Semarang has public transportation modes such as Angkot, BRT, and feeder buses that ensure the mobility of its citizens. However, private vehicles still dominate the mode of transport, accounting for 93% in 2020. This can be caused by the growth of private motorized vehicles up to 12% per year, while public transportation share is only 7%. The transportation sector also contributed 20% of total direct GHG emissions in 2020. To tackle these issues, the government showed its commitment to a sustainable mobility system. In Semarang’s mid term development plan, sustainable infrastructure became one of its key development missions. The environmentally Friendly Fueled Transportation Development program is one of the priorities under that mission as well.

1 Low Emission Integrated Mass Transit Plan (Urban Mobility Plan) Kota Semarang, 2020
2 Local Mid-Term Development Plan of Semarang 2021 – 2026
3 Environment agency of Semarang City, 2022
The citizens of Semarang City and the surrounding city, use Trans Semarang for work, study, shopping and recreation. The passengers include vulnerable groups such as elderly people, pregnant woman, people with disability, and so on. The most common origins and destinations are from home to schools and offices. Based on 2021 data, more than half of passengers are categorized under the general group (74.4%), while 12.6% are under the elderly group, 8% school students, 18% college students, 3.1% children and less than 1% veterans. The average BRT (Bus Rapid Transit) trip is 30 – 45 minutes.

As a mode of mass public transportation in the Semarang City, Trans Semarang is equipped with several facilities for the convenience of users such as AC, CCTV, and GPS. Trans Semarang fares are also quite affordable, namely Rp. 3500 (cashless) and Rp. 4000 (cash) for general groups and Rp. 1000 for special groups. Users can get information about routes, bus stops and bus positions in real time through the Trans Semarang mobile application. The current coverage of Trans Semarang is 45%. However, additional corridors are also being carried out, especially feeder corridors to reach areas with narrow roads. In 2021, the load factor is 37.4%. A problem with Trans Semarang is that there is not yet a dedicated line for the bus, so it operates on the same line as other vehicles, which could affect the interval time between BRT fleets. The city government plans to provide a dedicated line for Trans Semarang, in order to improve its services.

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4 Trans Semarang
5 Demand Survey IGES, 2016 in Low Emission Integrated Mass Transit Plan (Urban Mobility Plan), 2019
6 Trans Semarang
BLU Trans Semarang manages the operation of the BRT, including overseeing the bus operation which is run by 12 different bus companies. BLU Trans Semarang is a public authority under the Transportation Agency of Semarang City. It owns and manages infrastructure as well as a few buses. A large number of buses are mostly purchased and owned by the bus operators. The cooperation between BLU and operators is through contract, MoU, and concession. The contract is renewed per 1-year. Operators are paid per bus kilometer traveled.

7 Based on Accelerating a market transition in Latin America: New business models for electric bus deployment, P4G, Zebra and Dalberg, 2020
Opportunities

• The Mayor of Semarang has a commitment related to the implementation of electric buses. This can be seen through the efforts of the City of Semarang to provide 1 electric bus which will be used for tourism activities.

• Currently, there are 3 charging stations in Semarang City which can be the starting point to support the implementation of electric buses later.

• Moreover, Trans Semarang users have increased over the last 10 years - from 369,326 in 2009 to 11,306,893 in 2019.

Challenges

• The main challenge for the adoption of the electric bus fleet is the limited fiscal capacity of the city, given the high cost of electric buses. Therefore, there is a need for stages of mass implementation of electric buses as well as financial support.

• The varied geographical characteristics of Semarang City (there are lowlands and highlands), are a challenge for the adoption of electric buses. In some parts of the city of Semarang, flooding often occurs when it rains.

• Further technical studies are needed regarding the types of buses that are suitable for use in different geographical characteristics and in areas prone to inundation.

Acknowledgements

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About the TUMI E-Bus Mission

Funded by the German Ministry for Economic Cooperation and Development (BMZ), a core group of organizations supports cities in their transition toward electric bus deployment. For more information please contact: tumi-network@iclei.org or visit https://sustainablemobility.iclei.org/tumi-ebus-mission-2/