



ANNEXURE A:
The CHARGE Project – Development Concept

ZERO CARBON CHARGE (PTY)LTD



Development Concept



www.charge.co.za

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Introduction to Zero Carbon Charge

Zero Carbon Charge (CHARGE) is at the forefront of revolutionizing sustainable transportation infrastructure in South Africa. Our mission is to establish a nationwide network of ultra-fast chargers exclusively powered by renewable energy sources, particularly solar power. **Our goal is to decrease carbon emissions and prepare South Africa for the inevitable transition to electric vehicles (EVs).**

Our solution involves producing and storing renewable energy at the point of sale, thereby eliminating pressure on the grid and ensuring a reliable, sustainable energy source for EVs.

Each site will have a Solar Photovoltaic System, generating clean electricity for powering the charging stations and other facilities. The charging stations will be equipped with the latest technology for convenient and fast charging. Each site will also have a rest area and refreshment facility, restrooms and parking area.

The CHARGE Project Importance

The CHARGE project represents a paradigm shift in South Africa's approach to transportation infrastructure and energy consumption by spearheading the transition to a zero-carbon mobility economy. Through strategic investments in renewable energy and innovative charging solutions, we are paving the way for a more sustainable future, characterized by cleaner air, reduced emissions, and enhanced energy security. **The CHARGE project is not just about building charging stations; it's about catalysing a fundamental shift towards greener, more resilient transportation systems that benefit both present and future generations.**

Safeguarding the Environment

Our approach to minimizing environmental impact encompasses various innovative strategies.

- By generating power locally through Solar Photovoltaic Systems (PV), we not only reduce reliance on traditional power infrastructure but also **minimize visual pollution by eliminating the need for extensive power pylons.**
- Refreshment facilities are designed to comply with the appropriate energy-efficiency requirements.
- Our **commitment to responsible water usage** is evident through the implementation of grey water treatment systems for on-site vegetation irrigation. We will make use of water harvesting methods where possible and water will be purified on-site for all refreshment facilities built by CHARGE.
- We also have traffic engineering consultants on the team advising us on safe access, relevant regulations, and **minimising the impact on traffic flow.**

Local Economic Impact

Zero Carbon Charge is committed to driving local economic development and empowerment. Through our long-term lease agreements with landowners, we establish a symbiotic relationship that benefits both the community and the environment by involving the community in the long-term energy value chain. Revenue generated on the property directly **contributes to the local economy and creates permanent jobs.**



Moreover, our farm stalls (refreshment facilities) serve as platforms for promoting local produce and products, injecting capital into the community and fostering a sense of pride and ownership. We will also engage local contract service providers for security, electrical, and plumbing services.

