

We are pleased to announce that our in-house developed Artificial Intelligence (AI)-Integrated GIS-based Line Source Emission Inventory (LSEI) Dashboard, developed by the dedicated team comprising Rahul Vyawahare (Sr. Scientist), K. V. George (Chief Scientist), Jaysingh Rajput (Project Scientist), Atharva Malode (Project Associate-I), and Raj Sonarghare (Project Associate-I), has qualified the Semi-Finals of the SKOCH Award 2025.

The AI-driven LSEI dashboard enables automated vehicle detection and classification, achieving 100% accuracy for Indian vehicle categories, thereby minimizing human error and eliminating the labour-intensive manual traffic counts. By integrating engine technology and fuel-specific emission factors, the dashboard estimates hourly/daily emission loads for individual vehicle categories along with total and gridded emission estimates.

Furthermore, the high-resolution, grid-based emission load framework facilitates micro-scale emission hotspot identification which enables precise spatial assessment of vehicular emission dynamics across urban road networks.

This recognition highlights the innovation, scientific rigor, and societal relevance of the real-time line-source emission inventory platform developed at CSIR-NEERI, reinforcing its potential to support evidence-based air quality management, urban planning, and policy decision-making.

