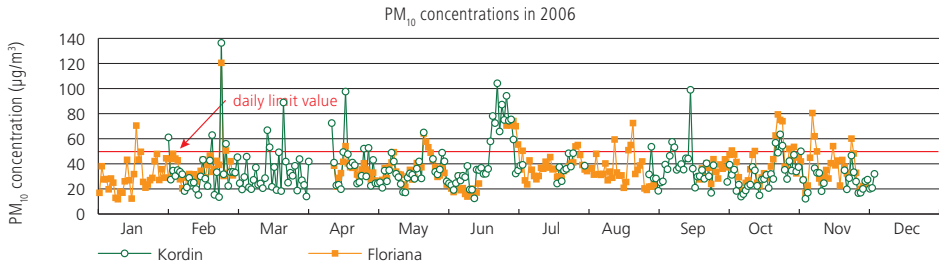
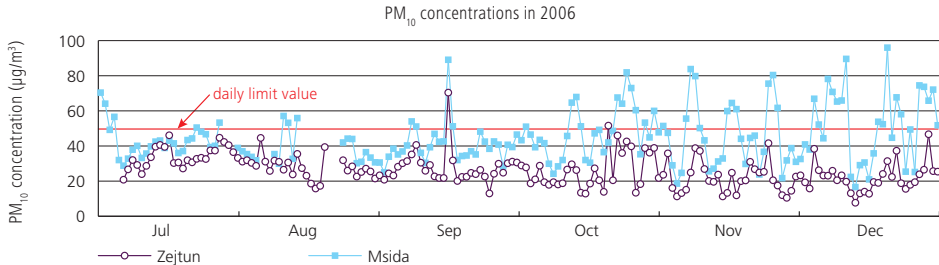


## A1 PARTICULATE MATTER CONCENTRATIONS

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



Source: MEPA

Particulate matter (PM<sub>10</sub>) consists of dust particles that are generally less than 10 millionths of a metre in diameter. They originate mainly from industrial processes such as fuel-burning in power stations and industrial plants, as well as direct emissions from activities such as quarrying and sanding. Transport is another major source of particulates that arise from exhaust emissions, tyre and break abrasion and re-suspension of dust that had previously settled on the roads. Natural sources of PM are sea spray and wind blown dust (long-range transported dust from the Sahara), which could at times contribute to a significant amount of the total particulate matter fraction. Studies have shown that these particles, especially the smaller fraction of it known as PM<sub>2.5</sub>, are the major pollutants causing deaths in Europe.<sup>8</sup> PM<sub>10</sub> concentrations in 2006 were measured at the Floriana, Kordin, Msida and Zejtun<sup>9</sup> real-time air quality monitoring stations, and a record was kept of the number of times the EU threshold, of 50 micrograms per cubic metre (µg/m<sup>3</sup>), was exceeded. During 2006 this threshold was exceeded in 32 out of the 262 days measured, that is on 12% of the days measured at the Floriana station. In the same year, at the Kordin station, the limit value was exceeded on 30 out of the 236 days measured (that is on 13% of days measured), while at Msida the limit value was exceeded on 30% of the days measured (51 out of 169 days measured). At the Zejtun station there were only 2 exceedances during the 176 days measured (that is on 1% of days measured). In 2006 all stations except for Zejtun exceeded the EU limit on more than the permitted 35 times per year (10% of days measured).<sup>10</sup> Such a trend has also been observed in many other European countries, particularly in urban areas.<sup>11</sup> During 2006, Malta's highest particulate concentration, of 136.4µg/m<sup>3</sup>, was recorded at the Kordin station, followed by a concentration of 120.5µg/m<sup>3</sup> in Floriana. The highest 2006 value at the Kordin station increased slightly compared to 2005,<sup>12</sup> when it stood at 127µg/m<sup>3</sup>. The concentration in Floriana decreased slightly in this period, with the 2005 highest value being 128µg/m<sup>3</sup>. A clear overall trend in these years is not therefore evident. At EU level, the European Environment Agency (EEA) indicates that between 1990 and 2005, overall emissions of PM<sub>10</sub> and particulate precursors (NO<sub>x</sub>, SO<sub>2</sub> and NH<sub>3</sub>) fell by 45% across the EEA member countries, with major reductions coming from the energy industry, in which primary PM<sub>10</sub> emissions were reduced by 83%.<sup>13</sup>

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8 EEA 2005.

9 Measurements at Zejtun and Msida began in July 2006.

10 This statement is related to a whole year's measurement and using no correction factor.

11 EEA 2007a.

12 Real-time PM<sub>10</sub> data for 2005 has been slightly modified in order to better align national measurements with standard measuring methods.

13 EEA 2008.