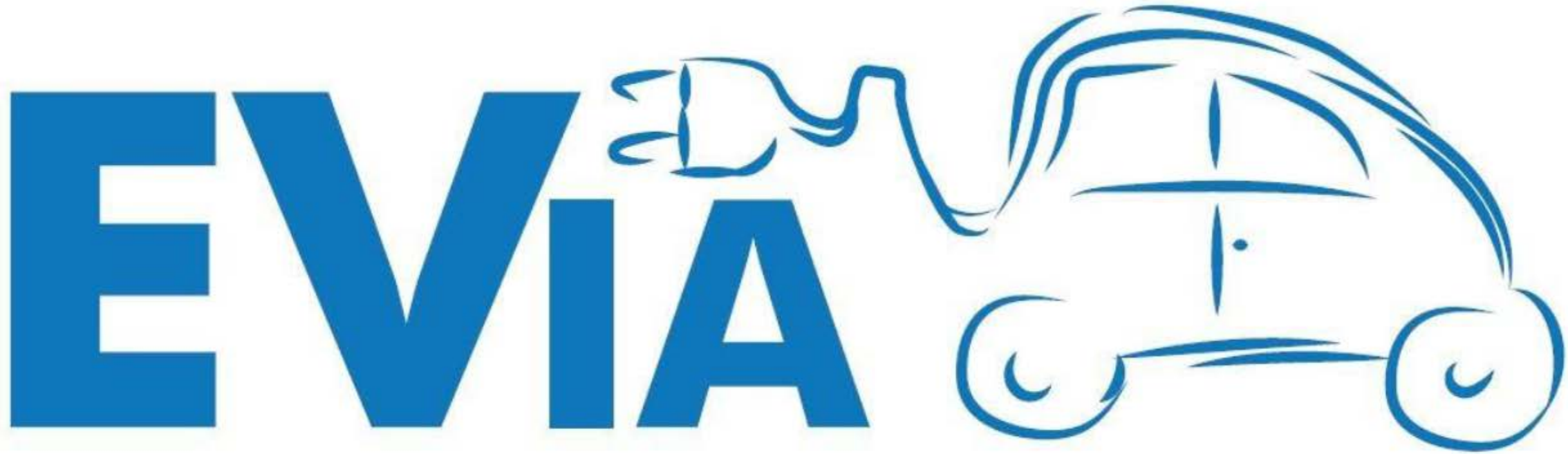


ELECTRIC VEHICLE INDUSTRY ASSOCIATION

Objectives

- Create a favorable environment to enable the use of clean mobility in South Africa
- Support the development of policy and regulatory framework
- Promote technologies for E-Mobility and sustainable integration into smart cities
- Support the introduction of sustainable mobility into the urban transportation mix
- Awareness creation for EVs in South Africa
- Promote co-operation and trust amongst the public-private sector

Working Groups

1. Charging Infrastructure
2. Battery and Recycling
3. Policies & Incentives
4. Vehicle Systems
5. EV 101- Sustainable Driving and Living
6. Mobility Concept and EcoMobility Services
7. Communication and Awareness Creation

WG: Charging Infrastructure

- Support to development of public, private and commercial charging networks for South Africa
- Provide support on improvement of specifications and policy
- Adoption of best practices optimisation of installation requirements
- Advisory of geographical positioning of charging infrastructure
- Advocating for use of cleaner electricity from renewable energy
- Data management (billing options, demand management and energy trading)
- Interoperability of EVs in Vehicle-to-Grid scenarios

WG: Charging Infrastructure

EVIA Position: Electric Vehicle Supply Equipment Guidelines for South Africa

<u>Electric Vehicle Conductive Charging Standards</u>

DC Fast Charging Stations

All public facing Direct Current (DC) fast charging stations must be dual CHAdeMO and Combined Charging System 2 (CCS2) equipped. In so doing BEV and PHEV vehicles from all vehicle manufacturers with DC fast charging capabilities will be able to charge at the charging station.

