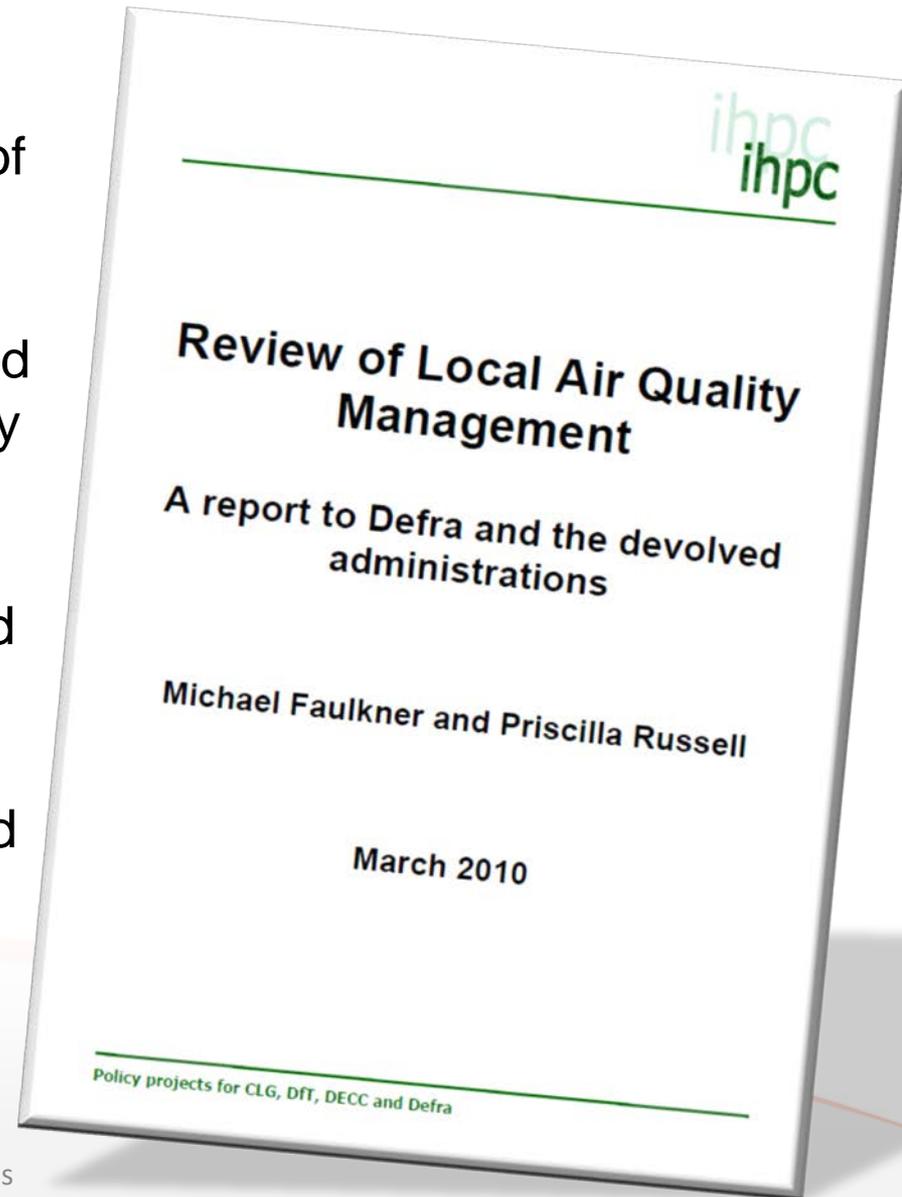


Proportion of the UK's current Air Quality Management Areas resulting from various sources (as of July 2011)

(http://uk-air.defra.gov.uk/library/annualreport/air_pollution_uk_2010_issue_2.pdf)

