



SABOA

Southern African Bus Operators Association

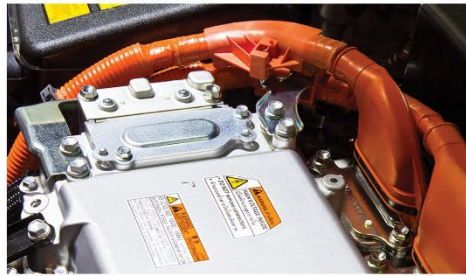
voice of the bus & coach industry



UYILO

E-MOBILITY PROGRAMME

enabling electro-mobility innovation



Hosted by:

NELSON MANDELA
UNIVERSITY

An initiative of:



The Electric Mobility Landscape

Thursday 9 June 2022

uYilo eMobility Programme

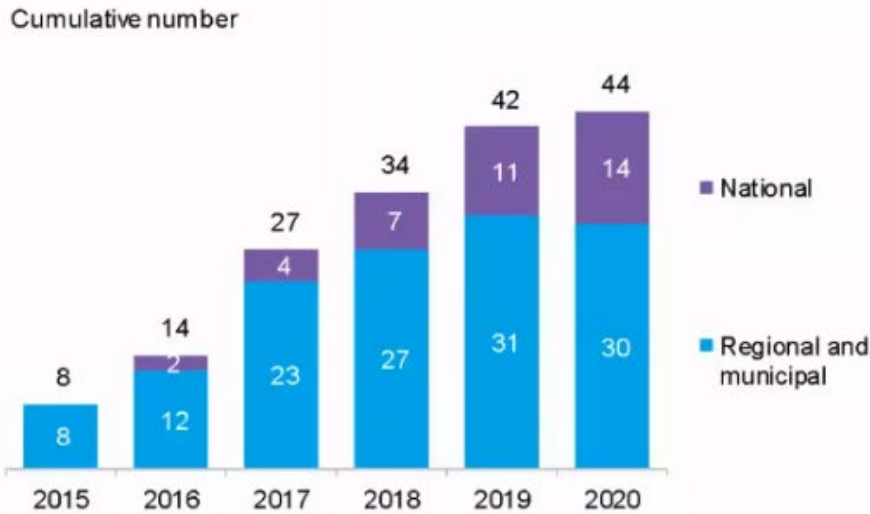
info@uYilo.org.za

www.uYilo.org.za

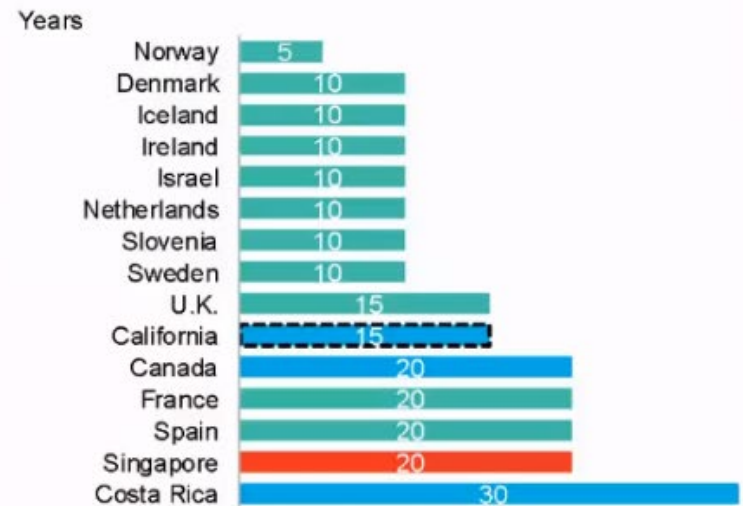
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Policy Pressure is Rising - *Phasing out of ICE*

Number of governments that have announced plans to phase out combustion vehicle sales



Years remaining until phase-out date



Source: BloombergNEF

Local Market Declarations

Our Commitment to Green and Healthy Streets

C40 Fossil-Fuel-Free Streets Declaration

- We pledge to transition to Fossil-Fuel-Free Streets by:
 - 1) procuring, with our partners, **only zero-emission buses** from 2025; and
 - 2) ensuring a major area of our **city is zero emission by 2030.**

To meet this commitment, we will:

- Transform our cities through people-friendly planning policies.
- Increase the rates of walking, cycling and the use of public and shared transport that is accessible to all citizens.
- Reduce the number of polluting vehicles on our streets and transition away from vehicles powered by fossil fuels.
- Lead by example by procuring zero emission vehicles for our city fleets as quickly as possible.
- Collaborate with suppliers, fleet operators and businesses to accelerate the shift to zero emissions vehicles and reduce vehicle miles in our cities.
- Publicly report every two years on the progress the cities are making towards these goals.
- The introduction of an electric car-charging network focusing on the City of Cape Town CBD.