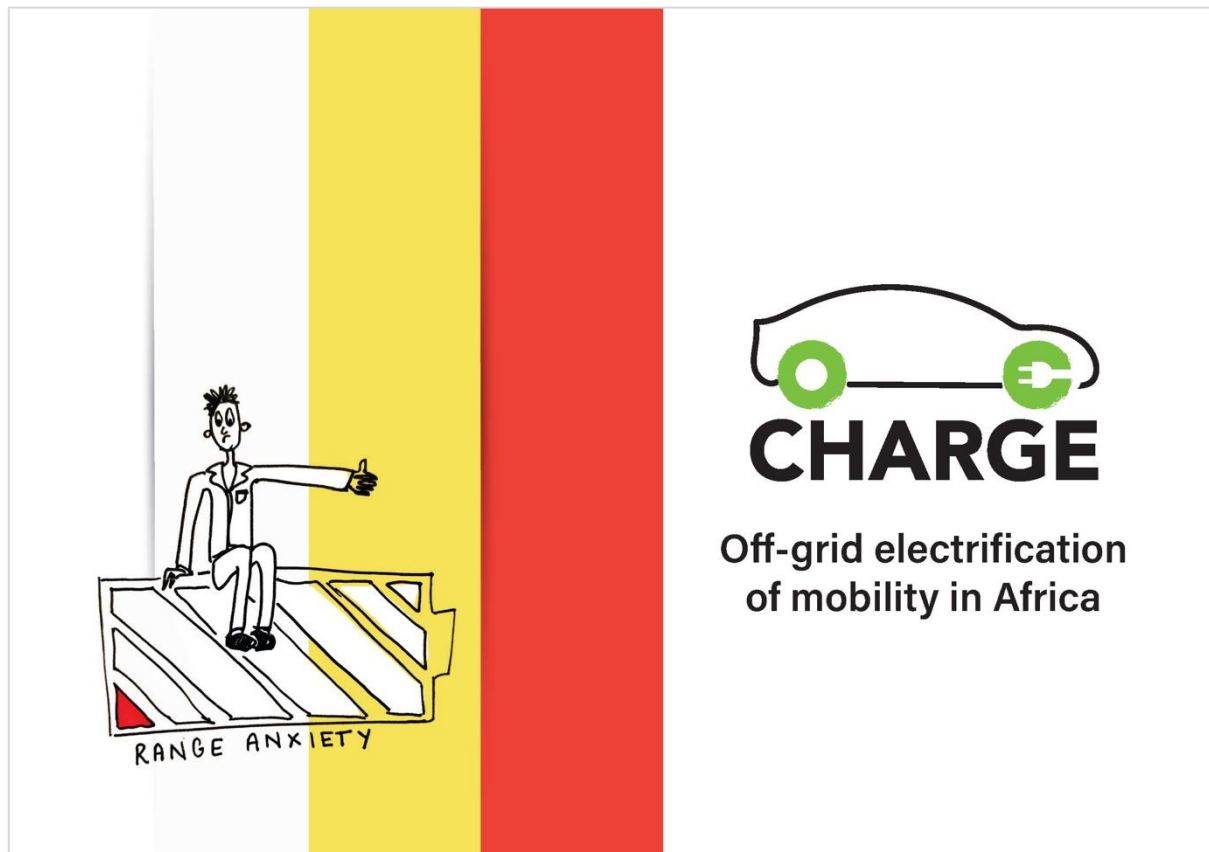
- Our off-grid EV Charging Stations will develop the EV ecosystem, not only fostering existing jobs and careers, but also creating new opportunities for future career development.
- We allocate 1% of on-site turnover from electricity generation and sale to local social investment, promoting skills development and empowering the local community.
- Supporting black landowners through traditional leadership: we will be working closely with traditional and royal leadership to support our site procurement, making a concerted effort to include black landowners as beneficiaries of the EV charging revolution in South Africa. This will also support previously disadvantaged communities and landowners to be included, rather than only focusing on landowners that are traditionally privileged.

National Impact

The impact of Zero Carbon Charge extends far beyond individual communities, contributing to a larger national agenda of energy independence and sustainability. Establishing a national network of ultra-fast charging stations acts as a catalyst for the uptake of electric vehicles, promoting sustainable mobility in congruence with the Spatial Planning and Land Use Management Act (SPLUMA).

- By utilizing locally generated electricity, we alleviate pressure on the national grid and reduce reliance on foreign energy sources.
- Our network of ultra-fast charging stations not only accelerates the adoption of EVs but also supports South Africa's commitment to reducing greenhouse gas emissions and mitigating climate change.
- By promoting sustainable mobility and energy localization, we play a pivotal role in shaping the future of transportation infrastructure and fostering a greener, more resilient economy for all South Africans.

The CHARGE brochure



Introducing South Africa's first off-grid national charging network for electric vehicles – powered by 100% renewable energy



UNIQUE SOLUTION

TARGETTING RURAL
AREAS, HIGHWAYS
AND MAJOR ROUTES

OFF-GRID

100% Grid independent – with no loadshedding or future growth restrictions.

NATIONAL

A charging station every 150km on all national and major routes.

ULTRA-FAST

Charging an EV to 80% in about 20 minutes with high power chargers.

