



CFF IMPACT BRIEF | E-BUSES IN JAKARTA

100 E-Buses for Jakarta's Sustainable Mobility Transition

In response to 60% of Jakarta's residents suffering from diseases linked to air pollution, TransJakarta has committed to improving air quality in the city by deploying e-buses. TransJakarta is a city-owned public transport agency that manages the longest Bus Rapid Transit (BRT) system in the world. The system includes 13 corridors and 155 feeder routes in the Jakarta Metropolitan Area.

The C40 Cities Finance Facility (CFF) supported Jakarta to improve its air quality by deploying a fleet of 100 e-buses for TransJakarta's network. The e-buses will gradually replace the city's EURO II diesel buses on selected BRT and non-BRT routes.



Jakarta is leading the electrification of the public bus fleet in Indonesia on three pilot bus routes (non-BRT). Each route is serviced exclusively by e-bus with a service-agreement for 196 kms per day.

"Jakarta faces the problem of deteriorating air quality and pollution through combustion engine vehicles. Together with the CFF, we were able to identify one of the most suitable solutions for Jakarta, which is in accordance with our vision and mission. Most important to us is the analysis of cobenefits of e-bus deployment, e.g. the calculation of GHG emission reductions. In the implementation phase we will measure and monitor, if co-benefits are realized accordingly. This is important for the communication towards the citizens of Jakarta and will be used for future projects as well."

SYAFRIN LIPUTO

Head of DKI Jakarta Transportation Agency



Project Profile



PROJECT PARTNER:

**PT. Transportasi Jakarta (TransJakarta)
Government of DKI Jakarta**



PROJECT SCALE:

100 Electric Buses



TOTAL REPORTED GHG EMISSIONS:

3,349 t CO₂e per year



FINANCE LEVERAGED:

USD 37,400,000



FINANCING SOLUTION:

Jakarta's e-bus project will be funded through a buy-the-service PPP arrangement. The CFF supported TransJakarta to adapt the model from diesel buses to e-buses, creating a business model to ensure adequate allocation of risk across stakeholders, as well as a feed-per-km fee agreement.



“Even amid the great lockdown and city budget cuts, the city government of Jakarta is continuing firmly in the transition to zero-emission buses with the support of the CFF.”

Ibu Sri Haryati, Undersecretary for Economic Affairs and Finance DKI Jakarta



GHG EMISSION REDUCTION
100,461 tCO₂e (2021 – 2050)



DAILY PASSENGERS
45,000 passengers per day



“We are making history! 2021 will be recorded as the year that Jakarta started a new phase on electric vehicles. This is no small issue, this is a big, a gigantic step that we are now undertaking.”

MR. ANIES BASWEDAN
Governor of DKI Jakarta



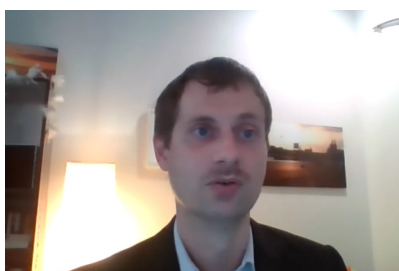
“I would like to thank the C40 Cities Finance Facility for the support given to Indonesian cities to facilitate infrastructure development. Electric buses and other electric vehicles as a means of public transportation deliver a major impact in overcoming air pollution and tackling climate change.”

MR. BUDI KARYA SUMADI
Minister of Transportation



“A moment of fantastic achievement and hope for DKI Jakarta and the country as a whole and indeed for progressive cities everywhere. I welcome the collaborative approach led by the C40 Cities Finance Facility in helping Jakarta address some of the most serious challenges it faces and ensuring that these efforts are finance-ready.”

MR. ROB FENN
The British Embassy of Jakarta,
Deputy Head of Mission to
Indonesia and Timor Leste



“Here and now, we have the first 100 E-Buses, which is a milestone, but we are looking forward for a cooperation on a bigger scale for sustainable mobility.”

DR. DAVID TANTOW
Counsellor for Development
Cooperation, Embassy of the Federal
Republic of Germany

Political Leadership Makes the Difference

- Just as Jakarta started its journey to transition the city's bus fleet, the coronavirus pandemic broke out.
- Even amidst the drastic lockdown and city budget cuts, the city government of Jakarta firmly continued with its transition to e-buses.
- Despite the project being the youngest in the CFF's portfolio, all CFF activities were carried out in a short timeframe, despite the additional burden imposed by Covid-19.
- The Governor is highly committed to the e-bus deployment and actively tracks its progress. The success of e-buses contributes to the achievement of the Regional Medium-Term Development Plan 2018-2022.
- The Governor issued two regulations (no.74/2021, 90/2021) and one instruction (no.17/2021) to accelerate e-bus rollout. For instance, the concession period of e-bus was extended from 7 to 10 years. This will bring down the cost of e-bus deployment by more than 10% accordingly (based on CFF analysis).