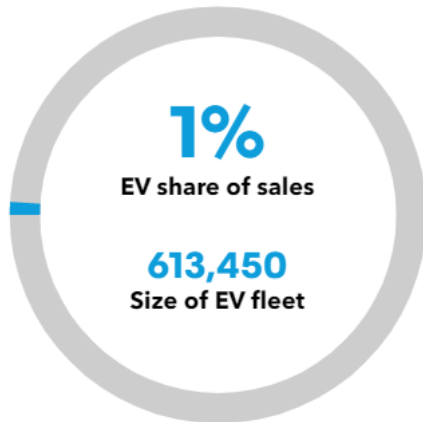
CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

<http://www.c40.org/other/fossil-fuel-free-streets-declaration>

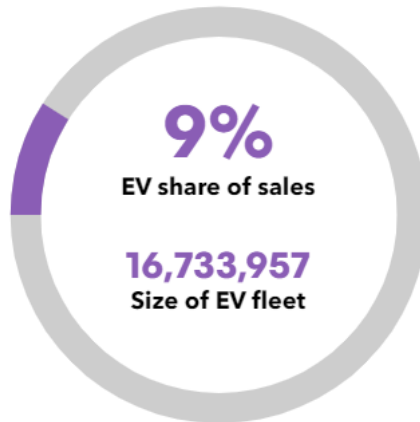
Electric Vehicle Market Segment Sales (2021)

EV sales are surging due to combination of policy support, improvements in battery technology, more charging infrastructure and new compelling models from automakers.

