

Corrigendum

Corrigendum to “Modelling air quality impact of a biomass energy power plant in a mountain valley in Central Italy” [Atmos. Environ. 62 (2012) 248–255]

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In Table 3 of the article we report the number of exceedences of the regulatory thresholds detected in our simulation. In fact, we show the total number of grid points that experienced a limit violation during the simulated year (2008). Although this is a first useful indication of the potential risk of having exceedences attributable uniquely to the new biomass energy power plant, it may not be a directly usable information for decision-making, for two main reasons.

First, when exceedences are simulated during the same day at two or more grid points, the violation count should be increased only by one, avoiding multiple counts of pollution episodes. Accounting for multiple counts, the number of exceedences is reduced from 141 to 65 for NO₂, while remains 15 for SO₂.

Second, the exceedences must be interpreted in terms of their potential measurement from an air quality monitoring station. It is thus important to assess the distribution and the spatial extent of the high pollution episodes.

According to both the European (EC, 2008, annex III) and Italian (D. Lgs, 2010, allegato 3) legislation “where contributions from industrial sources are to be assessed, at least one sampling point shall be installed downwind of the source in the nearest residential area” and that “Sampling points [...] must be sited in such a way that the air sampled is representative of air quality [...] at least 250 m × 250 m at industrial sites, [...]”. The horizontal resolution of our model is 250 m × 250 m, so the area of a single grid-cell is consistent with the minimum area that a monitoring station should represent.

We found that 14 of the 15 SO₂ exceedences are located in the grid cell of the power plant (denoted by a star), the other one being in an adjacent cell. In this case, the calculated exceedences should not be considered significant for regulatory purposes, because the peak values are not predicted to hit a residential area, where a dedicated monitoring station should be placed.

For NO₂, we found that 19 of the 65 exceedences are located in the grid cell of the power plant, while the others are scattered

around within a radius of about 2 km from the plant. In Fig. 1 we show the average increment of NO₂ calculated over the simulated year, and the locations of the grid cells where at least one violation is encountered during the year (green circles). Red circles further highlight those cells where 3 or more violations are predicted. Apart from the grid point of the power plant, a maximum of 5 violations are counted in a single cell. Most of the high pollution

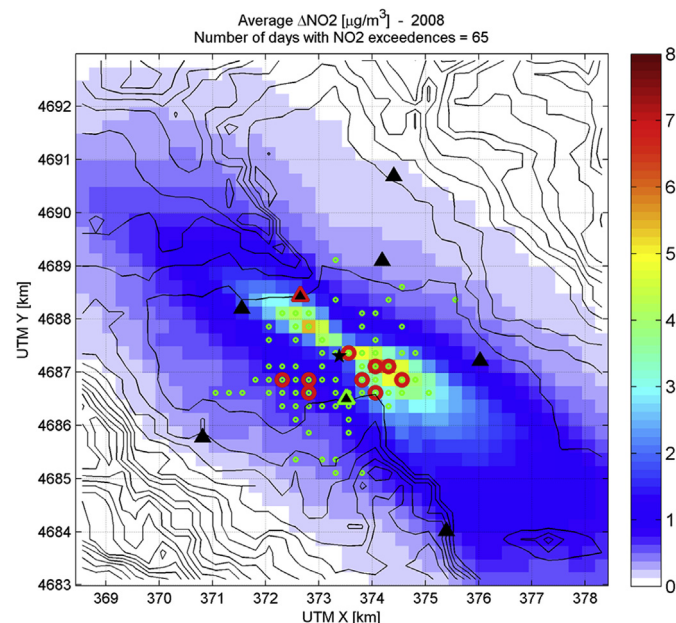


Fig. 1. Map of average increment of NO₂ due to a new biomass energy power plant (denoted by a star) calculated for the year 2008. Green circles denote grid cells where at least one violation of the 24-h maximum limit values of 200 µg m⁻³ is predicted. Red circles highlight those points where the number of violations is 3 or more. Black triangles denote main residential areas. The suggested sites for the location of a monitoring station are highlighted in green (Bazzano) and red (Monticchio). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

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episodes take place in the South-East direction, nighttime (not shown), along the main wind axis and not far from the residential area of Monticchio (green triangle).

The latter should thus be regarded as the preferred location for a monitoring station, in place of Bazzano (red triangle) as suggested in the article.

References

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