



# UIA third Call for Proposals:

## Policy trends from the proposals under the topic of air quality



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# Introduction

The UIA third call for proposals included air quality as a topic. The call was accompanied by a four-page document that set out the background and provided eight “themes and issues” that applicants were “invited to consider”.

The call was in recognition that urban authorities are well placed to implement measures that take into account the local situation and they have the policy and practice tools to implement and promote measures. It importantly noted that:

*“The fact that exceedances of PM and NO<sub>2</sub> in many cities in many countries persist, despite air quality action plans, indicate that innovative solutions and improvements in the approach are necessary: a better insight in where and when the air pollution problems may occur and how innovative solutions can contribute to solutions would be very welcome.”*

Several prompts are provided to applicants. Key points are:

*“Decisions on which urban source could best (cost-effectively) be mitigated, requires good data on the background sources”*

and

*“In any urban environment hotspots occur, which can be related to various sources. High-resolution modelling could help identifying these hotspots and allow far more precise and more cost-effective measures that are best suited for that micro environment.”*

Eight themes and issues are clearly set out to provide key pointers for what applications might be expected. In summary they are:

- develop and test tools to establish better source inventories of air pollution and high resolution modelling tools to identify urban air pollution hot spots;
- promote low or no emission modes of transport such as cleaner fuel mobility, better connection with public transport, instruments for different modes of transport, innovative modality options like e-bikes, cargo bikes or car sharing;
- healthy designs of public areas stimulating cycling and walking;
- Citizen Science (measuring air quality with small yet sufficiently accurate measuring devices in order to create a large urban dataset on air quality, establishing local hotspots);
- behaviour change and public participation projects (e.g. Smarter Labs);
- nature-based solutions in cities (e.g. trees and plants for air quality, but based on evidence of air quality benefits);
- innovative local and regional financing mechanisms (taxation, PPP's ,...) that further stimulate the uptake of low-emission solutions by citizens (mobility and housing) and industries;
- innovative approaches to unlock policy/political bottlenecks to boost implementation of innovation based solutions/technology to improve air quality.

This note summarises the submissions and provides general commentary and feedback on the applications as well as tips for future applicants.

# Submissions

There were 35 applications eligible for funding submitted by the closing date of 30 March 2018. These came from 12 European Union countries, although Italian urban authorities accounted for 43% of the applications.

The submissions largely followed the ‘themes and issues’ set out in the call for proposals, with most of the applications including several of the themes in the proposal. The areas included in proposals are summarised below in descending order of frequency of inclusion:

- four out of five of the proposals included some form of air quality monitoring, often with low-cost sensors and using citizens;
- around half included the provision of information on air quality to encourage behaviour change, usually by way of apps;
- around a third included vegetation in some form as a way to reduce pollution;
- around a quarter included air quality modelling, with a similar number including the use of electric vehicles and/or electric bikes;
- one fifth involved the use of a ‘hub’ or ‘smarter lab’, for the sharing of information and ideas, in some cases including support for SME start-ups;
- a similar number included the encouragement of modal change;
- one in ten included indoor air quality either as the primary focus or in addition to ambient air quality; and
- a similar number included combustion sources, such as domestic wood combustion and/or agricultural burning.

There were also a few themes and issues included in just one application:

- bioremediation of contaminated soils;
- use of biogas in CHP plant and buses;
- use of hydrogen as a supplement to natural gas for combustion;
- odours from composting, sludge storage etc.; and
- funding through a cryptocurrency.

## Commentary

It is the view of the review panel that the most of the measures that can be used by urban authorities to improve air quality have been tested over many years, which makes innovative measures or approaches difficult to come up with; yet innovation is the focus of the funding support. The panel was not looking for the application of existing measures/approaches to an urban area, unless there was a clear linkage to an innovative approach or a better way of doing thing to bring about real improvements. Unfortunately, half the applications were judged to be poor in terms of innovativeness, with around a third adequate and only handful good or excellent. This reflects the challenge of coming up with new ideas to improve air quality (but this should not be taken to down-play the importance of applying already available measures that have a role in improving air quality, such as encouraging cycling and walking and the associated modal shift from cars, but this is in itself not innovative, and should be being applied anyway by urban authorities). The clearest innovative idea was a focussed project on the use of electric vehicles to replace diesel generators for outdoor

festivals. This showed thinking 'outside the box'. Furthermore, in many proposals there was a lack of evidence of research into what has been done before, especially in the context of other European projects, which was then reflected in the proposal not recognising that the solutions being proposed were not innovative.

Many of the projects focussed on behavioural change driven by information on air quality. This is not a new concept (public information on air quality has been provided for many years), although the use of apps and cheaper sensors (not always very accurate) has grown in the last decade, making dissemination of information easier. However, it is crucial to understand the linkage between providing information and changing behaviour – what is the evidence that there will be a significant lasting change in behaviour? This is not something that was clearly addressed in the proposals, either by drawing on existing research or within the design of the project.

