

# Forward thinking supply chains continued >>>

**SAPICS**  
THE PROFESSIONAL BODY FOR  
SUPPLY CHAIN MANAGEMENT

IN ASSOCIATION WITH  
**saaff**

**20 September 2023**

## **SAPICS Spring Conference**

Indaba Hotel, Fourways, Johannesburg, South Africa

### **The Road to Sustainable Mobility**

Greg Cress, Sustainable Energy & eMobility Lead, Accenture





# IT'S 2030... TWO SCENARIOS



elevate, educate and empower

accenture

SAPICS  
THE PROFESSIONAL BODY FOR  
SUPPLY CHAIN MANAGEMENT  
IN ASSOCIATION WITH  
saaff





elevate, educate and empower

accenture

SAPICS  
THE PROFESSIONAL BODY FOR  
SUPPLY CHAIN MANAGEMENT  
IN ASSOCIATION WITH  
saaff





elevate, educate and empower

accenture

IN ASSOCIATION WITH  
SAPICS  
THE PROFESSIONAL BODY FOR  
SUPPLY CHAIN MANAGEMENT  
saaff



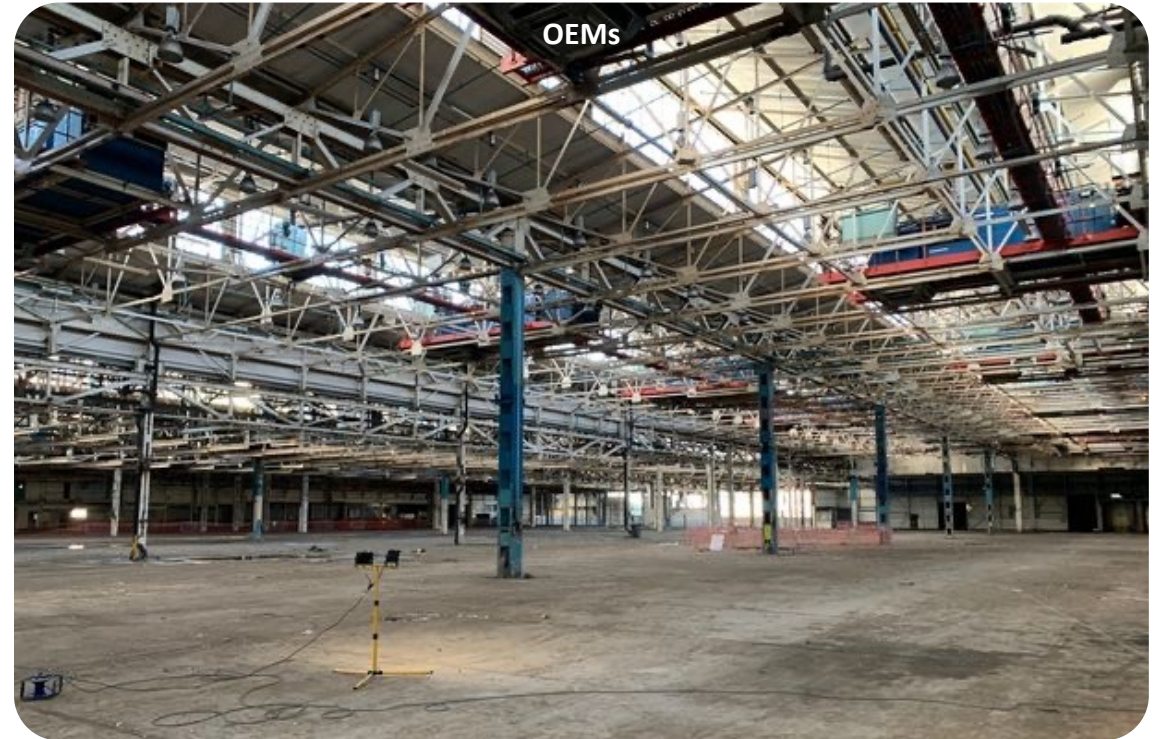


elevate, educate and empower



# SOUTH AFRICA HAS BEEN LEFT BEHIND

ECONOMIC GROWTH



OIL & ENERGY

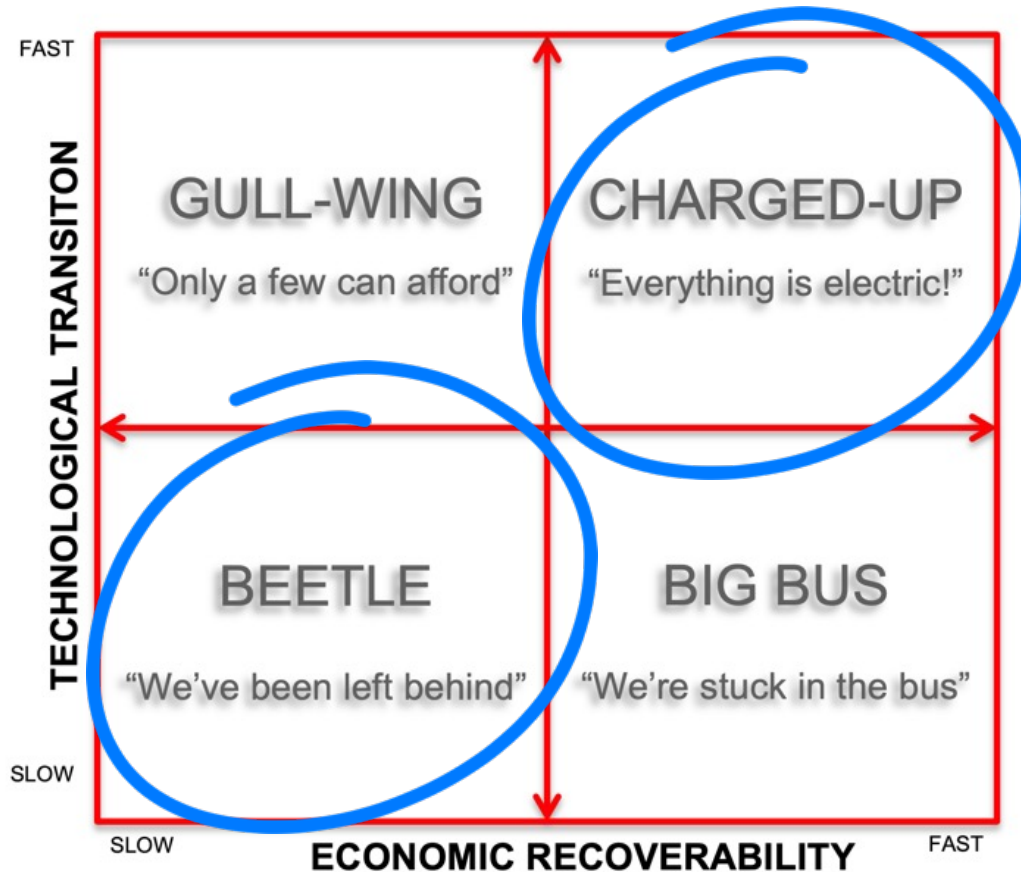


TECHNOLOGICAL TRANSITION





# Automotive Scenario Logics: SA 2027-2030



## GULL-WING:

- OEMs have made a concerted effort to educate the consumer market about the benefits of Electric Vehicles. In fact, large Dealerships have also invested in digital experiences and consumer education around EV's for the 2<sup>nd</sup> hand market.
- However, economic recoverability has been slow. Many people still not able to afford the newest/technologically advanced vehicles on the market.
- With people still struggling to afford new vehicles, customers are forced to look at substitute mobility transport services vs. owning their own vehicles
- Majority of car owners are choosing, if not being forced to, hold onto their current ICE vehicles for much longer
- Electric vehicles are only seen in and around developed urban areas and affluent residential estates
- The government has deregulated the power generation market and as a result a number of IPP's have connected to the national grid, alleviating the burden on Eskom and as a result the reliability of the national grid has improved significantly

