

Kigali battery research and development

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In Rwanda, more than half the vehicles on roads are "moto-taxis". They are the backbone of the country's transport system. Ampersand, a fast-growing electric motorbike company in Kigali, is allowing motorbike taxi drivers to save money and cut emissions.

It is mid-afternoon in Kigali, and on a busy commercial street lined with flatbed trucks carrying shipping containers, motorcycle rider Numukobwa Dative pulls over to the curbside to pick up a passenger. The young man is looking for a ride to the city centre and, after a brief haggles over price, Dative hits the throttle and they merge effortlessly into a sea of rush hour traffic.

Dative is the owner of a "moto", one of the ubiquitous motorcycle taxis that form the backbone of commercial life in Rwanda's capital, ferrying people to and from work, making food deliveries, and running errands.

But what sets Dative's motorcycle apart from the more than 75,000 others on the rolling green hills of this vibrant city is a distinctive yellow box that sits at the base of her motorcycle. It's a lithium-iron-phosphate battery manufactured by Kigali-based Ampersand, an eight-year-old startup and one of Africa's first electric vehicle and EV energy companies. The battery provides electric power, giving Dative a smooth, silent ride of up to 100 km per charge.

In Kigali and elsewhere across East Africa, battery-powered motorcycles are slowly replacing their noxious, oil-guzzling predecessors, making a quiet energy transition that is inspiring a startup revolution eager to capitalise on the billion-dollar market for electric two- and three-wheel vehicles and the energy that powers them.

With 30 million commercial motorcycles in Africa alone, electric motorcycles bring more benefits than just a reduction in greenhouse gas emissions and air pollution. Costing less to acquire, finance, and maintain than an oil-powered vehicle, they are also putting back life-changing money in the pockets of their drivers and their families.

In a country where the average monthly wage equals \$188, that adds up to significant savings. With each moto-taxi trip costing, on average, \$1.50, Dative can earn up to \$23 a day. That translates to a 35% increase in income per week as opposed to a petrol motorcycle.

Whale, who founded Ampersand in 2016, headquartered his e-motorcycle business in Kigali to take advantage of the country's ambitious green policies, generous tax incentives, and abundant, affordable, and reliable electricity. Since then, Ampersand has grown its fleet in Rwanda to more than 2,200 e-motorcycles, over 300 employees, and 26 charging stations. In Rwanda and Kenya combined, Ampersand powers over 1.2 million km per week and provides 120,000 battery swaps every month.

"It was the lowest of the low-hanging fruit," says Whale. He points out that Rwanda's e-mobility incentives, particularly an electricity tariff and VAT exemption that lowers the cost of battery leasing for drivers, is inspiring other African countries to follow suit.

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