Where the station operator chooses to install a configuration that includes the above dual DC charging plug standards, but also includes an Alternating Current (AC) fast charging outlet, i.e. a so called “triple-charger”, this AC outlet must be of a Type 2 socket only.

IEC 62196-3 (CHAdeMO)

Vehicle Side

IEC 62196-3 (CCS2) Combo Type 2

Vehicle Side

WG: Charging Infrastructure

AC Charging Stations

All public facing Alternating Current (AC) charging stations must be equipped with Type 2 sockets only. This will allow BEV and PHEV vehicles from all manufacturers to use the station, with each vehicle owner required to only carry either a (Type 1 to Type 2) or a (Type 2 to Type 2) Mode 3 public charging cable.

IEC 62196-2
(Type 2 Socket)

Type 2 Socket to Type 1
Charge Cable (*)

Type 2 Socket to Type 2
Charge Cable (*)

WG: Charging Infrastructure

General Requirements

All electric vehicle conductive charging equipment supplied and installed in South Africa must adhere to the latest (2014 and upwards) versions of the following standards which have been adopted as SANS national standards:

- **IEC 62196** – in its entirety and specifically Parts 1-3;
- **IEC 61851** – in its entirety and specifically Parts 1, 2, 21-24.

The manufacturer of such equipment must obtain a National Regulator for Compulsory Specifications (NRCS) Regulator's Certificate of Compliance (RCC).

Electric Vehicle Parking Signage

WG: Battery and Recycling

- Improvement of battery technologies
- Advocate for the introduction of standards of batteries, materials, and designs
- Research on recycling of batteries
- Applied research and development of second life application of spent EV and HEV batteries

WG: Battery and Recycling

SANS/IEC 62133-2

Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications

IEC 62281:2016 RLV

Safety of primary and secondary lithium cells and batteries during transport

IEC 62660-1:2010

Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 1: Performance testing

IEC 62660-2:2010

Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 2: Reliability and abuse testing

IEC 62660-3:2016

Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 3: Safety requirements

IEC TR 62660-4:2017

Secondary lithium-ion cells for the propulsion of electric road vehicles - Part 4: Candidate alternative test methods for the internal short circuit test of IEC 62660-3

ISO/IEC PAS 16898:2012

Electrically propelled road vehicles -- Dimensions and designation of secondary lithium-ion cells