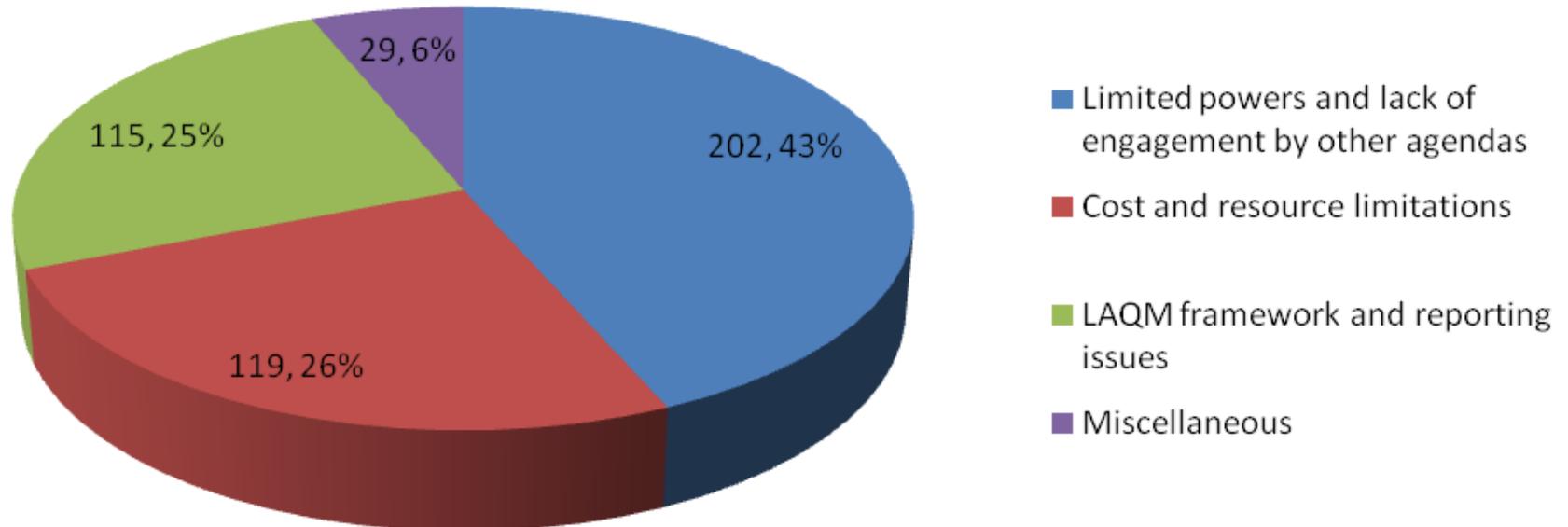
LAQM Review

- Defra commissioned in-house consultants to undertake a review of LAQM in 2010.
- AQMRC, UWE and Air Quality Consultants Ltd were commissioned to undertake a questionnaire survey of all UK local authorities.
- Response rate was 55% (239 LAs) and open responses were analysed using Grounded Theory methodology in NVivo 8.
- The report and results can be found on the Defra website <http://uk-air.defra.gov.uk/news?view=129>



