# The Air Quality Manager's Guide

Summary

i   This report distils insights and ideas drawn from nearly a decade of working with and on behalf of the Low Emission Partnership. It is presents a contrasting view on '*where next for local air quality management*', to be considered alongside traditional policy perspectives defined by LAQM and more recently within the realm of Public Health. The ideas presented are entirely compatible with these national duties and drivers. Yet at the same time they offer a different perspective based on management theory rather than policy approach or technical specialism. In doing so the aim is to re-frame the challenges of local air quality management and thereby access fresh ideas and possibilities.

ii   The work is built around a core proposal, which is to reclaim, redefine and revitalise *the role of Local Air Quality Manager*. Section 1 provides context and rationale; Section 2 provides a view of the re-defined role and the system, within which it operates; Section 3 provides broad principles for approaching and undertaking the role; and Section 4 describes a framework for establishing detailed practitioner guidance. Reference is made throughout, to a series of 18 charts, which are collected together as a supplementary set of slides.

iii   Perhaps the most important distinction between the approach presented here and that engrained within traditional LAQM, is that the former sets out to support and empower the professional air quality manager, while the latter tends to constrain and dictate to them *via* a fixed and prescriptive process.

iv   The ideas underpinning this work are relatively involved, which creates a practical barrier for their recognition, acceptance and use. This report is a first attempt to distil and present them together in a concise and coherent form. It is not presented as a full, final or necessarily immediately practicable document and further review, revision and refinement would no doubt be useful. None the less, it provides a starting point for a discussion as to how things could be different; and also an invitation to those with shared interests and insight to work together towards the realisation of perceived benefits.

v   The material is presented in a format which is intended to be accessible and thought provoking as a standalone read (albeit with limited detail in places) while at the same time to provide a basis for a formal presentation or facilitated workshop. As such, it represents the final output of currently funded work, so any follow-up is contingent on opportunities and funding as yet unidentified. Comments questions and any other feedback are none the less very welcome (please direct to Rob Pilling, rob@green-sphere.co.uk)

Section 1		Section 2		Section 3		Section 4
Rationale	⇨	Role	⇨	Principles	⇨	Guidance
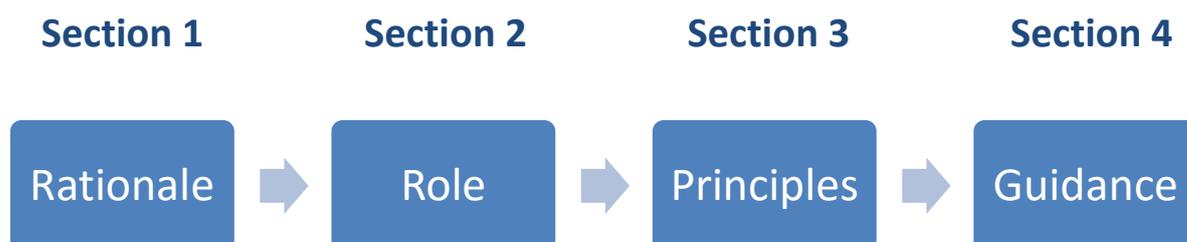
1   Rationale

1.1   Traditional LAQM emphasises review and assessment, compliance with air quality objectives and the completion of statutory reports. As a consequence, appraisal has tended to dominate over taking action, and process compliance has provided a substitute for the delivery and demonstration of concrete benefits.

1.2   In recent years, there has been a shift by some Local Authorities, towards promoting specific area wide actions, for example *via* Low Emission Strategies, as ends in themselves rather than as an output of the LAQM process. This shift reflects a belief that taking action rather than assessment should be the local priority and focus.

1.3   These two philosophies co-exist, creating a sense of evidence-based action and progress. However, closer inspection reveals that they do not join up. This makes it difficult to establish unambiguous policy aims and harder still to scrutinise performance against them.

1.4   The situation has been compounded by the parallel and siloed rise of air quality as a matter for public health teams. Equally, the sustained and ongoing impact of austerity, cuts and local restructuring has taken its toll on resources, competences and capacity for air quality management at local level.

