



AMPERSAND ELECTRIC MOTORBIKE TAXIS

# E-bikes for lowcarbon public transit

**KEY CONCEPTS** 

E-BIKES, AIR POLLUTION, **ELECTRICITY, BATTERIES, ACCESS, MOBILITY, SMALL-BUSINESSES, PRODUCTIVITY,** PUBLIC TRANSPORT, NON-MOTORISED TRANSPORT, **LOW EMISSIONS** 

Across East Africa, the ubiquitous motorcycle taxi is an indispensable mode of transport, nimbly navigating congested roads and conditions unfriendly to larger vehicles. Although ideal in form, the approximately 25 000 moto-taxis operating daily in Kigali alone still rely on costly, green-house gas-emitting fuel. Looking to change that, the 2019 start-up company Ampersand assembles and finances electric motorcycles that cost less to purchase and operate, perform better than their petrol counterparts, and could offer a game-changing turn of the sustainability tide for a massive part of East Africa's transport sector. Emitting 75% less carbon than their petrol counterparts, Ampersand's fleet of electric motorcycles are powered by batteries provided through a novel and user-friendly 'pay as you go' battery-swapping system.



Kigali

**POPULATION** 12 952 218



**DENSITY** 525 inhabitants per km<sup>2</sup>



#### INFRASTRUCTURE DEFICITS

Lack of public transport and pedestrian infrastructure



Tropical climate



**CLIMATE** 

Air pollution, traffic congestion

#### Introduction

A major contributor to greenhouse gas (GHG) emissions, the transport industry is begging for adaptive mitigation interventions. A key player within Rwanda's transport industry, motorbike taxis are favored across East Africa for their affordability and agility over routes unserviceable by four-wheeled vehicles. In Kigali alone, an estimated 25 000 motorbike taxis —known as motos—provide mass transit solutions for millions. Considering associated activities such as manufacturing, purchasing, sales of spare parts, and maintenance, the sector's contribution to numerous livelihoods is undeniable. Indeed, across East Africa, 3 million drivers earn a living through this industry. Unfortunately, as with other traditional vehicles, conventional motorbikes run on fossil fuels. In Kigali, the average motorbike taxi covers 188 kms daily. Seeking to improve the sustainability of this vital industry, a start-up called Ampersand introduced electric motorbikes that emit at least 75% less carbon than conventional motorcycles to the moto-taxi market.

# Approach

Launched in 2019, Ampersand today counts a fleet of 618 electric motorcycles (34 in Kenya, the rest in Rwanda), all of which are assembled in Rwanda. Emitting 75% less carbon than their petrol counterparts, Ampersand bikes emit zero exhaust fumes, and save their drivers up to USD700 per year on fuel, increasing the income of drivers by about 41%. Manufactured abroad but designed for the Rwandan market, Ampersand battery packs are assembled locally, and leased to motorcycle owners via a novel and userfriendly battery-swapping system operating throughout Kigali. This system not only saves drivers from waiting for batteries to charge, it also means they only pay for the energy used (this is useful as most drivers lease rather than own the batteries). Additionally, because the bikes do not make noise, Ampersand has added speakers for drivers to play music and prevent accidents.

## Institutions, Governance, and Finance

A team of engineers in Rwanda designs the battery packs, while various international partners have assisted with funding to help scale-up activities. Government support via the Rwanda Green Fund facilitates the company's efforts to advance a larger transition to e-transportation through incentives such as capped electricity tariffs for e-transportation charging stations, rent-free charging stations, and preferential parking and travel lanes for e-transportation around Kigali. Ampersand has also partnered with Total Energies in Kenya in a bid to roll out its activities in Kenya. In line with Total Energies' climate ambition of net zero emissions by 2050, this new partnership has resulted in three swapping and charging stations in Nairobi, Kenya.

### The Impact

IMPACT	SOCIAL	ENVIRONMENTAL	ECONOMIC
Reduction in GHG emissions		X	
Reduction of air pollution	X	X	X
Higher incomes for moto drivers	X		X
Green jobs (for Ampersand employees)	X	X	X

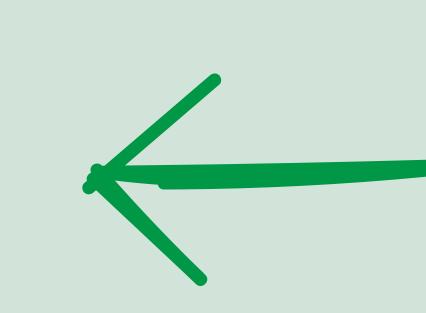
# **Looking Ahead**

Through scaling up and partnerships, Ampersand hopes to electrify East Africa's entire transport sector by 2030, and the rest of Africa's by 2050.

## Learn More

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