

**DOCTORAL THESIS INFORMATION WITH NEW SCIENTIFIC
CONTRIBUTION, THEORETICAL STUDY**

1. Dissertation title: Research on quantifying the co-benefits of greenhouse gases mitigation in the public transport sector in Hanoi

- **Code:** 9440221

- **Major:** Climate Change

2. PhD Candidate: Tran Do Bao Trung

- **Research Advisors:** PhD. Luong Quang Huy

- **Training Institution:** Viet Nam Institute of Meteorology, Hydrology and Climate Change

3. Introduction to the Dissertation

Greenhouse gas emissions from human activities are becoming a global problem. Under the impact of climate change, natural disasters tend to change to more extreme nature, threatening human life on Earth. Recently, the co-benefit approach has been promoted in the issue of sustainable development, especially in developing countries, which face problems of economic development, environmental pollution and climate change. Co-benefits are considered as an important bridge in sustainable development, linking environmental protection and public transport development.

The dissertation "*Research on quantifying the co-benefits of greenhouse gases mitigation in the public transport sector in Hanoi*" using mathematical models, economic evaluation methods to determine the potential of GHG mitigation and co-benefits of GHG mitigation measures in the urban public transport sector to contribute to providing a more detailed view of socio-economic impacts society - environment in implementing solutions into practice.

The dissertation has 2 objectives: (1) To identify mitigation measures and potential to mitigate GHG emissions in the public transport in Hanoi; (2) To quantitatively assess the economic, social and environmental co-benefits of GHG

mitigation in public transport in Hanoi and propose measures to mitigate GHG emissions, achieve economic, social and environmental co-benefits.

In addition to the introduction, conclusion and recommendations, the dissertation consists of 3 chapters. Chapter 1 reviews domestic and international studies on quantifying the co-benefits of GHG mitigation in the field of urban public transport. Chapter 2 presents a bottom-up approach to quantifying GHG emissions and valuing the co-benefits in terms of carbon credits, energy savings, health due to air pollution, travel time savings. Chapter 3 presents the results of applying the developed method to calculate the co-benefits of GHG mitigation in the field of public transport in Hanoi. The Appendix includes tables for calculating intermediate results.

4. New contributions of Dissertation

- *Theoretical contributions:* The dissertation has developed a scientific basis to research and select methods to quantify greenhouse gas emissions and co-benefits for the field of public transport. In which, the co-benefits of inter-sectoral factors have been identified and quantified.

- *Practical contributions:* The research results of this dissertation can be directly applied in the process of policy making, planning and strategy formulation to mitigate greenhouse gas emissions in the field of public transport, contributing to the implementation of goals in Vietnam's updated NDC, and at the same time ensure sustainable socio-economic development of Hanoi in particular and Vietnam in general.

Research Advisors



PhD. Luong Quang Huy

PhD Candidate



Tran Do Bao Trung