Citeair II

Newsletter

Editorial

The Citeair II project is now reaching its end. Taking into account that the team started working together on the previous Citeair project in 2004, we are looking back on a long and very fruitful cooperation. This cooperation will surely continue after the project lifetime. This is not only because close relationships between organisations and team members that are beneficial for everybody have been established, but also because the topics that were addressed will remain on the agenda for cities, regions and the European Union. In addition, the project has developed and applied mature tools, methodologies and products that can be applied by a multitude of cities and regions in Europe. Citeair contributes significantly to the overall objective of the INTERREG IVC programme: to improve the effectiveness of regional policies and instruments.

The main products of Citeair are described in this final newsletter. Firstly is the development of an Integrated Emission Inventory that combines pollutant emissions and emissions from greenhouse gases into one inventory that allows to consider both types of pollutants with one tool. On the air quality side, Citeair has provided a methodology for an air quality forecast which contains three levels of complexity. The statistical forecast model offers opportunities for cities that do not have the resources to develop their own forecast. Since traffic is the major source of air pollution in most European Cities, we have developed and tested a methodology to benchmark the traffic in urban agglomerations. You are invited to read the article on our Sustainable Mobility Indicator. Last but not least, the project has brought the interactive webpage www.airqualitynow.eu and the Common Air Quality Index (CAQI) to a status where they are widely accepted. The CAQI is also applied by the European Environment Agency. More than 90 cities deliver their air quality data to www.airqualitynow.eu and support our aim to draw a picture of urban air quality in Europe.

Now, what for the future? As said at the beginning of this editorial, the cooperation will surely continue! This is especially true for www.airqualitynow.eu that has become an operational service for European cities. Any new city that wishes join is very welcome, we are prepared to incorporate data from new cities at any time.

One activity that keeps the idea of Citeair alive is the ObsAIRve project where Citeair is invited to contribute with its experiences and know how.

Finally, we want to say thank you for all the support we have received from the Citeair Community that is present on www.airqualitynow.eu, from DG Environment, EEA and last but not least from INTERREG IVC that made this project possible.

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Successful Final Conference held in Rome

The Citeair II Final Conference was held in Rome on the 24 June 2011 to present the achievements and future prospects of the project. The conference was held in Spazio Europa – the home of the EU in Rome – and experts from across Europe attended to learn about the project, and work together in improving air quality in European cities. The conference started with looking at the importance of the work of Citeair within the context of EU air quality policy, and the INTERREG IVC Programme within which Citeair II is funded. Although we are improving European air quality through European policy initiatives and legislation, we still have a long way to go.

Pictures from Citeair II final conference in Rome

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Citeair is recognised as an important project in improving European air quality from the European Commission: Silke Brocks, Project Officer from INTERREG IVC told the audience that "Citeair is a flagship project for us", while Emile de Saeger from DG Environment highlighted the role that the Air Quality Index (CAQI) including PM2.5 (developed within Citeair II) could play in the forthcoming revision of the air quality Directive.

Ultimately, the health of European citizens is an important priority for the European Commission, and the links between air quality and human health were expanded in a presentation from a representative of the World Health Organization (WHO), stressing that more research needed to be done in linking health to air quality, and that the communication of these links was extremely important. Transport – especially in urban areas – accounts for a large proportion of air pollution. This was mentioned by several speakers, and Giovanna Rossi (Italian Ministry of Environment) presented some of the measures going on in Italy to reduce air pollution from transport. She also highlighted the importance of accurate and reliable data to help in reducing air pollution. The importance of data and benchmarking in urban mobility was further expanded by Michael Aherne from the National Transport Authority in Ireland who presented the importance of city benchmarking for evaluation, comparisons and external communication.

> "Citeair II is a flagship project for us" Silke Brocks, Project Officer, INTERREG IVC

Within this overall context, the final tools developed within Citeair II were presented to the participants: this newsletter includes further details on each of them.

The agenda, participants list and presentations from the event can be found on the Citeair II website at: www.Citeair.eu/index.php?id=63

An Integrated Emission Inventory: Nice to Have?

Citeair II has developed an integrated emission inventory (EI) for local air and climate policies. It may seems obvious to combine air and climate emissions into a single system since they mainly originate from the same sources. Following the experience in the project, we can assure you that it is in fact a convenient thing to have. However, making the IEI is far from easy since the demands and methodologies for EIs are quite different in the climate and the air quality fields. Creating the integrated emission inventory, although not straightforward, did provide some interesting knowledge: for example, calculating NO_x from CO_2 gives different results than calculating CO_2 from NO_x.

It is not possible to say which is correct, but by confronting the different ways of making the EI, it is possible to have an idea of which sources are under or overestimated. Details of the EI and its development can be found in a guidebook written by the project. This document describes emission inventories in the various project cities, and addresses several conceptual issues in creating EIs, and in dealing with carbon sinks. Accompanying the guidebook is an example of an integrated EI, available in MS Access format: the example includes data from Rotterdam, but interested users can use the structure of the database and adapt it to their own needs.

