



**Government of India
Ministry of Earth Sciences**



India Meteorological Department

PRESS RELEASE

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Subj: Advanced high-resolution Air Quality Early Warning System for Delhi and India

Ministry of Earth Sciences is constantly striving to improve Air Quality Early Warning System by incorporating various changes in Air Quality Forecast Models such as improved emission inventories, Land Use and Land Cover and improved assimilation of various observational data. The Air Quality forecast model System for Integrated modeLling of Atmospheric composition (SILAM) for India has been further improved by implementing global emission inventories CAMS-GLOB v2.1 supplemented with EDGAR v4.3.2 for coarse and mineral-fine anthropogenic particulate matter at 10km resolution. A very high resolution city scale model ENFUSER (ENvironmental information FUsion SERvice) for Delhi also has been operationalized to identify the air pollution hotspots and pollution upto street level. SILAM and ENFUSER have been developed in technical collaboration with Finnish Meteorological Institute (FMI).

The speciality of the ENFUSER is the high utilization of measurement data such as air quality observations, a detailed description of the road network, buildings, land-use information, high-resolution satellite images, ground elevation and population data. The ENFUSER natively tap in to the operative IMD's regional SILAM access point. The ENFUSER results are being evaluated with the satellite measurements and observations, model is found to capture the hotspots over Delhi very well. The SILAM models have been extensively validated against observations over Indian region.

Air Quality forecast model WRF-Chem has also been updated with high-resolution land use land cover information to improve the air quality forecast.

Now AQ early warning system also provides air quality forecast for Lucknow, Kanpur and Varanasi at 2 km resolution. The AQ forecast is also available for some other cities at 10km resolution.

The air quality forecasts products are available at <https://ews.tropmet.res.in/> and <https://mausam.imd.gov.in>.