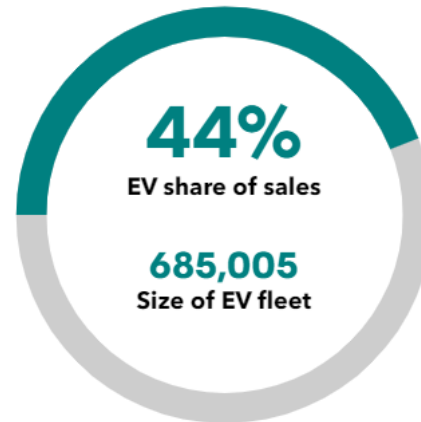
Vans and trucks



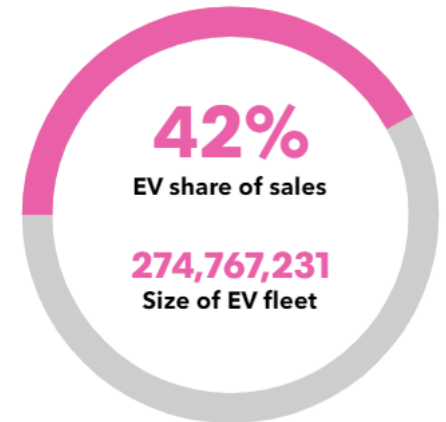
Passenger cars



Buses



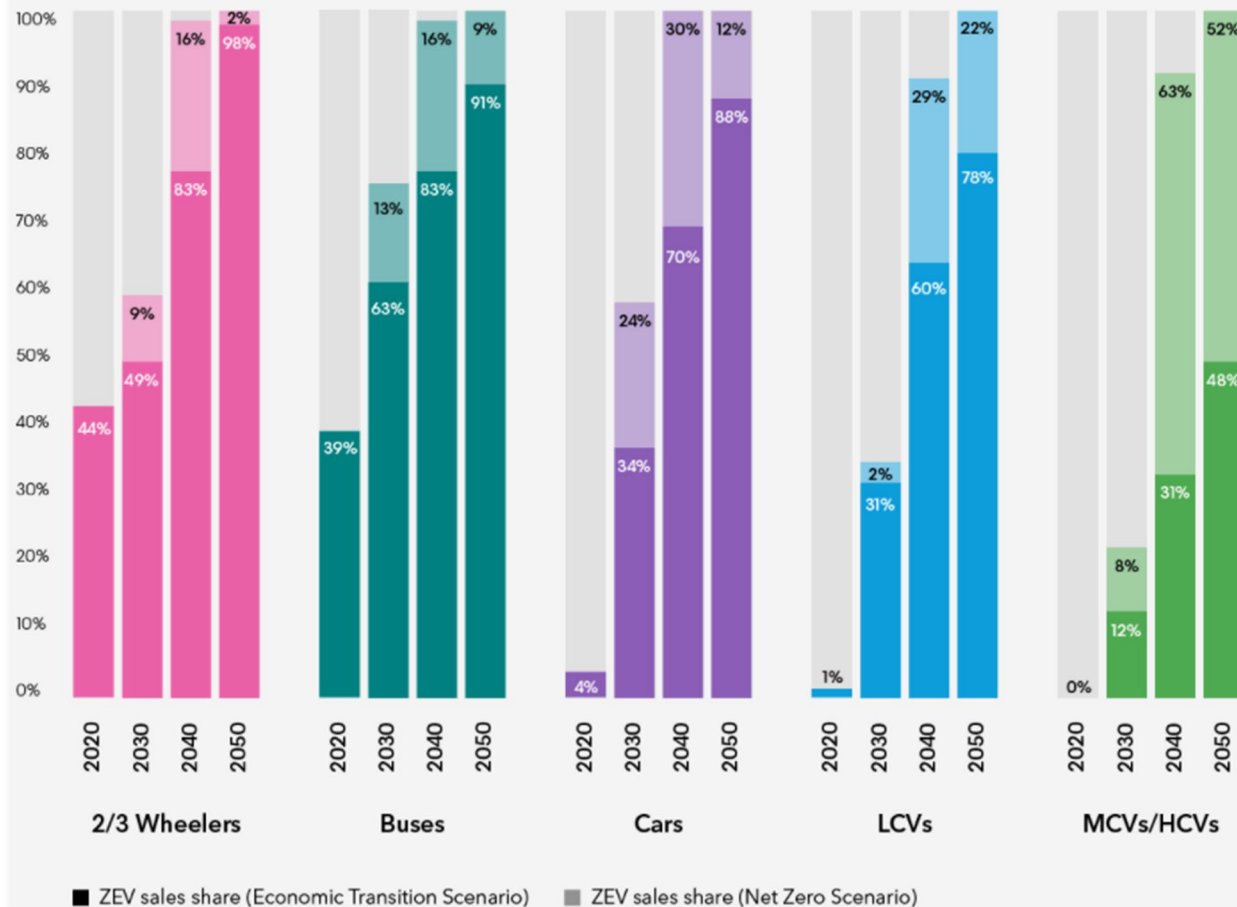
2 and 3 wheelers



Source: BloombergNEF

Electric Vehicle Market Segment Outlook

Share of zero-emission vehicle sales by segment: Economic Transition Scenario and Net Zero Scenarios