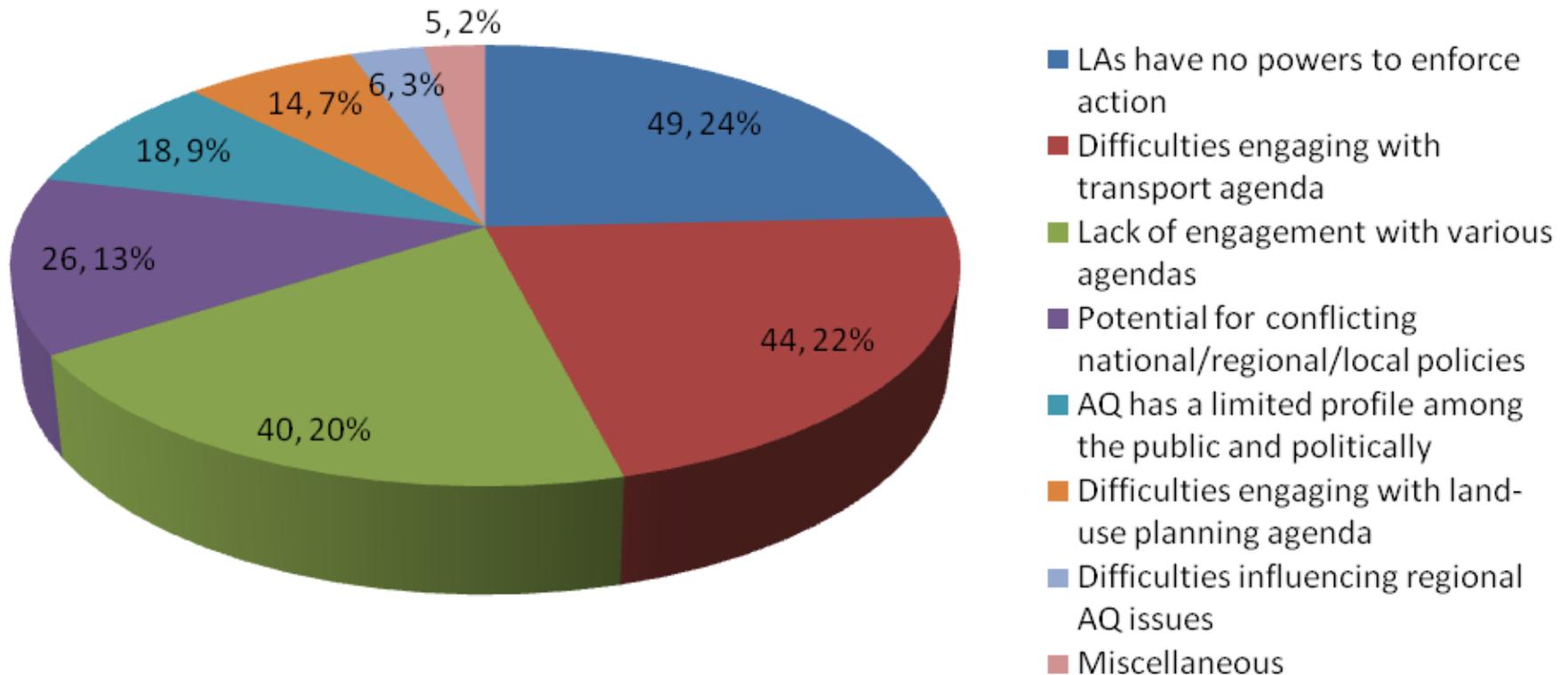
Main weaknesses of LAQM

B2: What do you identify as the main weaknesses of the LAQM process as a whole?



