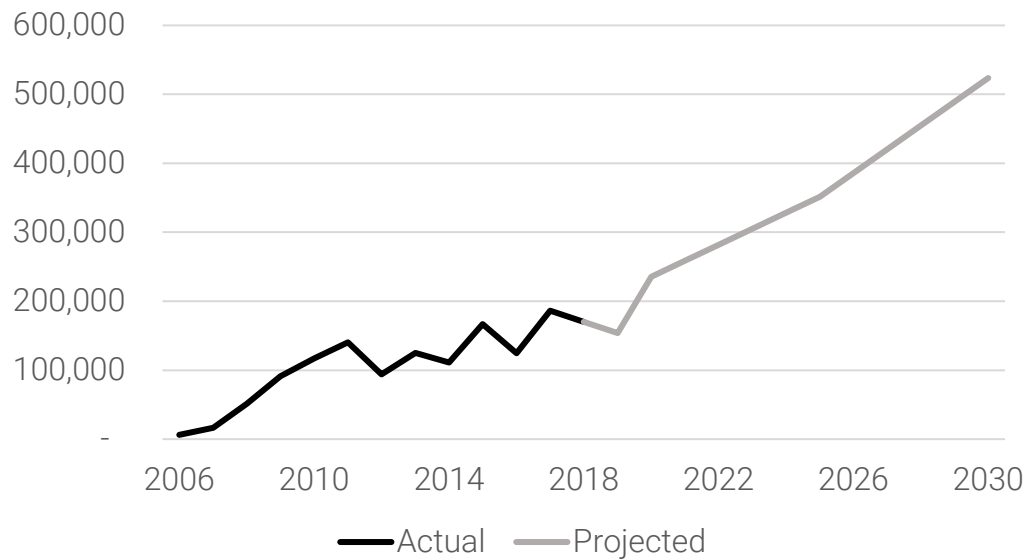


# UNEP Global Electric Mobility Programme E-2Wheeler Demonstration in Kenya and Uganda

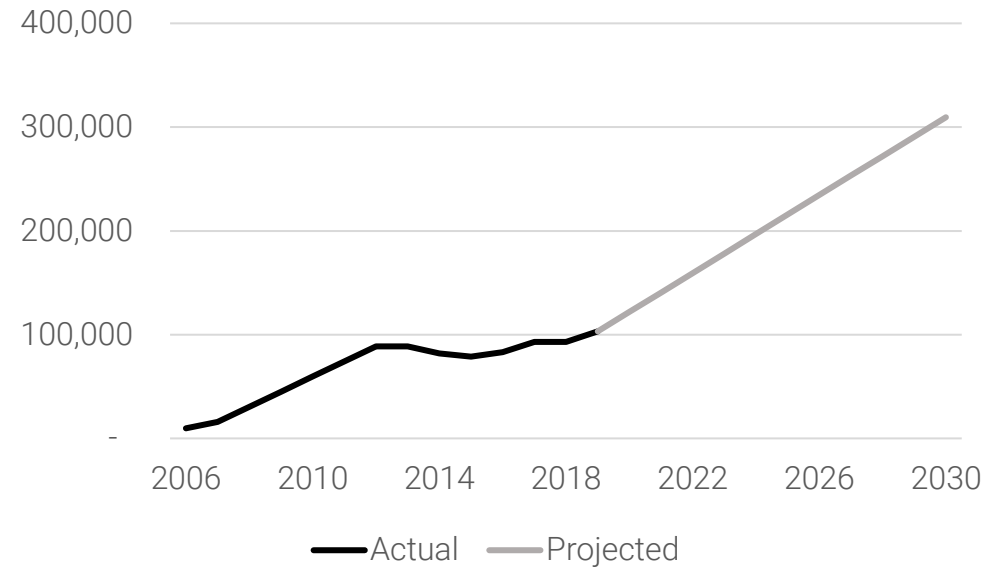


# Motorcycle fleet growth

Motorcycle registrations in Kenya



Motorcycle registrations in Uganda



Annual motorcycle registrations are growing rapidly and are already outpacing imports of cars.

In Kenya, fuel use and greenhouse gas emissions of the motorcycle fleet are estimated to almost equal the fuel used by passenger cars.

# Socio-economic dimension



The 2&3 wheeler sector contributes significantly to the Kenyan economy:

- The 2&3 wheeler sector provides employment to about 400,000 Kenyans
- The sector has significant potential in mitigating youth unemployment
- The manufacturing node of the two- and three-wheeler sector employs more than 3,001 individuals. T
- The wholesale and retail node of the two and three-wheeler industry employ a total of 9,206
- Repair and maintenance node of the two and three-wheeler industry employs 36,799 skilled and semiskilled employees

# Demonstration of E2W

UNEP is currently implementing a BMU-IKI funded e-mobility project including 3 demonstration projects in East Africa – Ethiopia, Kenya Uganda and 3 demonstration projects in South-East Asia – Philippines, Thailand, Vietnam

**Kenya** - 49 electric motorcycles are tested in 4 different fleets:

- Karura Forest / Nairobi – rec  : used by scouts to patrol the forest for illegal loggers
- Kenya Power and Lighting C  (C, utility) – received 15 units used by meter readers distributed across the country
- Kisumu County – received 15 units used by city inspectorate to carry out routine monitoring
- Powerhive – received 9 units used in taxi fleet

**Uganda** - 50 electric motorcycles:

- Demonstration run by International University of East Africa / Kampala, Uganda

Demonstration partners:



# Technical Specifications of the E2Ws

Two different layouts of the electric motorcycles are tested:

- Hub engine
- Center mounted engine

Small batteries with useful capacity below 2 kWh

Engine power: 2000 W

Expected range: 50 to 60km

Charging with normal socket

Donated by Chinese manufacturer TAILG



# Intermediate results



INTERNATIONAL  
UNIVERSITY  
OF EAST AFRICA  
"Learning to Succeed"

UN  
environment  
programme  
Global Electric  
Mobility Programme

Average range: 44 to 71 km per charge

Maximum speed: 55 km/h to 80 km/h

Maximum weight transported: 117 kg to 172 kg

Average charge time: 3.5 to 6 h

## Reported challenges:

- Long charging time
- In some applications restricted range
- Limited speed
- Mechanical and electrical failures

## Reported benefits:

- Significant reduction of fuel costs
- Reduced noise



# Next steps

- Demonstrations ongoing until April 2021
- More detailed data is getting collected now
- All demonstration partners highlighted the saved fuel cost
- The demos are showing that the technology works and that the performance can be continuously improved
- Continued support for policy development
  - UNEP supported the development of standards (safety etc.) for electric 2&3 wheelers
  - UNEP is now supporting Kenya Bureau of Standards (KEBS) with the development of some basic regulation, including safety, for EV charging

**Thank you**

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