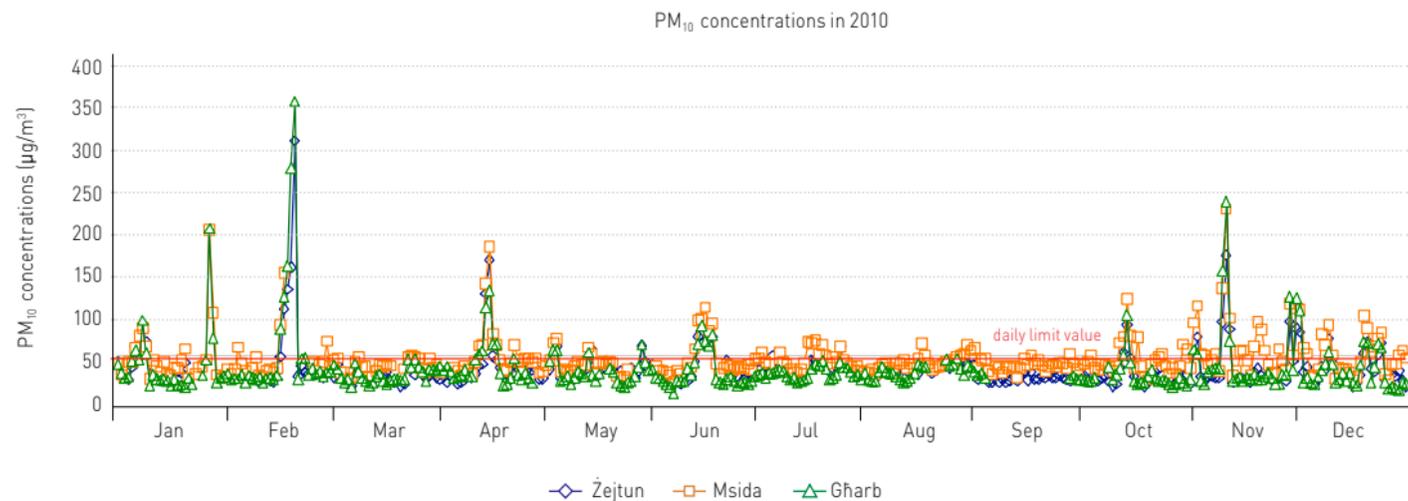


## A1 PARTICULATE MATTER CONCENTRATIONS

 **Key policy question:** Do particulate matter concentrations meet EU air quality standards?



Source: MEPA

Particulate matter (PM) consists of very small suspended solid or liquid particles, which have short- and long-term effects on health: from general ill-health to respiratory problems such as asthma, as well as cardiovascular effects.<sup>11</sup> PM originates mainly from fuel combustion in transport and power generation, quarrying and construction dust, mechanically-generated dust, tyre and brake abrasion, and aerosols of transboundary origin, but it also includes dust from natural sources such as atmospheric sea salt and wind-blown dust (both local and transported, e.g. from the Sahara). In 2010 Malta's real-time monitoring stations recorded high levels of  $PM_{10}$ ,<sup>12</sup> although they are partly from natural sources, which may be deducted in computing final EU reporting figures, and thus compliance with EU standards. The EU daily limit value of  $50\mu\text{g}/\text{m}^3$  should not be exceeded more than 35 times a year (approximately 10% of days measured). In 2010, at Msida, which is the site most dominated by traffic, the limit value was exceeded on 80 out of 340 days measured (23.5% of days measured). Following

deduction of natural sources, Msida was left with 37 exceedances (or 11%) of days measured. In 2009, Msida had registered exceedances on 57 days or 18% of days measured, but 35 days when natural sources were deducted. At Għarb the threshold was exceeded on 39 out of 326 days (12% of days measured) in 2010, and the highest concentration for 2010, of  $366\mu\text{g}/\text{m}^3$ , was recorded in this locality. Following deductions of natural sources, it emerged that all but one of the exceedances at this station were due to natural sources. In 2009, Għarb had registered 15 exceedances. The urban site in Żejtun recorded exceedances on 33 or 10.2% of the days measured. In 2009, there were 22 exceedances at this site.  $PM_{2.5}$  are considered particularly harmful due to their ability to penetrate deeper into the lungs.<sup>13</sup> The EU annual average limit value for  $PM_{2.5}$  is  $25\mu\text{g}/\text{m}^3$ , to be attained by 2015. In 2010 the highest  $PM_{2.5}$  value was recorded at Msida, at  $20\mu\text{g}/\text{m}^3$ , decreasing by 11% from 2009, while during the same period at Għarb there was a 37% decrease in  $PM_{2.5}$ , down to  $11.3\mu\text{g}/\text{m}^3$ .