LAQM: Limited powers and engagement

B2: Limited powers and lack of engagement by other agendas

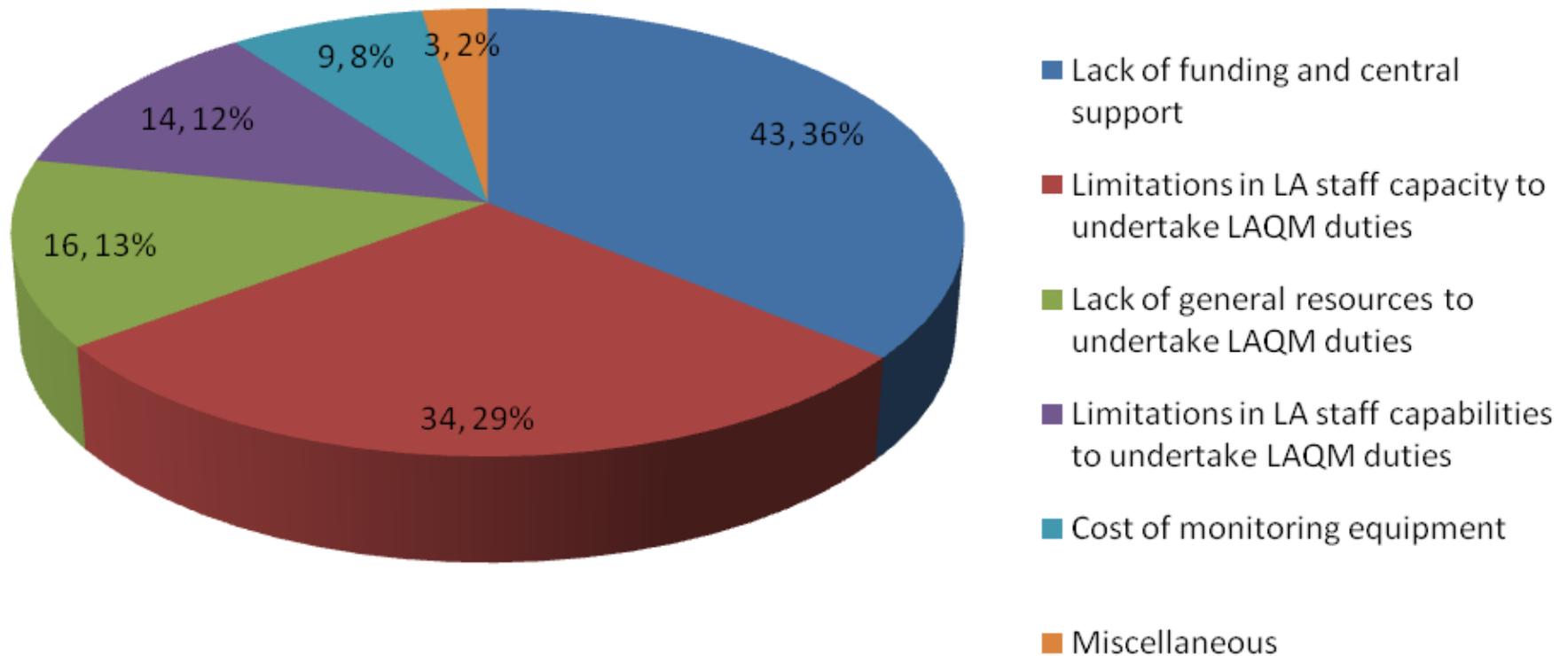


LAQM: Limited powers and engagement

- *“local authorities often have no regulatory powers to influence air quality” with “no direct control of the source of exceedence, e.g. transport”*
- *“more powerful role and enforcement powers against those causing emissions would be more useful and effective”*
- *“lack of responsibility for those in charge of the sources (e.g. transport planning)”*
- *“the only thing we feel we can do is try and influence Highways Agency decisions but everyone has their own agenda so it is very difficult to get air quality taken seriously outside the Environmental Health Department”*
- *“much action is dependent on the force of personality of officers” and until this lack of integration is addressed “there will continue to be conflicting priorities with no clear mechanism for resolution”*
- *“lack of consistency and integration between LA measures and national policies”*

