

The regulatory landscape for electric-powered vehicles (EVs) in South Africa

The regulatory landscape for electric-powered vehicles (EVs) in South Africa

Introduction

Vehicle safety in the transportation of radioactive materials is crucial to protect public health, the environment, and national security by preventing releases, limiting radiation exposure, and deterring malicious acts. This is achieved through stringent regulations from competent authorities. Some member states prefer to follow the IAEA transport requirements rather than prescribe their own. These requirements dictate specialized packaging, vehicle marking, route planning, and security measures, ensuring that the inherent hazards of radioactive materials are contained and controlled during transit. This, however leaves a gap in ensuring that the vehicles themselves, in terms of their design and manufacture, are safe.

South Africa's EV regulatory framework is evolving from fragmented, sectoral measures toward a coordinated industrial and regulatory strategy. The Department of Trade, Industry and Competition (dtic) published an Electric Vehicle White Paper that sets out a comprehensive roadmap for a just transition of South Africa's automotive sector, covering manufacturing, incentives, skills, and infrastructure. The White Paper is the base document guiding many subsequent regulatory and fiscal proposals.

South Africa is shifting from policy design to implementation —finalising regulations stemming from the White Paper, rolling out standards for charging infrastructure, and operationalising fiscal incentives for manufacturers. This paper provides an in-depth examination of the south African regulatory landscape for electric-powered vehicles and identifies gaps that need to be addressed in the regulatory framework.

Battery Safety: South Africa's Regulatory & Technical Requirements

Relevant Standards & Testing Regimes

Occupational health & safety, environmental law (e.g. for disposal / recycling of batteries), transportation regulations all intersect with battery safety. Though EV-specific battery safety regulation are not yet as comprehensive, resulting in testing/labs employing requirements other member states. Some requirements can be found in national standards; others are emerging via policy documents or still in draft form. South Africa is still in a phase of aligning its regulatory infrastructure with best global standards.

Current standards in the area of EV batteries are specific to "battery swap" systems (where batteries are removed and replaced/swapped between vehicles). These standards address safety requirements for these systems, including safety and interoperability for both the removable battery systems and the infrastructure or systems that swap them.

EV batteries, battery packs and related components are currently subject to testing against internationally recognized safety standards. International Organisations like SGS and TÜV SÜD offer testing services for batteries/cells/modules/packs under IEC, ISO, UN, and other such standards.

Gaps / Areas for Development

One key gap is that there is not yet (as publicly visible) a fully unified set of EV battery safety regulations that cover the entire lifecycle (from manufacture to in-vehicle safety to disposal / recycling). The reliability of grid, charger safety, local Battery Management System (BMS) certifications, and mandatory local compliance testing remain areas needing more regulatory clarity or enforcement.

Adding battery safety into the broader regulatory framework means:

- Policy documents (e.g. the EV White Paper, industrial incentives) must consider mandated safety certification (for manufacturers, importers) as part of conditions.
- Trade / import tariffs and duties should incentivize only those battery systems that meet safety and testing standards.
- Standards bodies (SABS / SANAS) will need to issue or adopt more SANS standards for battery safety and ensure test labs are accredited and available locally.
- Transport & storage regulation: ensuring that when EV batteries are stored, transported (especially in bulk, or replacement/spare batteries) the dangerous goods rules are respected.

Country or International Organization

Instructions

Author: Mr NOGXINA, Lindile (South African National Nuclear Regulator)

Co-author: Ms MMUTLE, Nontutuzelo (South African National Nuclear Regulator)

Presenter: Mr NOGXINA, Lindile (South African National Nuclear Regulator)

Track Classification: Track 1 Legislative and Regulatory Framework for Safe and Secure Transport