## BEETLE:

- SA continues on the status quo path: SA stubbornly continues to only invest in manufacturing and export of ICE vehicles, and not make or build facilities to transform to assembling or manufacturing EV vehicles, as a result SA becomes more irrelevant on the global stage with demand for our exports declining
- As a result, unemployment levels worsen, nothing has changed from 2020
- As new vehicle prices increase, new vehicle sales plunge, with the majority of South Africans not able to afford to change or upgrade their current vehicles
- Some consumers look for cheaper alternative imports from neighboring African countries
- Some large OEMs exit South Africa as a feasible market for car manufacturing → contributing to further job losses
- With people still struggling to afford new vehicles, customers are forced to look at substitute mobility transport services vs. owning their own vehicles, but there is more supply of substitute transport than there is supply

## CHARGED-UP:

- South Africa's economy has recovered tremendously, GDP growth has been upward of 3% a year since the lows of 2020
- Unemployment has dropped to 25%, levels previously seen in 2010
- As a result, more people are gainfully employed, and require transport, and are able to afford their own vehicles
- Global OEM's have brought FDI into SA and transformed assembly plants into full manufacturing plants for Electric Vehicles, 60% of which are exported and are meeting international export standards
- Consumers have shown a major transition towards green energy and sustainable technologies and as such have adopted electric vehicles as a feasible mode of transport
- Even a few autonomous/self-driving vehicles are making an appearance on SA's roads
- Cities, OEMs and IPPs have created an "Energy Alliance" to offset the dependency on Eskom for EV charging infrastructure supply
- Understanding the benefits of an electric-vehicle future, Government has made tremendous progress in removing all red-tape that constraints EV adoption (the full potential and objectives of the SA Automotive Masterplan are achieved)

## BIG BUS:

- South Africa's economy has recovered tremendously, GDP growth has been upward of 1% a year since the lows of 2020
- Unemployment has dropped to 25%, levels previously seen in 2010
- As a result more people are gainfully employed, and require transport, and are able to afford their own vehicles
- Unfortunately, government regulation on importing of EV's, the delay in reducing import duties on EV's, the lack of rebates/incentives for people to buy EV's are all still delaying the technological transition
- Very low levels of investment in consumer education in the EV benefits are visible, people are still not trusting the technologies and quality
- As a result, third-party service centres (e.g. Bosch) have not moved fast enough to upskill and re-skill their service technicians on new EV tech vehicles



ECONOMIC

RECOVERY





elevate, educate and empower





elevate, educate and empower





elevate, educate and empower

accenture

SAPICS  
THE PROFESSIONAL BODY FOR  
SUPPLY CHAIN MANAGEMENT  
IN ASSOCIATION WITH  
saaff



# SOUTH AFRICA IS CHARGED UP!



elevate, educate and empower

accenture

SAPICS  
THE PROFESSIONAL BODY FOR  
SUPPLY CHAIN MANAGEMENT  
saaff

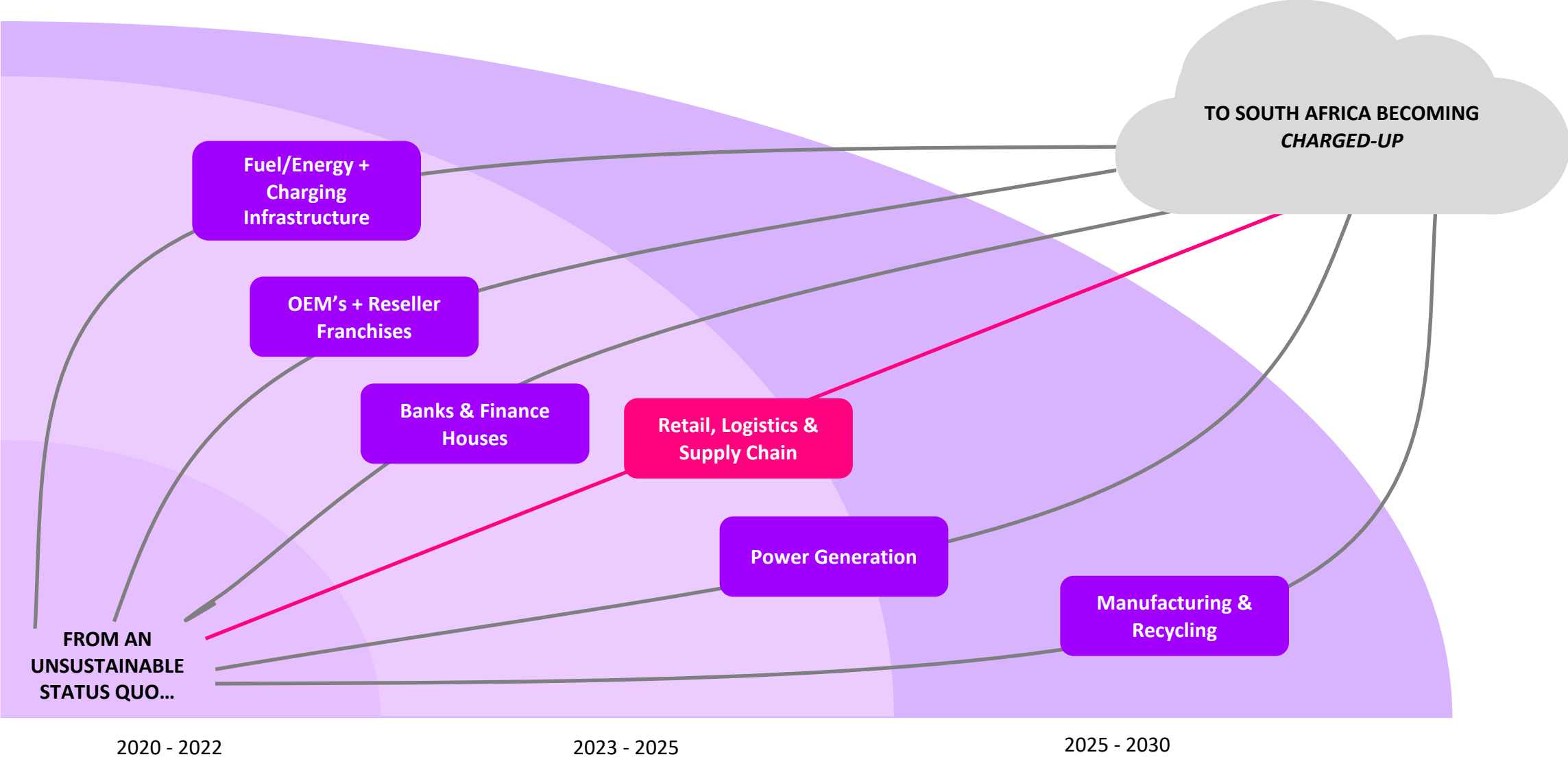


An aerial photograph of a coastal city, likely Cape Town, South Africa. The image shows a large stadium in the foreground, surrounded by green spaces and buildings. In the background, there are rugged mountains and a coastline with a bay. The text is overlaid in the center of the image.

