

## Environmental Research, Technology Demonstration and Conference Project

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| <b>ECF Project:</b>                       | ECF 2022-102  |
| <b>Project Title:</b>                     | Environment and Conservation Fund - Estimating carbon emissions, assessing decarbonization strategies and managing green transportation in Hong Kong with a multifunctional simulation platform   |
| <b>Principal Investigator:</b>            | Dr Ke Jintao, Department of Civil Engineering, The University of Hong Kong  |
| <b>Total Approved Grant:</b>              | \$500,000   |
| <b>Duration:</b>                          | 1/3/2024 to 28/2/2026   |
| <b>Project Status/Remarks:</b>            | To be commenced   |
| <b>Project Scope:</b>                     | In 2021, the Hong Kong SAR government announced Hong Kong's Climate Action Plan 2050, setting out the objective of achieving carbon neutrality before 2050 and initiating a series of decarbonisation strategies. Among these strategies, the green transport scheme aims to attain zero carbon emissions in the transport sector by 2050, calling for more efficient management tools to estimate, monitor, and control transport carbon emissions. To cope with this urgent need, this project aims to develop a multifunctional simulation platform that can simulate the movements and trajectories of taxis, buses, metro trains, and other vehicles on the road network of Hong Kong. Calibrated by real-world mobility datasets, the proposed simulation platform can offer an accurate estimation of vehicle-mile-travelled (VMT) and carbon emissions of different vehicles, and thus provide a reference for the government to formulate effective green-transport-related policies and decarbonisation measures. In addition, the simulation platform can be utilised to evaluate the effects of different decarbonisation measures on reducing carbon emissions in the transport sector. Also, the simulation platform can help design better operating strategies for managing the electric vehicle fleet in Hong Kong, which has been growing swiftly in recent years and will continue to expand rapidly in the near future. |
| <b>Summary of the Findings/ Outcomes:</b> | To be available upon completion of the project  |