Emissions Trends Analysis (Year 2014 GWEI study)

Bebhinn Do[1]

The Year 2014 Gulfwide Emissions Inventory Study included a task to conduct a detailed and comprehensive emissions trends analysis using data from the five most recent inventory studies covering 2000-2014 to assess the long-term emissions trends in the GOM OCS emissions. The platform equipment sources were separated into combustion equipment, non-combustion equipment, and vents and flares. The non-platform sources encompass marine vessels and aircraft that support OCS oil and gas production. Other non-platform sources were excluded from the analysis.

As the science for estimating air pollutant emissions has evolved, the methods used to estimate emissions in the BOEM inventories have also evolved. Changes in emission factors, models, and activity data sources have created artificial trends in the data (i.e., emission decreases or increases are seen due to improved method and activity quantification). For example, the increased resolution in the marine vessel identification and better quantification of activity makes it appear as if emissions from BOEM sources have decreased recently. In reality, the revisions to the methods, primarily the improved data sources, are better at identifying vessel categories and quantifying their propulsion operations.

Overall, emissions are largely affected by three factors 1) activity/production levels in the GOM by water depth and planning area, 2) changes in inventory methodologies, and 3) improvements in available emission factors. There was qualitative agreement to the spatial distribution of total production; however, there are factors that sometimes mask this trend at a total inventory level, including emission estimation methods and the uneven spatial distribution of production.

[1] Eastern Research Group, Inc. (ERG)