

FACTSHEET DAR ES SALAAM



Demonstration City | Dar es Salaam - Tanzania

Due to rapid urban growth and growing individual motorisation, the transport system in Dar Es Salaam suffers from chronic congestion. This has led Dar es Salaam City Council to introduce a Bus Rapid Transit (BRT) scheme in 2016 (named DART). 140 fossil fuelled buses are currently running, connecting the city centre with the Western suburbs (phase 1). The existing BRT stations and terminals are therefore important transport hubs. Further plans include expansion to new routes and the addition of 150 buses, which could be powered by CNG. The city however also considers other sustainable solutions including electric mobility solutions (e.g. e-Feeder to BRT, e-BRT-Busses, e-bike sharing).

The demonstration project in Dar Es Salaam will focus on e-mobility for last-mile connectivity. The demonstration aims at integrating 60 electric feeder/e-3-wheeler and distribution services with Dar es Salaam's BRT (DART) to support first/last mile connectivity. The e-3-wheelers (newly built 50 imported/provided by DART and 10 newly built with Valeo components), will be an integral part of public transport. Under SOLUTIONSplus, the deployment of e-3 wheelers will happen at 5 DART stations considering urban locations: a) in the city centre, where fossil-fuelled 3-wheelers are currently banned for environmental reasons and where accessibility to/from the BRT stations can be limited due to longer distances; b) in peri-urban areas where combustion-fuelled 3-wheelers are currently very common as feeder-modes. Also, a feasibility study on the electrification with respect to vehicle specifications (range, speed), charging infrastructure (type and location) will be carried out. As part of this, state-of-the-art data collection methods using geo-localization devices will be applied for a detailed derivation of the systems specifications. Subsequently, an implementation plan for the introduction of e-3-wheelers will be developed. This will follow a systemic approach and include the development of business models (vehicle ownership, rental schemes, and maintenance), the charging infrastructure and localisation.

Further aspects to be assessed under the demonstration relate to the battery type (fixed vs. battery swapping), ownership models (leasing/pay-per-use model), the use of existing telecom and power distribution boxes to accommodate vehicle charging, fleet bundling, and eco-routing. Interaction with the passengers and the system will be fostered through the SOLUTIONSplus-MaaS-smartphone application that will consider the growing smartphone ownership of Dar es Salaam's population, to allow a maximum spread of the use and increase smart metering services. An open Application Program Interface (API) will be made available to allow 3rd-parties/software programmers to develop further services. The demonstration project will furthermore include local stakeholders as much as possible to increase the acceptance of the system: The current 3-wheeler market employs many people in Dar and the inclusion of current drivers will be a crucial target of the project. Furthermore, capacity building on sustainable maintenance of the vehicles will be carried out, building on the current structures of OEMs in Tanzania. Tanzania has already a high share of renewable energies through hydropower which will be used for the services.

The demonstration action will address two highly important challenges of urban mobility: Firstly, how to overcome the last-mile connectivity issue of mass-transit services such as BRT, secondly the issue of sustainability for combustion fuelled small-scale vehicles. Innovative aspects of the project are as follows: it will make electric 3-wheelers appear on the streets of Dar es Salaam for the first time, showcasing the suitability and advantages of electric vehicles; and also it will be placed in different locations in the city (central/down-town, commercial, residential and sub-urban) to test various types of locations and environments with respect to the usability of electric three-wheelers. This includes BRT stations and terminals that are served by 3-wheeler-taxis already and where e-mobility can easily adapt to the micro-local context and integrate into the existing system. The city centre will become accessible for electric 3-wheelers exclusively.



E-3 wheeler

Test category: Test under real operational conditions

Vehicles involved: 60 e-3 wheelers

Integration with PT system: BRT system

Lines involved: 5 DART stations

Time span: From June to December 2021