Signs of Transformation – planning and guiding the shift towards e-bus deployment in Jakarta

With our partners, the CFF strives for transformative change, supporting systemic shifts in how cities implement climate action and access climate finance!



A technically-sound, finance-ready project and a comprehensive social cost benefit analysis.

Despite taxes on the costs of e-bus deployment, studies conducted with support by the CFF demonstrated that the environmental, public health and economic benefits outweigh the costs. Switching to e-buses is therefore the strategic future-proof choice for Jakarta.



Despite starting the project at the peak of the Covid-19 pandemic in March 2020, the strong commitment by Jakarta and the CFF enabled a seamless transition to virtual formats.

Online sessions with technical and financial experts in the city gave partners the opportunity to, amongst others, acquire the knowledge necessary to analyse existing routes and prioritise routes for e-bus deployment according to passenger needs.



TransJakarta promotes the recruitment of female drivers on the basis of a 30%-quota.

The gender study conducted by the CFF provided further insights for the program and comprehensive recommendations for the implementation process within TransJakarta.



A webinar series on e-mobility attracted ~200 participants from cities, national governments, NGOs, academia and financiers from around the world.

The webinar series inspired and amplified policies, incentives, and support to encourage the adoption of electric mobility. It furthermore gathered diverse views from stakeholders on how to incentivise and accelerate the adoption of e-mobility.



Fruitful city-to-city learning sessions with Auckland Transport, King County Metro, EMT Madrid and Land Transportation Authority Singapore.

E-buses are a new technology for TransJakarta. To kick-start the project preparation, Jakarta interacted with experienced cities around the world to learn key lessons and best practices.



► ACCELERATING E-BUS DEPLOYMENT

“To support battery electric vehicles, the Government of Indonesia has issued Presidential Regulation Number 55 in 2019 for the acceleration of provision of electric vehicles for road transportation. Through the deployment of electric vehicles, we will increase savings and will also reduce greenhouse gas emission...We hope that this E-Bus programme is the foundation of e-bus development in Indonesia.”

MR. ARIFIN TASRIF
Minister of Energy and Mineral Resources



► LEARNING FROM OTHERS

“CFF has supported the planning and trial of e-buses in Jakarta by providing independent technical and financial feasibility studies. These are supported through lessons learned from around the world. CFF also helped us to identify a business model suitable for our context. We are now able to build on this and are introducing the first e-bus fleet in Indonesia.”

MR. SYAFRIN LIPUTO
Head of DKI Jakarta Transportation Agency



► INTERNAL RESTRUCTURING

“The organisational structure of TransJakarta separates between operation and engineering. The momentum of the E-Bus Trial Project was used for internal restructuring: A task force for the pilot was established, with the operational team and engineers working side-by-side. We now have a better understanding across technical, operational and procurement issues when it comes to e-buses.”

MR. YOGA ADIWINARTO
Director of Operation and Safety,
TransJakarta



KEY CHALLENGES

- E-buses and e-mobility as a wider concept are relatively new technologies in Indonesia.
- The lack of capacity related to e-buses is not only due to technical limitations, but due to issues around cost structures and daily operations.
- National policies on energy subsidies, additional taxes on e-buses and legal impediments for the initiation of procurement processes.
- Further mitigation measures must be taken to sustain the positive impact of e-buses. The current mitigation impact is limited, as coal is the main fuel used to generate electricity in Indonesia.

LESSONS LEARNED

- Institutionalising regular coordination with the partner city, transport agency, and consultants helped build trust and identify precise capacity needs and measures.
- A complete set of available data greatly reduces the project preparation time.
- When accounting for environmental and public health benefits, they can offset seemingly higher costs for e-buses.
- City officials suggest that more emphasis should have been put on the financial modelling, e.g. first assessing funding sources and respective timelines as well as requirements.

BEST PRACTICES

- Establishing a permanent and institutionalised decision-making body – such as a Project Implementation Unit (PIU) – is key for leading such a complex transition. The PIU for the e-bus project is now mandated to oversee all e-mobility efforts in DKI Jakarta.

OUTLOOK

- According to the e-bus roadmap from TJ: 60% of the bus fleet will be electrified by 2025, respectively growing to a share of 80% by 2030.