IEC 62619:2017

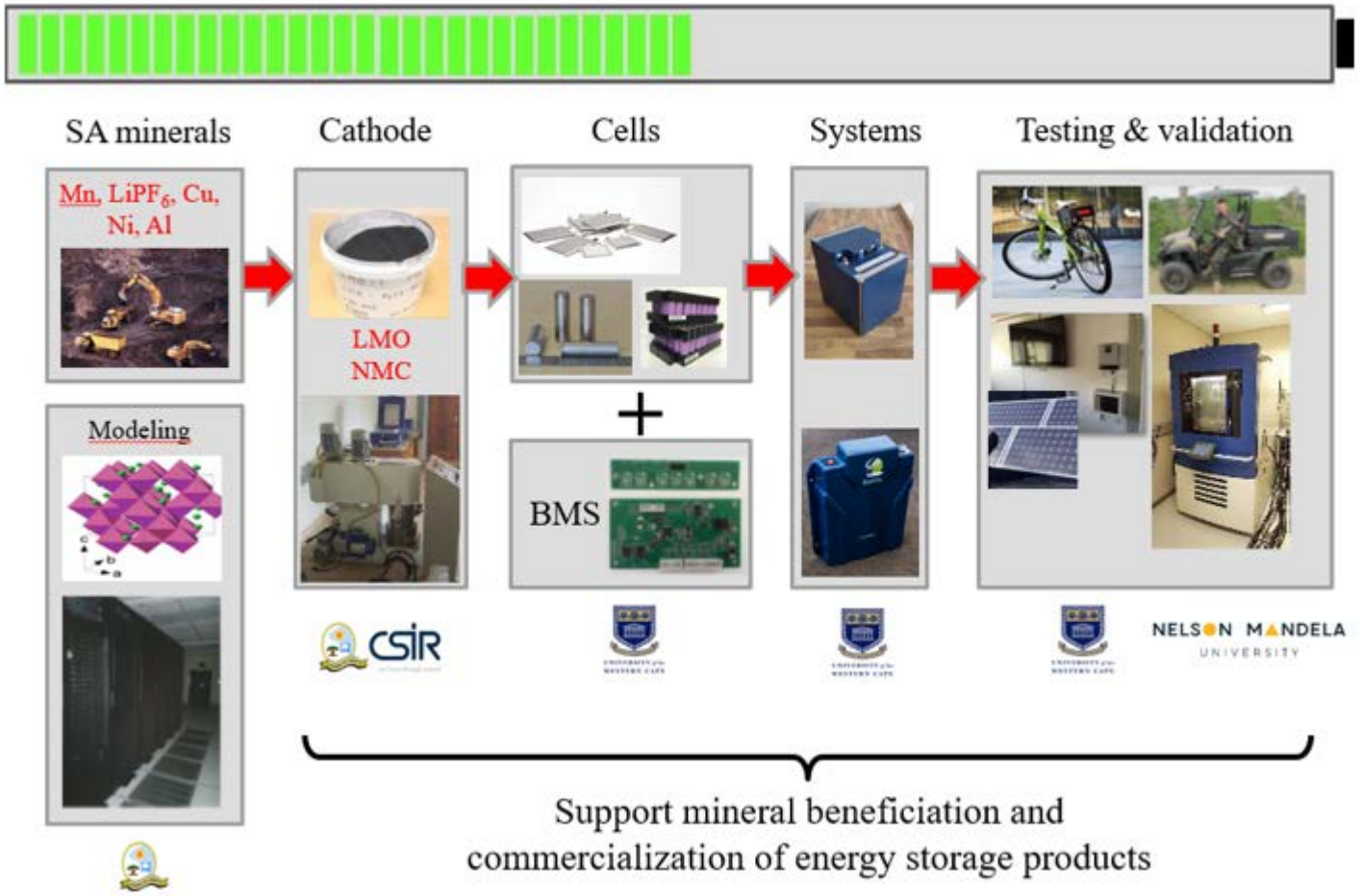
Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications

IEC 62620:2014

Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for use in industrial applications.