# HOW MIGHT WE BUILD THIS PREFERRED FUTURE FOR SOUTH AFRICA?



# WE NEED A ROADMAP TO AN ENERGY-INDEPENDENT, SUSTAINABLE, EMOBILITY-CENTRIC FUTURE



In-demand and affordable

**E-MOBILITY  
PRODUCTS AND  
SERVICES**

Pervasive and accessible

**CHARGING  
INFRASTRUCTURE**

**The Sustainable  
Mobility  
Equilibrium**

Sustainable and decentralised  
**ENERGY GENERATION &  
RECYCLING**



In-demand and affordable

# E-MOBILITY PRODUCTS AND SERVICES

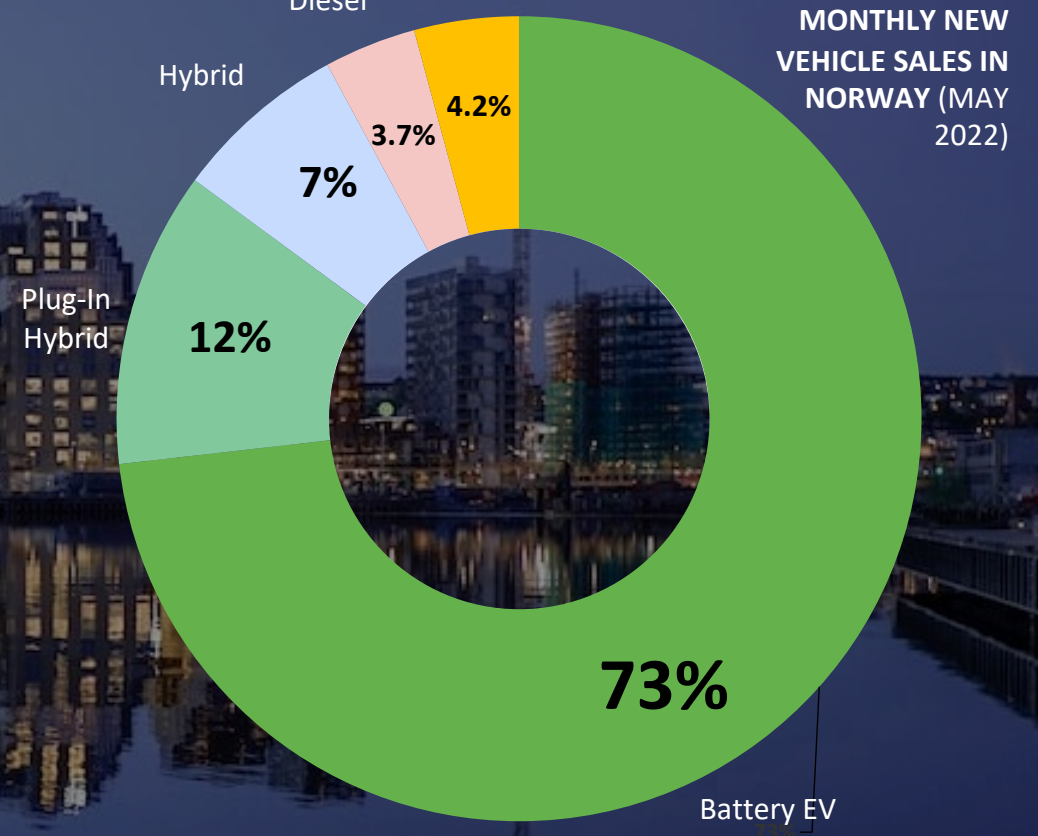
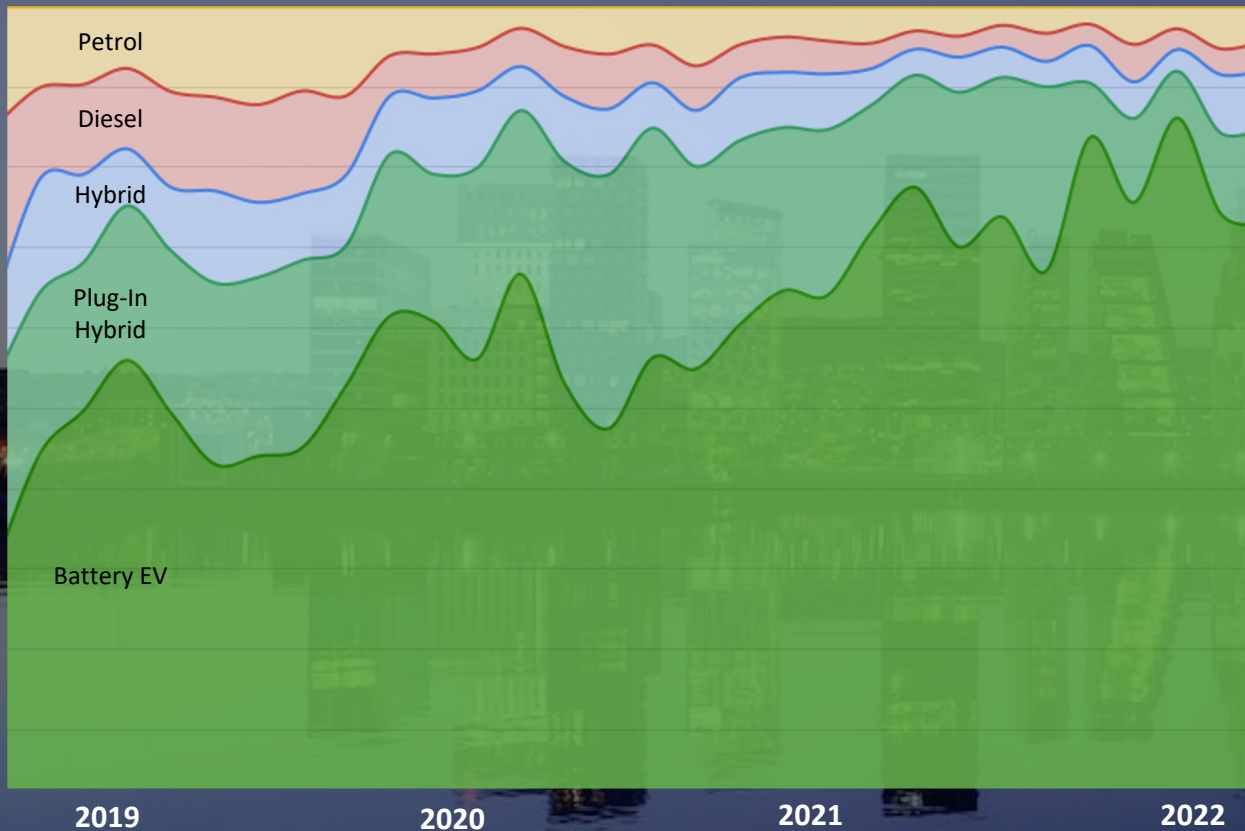
The Sustainable  
Mobility  
Equilibrium

Pervasive and accessible  
CHARGING  
INFRASTRUCTURE

Sustainable and decentralised  
ENERGY GENERATION &  
RECYCLING

# HOW DID NORWAY GET IT RIGHT?

CHANGING LANDSCAPE OF POWERTRAIN MARKET SHARE IN NORWAY



Source: CleanTechnica





ELECTRIFIED  
FIAT PANDA!

