

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.