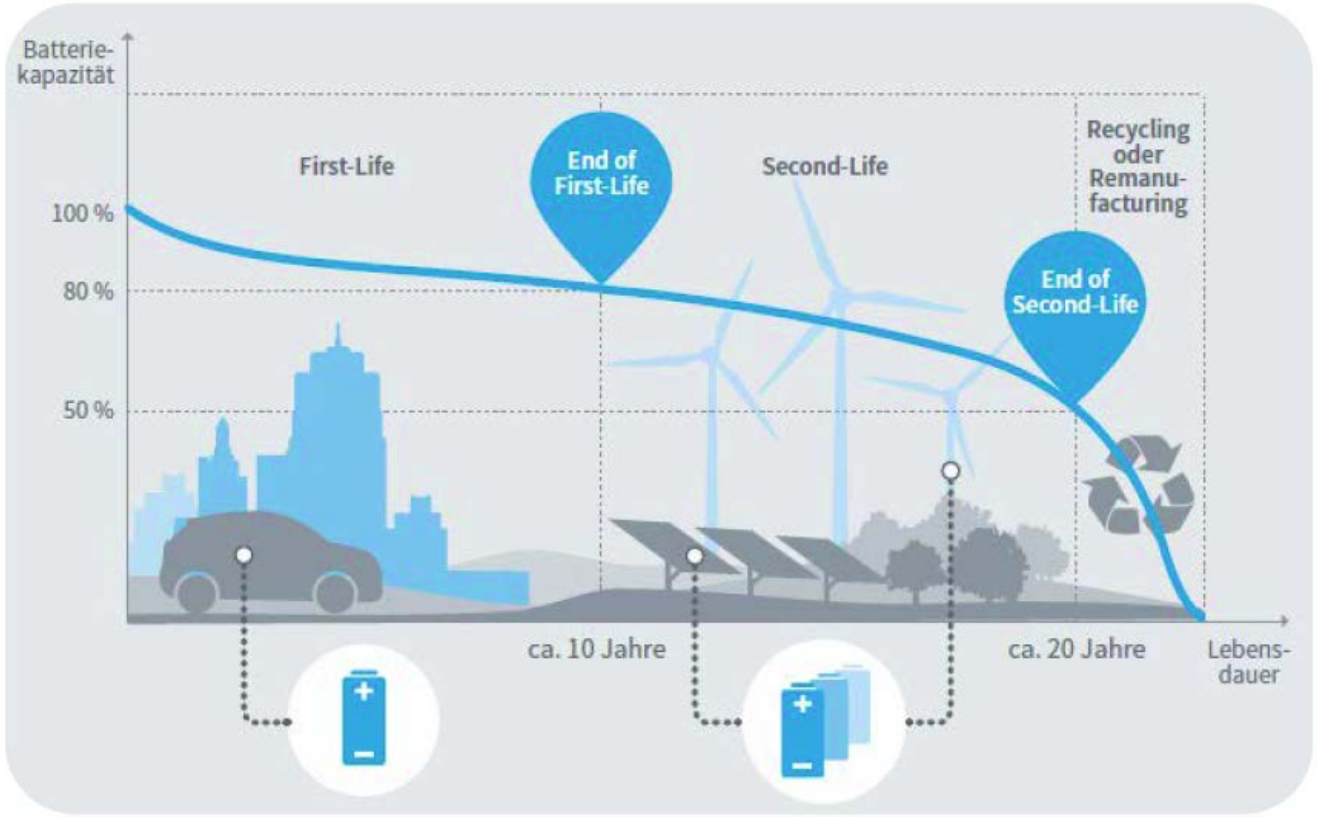
WG: Battery and Recycling

National Battery Consortium Members (DST)



WG: Battery and Recycling

Electric Vehicle Batteries - 2nd Life



Source: Schaufenster Elektromobilität

State of health < 80% (Norm document DIN 43539) battery is unsuitable for the vehicle

WG: Policies and Incentives

- Identify which policies are important to South Africa's market of EVs
- Assess the effectiveness of the policies in the country
- Research on introduction of policy and regulatory framework
- Enable the mechanisms of the industrial chain influence the production of EVs
- Mechanisms of electricity pricing or petroleum pricing, which may influence the purchasing of EVs

WG: Policies and Incentives

South Africa 2030 National Development Plan

- The green economy agenda will be leveraged to promote deeper industrialisation, energy efficiency and employment
- Building sustainable communities: Reducing the carbon footprint and economic costs of transport
- Over the short term, policy needs to respond quickly and effectively to protect the natural environment and mitigate the effects of climate change

Department of Transport - Green Transport Strategy

WG: Vehicle Systems

- Introduction of vehicle systems to the value chain
- Identify key challenges and enablers (both legislative and technological) to newer technologies in niche markets
- Skills development and training
- Introduction of new curricula development in higher education systems

WG: EV 101 - Sustainable Driving and Living

- Information sharing about EV technologies
- Purchase and operating costs
- Available government financial incentives
- Scaling EV developments for mass public adoption
- Incentivising sustainable EV practices

WG: Mobility Concept and EcoMobility Services

- Identifying new eMobility innovations
- Identify gaps in Market and eMobility Services
- Possible interventions to bridge existing gaps
- Identifying collaboration opportunities

WG: Communication and Awareness Creation

- Tackle the barriers hindering the adoption of E-Mobility
- Identify and use effective means of communication and awareness creation
- Profile understanding of the behavior and attitude of potential EV users
- Planning for improving buy-in from the intended public
- Strategies for communicating a unified message about EVs from stakeholders

“Unity in Sustainable Mobility”

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LinkedIn: Electric Vehicle Industry Assocation
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