Read the guidebook and learn from what others have tried before. Play with the database and save some time developing everything from scratch: this is the essence of Interreg projects! Not every city can benefit from the same way from our findings on an IEI. If you are working in a big city with many sources emitting air pollutants and CO2, and if you do your own dispersion modelling for different emission scenarios then the database can be useful for you. If your city does not do a lot a air quality modelling, our findings on confronting top-down and bottom-up emission inventories can be useful,

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Comparing bottom up and top down approaches in the IEI
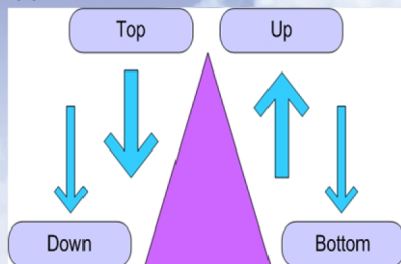
and it would be interesting for you to check to see if you get the same results. If you are from a medium or small city and mainly interested in monitoring your energy and fuel consumption, then the IEI is not for you, but you may want to consider our findings on shadow emissions.

To read the guidebook, click here.

Urban Air Quality Forecast

The work conducted under the Citeair II project lead to the development of a statistical forecast of pollutant concentrations by mixing a raw forecast from large-scale Chemistry Transport Modelling (CTM) with in situ measurements in cities. Applications with data from Rotterdam, Seville, Prague, Marseille, Paris, Gdansk, Brno, Leicester, Maribor and Gothenburg show the robustness and reliability of the approach. The use of the statistical forecast methodology developed within Citeair offers a unique opportunity for cities that don't have the resources to develop their own forecast. In comparison to a stand-alone forecast the application of the Citeair forecast is relatively simple.

Scripts for computing and validating the statistical model for one station and one pollutant are now available and shared under licensing agreement with Citeair II partners. The programs can be used by anyone with their own chemistry transport model to improve their forecast.

Users who want to base the forecast on CHIMERE simulation can contact the PREV'Air team for the data (prevair@ineris.fr).

Findings from the development, analysis and testing of the statistical forecast as well as advice on how to apply the methodology can be found in the guidebook, which is available here.

Airqualitynow.eu: More and more cities, more and more services

More than 90 cities now provide air quality data to the web service www.airqualitynow.eu. Any other cities interested are still welcome to join the project! The procedure to become a member of www.airqualitynow.eu and the data delivery is fairly straight forward. The increasing number of data providers allows us to

better describe air pollution in cities over the whole European territory. The website has also been translated in 11 different languages (English, German, Spanish, French, Italian…) to better communicate to European citizens.

Different pollutants are available on the website: mainly nitrogen dioxide, ozone and particles (PM10 and now also PM2,5). Different indices are available: traffic and background, with hourly indices for the current day, daily indices for the previous day, and annual indices. This range of timescales allows the visitor to observe the development of pollutant episode spanning over three days (yesterday, today and tomorrow).

To participate, cities need only provide air quality monitoring data for an urban background and/or a roadside monitoring station. All necessary calculations to generate the indices are done on www.airqualitynow.eu ensuring ease of application for the cities as well as consistency. To facilitate data transmission, a data format and

a simple process to send data have been developed so that all the cities interested can easily join the process. Beyond this, it is also possible for cities to implement the forecast for their city. Cities may either deliver their own forecast, or apply the forecast methodology developed by Citeair that is described in the guidebook on Urban Airquality Forecast.

All of the daily information is displayed by Citeair media partners. Five media websites are now registered (see www.airqualitynow.eu/about_press.php), and new ones will be approached in the coming months. In all communication of data within Citeair, the names of the data providers are indicated on the homepage below the hourly results to highlight the role of each local organisation.

A mini website (airqualitynow.mobi) has also been developed which allows easy access to Citeair indices on mobile phones. An application (for Iphones and androids) will also be available by the end of 2011.

Sustainable Mobility Indicator

The Citeair II sustainable mobility indicator has been developed to help to benchmark the traffic situation in urban agglomerations, and to describe related impacts on the environment and citizens. One of the main outcomes is a toolbox to assist decision makers in managing the traffic in a better way, informing the public and contributing to a more environmentally-friendly behaviour.

The indicator has been derived from the combination of information on traffic and on the impact of traffic on the environment and citizens (through exposure to traffic).

It is assumed that one extra minute in traffic means one minute less in the background situation (home, office, leisure). Thus, the impact of traffic is calculated through examining how long a car driver, due to the traffic condition improvements/worsening, has been less/more exposed to traffic pollution agent (expressed by the value of the roadside index (CTI)). This is calculated by looking at the difference between the actual trip time ATT (updated with real-time traffic data) and the standard trip time STT (average value of ATT).

The indicator was tested with real traffic data collected from Rome and Paris. The methodology and the analysis of the results is available in a guidebook.

This indicator provides a tool to help any city in the difficult task of analysing their mobility status using a simple measure. In this context, the methodology we have defined is useful to those cities which are interested in applying simple performance measures. Further details of the Sustainable Mobility Indicator are available online. The guidebook is available here.

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