LAQM: Costs and resource limitations

B2: Cost and resource limitations

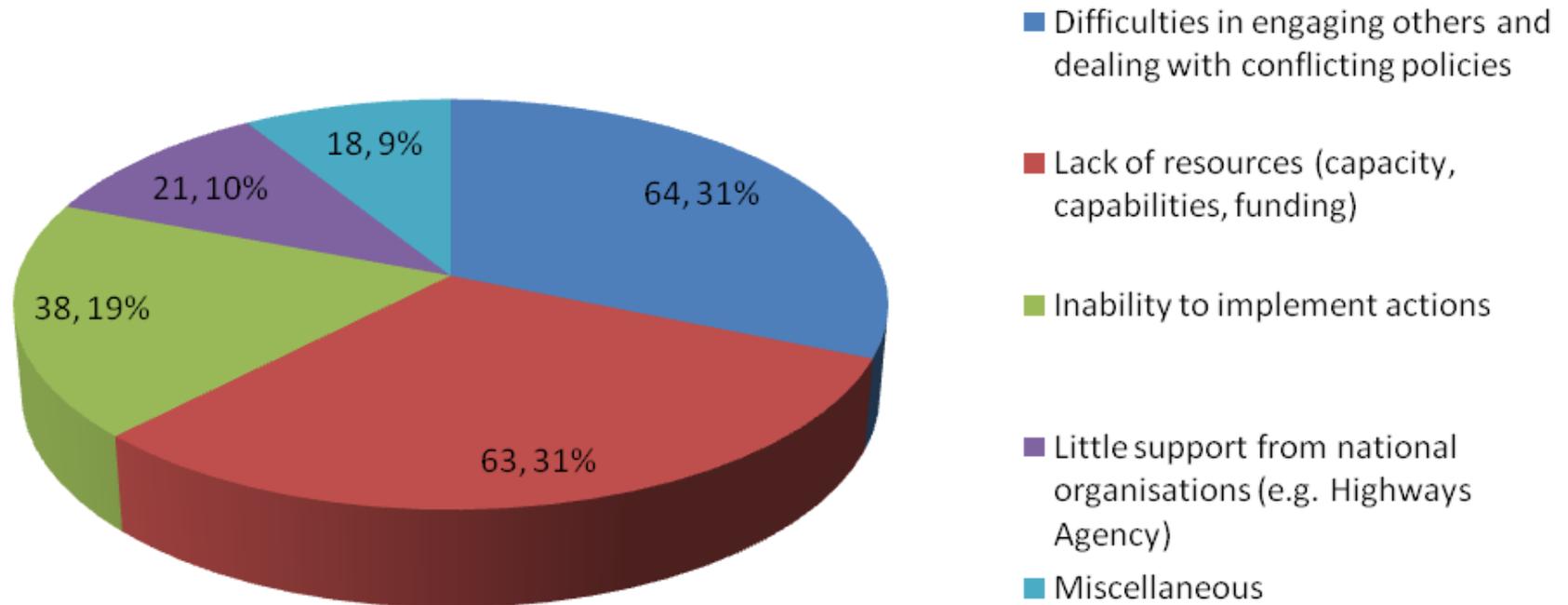


LAQM: Costs and resource limitations

- Resource constraints include:
- *“staffing resources”*;
- *“lack of funding for its implementation that makes the process seem a little futile”*;
- *“time to develop it [Air Quality Action Plan], given our already high workload”*; and
- *“we have a plethora of intended actions that need relatively modest sums of money to get off the ground”*

Action Plan constraints

E3: What have been the main factors that have constrained the development of your Air Quality Action Plan? What actions have been taken, if any, by your Council to resolve them?

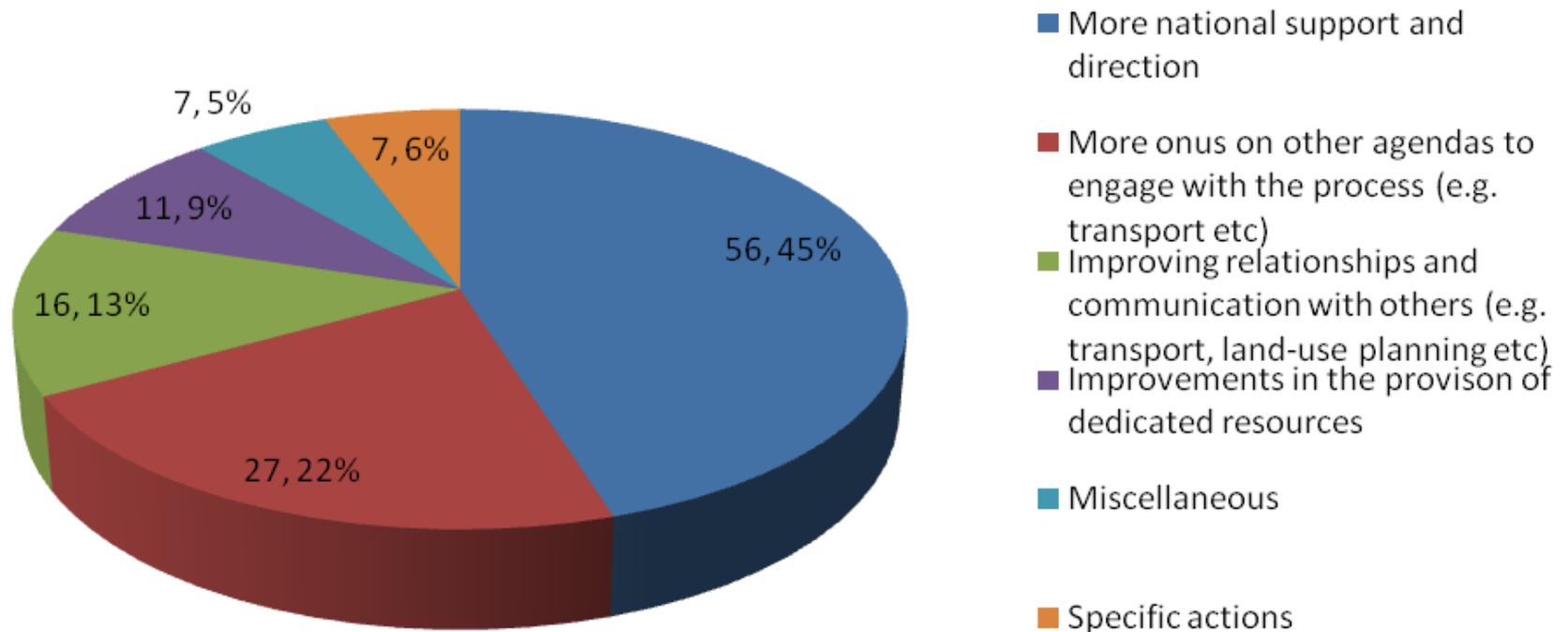


Action Plan constraints

- *“unable to implement the key actions in the plan due to a lack of funding, this undermined the credibility of the plan”;*
- *“somewhat limited due to the industrial source and our limited powers”;*
- *“I’m not sure that it [Air Quality Action Plan] has, other than to demonstrate how little the local authority is actually able to achieve”*
- *“has felt like a paper exercise, very difficult to get stakeholders involved”;* and
- *“no use at all, County Council highways have included its [Air Quality Action Plan] findings in their LTP [Local Transport Plan] and ignored it for the last 4 years”.*

How can AQAPs be improved?