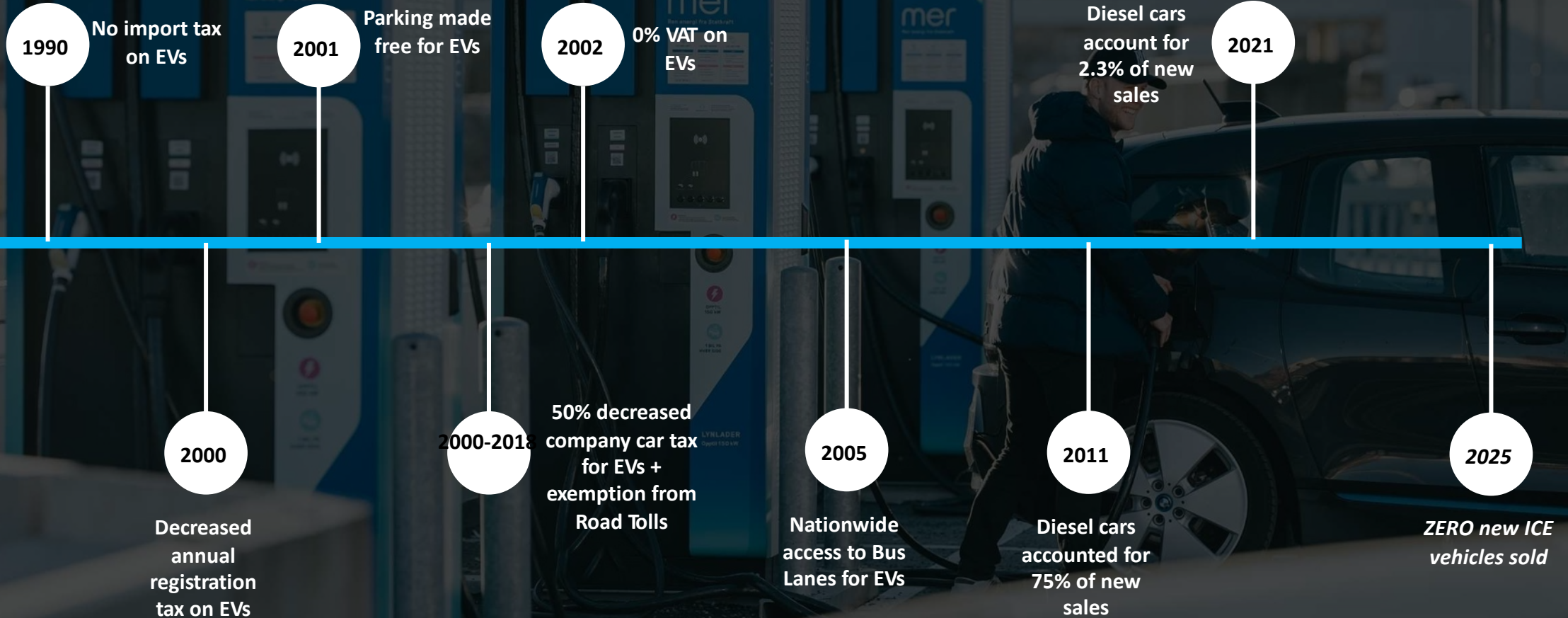
MORTEN  
HARKETT

FREDERIC  
HAUGE

Picture credit: Bellona



# WHAT WE CAN LEARN FROM NORWAY





# WORLDWIDE, NEV SALES ARE GROWING...

## 10.5 million

NEVs sold globally in 2022\*,  
representing a 55% increase  
over 2021 (6.5 million NEVs)

### What's driving these numbers?

- **Education:** customers are aware and educated about the benefits of NEVs, and are *choosing* NEVs over ICE vehicles
- **Price/Incentives:** NEVs have price-parity with ICE vehicles and the deciding factors are range, lifetime costs, and Net Zero awareness

\* Source: [ev-volumes.com](https://www.ev-volumes.com)



# VIRTUAL: THE GM EV LIVE SHOWROOM

It feels good to drive electric

Have questions about going electric?

Take a one-on-one live video tour with an EV Specialist and get answers in real-time.

Join A Live Tour

EV HUB

LEGAL

Copyright/Trademark

Privacy Statement

Security Vulnerability Disclosure

California Residents

©General Motors 2022

Visualize your potential savings

Potential Maintenance Savings

Potential Third-Party Incentives

Potential Fuel Savings

Average Fuel Economy<sup>©</sup>

38

Average Annual Mileage

15,000

Zip Code

ZIP

evlive

Powered by ZappoRide

Use our savings calculator to find out how much you could save today.

Switching to an EV will save you money on fuel costs, but there are other



# RETAIL: FISKER EV BRAND EXPERIENCE CENTRES



elevate, educate and empower



# RETAIL: ELECTRIC VEHICLE EXPERIENCE CENTER (UK)



- Range Anxiety
- Charging
- Power consumption

- Servicing & Maintenance
- Driving experience





# IN SA, NEVs STILL HAVE A PERCEPTION PROBLEM...

R3000 one charge. I don't see it working

1d Like Reply

2

This is a joke 🤔😂😂, they can't even give us electricity 24hr.mara have plans for electric Cars.

1w Like Reply

It feels like we are been forced into the EV trend  
Eish

1w Like Reply

Six and a half hrs to charge full, geez that takes long

17h Like Reply

R1.1m is entry level??

23h Like Reply

Green car being charged by "dirty" energy .  
EVS is a farce.

2w Like Reply

8

I'm expecting to pay R1.9 million

1d Like Reply

I'm not 🚫 interested in buying an electric cars... How are we going to charge this cars... 🤔🤔

1w Like Reply

2

I would like to know how much does a full charge cost in kwh units? Not to mention the price of replacement batteries and initial cost. Is it worth it?

1w Like Reply

They cannot even supply enough electricity for the current demand who they trying to fool

1w Like Reply

One would wonder whose bright idea it was to sell purely electric vehicles in South Africa... when some areas have less than 12 hours access to electricity a day...