1.5   At the present time, political attention revolves around NO_2 exceedences and near term compliance. While these pressures *may* sharpen attention and stimulate selected interventions, there is a concern that they are also absorbing scarce resource and distorting the overall response, which would reasonably be expected to consider overall health burdens, the broadest scope of measures and longer as well as shorter time horizons.

1.6   The Partnership has argued consistently since its inception in 2008 for a more balanced and strategic approach to local air quality management. It has also argued that the best way to establish this is not to reinvent the wheel, but to rely on tried and tested management theory on the one hand, and good knowledge and understanding of air quality issues on the other. From this perspective and based upon nearly a decades work it is concluded that *the most immediate challenge for local air quality management is less associated with policy, technical or technological matters, and more about effective management, organisation and resources.*

1.7   There are different routes by which these management challenges could be addressed. It could be dealt with through national policy, through local corporate processes or *via* the air quality management profession itself. Ideally, perhaps, change would come about as the result of all three.

1.8   In professional circles, the term Air Quality Manager is largely associated with the technical specialism of atmospheric monitoring and modelling. This guide takes a step towards re-claiming and re-defining the title. It argues that local air quality management needs Local Air Quality Managers. Professionals with specific expertise, assigned to appropriate roles with the authority and resources to match. This role is distinct from the associated policy, technical and technological specialisms and also to general management in its broader form. It is a role that has been neglected, over-looked and underplayed for many years.

2   Role

System View (Chart 1)

2.1   Chart 1 provides a system view by stepping outside of any particular policy regime. Through this lens it is possible to identify the multiple factors which combine as both drivers and constraints. These are grouped as environment, health and wider co-factors. Important (though not exclusive) elements of each are, respectively, LAQM, public health outcomes framework and national/local economic policy.

2.2   The diagram identifies an important role of leadership as being to *translate* multiple drivers and constraints into a tractable and manageable challenge. In turn, these considerations provide terms of reference for undertaking local air quality management, which draws on technical appraisal, evidence and advice to design, evaluate and deliver integrated local action, with the aim of achieving beneficial outcomes and demonstrating policy success.

Scope of Concern (Chart 2)

2.3   Chart 2 lays out the scope of air quality concern. That is, it defines the dimensions of impact and risk, which air quality management sets out to address. It identifies pollutants, sources, impact modes and associated indices. Traditionally, policy wraps these dimensions into its own fixed narrative, which gives weight and priority to specific elements, configurations or quantitative indices. From the management perspective, these policy narratives are useful, but need not define or constrain the corresponding operational work flow or 'delivery narrative'. Indeed, retaining clarity and flexibility regarding the *real and full* scope of concern, is an important step for simplifying, streamlining and strengthening both our conceptualisation of the system itself, and our response within it.

Scope of Action (Chart 3)

2.4   Traditional debate around local action plans has tended to conceptualise measures as discrete interventions which are often pitted against each other in search of the 'best one'. In our revised frame, the concept of *a measure* is more to help breakdown interconnected activities into manageable chunks so that they can be blended and packaged-up in a sensible and realistic manner. This is an important conceptual shift. Chart 3 lays out broad categories of action to this effect.

The Local Air Quality Manager (Charts 4-5)

2.5   Chart 4 describes the role of Local Air Quality Manager, essentially defining a professional commitment to improving air quality, protecting health and doing so intelligently, transparently, effectively and efficiently. Chart 5 helps to distinguish between this role and associated ones relating to leadership, technical assessment and action delivery.

2.6   While it is inevitable that practitioners may be required to wear multiple hats and accept multiple responsibilities. It is important to recognise the tensions, risks and difficulties that this can create. PRINCE2 makes a very strong case for differentiating between leader, manager and delivery roles and for avoiding requiring a single individual to span these interfaces. Indeed, if necessary, it may be desirable to agglomerate air quality responsibilities over a wider area, if this allows more individuals to be assigned single dedicated air quality management roles.