E4: Are there any ways in which the effectiveness of the overall process of Air Quality Action Plan development and implementation could be improved?

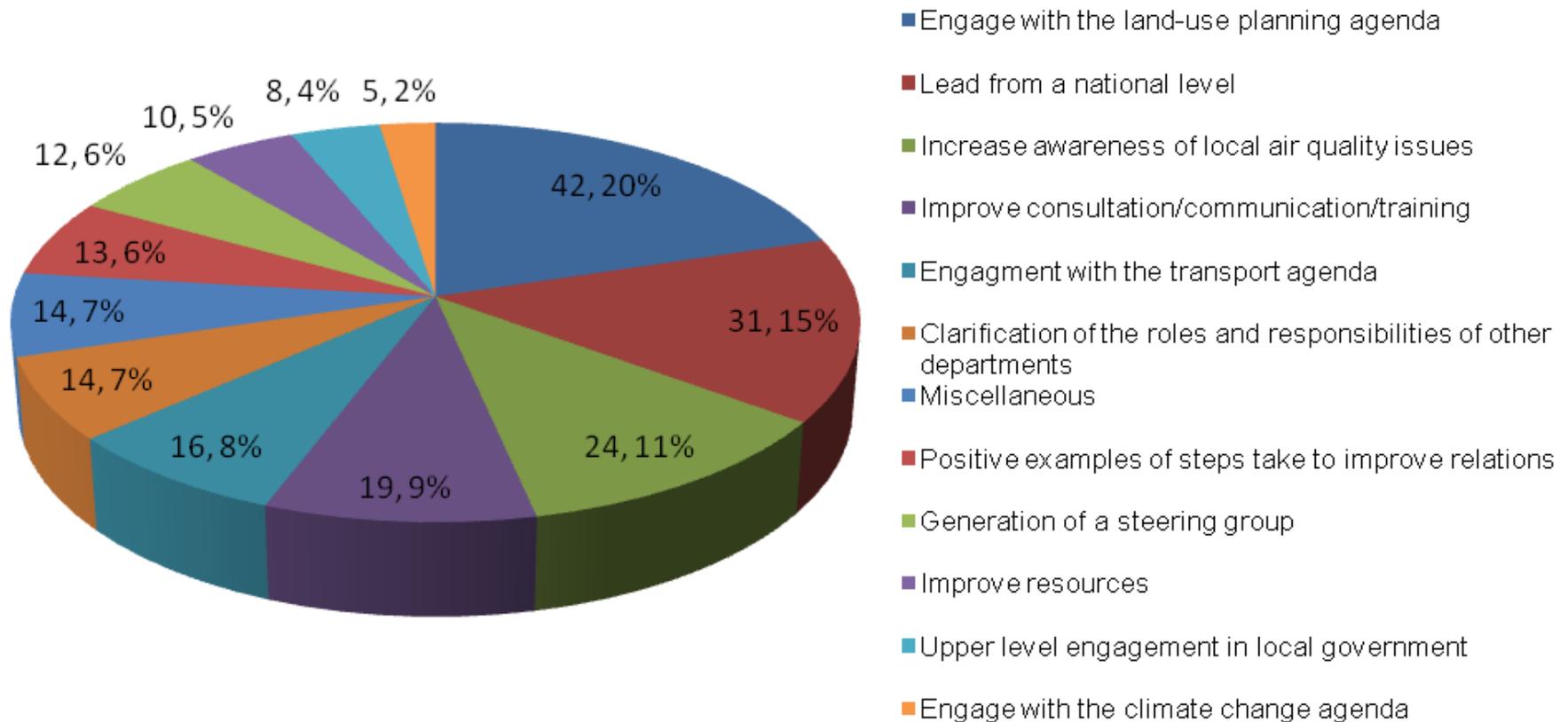


How can AQAPs be improved?