2w Like Reply

4

Go plug and play somewhere else.I just don't see it working in SA

2w Like Reply



# ... AS WELL AS A PRICING PROBLEM

## GWM ORA FUNKY CAT



## BYD ATTO 3



	South Africa	Australia
Import Duty	25%	Exempt
Luxury Tax	~17%	0% for < AU\$ 89,000 (~R1,1m)
Rebate	Zero	AU\$ 3,000 (~R38,500)
Final Price	R716,000	AU\$ 43,000 (~R552,000)

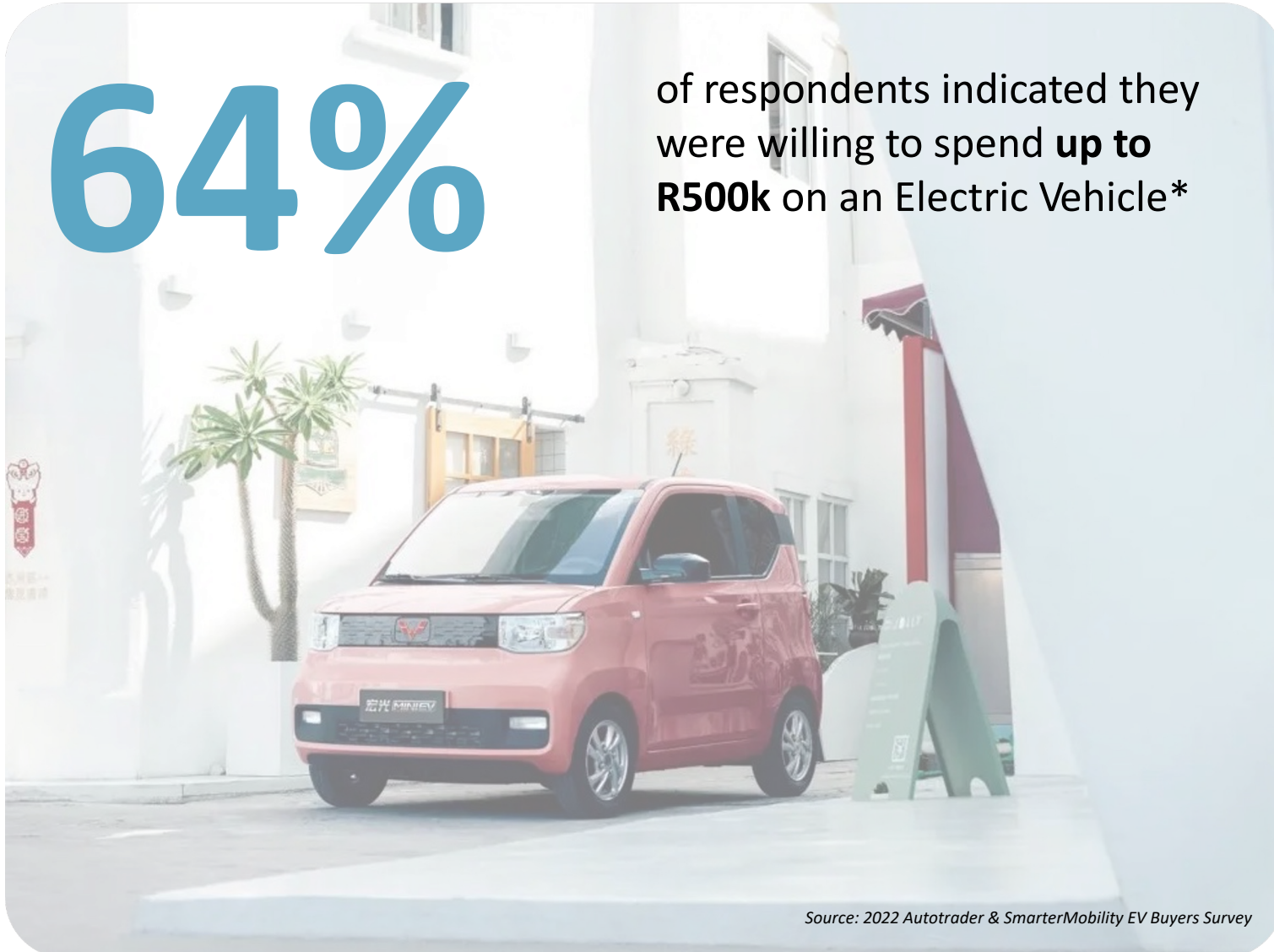
	South Africa	Australia
Import Duty	25%	Exempt
Luxury Tax	~17%	0% for < AU\$ 89,000 (~R1,1m)
Rebate	Zero	AU\$ 3,000 (~R38,500)
Final Price	~R700,000	AU\$ 40,810 (~R522,000)



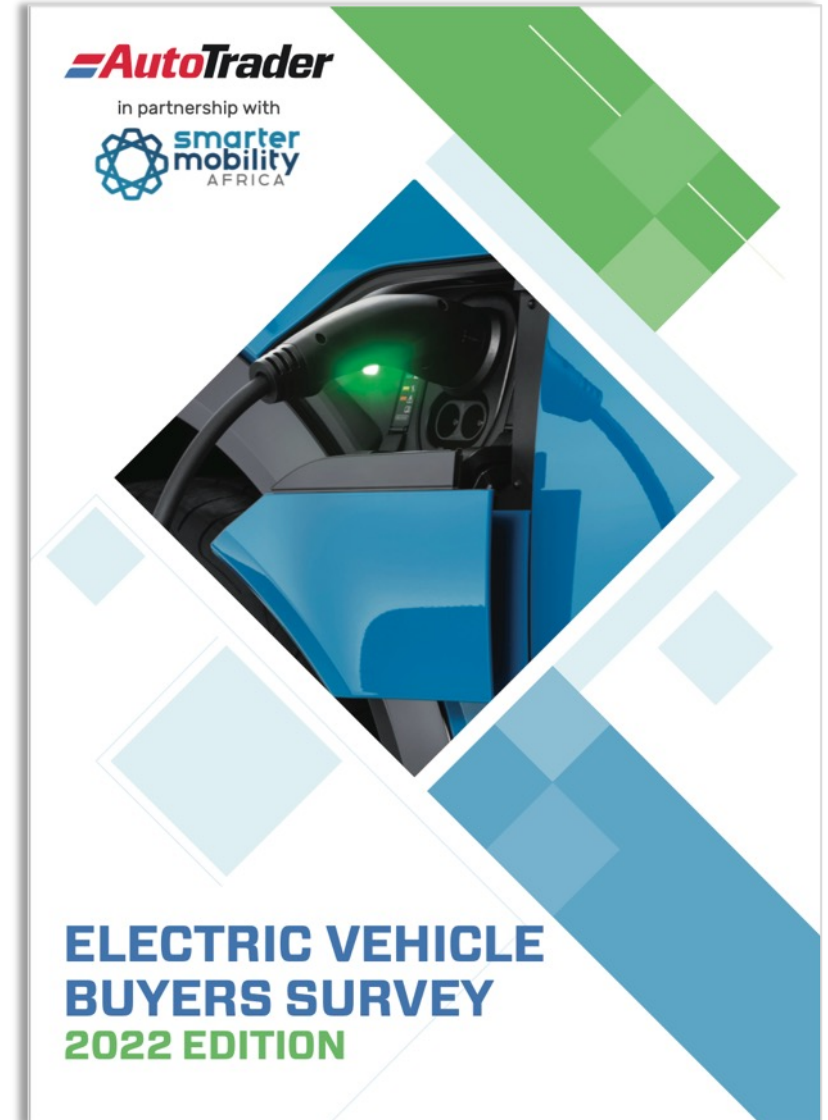
# BUT... DEMAND FOR AN AFFORDABLE EV IN SA IS HIGH

