EMISSIONS OF FINE PARTICULATE MATTER

AIR 4

Airborne particulate matter and the toxic substances which they transport can penetrate to varying degrees into the respiratory system, and entail harmful effects on health. These particles are generated by various human activities (industrial production, transport, household heating, etc.). Their emissions into the atmosphere must be controlled in order to reduce exposure to the public.

Airborne particulate matter is classed according to their size. The TSP, PM_{10} and $PM_{2.5}$ are the particles for which the median aerodynamic diameter is respectively ≤ 75 µm, 10 µm and 2.5 µm

More than 80% of emissions come from the residential sector, industrial activities and transport.

In 2014, Walloon emissions of PM_{10} in the atmosphere were around 14,131 tonnes, of which 71% were made up of $PM_{2.5}$ which are more harmful to health, due to their capacity to penetrate into the pulmonary alveoli.

The activity sectors which emitted the most PM_{10} in Wallonia were the residential sector (use of wood for heating), industrial activities (quarries and cement plants, etc.), road transport (diesel combustion, wear of brakes and tyres) and agriculture (breeding, soil cultivation, harvesting, etc.).

A downward trend

Emissions of TSP, PM_{10} and $PM_{2.5}$ fell respectively by 53%, 49% and 49% between 2000 and 2014, with pronounced reductions in industrial sectors (closures of companies, better performing filtration systems, etc.), energy sectors (replacement of solid fuels by natural gas and renewable sources of energy), and the transport sector (stricter EURO standards for new vehicles), and this despite the increase in emissions from the residential sector (use of wood-fired heating systems).

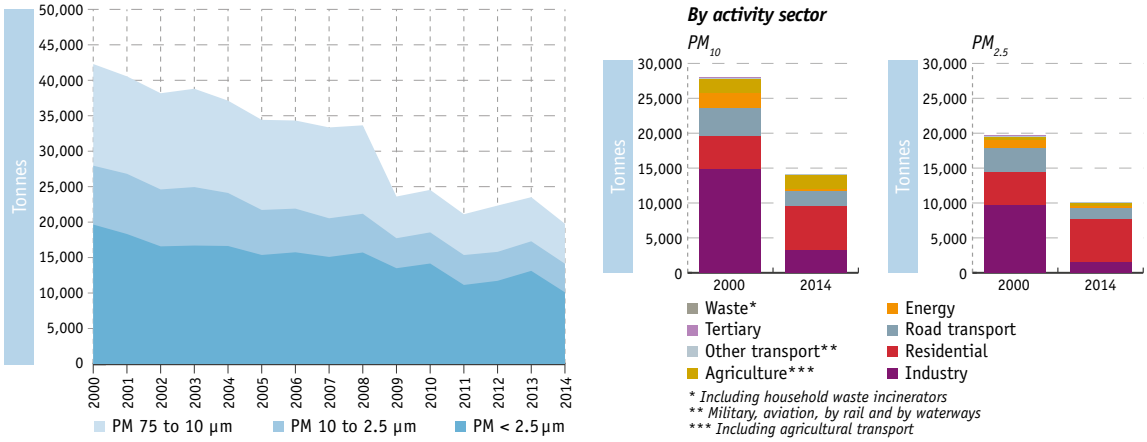
Tackling the different sources

The Gothenburg Protocol was amended in 2012 and has since set a reduction target for $PM_{2.5}$ (-20% from 2020 onwards compared with 2005). Directive (EU) 2016/2284, which will repeal Directive 2001/81/EC, also sets targets for 2020 onwards for $PM_{2.5}$ (-20% from 2020 onwards and -39% from 2030 onwards, compared with 2005).

In addition to the measures envisaged in the Air-Climate Plan (*Plan air-climat*) (2008-2012), an Action Plan in the Event of Pollution Peaks caused by Fine Dust was adopted in 2008. This provides *inter alia*[1] for short-term measures adapted to the level of pollution (speed limits on motorways, free public transport, limitation of certain industrial activities, etc.). An Action Plan to meet the quality objectives for particulate matter (PM_{10}/$PM_{2.5}$)[2] was adopted in 2011 and strengthened in 2016[3]. Eight new measures are aimed at reducing emissions from transport, the residential sector (wood-fired heating), green waste burning and agriculture. Among the new long-term measures, the Plans to Reduce Diffuse Emissions of Particulate Matter (*Plans de réduction des émissions diffuses de particules - PRED*), which was drawn up in 2012, can also be cited. Furthermore, a sectoral charter aiming to reduce emissions of dust and fine particle matter from quarries was signed in 2016. Elsewhere, the new Air Climate Energy Plan 2016-2022 (*Plan air climat énergie 2016-2022 - PACE*)[4] has defined the measures to be implemented by 2022. This is intended to meet the air quality objectives set by Directive 2008/50/EC[5] on fine particulate matter[1].

[1] → AIR 10 | [2] Decision of the Walloon Government of 31/03/2011 | [3] Decision of the Walloon Government of 21/04/2016 | [4] → AIR Focus 3 | [5] Transposed by the Walloon Government Decree of 15/07/2010

Fig. AIR 4-1 Atmospheric emissions of fine particulate matter in Wallonia



SOERW 2017 – Sources: SPW - AwAC (report carried out in February 2016, provisional data 2014)