As noted earlier, monitoring featured in many of the proposals, sometimes accounting for a large part of the expenditure, but monitoring alone is not a measure to improve air quality. It is important to have information on air quality, but there was not always a clear understanding of how the monitoring would link to the measures. In addition, there was, in most cases, a failure to recognise the limitation of the cheaper citizen-based sensors in terms of their accuracy (in one case it was stated they were Directive compliant, which is not correct). Furthermore, the focus, in terms of health impacts from the key urban pollutants: nitrogen dioxide and particulate matter, is on long term exposure (annual mean concentrations), but this was not always recognised, with a lot of focus on short-term episodes of higher concentrations.

The partnerships formed were generally a lot better than the other aspects, with two thirds adequate, good or excellent. Good projects would involve a mix of one or more municipalities, a university, commercial organisations (ranging from consultants to equipment suppliers) and NGOs, with clear evidence that the partners had the appropriate experiences and had been involved in the project development. One of the projects considered poor in this regard had nearly all the money assigned to one municipality, with two other partners, a public organisation and a research organisation, making a limited contribution just to the monitoring, with no clear evidence they had worked together to develop the project. This did not provide a balanced approach nor evidence that the appropriate skills lay in the one dominant organisation. In another project there were 14 delivery partners, but, in this case, with insufficient evidence that they could be coordinated to provide a coherent project.

Measurability, on the other hand, was not addressed very well, with four out of five of the projects being considered to be poor or very poor in this regard, with only one proposal being considered to be good. The main weakness was that many of the proposals did not set out how the changes due to the project will be isolated, especially the air quality improvements. Where use of air quality measurements was proposed, it was not recognised that the change in air quality was likely to be small and therefore unmeasurable, given the natural changes from one year to another as a result of meteorological conditions varying, and the need to account for other changes, such as more Euro 6 cars in the fleet, reducing emissions and concentrations. Where such factors were not recognised, it indicated a weakness in the understanding of air quality by the project partners. Such limitations could be overcome with modelling, and the better projects included this approach, although modelling can be challenging, especially for those projects proposing the use of trees to improve air quality.

In addition, transferability was not addressed very well, with two thirds considered to be poor or very poor. Transferability needs to consider:

- is the solution suitable for other urban areas, such that it is likely to be taken up (taken up as a solution, not a project)?

- are there likely to be resource constraints; financial, technical, expertise? In other words, would it be unlikely that the project would proceed without substantial external funding? Would it be constrained by the need for a large technical input? Would the appropriate expertise to introduce the measure be readily available?
- how the solution will be suitable for scaling up and being adopted more widely?

Finally, it is noted that the eight themes and issues outlined for applicants (see Introduction above) did not pay much attention to sources, and in particular no recognition was given to the importance of emissions from diesel vehicles, which are often a dominant source of poor air quality, for which older vehicles are more polluting than those currently coming onto the road. To have included this as an issue in the Call for Proposals would have encouraged consideration to be given to innovative ways to tackle this important source. The only pointer that indirectly addressed this issue was the second one “promote low or no emission modes of transport”. This, however, essentially just produced proposals to encourage cycling and walking and to introduce more use of electric bikes and electric cars, all of which are not in themselves innovative. This is considered to be an opportunity missed, which could be included in any further call for proposals on the topic of air quality.

## Tips for applicants

The following are pointers from the expert reviewers to help future applicants increase their chances of scoring highly:

1. Some proposals used the word ‘innovative’ far too readily. This does not sell the project to the reviewer, where what is being described is really not innovative. It suggests the applicant does not understand the subject area enough to know what is innovative.
2. Some applicants seemed to try to include all of the themes and issues in the proposal, seemingly on the basis that this would increase their chance of success. The view is that this tended to lead to less coherent projects, as the integration was not clearly demonstrated. In general, the projects that were more focussed were found to be more innovative.
3. In general, the applications did not recognise the limitations of what was being proposed. This inevitably suggests that insufficient research was undertaken or insufficient understanding was available to the team. Examples are:
  - *not recognising that low-cost sensors are largely indicative monitors, so may not provide data of sufficient accuracy; there are many reports available on the limitations of such monitors;*
  - *not recognising that the use of vegetation can potentially increase exposure to road traffic emissions by creating canyon like conditions; and*
  - *not recognising that the vegetation can emit VOCs that contribute to ozone formation, thus worsening air quality.*
4. More attention needs to be given to ‘measurability’; in other words, demonstrating that the project will deliver real results that will improve air quality in a significant way. But care needs to be given to what to measure, as in many cases the action being introduced will not give rise to a large improvement in air quality, and thus measurement of air quality will not, in itself, be able to demonstrate the change (if this is not recognised then it demonstrates that insufficient air quality expertise is available to the project). Surrogate measures can though be used, such

as a reduction in traffic that is more easily measured, and if linked to modelling can be used to estimate the air quality improvements.

5. It is important for the applicants to make clear they have a good understanding of the subject. This can be done by providing a detailed review of existing evidence, both scientific and from other EU funded projects, and then making clear how the proposed project will provide added value. This was often a weakness in proposals.