64%

of respondents indicated they were willing to spend **up to R500k** on an Electric Vehicle\*



Source: 2022 Autotrader & SmarterMobility EV Buyers Survey





In-demand and affordable

# E-MOBILITY PRODUCTS AND SERVICES

## IN SUMMARY:

- SA must take **lessons from the future** – look at Norway
- Changing Consumer Expectations are demanding **new ways of customer profiling and interaction**
- Significant investment needed to **educate and convince SA consumers** about the benefits of NEVs over ICE vehicles



High demand and affordable  
**E-MOBILITY  
PRODUCTS AND  
SERVICES**

**The Sustainable  
Mobility  
Equilibrium**

Pervasive and accessible  
**CHARGING  
INFRASTRUCTURE**

Sustainable and decentralised  
**ENERGY GENERATION &  
RECYCLING**



# EUROPEAN EV CHARGING INFRASTRUCTURE

# 307,000

EV charging points in the EU\*

GreenFlux  
Smart charging

EVBOX

DIRT

has-to-be  
eMobility

NOW

dreev  
EDF GROUP

JEDLIX

IONITY

chargepoint+

newmotion  
charge smart

# 1:10

1 EV charger per 10 NEVs

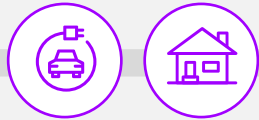
Source: ACEA European Automobile Manufacturers Association



# LEVEL 1 / 2 / 3 CHARGING PHILOSOPHY

Three locations typical for charging BEVs

## Home charging



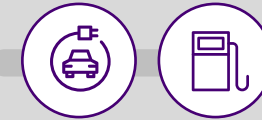
  
6-10 HOURS

## Destination charging



  
1-3 HOURS

## Energy Station charging



  
30 MINUTES

Three levels of EVSE charging power

### Slow

Level 1 AC (7kW)  
Basic Home Charging

**8 km per hour**

### Faster

Level 2 AC (22kW)  
Home or Public Charging

**15-30 km per hour**

### Fastest

Level 3 DC (50kW – 150kW)  
Public Fast Charging Station

**>100 km per hour**

Typical usage

- Home use, charging off solar
- Employee parking during the workday (6-10 hrs)

- Home use for EV owners wanting a faster charge (1-3 hrs)
- Charging in a **commercial area** while shopping or doing business

- Fast charging while on a long trip in order to reach a destination (0.5 hrs)
- Or to extend the length of a trip

Priority locations

- Employee parking areas
- Long-term customer/visitor parking, airports, train stations
- Park and ride lots

- Shopping centres
- Logistics depots
- Municipal locations
- Hotel chains, schools, churches

- Near high volume roadway access points
- Fuel Retailers, “Energy Retailers”

Volume Potential for South Africa by 2030\*

1:1 with Home Solar installations & NEV sales

**~80,000 charging points**

**~20,000 charging points**



# SUBWAY EV CHARGING NETWORK



Subway "Charging Oasis"  
Parks

Partnership with GenZ

Picnic spots, WiFi, playgrounds, green  
space, restrooms

Re-imagined restaurant experience

"28 minutes" fits the Subway  
business model perfectly

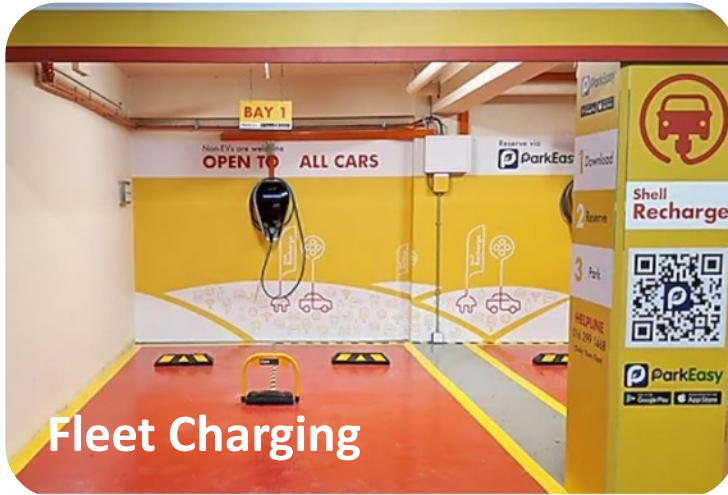


# SMART, CONNECTED ENERGY STATIONS

- Shell converting its Fulham station for EV Recharging
- 10 x 175kW DC fast-charging stations
- Integrated solar providing 100% renewable energy – also to the local community



# LOGISTICS COMPANIES TRANSITIONING TO ELECTRIC





# HEAVY COMMERCIAL OEMS INVESTING IN ELECTRIC



- Volvo, Ontime, Coca Cola
- Valencia, Spain
- 5 x 100% Electric Volvo Trucks
- 100% electric by 2030

- Volvo & Shell Recharge building an “Electrified Charging Corridor Project” in California for Medium- and Heavy Duty EVs

- Volvo South Africa & KDG Logistics: first Volvo Electric Truck sold in SA



Pervasive and accessible

# CHARGING INFRASTRUCTURE

## IN SUMMARY:

- Charging network **must be a catalyst** and not a constraint to EV growth
- **Remove range anxiety** by removing the requirement to plan travel by EV
- Fuel service station **re-imagination**
- **Logistics & Supply Chain** key role



