



## **Questionnaire concerning mitigation measures (University of Aveiro, Portugal)**

1. Which measures for the improvement of air quality and especially for the reduction of particulate pollution are currently being used?

The North Regional Coordination and Development Commission (CCDR-N), through the annual evaluation of the concentration levels of the pollutants measured at stations that constitute the Air Quality Monitoring Network of the Northern Region, has detected exceedances of the PM<sub>10</sub> limit values fixed by the Decree-Law n° 102/2010, of September 23<sup>th</sup>, at four agglomerations, namely, Porto Litoral, Braga, Vale do Sousa and Vale do Ave.

In compliance with National legislation, this CCDR promoted the development of a strategy to mitigate emissions of this pollutant. This strategy was consolidated through the Plan to Improve Air Quality in the Northern Region (Plano de Melhoria da Qualidade do Ar da Região Norte), which presented a set of measures to be implemented in Porto Litoral, Braga, Vale do Sousa and Vale do Ave agglomerations, identified as those in which the problems of air quality would justify an intervention and the adoption of measures. This plan was published in the Portuguese Decree 716/2008 of August 6<sup>th</sup>.

Aiming at implementing the measures defined in the Plan to Improve Air Quality, a series of contacts were conducted between the agencies identified as responsible for the implementation of the measures included the plan. From these contacts, a subset of measures were defined and the PERN was elaborated (PERN – Execution Programme of the Plan to Improve Air Quality in the Northern Region, Programa de Execução do Plano de Melhoria da Qualidade do Ar da Região Norte). This document was approved through the Decree 20762/2009, of September 16<sup>th</sup>.

In order to implement the PERN, CCDR-N signed protocols with 35 entities that have pledged to implement more than 400 actions, in the scope of 16 measures, to reduce emissions of particulate matter. The measures included in the PERN were focused on six main sectors: traffic, industry, civil construction, domestic heating, agriculture/forests and environmental education. These measures were implemented between 2009 and 2011. During this period, CCDR-N has accompanied and

monitored the implementation of those measures. At the institucional website “<http://www.ccdr-n.pt>” the final report is available: “Relatório de monitorização das ações - Outubro 2009 – Dezembro 2011 - PERN”.

2. What are the most effective measures, especially in southern European urban environments?

The most effective measures include those related to both traffic management and residential combustion.

3. How and how frequent do you evaluate their effect?

The PERN (Programa de Execução do Plano de Melhoria da Qualidade do Ar da Região Norte) was implemented for the first time in the Northern Region of Portugal between 2009 and 2011. An assessment of the impact of the implementation of this Programme has not yet been completely made. This assessment will be done throughout the year of 2012. Thus, the monitoring data at the end of this year will be important to evaluate the effectiveness of the measures undertaken and to define future strategies to improve air quality.

4. Should further mitigation measures be considered?

Yes, there are some measures set out in the protocols, which have not yet been executed because of budget cuts or political reasons. Examples are: (i) the implementation of low emission zones in the city centres of the main agglomerations of the Northern Region and, (ii) municipal fleet renovation.

5. Which measures are you willing to test and apply? e.g.

- street washing
- application of dust suppressants

Street washing is one of the measures set out in the protocols and included in the PERN – Execution Programme of the Plan to Improve Air Quality in the Northern Region. This measure had great support by local authorities and municipalities. The replacement of particulate filters on heavy vehicles is another measure of this Program. Tests were performed in 2009, over 6 months, involving 12 heavy vehicles, 6 in the metropolitan area

of Porto, and another 6 in the metropolitan area of Lisbon. The selected vehicles included 4 heavy passenger vehicles, 4 heavy goods vehicles, and 4 solid waste collection vehicles. However, it is still missing in Portugal the adoption of policies and measures to support the installation and operation of particulate filters on heavy vehicles.

6. In the existing industrial emission inventories, non-IPPC activities are considered? Which type of regulation and control for non-IPPC activities are applied?

In inventories either Regional or National, this criterion is not used, i.e. all the types of industries are included.

For this type of industry, atmospheric emissions are regulated by the Decree-Law n° 78/2004, of April 3, and by the Decree-Law n° 242/2001, of August 31.

7. Is there any inventory or identification about industrial activities that generate diffusive PM emissions as consequence of handling, storage and transport of bulk materials? Which mitigation measures are considered to be applied for the previous mentioned activities?

No. In the Northern Region of Portugal, the harbour at Leixões (Port of Leixões) has activities with diffusive PM emissions. CCDR-N signed a protocol with the entity responsible for managing this port, aiming at implementing some measures to minimise the diffusive emission of particulate matter, namely: continuous monitoring of PM<sub>10</sub>; replacement or complement of the existing tree barrier; the construction of barriers to the quay discharge chips, with at least 10 meters height and respective coverage; sweeping and washing the streets of motor traffic within and surrounding spaces to handling; regular spraying of dusty goods with freshwater; good practices in the handling and storage of bulk solids.

8. Are the PM emissions generated as consequence of Public Works within the cities regulated with the application of mitigation measures or with the application of an emission limit values?

In the scope of PERN, CCDR-N produced a Best Practice Guide for Environmental Protection on Construction Sites, which identifies measures to minimise the emissions of dust. Under the protocols signed between CCDR-N and municipalities, some of them

pledged to include these measures in the technical specifications for public works, and also in their municipal regulations.