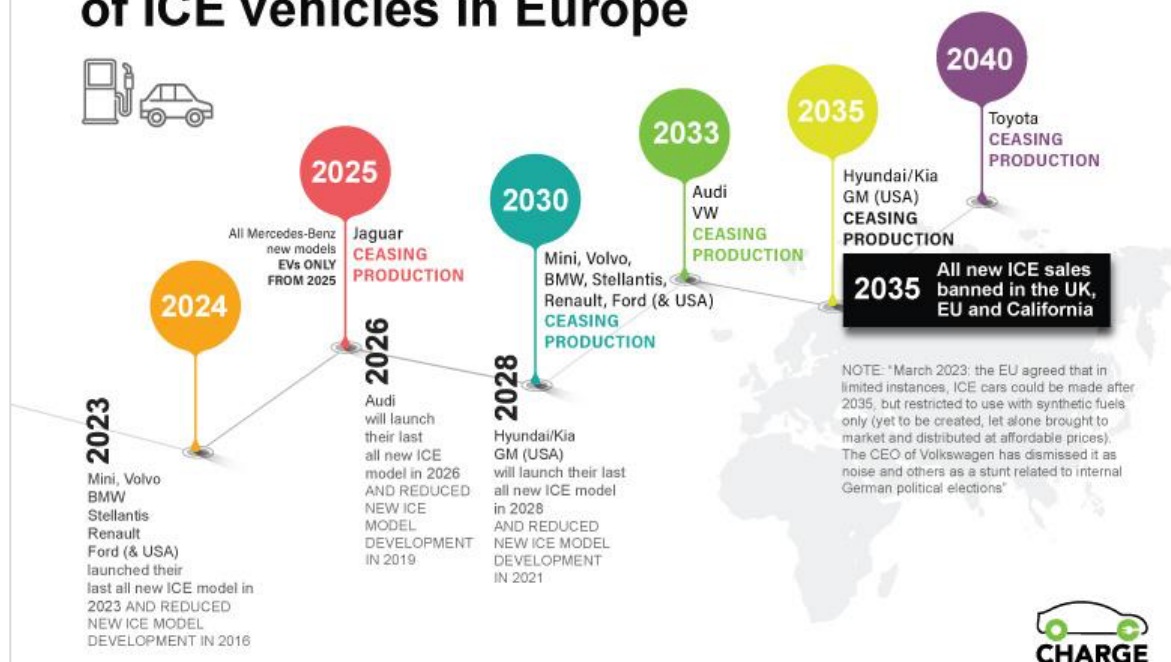
100% RENEWABLE ENERGY

On-site power generation at each charging location.

CUSTOMER CENTRIC

User friendly app, easy payment options, fast WiFi, restrooms, shop.

Manufacturers ceasing production of ICE vehicles in Europe



SHIFT TO ELECTRIC VEHICLES IS INEVITABLE

The transition to electric vehicles in South Africa is not merely a possibility but an inevitability, marking a pivotal moment in the history of transportation.

The SA motor industry is part of a giant integrated global supply chain. As the global chain pivots to EVs, South Africa's market will increasingly shift to EVs along with the markets of its major suppliers.

1-in-4 new cars sold globally were electric in 2023.



Having only a 0.5% share in the international car market, SA is inevitably bound to embrace the shift towards electric vehicles.

Global EV uptake

2023

A total of 14,2 million new Battery Electric Vehicles (BEV) and Plug-in Hybrids (PHEV) sold

GLOBAL CAR MARKET

2020: EV = 5% market share
2023: EV = 19% market share

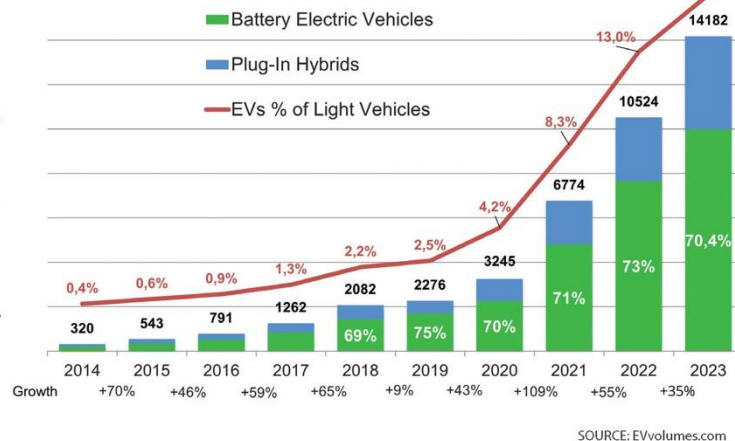
5 months of 2023 witnessed new all-time highs for EV sales, Market share increases were consistent throughout the year.

Investors have also maintained confidence in EVs, with the stocks of EV-related companies consistently outperforming traditional carmakers since 2019

