Outer Continental Shelf Air Quality System (OCS AQS) Integrated Air Dispersion Modeling Capabilities

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Abstract

The Bureau of Ocean Energy Management (BOEM) and the Bureau of Safety and Environmental Enforcement (BSEE) completed development of the OCS AQS web-based emissions inventory solution in 2020 to prepare emissions inventories in federal waters for the Gulf of Mexico (GOM) and Alaska. In addition to the emissions inventory module, OCS AQS includes fully integrated air dispersion modeling capabilities to conduct air quality studies in support of BOEM/BSEE environmental regulations. OCS AQS currently employs the U.S. EPA AERMOD model for conducting near field air quality studies and CALPUFF model for conducting long range transport modeling. OCS AQS air quality models support BOEM's plan review process for required impact assessments. OCS AQS streamlines the modeling process by automating model input preparation steps including selecting emissions inventory data (e.g., sources and pollutants), terrain, meteorological and land use processing, defining the calculation and receptor grids, and generating all necessary model input files. In addition, OCS AQS automates the process of initiating and managing multiple modeling runs and post-processing results for data analysis, visualization, and reporting. For example, the OCS AQS mapping module displays pollutant specific concentration contours, source locations, and modeled receptors to support geospatial analysis of modeling results. The integrated capabilities provide easy-to-use and powerful tool for the user to conduct complex air quality studies in the Gulf of Mexico and Alaska regions, supporting the agencies in their respective regulatory air quality and enforcement programs.