Source: BloombergNEF

South Africa's EV Landscape



Government Fleets



Mining



e-Bike Share



Eco-Tourism



Electric 3-Wheeler



Utility Vehicle



CBEV

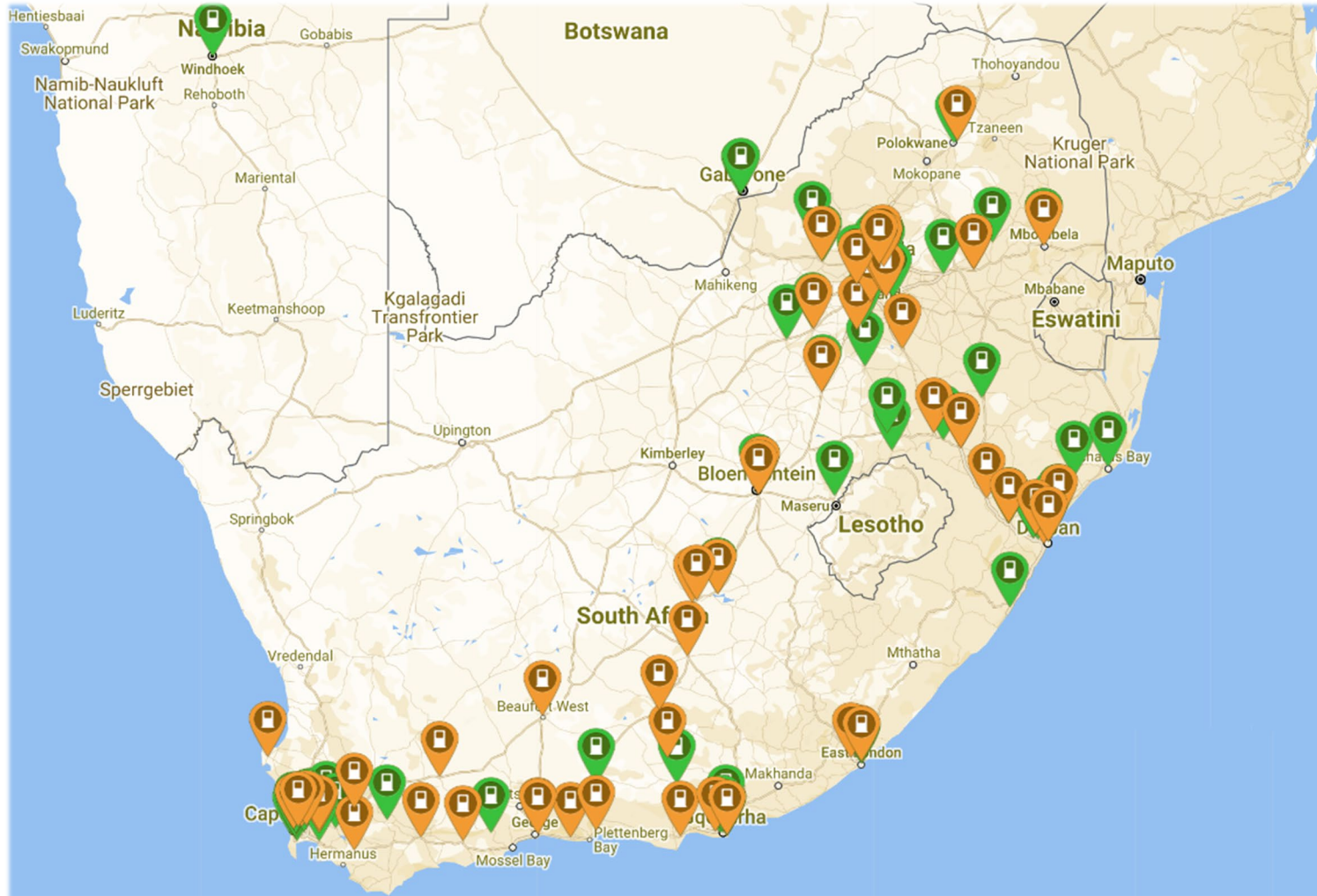


CBEV



eBUS

South Africa's EV Charging Network



Source: PlugShare

Charging Infrastructure Options for eBuses

Depot charging



Bergen, Norway

Source: SSE

Automated fast charging system



Zurich, Switzerland

Source: ABB

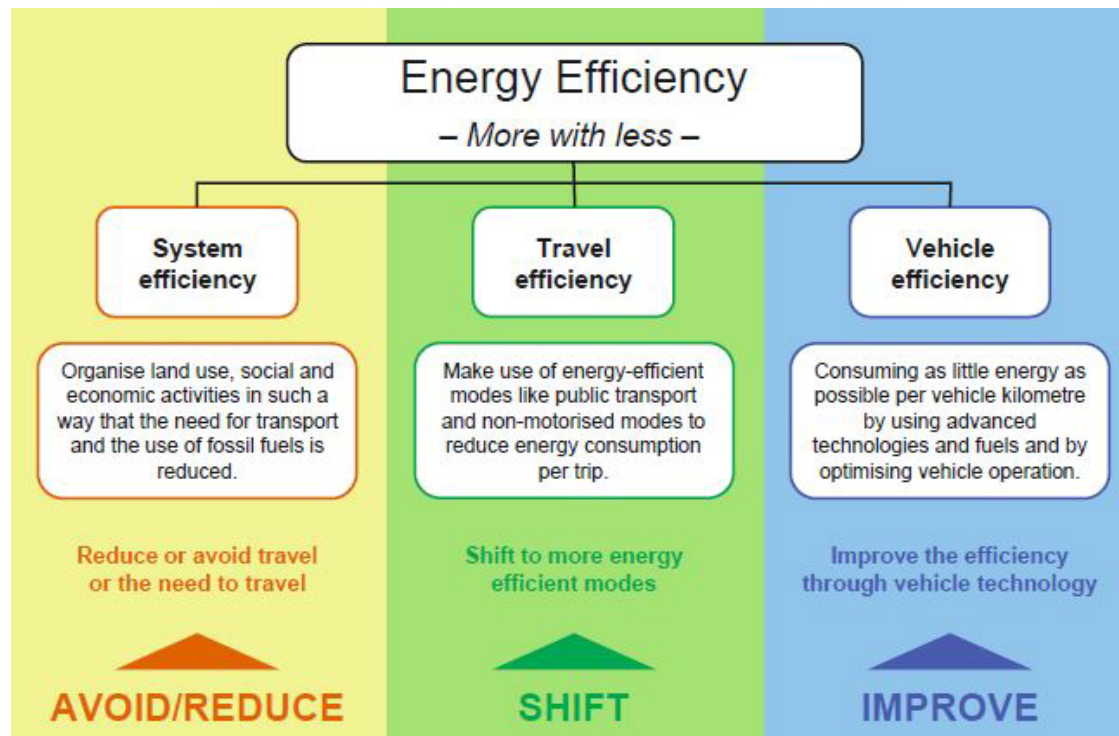
Battery Swapping

Source: Phoenix Contact



Port city of Qingdao, China

Sustainable Mobility Transitions Required



OEM Group Reference Case

Responsible Company



We are fully committed to the Paris Agreement

Scope
1+2



-50%
t CO₂e
(2025 vs. 2015)¹



-70%
t CO₂e
(2030 vs. 2019)¹



Caminhões
Ônibus

-28 / -19%
Electricity/Gas usage
(2022 vs. 2018)²

NAVISTAR

-20%
Energy intensity improvement
(2030 vs. 2018)³

Scope
3⁵

Well to wheel
-20%
g CO₂e/vkm
(2025 vs. 2015)¹

Well to wheel
-28%
g CO₂e/vkm
(2030 vs. 2019)¹



Tank to wheel
-24 / -25%
g CO₂e/ton-mile
(2027 vs. 2017)⁴



All our brands have validated science-based targets or are in the process on obtaining those

1 Science based approved target 2 Company specific target - energy efficiency targets with regards to electricity and natural gas usage at the Resende manufacturing plant 3 Company specific target - energy intensity is an energy efficiency metric modeled by the USDOE using its Energy Performance Indicator model at four US facilities 4 Regulatory target - based on EPA Phase 2 GHG emission reduction targets for tractor combinations (-25%) and for vocational vehicles (-24%) - reduction targets are industry targets and exact reduction need per OEM will depend on sold vehicle mix 5 Downstream