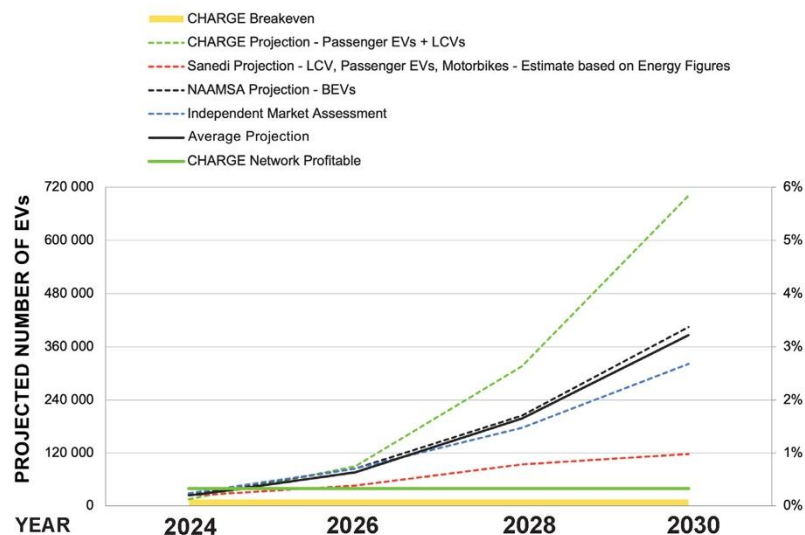
GLOBAL BEV & PHEV SALES

('000s)

EV VOLUMES



EV uptake projections for South Africa



'NAAMSA' National Association of Automobile Manufacturers of South Africa
'SANEDI' South African National Energy Development Institute
'PHEV' Plug-in hybrid electric vehicle
'LCV' Light commercial vehicle

'ENERGY CRISIS'

In South Africa grid powered EV charging presents fundamental problems

1. CARBON FOOTPRINT

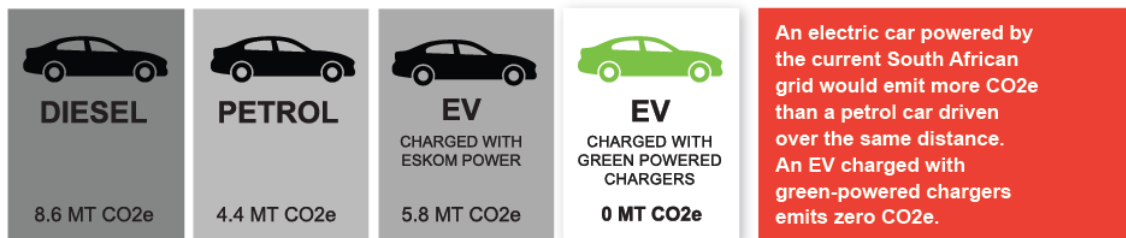
EVs are only as green as the power supply.

2. UNRELIABLE SUPPLY

Eskom cannot for the foreseeable future be trusted to supply reliable stable power.

3. SHORTAGE OF SUPPLY

When the EV uptake escalate Eskom will not be able to supply sufficient power.



Over average distance driven per year: 25 000 km (18 000 miles)

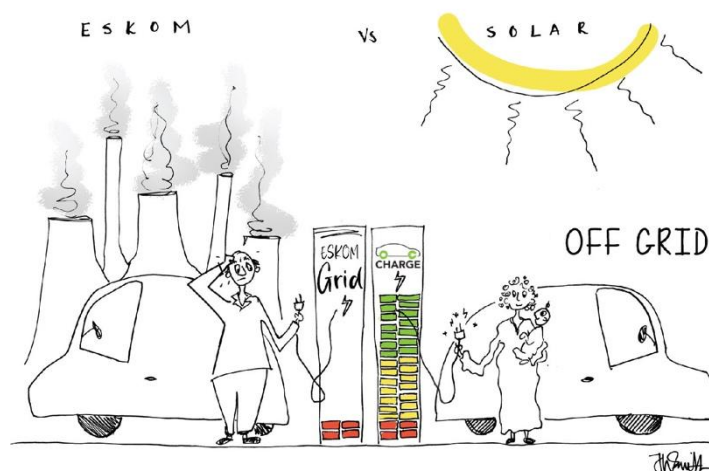
ENVIRONMENTAL IMPACT

Zero Carbon Charge is projected to produce **17 million + carbon credits** over the next twenty years.

Each EV recharged with Zero Carbon Charge green chargers will save on average 5.8 tons of CO₂e per year.

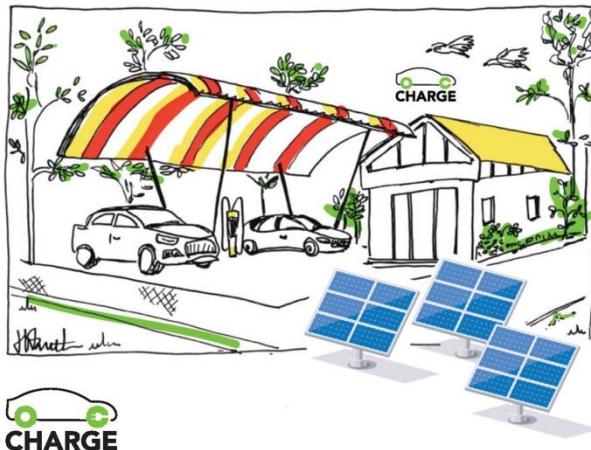
We project that by 2032 there will be 1,4 million EVs on SA roads.