3   Principles

3.1   Charts 6-11 (described below) elaborate upon the professional role of the Local Air Quality Manager. They are inspired by the logic of PRINCE2, combined with an understanding of the difficulties and challenges which are unique to local air quality. Together they provide a foundation for the design and implementation of sustained, coherent and cost-effective action.

3.2   The concepts are presented as a simple list rather than as a pre-determined process. This is deliberate as the intention is to support and empower the manager, rather than to constrain them through prescription. It is the manager's responsibility, therefore, to design a work flow based on these principles, which fits their own aims, situation and personal style.

Corporate Commitment (Chart 6)

3.3   In the context of multiple and competing policy drivers and constraints, the starting point for effective local action on air quality is a clear and unambiguous corporate commitment. Crucially, this needs to be a commitment to something specific, realistic and testable. While the corporate commitment needs to be developed and owned by senior management, it is vital that the AQ manager is fully involved. Firstly because of their specialist knowledge and experience of air quality and secondly because they are best placed to advise as to whether the aims and ambition are realistically aligned with the competencies and capacity available to deliver them.

Professional Mandate (Chart 7)

3.4   While the corporate commitment establishes accountability for local air quality work, the professional mandate delegates qualified responsibility to the Air Quality Manager. The mandate is negotiated with the corporate leadership. It is a contract by which the Air Quality Manager applies professional expertise and practice in pursuit of agreed goals. The form and content is flexible, but must be responsive to progress and events. While in principle the mandate derives from the corporate commitment, in practice the two will be developed most effectively together and in parallel.

Mind-Set (Chart 8)

3.5   The term *mind-set* is used here to describe the general approach adopted by the local air quality manager toward their role. The chart depicts a mind-set, which maintains a strong action/outcomes focus throughout the project/programme lifecycle, underpinned by parallel running knowledge, evidence and communication processes. The AQM sits centrally, orchestrating a dynamic and responsive path rather than (as has been the tendency in the past) as slave to a fixed and laborious process.

Packaging and Delivery of Measures (Chart 9)

3.6   Successful and sustained local action requires a platform of linking provision, policies and practice. The detailed apparatus and terminology is less important than that the necessary coordination be achieved. The following nested structure provides one approach, which can be applied at local, regional or supra-regional level: Strategy (framework for joined up work on AQ and low emissions), Area Action Plan(s) (area-wide emission reduction measures), Hot Spot Plan(s) (supplementary action addressing hot-spots), and Exposure Plan (protecting individuals in the face of residual air pollution).

3.7   Development and documentation of these structures need not be laborious, and indeed detailed contextual material is better held elsewhere. The various action documents should be precise, concise and easily maintainable over time. Good use could also be made of prior examples and standard templates, as/when these become available.

Selection and Optimisation of Measures (Chart 10)

3.8   Chart 10 lays out some important principles relating both to the nature and strength of possible action. In brief, by taking action we can reduce emissions, move or manage where or how they arise or we can move, manage or protect the individuals or receptors at risk. In doing these things, we can create a stand-alone intervention or we can influence broader projects or the manner in which services are delivered. Crucially, if we want to talk about the strength of an action, we need to consider not just what the action is, but also how it is designed and how it is implemented. We also need to be clear about what we mean by strength of action, what parameters we are optimising and over what timescales.

3.9   Different intentions, weightings and priorities at the point of action planning can have a strong influence over the form and nature of ensuing action. For example, emphasis on short term compliance with NO_2 limit values can drive a different response to that which sets out to maximise health benefits by 2025. It is useful therefore to document an explicit selection and optimisation approach and also to ensure that this is clearly aligned with the intentions and priorities set out in the corporate commitment. The selection and optimisation approach also has close links with the specification and use of specific indices and tests, which is discussed in paragraph 4.5.

