

"The development of electric bus systems at the local level and the conversion of small passenger vehicles or feeder systems from internal combustion engine to electric power"



CONCEPT OF PROJECT:

The project supports Chiang Mai's transition to a **low- carbon** and **climate-resilient** transport system by developing an **electric bus** network integrated with electric *songthaew* feeder services. The expected outcomes are as follows:

- 🌱 Reduced GHG and PM2.5 emissions.
- ☀️ Enhanced resilience to extreme weather events.
- ♿️ Improved equity of access for vulnerable groups.
- 🚗 Strengthened local capacity to manage clean mobility.

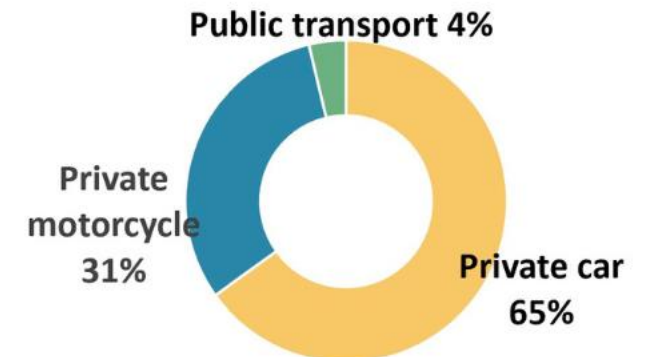
PROJECT BACKGROUND:

Chiang Mai has experienced rapid urban expansion without the development of an adequate public transportation system, resulting in severe traffic congestion, deteriorating air quality, and elevated greenhouse gas emissions. Existing transport modes remain inefficient and inequitable, while the city is increasingly exposed to climate-related risks such as flooding and extreme heat.

In response to these challenges, the Chiang Mai Provincial Administrative Organization (PAO) plans to develop a local electric bus (EV bus) system accompanied by a feeder network. This initiative is designed to enhance mobility efficiency and reduce environmental impacts, and will be aligned with:

- the Office of Transport and Traffic Policy and Planning's (OTP) master plan comprising 22 bus routes for Chiang Mai,
- Thailand's Nationally Determined Contribution (NDC) targets
- the Sustainable Development Goals (SDGs)