That would directly save 9,1 million tons of CO₂e per year.



The CHARGE Network

120 OFF-GRID CHARGING STATIONS FOR
PASSENGER & COMMERCIAL VEHICLES UP TO 8 TONNES

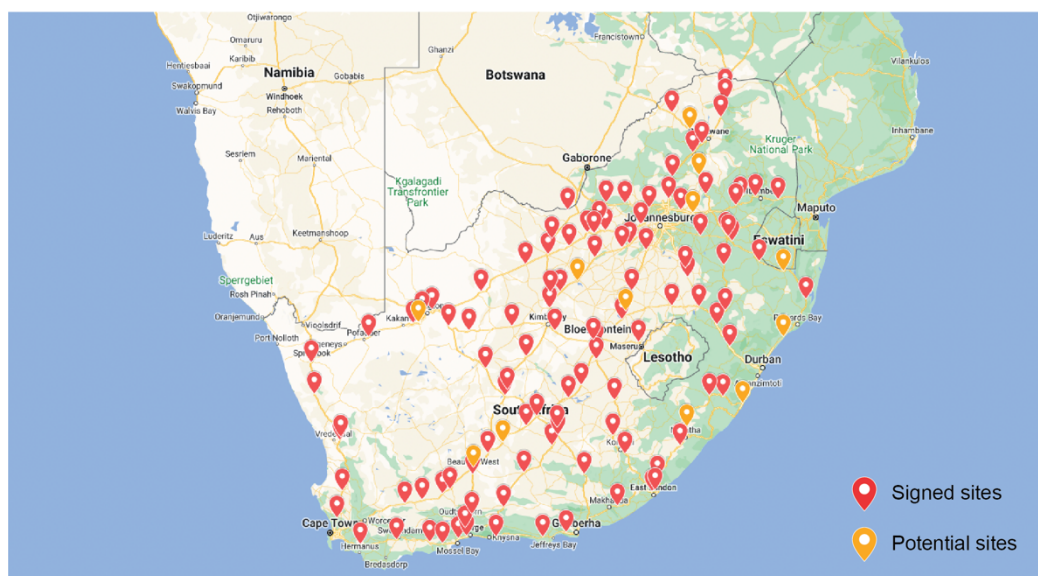


AT EACH CHARGING LOCATION

- 1** EV Charging Station
- 2** On-site power generation system – 100% renewable energy
- 3** Farm Stall
Parking Area
Restroom facilities
Botanical garden

MAP: 120+ SITES IN DEVELOPMENT

OFF-GRID CHARGING STATIONS FOR PASSENGER
& COMMERCIAL VEHICLES UP TO 8 TONNES



IMPACT ON SOUTH AFRICA

ENERGY LOCALISATION

Reduced reliance on foreign energy sources.

SOCIO-ECONOMIC IMPACT

Preservation of foreign exchange through decreased crude oil imports.

Creation of permanent jobs.

Boost to the local economy.

Significant contribution to convenience spending during vehicle charging.

Improved energy efficiency and reliability.

ENVIRONMENTAL IMPACT

Minimizing carbon footprint.

Contribution to climate mitigation efforts.

Improvement in air quality and respiratory health for all South Africans.

HUMAN RESOURCE DEVELOPMENT

Investment in community development and opportunities for underprivileged students.



ALLIANCES FOR
**CLIMATE
ACTION**
SOUTH AFRICA

ZERO CARBON CHARGE

has joined the Alliance for Climate Action South Africa.

We are committed to playing our part
in achieving a zero-carbon future by 2050.





GET INVOLVED



PARTNER
WITH US



INVEST



LEARN
MORE



NEWSLETTER
SIGN UP



ZERO CARBON CHARGE (PTY) LTD

Reg Nr: 2022/232376/07
Enterprise Type: Private Company
Location: South Africa
Date founded: Nov 2021

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MAP: Progress in various municipalities and provinces

MAP: Zero Carbon Charge Land use Applications already approved in **5 provinces**