- *“legislation/guidance and financial support to require transport actions”;*
- *“if the implementation of the AQAP [Air Quality Action Plan] was mandatory, funding would be easier to obtain within the Council”;*
- *“tools for quantification so we can prioritise actions easier”;* *“case studies with quantification”*
- *“Defra/DAs to engage with Transport and Planning Departments at a higher level”;* and
- *“clearer links with climate change “.*
- a *“transfer of responsibility”* for writing the Air Quality Action Plan to those that *“are able to directly affect it [air quality] as opposed to those who lobby and influence”*

How can interdepartmental relationships be improved?

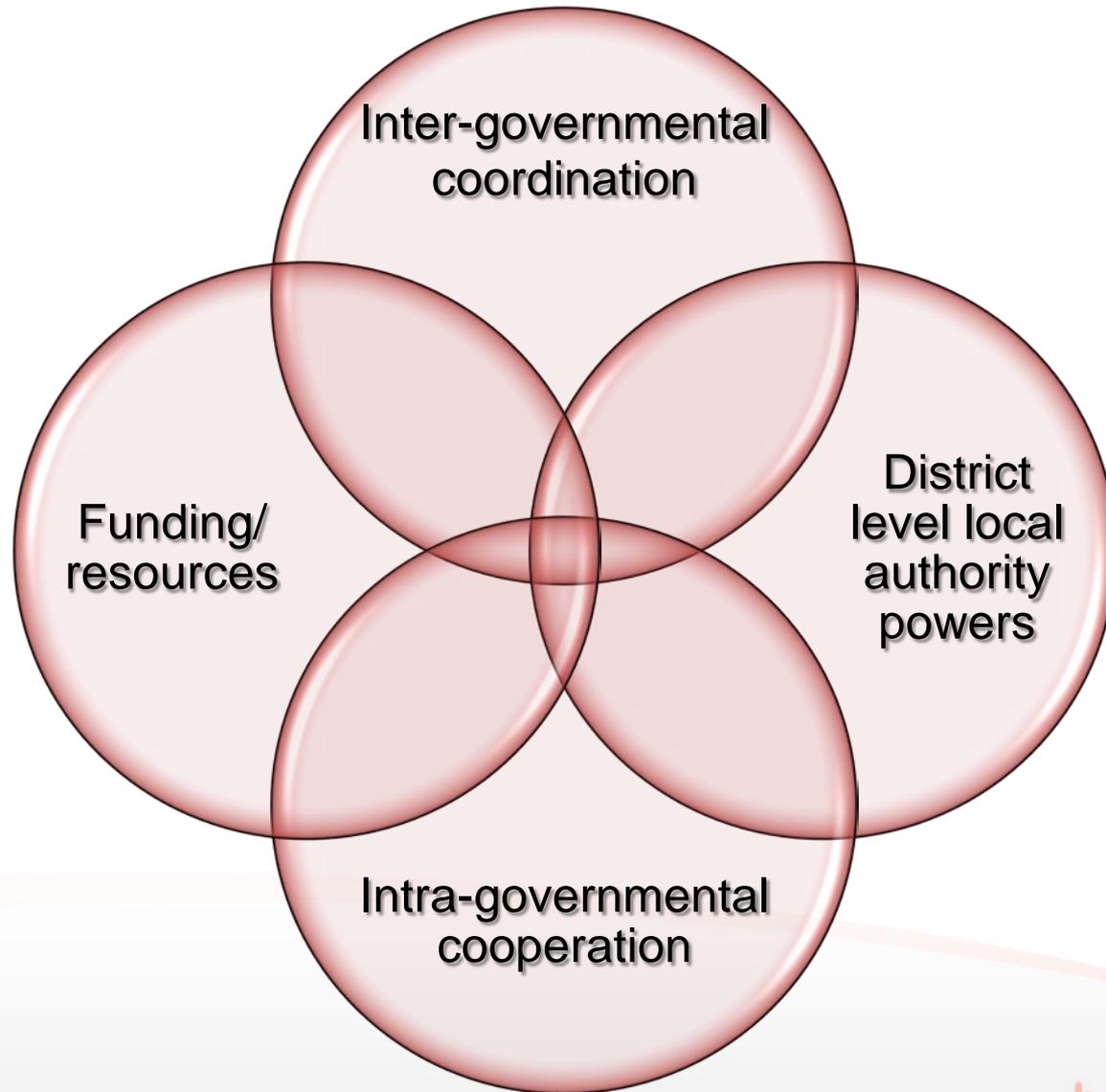
F4: What steps could be taken to improve inter-departmental relationships relating to air quality within your Council or with other bodies?