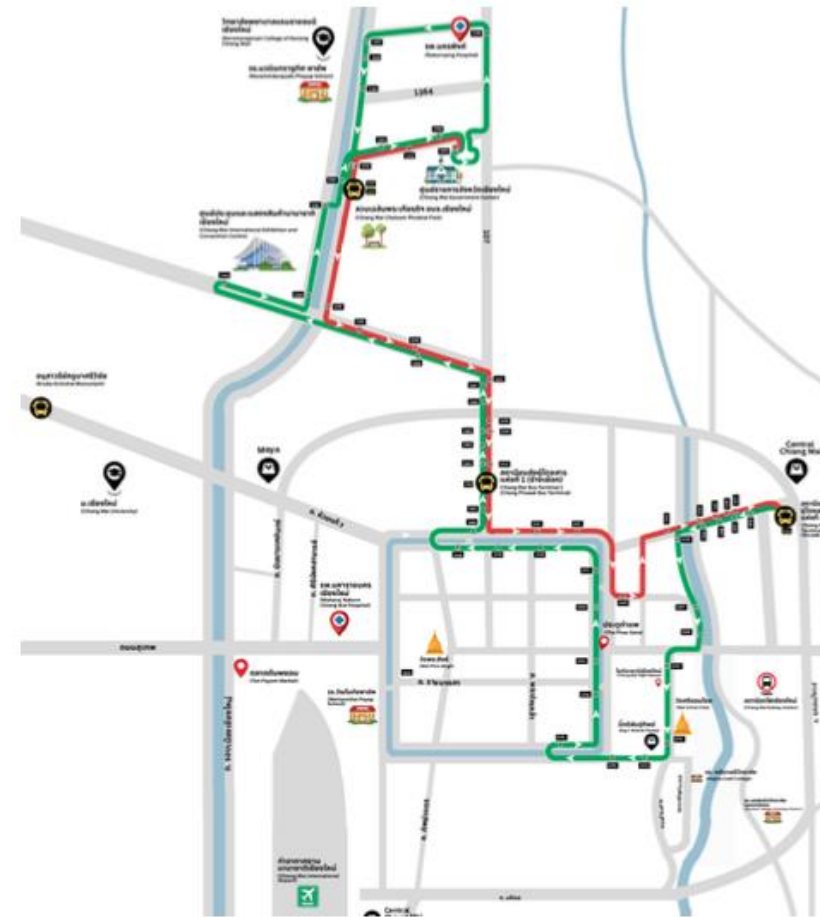
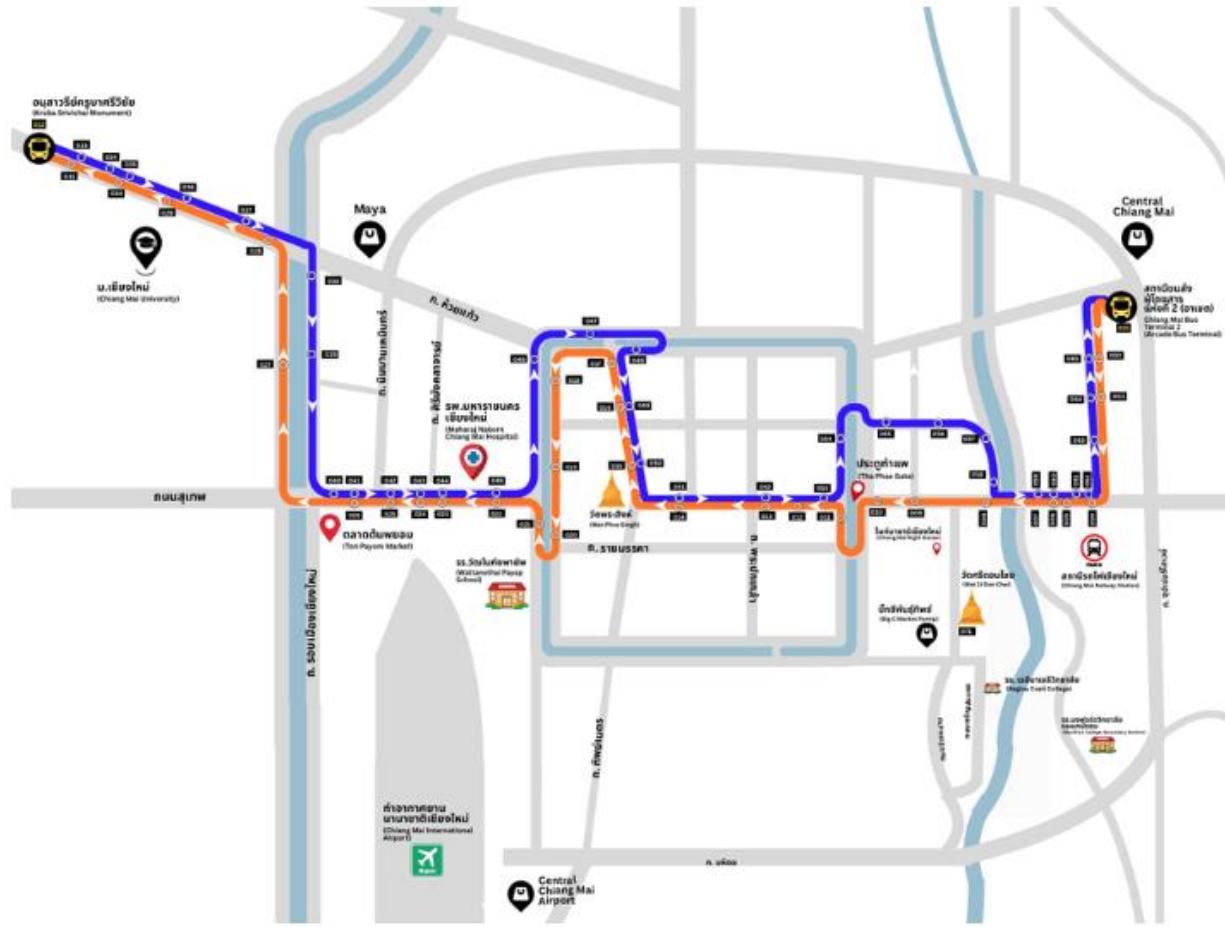
Pollution Source Proportions



IMPLEMENTATION PLAN:

Development Progress

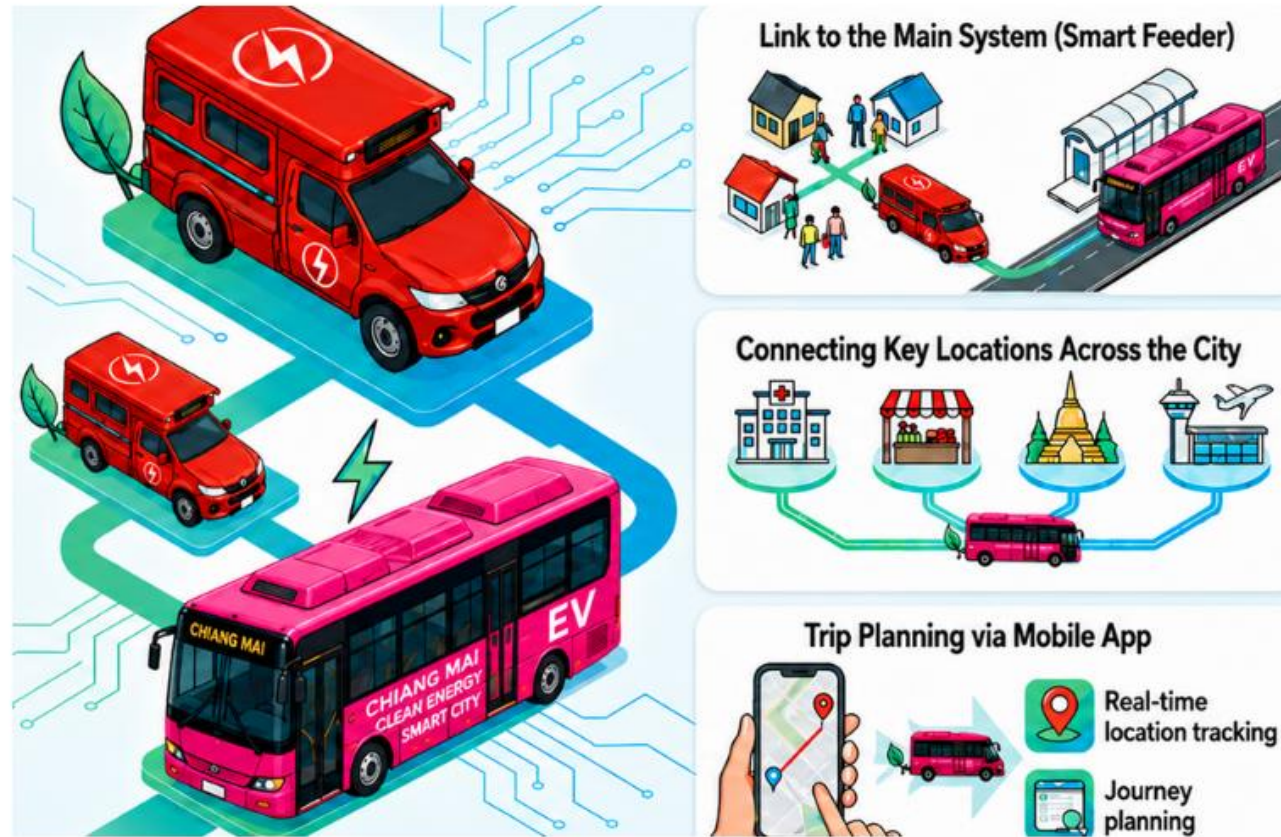
- Two bus routes have already been launched, namely Route 18 and Route 20, marking the initial phase of the local EV bus network implementation.



IMPLEMENTATION PLAN:

Development Progress

- A feasibility study on converting the existing fleet of small internal combustion engine (ICE) minibuses to electric vehicles has been completed
- A feasibility study on the design and development of the feeder system has been completed.



Next Steps & Challenges

- **Expansion of Operations to 4 Additional Routes** The Chiang Mai PAO plans to extend the EV bus network by introducing 4 additional routes, thereby enhancing network coverage and improving accessibility across key urban and peri-urban areas.

- **Implementation of an Energy Security Initiative through a 4.5-MWp Floating Solar System with Battery Energy Storage 2 MWh** To strengthen long-term energy security for the EV Bus and feeder systems, the PAO intends to develop a 4-megawatt floating solar photovoltaic (FPV) system. This renewable energy infrastructure will support future public transport electrification and reduce dependence on grid electricity and fossil-fuel-based energy sources.