High demand and affordable  
**E-MOBILITY  
PRODUCTS AND  
SERVICES**

Pervasive and accessible  
**CHARGING  
INFRASTRUCTURE**

**The Sustainable  
Mobility  
Equilibrium**

Sustainable and decentralised  
**ENERGY GENERATION &  
RECYCLING**



# WE NEED ENERGY DIVERSIFICATION & DECENTRALISATION

FROM



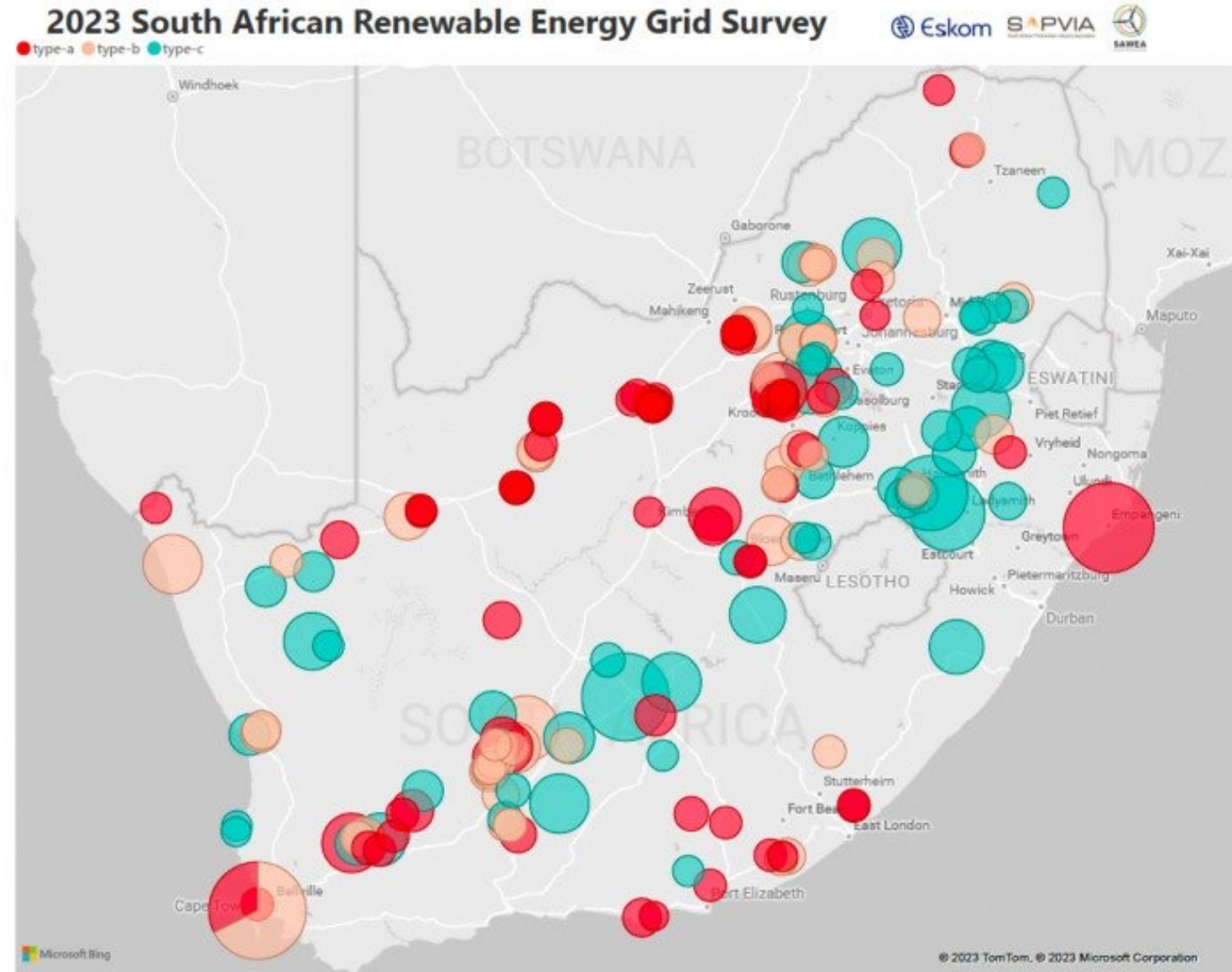
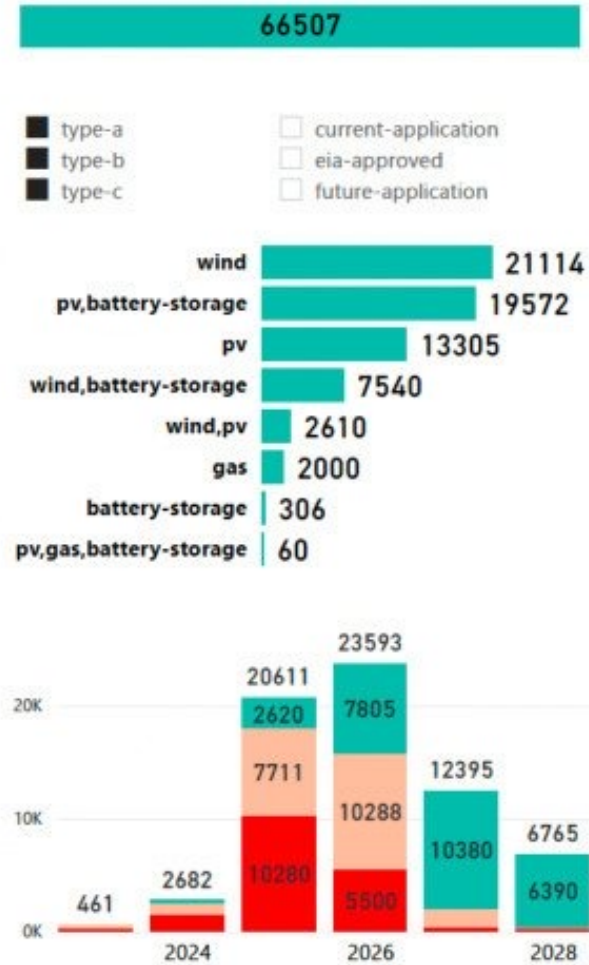
TO





# 66,000 MW IN THE RENEWABLE ENERGY PIPELINE BY 2028

## Project Type / Status





# MINI-GRID EXAMPLE: 50MW OXFORD ENERGY SUPERHUB

Solar PV  
Generation

NEV Charging

Battery Energy  
Storage (BESS)



**Electric Vehicle charging**

New high voltage cables are providing power to support growing EV adoption across Oxford.



**Battery energy storage**

A giant hybrid battery is storing energy and helping to make greater use of renewable power from the wind and sun.