TRATON

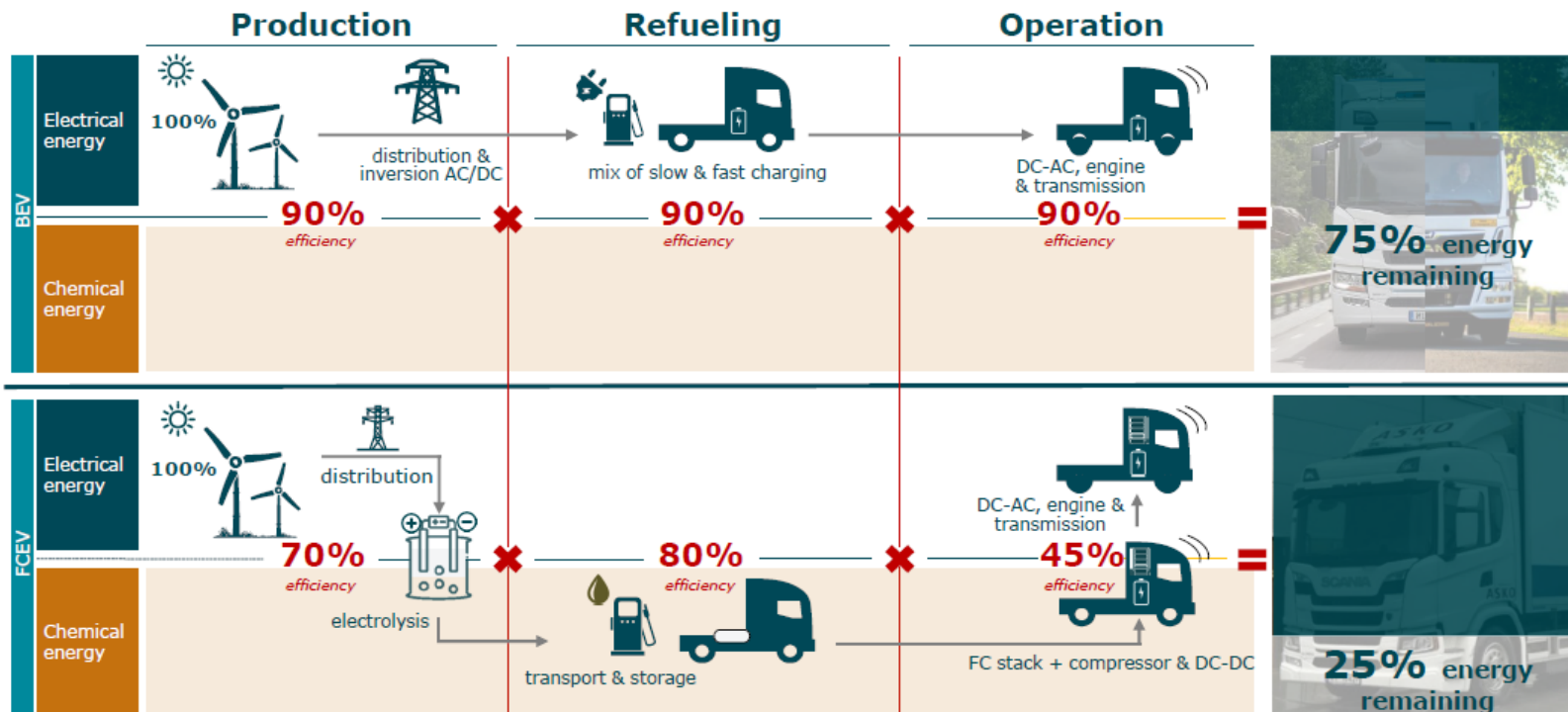
Source: TRATON

OEM Group Reference Case

Responsible Company



Our strategic focus is underlined by a comparison of system efficiency between BEV and FEV



TRATON

Source: TRATON

OEM Group Reference Case

Responsible Company



All TRATON brands with BEV products across major applications and weight classes



MAN electric truck
(eTGM)



Scania electric bus
(Citywide LF)



Navistar electric bus
(IC Bus electric CE Series)



VWCO electric truck
(e-Delivery)



Scania electric truck
(25 P BEV)



Navistar electric truck
(International eMV)



MAN electric bus
(Lion's City E)



MAN electric van
(eTGE)

TRATON

Source: TRATON

Let's not forget the important role Buses play



70 People in Bus Vs Car

Key frameworks towards adoption of eMobility

- Development of **adequate policy** packages
 - *Regulations*
 - *Taxes*
 - *Subsidies (Financial and non-financial considerations)*
- Establishment of localised **pilot projects**
- Strategies to **finance** the **transformation** towards electric mobility
- **Technology localisation** and **industrialisation** initiatives
- **Skills Development**

Unlocking the Mobility 2030 Value Chain in South Africa



South Africa's unemployment rate is high, with 38.2% of young people (aged 15–34) without jobs.¹ With the rise of Artificial Intelligence and the Internet of Things, there will be a shift in the job market. The common perspective is that robots will take jobs away. The other perspective, often not shared, is that, with the help of tech entrepreneurs, different jobs are being created – which will ultimately stimulate the economy. This is one reason why the South African government should continue embracing the future of mobility.

With the proposed legislation changes and partnerships with private sector to create a favourable environment for mobility, it is evident that government is embracing e-mobility. Besides for boosting the economy and creating jobs, e-mobility will help government tackle a few issues. The Department of Transport is constantly grappling to find solutions for increasing traffic congestion, urbanisation, unregulated public transport and aging transportation infrastructure. These challenges have driven the Department of Transport to partner with other government departments and private sector to invest in initiatives that support mobility technology.

An example would be the uYilo e-Mobility Technology Innovation Programme (EMTIP), hosted by Nelson Mandela University's engineering innovation hub, eNtsa. Translated from Xhosa, uYilo means 'to create'. The goal of the programme is to mobilise SA for e-Mobility by creating new business opportunities and generating the know-how to support the sector.²

uYilo has a pilot fleet of electric vehicles – provided by its partners within the automotive industry – and has set up its smart-grid infrastructure on campus, which is the largest dedicated EV-charging facility in SA. The initiative is supported by various government departments and other important stakeholders.



Source: KPMG

uYilo Electric Mobility EcoSystem



uYilo Representations



South African Bureau of Standards



CHAdeMO



CHARIN

Founding Member



WWW.GSMP.WORLD

Driving zero emission mobility solutions for all