Technical Assessment (Chart 11)

3.10   Chart 8 focusses attention on the selection design and implementation of action and identifies knowledge, evidence and communication as supporting activities. This represents an important inversion compared to traditional LAQM, which places technical monitoring and assessment more centrally. The inversion is inspired by PRINCE2 product based thinking, and helps to avoid over-engineering of assessment activity. It challenges these processes to 'service' action delivery as efficiently and effectively as possible. The best way for doing so, is likely to be situation specific and so while it is useful to establish a suite of methods and tools to draw upon, it is important to retain flexibility for the air quality manager to specify detailed requirements and work flow according to need.

3.11   Chart 11 begins to lay out core assessment methods and principles, by proposing two key ideas: (i) The use of 'doubly integrated' air quality assessment (i.e. assessment which combines 'with measures' and 'without measures' scenarios alongside parallel consideration of emissions, concentrations and exposure), and (ii) The use of two tier assessment, one a broad strategic view, the other more detailed and specific. These ideas are essentially an extension of the Partnership's approach on new development, conceptualised more broadly for action planning. Further work would be required in order to fully develop and demonstrate these ideas in practice.

4   Guidance

Concept

4.1   The definitions and principles laid out in the previous sections reflect the nature of air quality issues and the practicalities of its local management. Together they provide a structured foundation, which will remain consistent over time and is resilient to shifts in knowledge, evidence, policy priorities and political debate. More detailed and technical information and advice is also needed to help translate these ideas into effective managed action. Inevitably this more detailed knowledge is more subject to change, re-evaluation and shifting of consensus over time. It is important that the air quality managers have good access to the best and most up to date advice and guidance on these matters.

4.2   Charts 12-18 present a knowledge structure, which helps both to map out the topics of interest and begin to organise existing and available information in a useful way. Importantly, the modular and layered structure seeks to accommodate and signpost available information, rather than re-write or capture it (the sheer scale and complexity of the subject matter, make the latter impractical).

4.3   This does not preclude the development over time of highly tailored and integrated guidance material, or even a comprehensive Local Air Quality Management Manual. But in the meantime it encourages a collaborative approach, which links and distils the best of available information in a dynamic and evolving way. It also allows for alternative approaches to compete with each other in a constructive manner based on their respective merits rather than in a territorial winner-takes-all fashion. Development and linking of modular and dynamic information would be well supported by an on-line platform, such as the Partnership's own Low Emission Hub.

Framework

4.4   The guidance framework builds around three broad management competencies categorised here as project, technical, and general. Chart 12 illustrates how these combine to form the air quality manager's role. The colour coded symbols then provide headers and navigation through the subsequent Charts 13-18. The various units build an armoury for the Air Quality Manager, from which to select, blend and deploy according to need and opportunity. This person-centered approach offers greater flexibility and responsiveness over a force fitted and pre-determined work flow.

4.5   Four of the components - Management, Action, Assessment and Reporting - are relatively self-explanatory. The fifth - Indices and Tests – requires a bit more thought. It refers to *selection, specification and guidance relating to the use of qualitative and quantitative indices and tests.* Traditionally these aspects are wrapped up within one or a combination of the other four components. However, treating them separately makes them more visible, transparent and accessible. It also reduces the risk of one form of management or perspective dominating or distorting thinking around these key 'executive' tools – which need to be formed and deployed in a balanced way, which draws on and respects all of the identified perspectives equally. The Partnership's most recent publications on Low Emission Development provide a good example of how this 'separated-out' emphasis on indices and tests can lead to improved and more transparent decision processes.

4.6   Laying out the framework in this way, is useful simply to map the knowledge and competencies required to undertake local air quality management effectively, which, for example, helps to identify strengths, weaknesses and gaps in existing provision. The framework can also be used as a structure for producing and linking together very specific modular materials (for example the LEP topic note on EV infrastructure requirements for development sites) or equally as an indexing system for cross cutting materials or case studies (e.g. Defra LAQM-PG/TG documents). Indeed the structure would work well in combination with the Low Emission Hub, initially perhaps as an index system for the resource table, and potentially evolving into a complementary wiki-style manual, with links throughout to relevant Hub case studies and other resources.