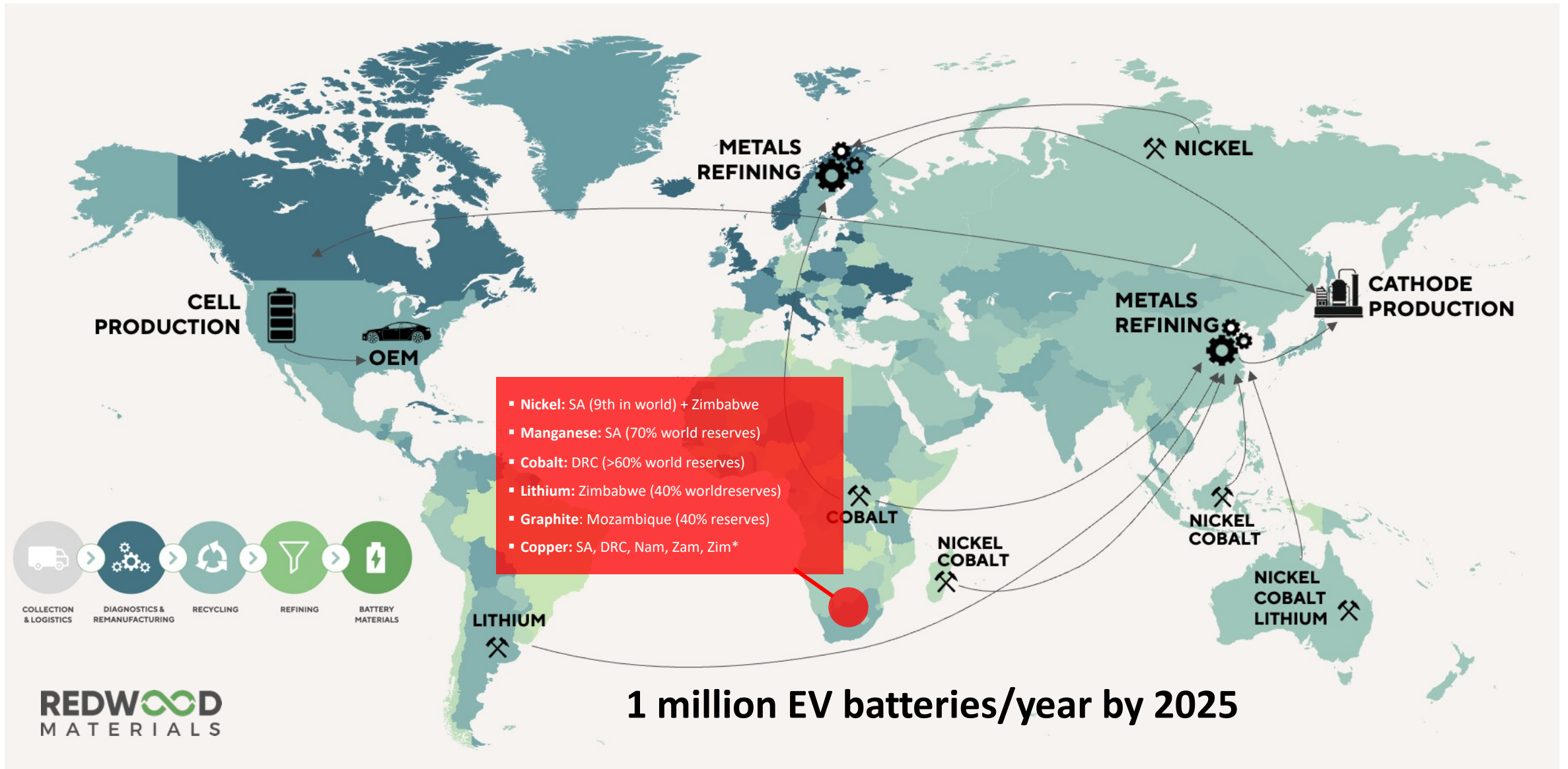


**Ground source heating**

Over 60 properties in Blackbird Leys have had innovative ground source heat pumps installed to warm their homes.



# BATTERY RECYCLING: A SIGNIFICANT SC OPPORTUNITY





Sustainable and decentralised

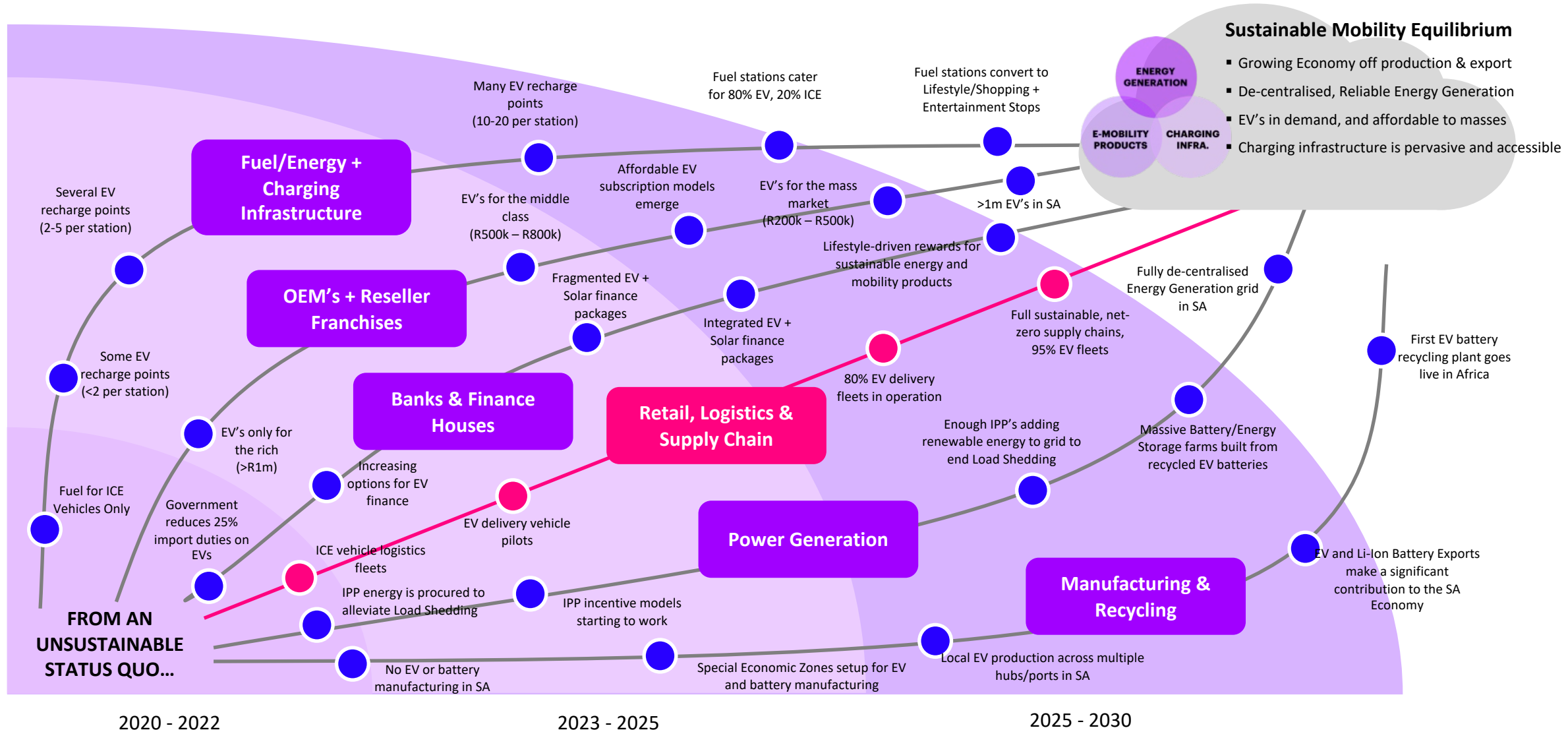
# ENERGY GENERATION & RECYCLING

## IN SUMMARY:

- **Diversification and decentralisation of Energy generation are of national importance**
- **Both small-scale and large-scale generation projects have roles to play**
- **More EV's = More decentralised (and mobile) energy storage**
- **Establishing a viable EV battery recycling value chain is vital**



# WE HAVE A ROADMAP TO AN ENERGY-INDEPENDENT SUSTAINABLE FUTURE





# NO REGRET MOVES: SUPPLY CHAIN & LOGISTICS

## Fleet Electrification

- Feasibility study / cost-benefit analysis of a partial or full fleet electrification strategy (EV R0.26/km vs ICE R2.00/km)
- Pilot project / POC with selected routes, partners and ranges
- Partner/eco-system study

## Decentralised Energy & Charging Network Rollout

- Energy efficiency audit & decentralised energy rollout plan
- EV fleet charging model, route planner and optimisation
- Closed-loop pilot







# *#LetThereBeCharge*

GREG CRESS

Accenture South Africa, Industry X

greg.cress@accenture.com | @gregcress

  
**accenture**