How can interdepartmental relationships be improved?

- *“requirement to have a [air quality] policy in LDF [Local Development Framework]”,*
- *“improvements in air quality should be a mandatory consideration in City Region and Local Development Plans”;*
- *“provide more robust planning requirements to incorporate air quality in planning process”;*
- *“requirement for Supplementary Planning Documents/ Guidance”;*
and
- *“encourage the use of s106 type agreements [Planning Obligations] to secure monitoring/actions”;*

Barriers to Action Planning



District level local authority powers

- No legal requirement to meet the air quality objectives
 - Local authorities required to work “in pursuit of” achieving them
 - Undermines political weight given to LAQM
 - Transference of EU fines to local authorities unfair?
- Localism Act 2011
 - Powers of freedom do not provide national support and direction required
 - Devolution of responsibility without commensurate power
- Reliance on external bodies to achieve action plan measures
 - e.g. Highways Agency

Funding / resources

- Air Quality: Defra Air Quality Capital Grant - ~£2 m p.a.
 - Highly competitive and oversubscribed
 - Now targeted at reducing NO₂ but previously less specific
- Transport: Local Sustainable Transport Fund (LSTF) - £560 million over four years 2011-2015 for local transport projects
 - Air quality competes with other transport priorities
 - Reporting cycles may not match
 - County/district divide can hamper communication and prioritisation
- Planning: Section 106 Agreement planning obligations and Community Infrastructure Levy
 - Supplementary Planning Documents can target air quality improvement
 - Difficult to determine cumulative impacts and contributions
 - Can discourage developers investing so planners not keen

Intra-governmental cooperation

- Departmental “silos” can limit internal liaison and commitment.
- Transport
 - Integration of Air Quality Action Plan and Local Transport Plan can be difficult
 - Lack of integrative guidance
 - Ineffective communication between Environmental Health Officers (EHOs) and transport planners
- Planning
 - Without an Supplementary Planning Document EHOs must scan all planning applications or rely on planning colleagues to identify developments likely to affect air quality
 - Ad hoc approach can mean some developments are missed
- Climate change
 - Indication that climate change and air quality roles are not closely linked in practice in local authorities
- Public health
 - Potential for closer links but two-tier split may restrict integration

Inter-governmental coordination

- Lack of cross-departmental cooperation at national level cascades segregation at a local level
 - e.g. Public Service Agreement 28
 - Dept. Communities & Local Gov., Dept. of Health, Dept. Energy & Climate Change, Treasury
- Dual approach to air quality management
 - National pursuit of EU limit values in Zones and Agglomerations
 - Local pursuit of air quality objectives in Air Quality Management Areas
 - Local authority Air Quality Action Plans not previously reported to EC
- National emissions reduction strategy
 - National strategy undermined the importance of local measures
 - Failure of emissions reduction strategy
 - Reliance on flawed emissions factors to determine local impacts
 - No clear alternative provided

Fundamental barriers

Flawed subsidiarity

- Local authorities not best-placed to remediate traffic-related air quality issues
- Insufficient powers to influence policy at the appropriate level

No legal obligation

- Lack of statutory obligation to achieve air quality objectives undermines local political weighting and hampers redress

Locus of local responsibility

- EHOs are ill-equipped to coordinate and implement AQAPs
- Reliance on source-managers' cooperation

Opportunities for reconceptualisation

- Access to clean air is a fundamental right and should be a national and local priority.
- Air quality management should be integral to all policy areas and driven by cross-departmental national strategy and local communities.
- Pro-active communication strategy to engage public and engender behaviour change.
- Exposure-reduction approach rather than hotspots.
- Responsibility for Air Quality Action Plans should be removed from environmental health departments and integrated into strategic cross-departmental policy at a higher level.
- Funding of measures to improve air quality should be borne by source following the 'polluter pays' principle, e.g. Vehicle Excise Duty and fuel tax.
- National government should drive managed traffic demand reduction rather than emissions reduction strategies.



Thank you for your attention.

Any questions?

Please contact Jo Barnes using the details below: