



*Case Study*

**New Energy Vehicle  
Value Chain: Electric  
Mobility Transition  
and Localisation**

**Project Name**

New Energy Vehicle Value Chain: Electric Mobility Transition and Localisation

**Client**

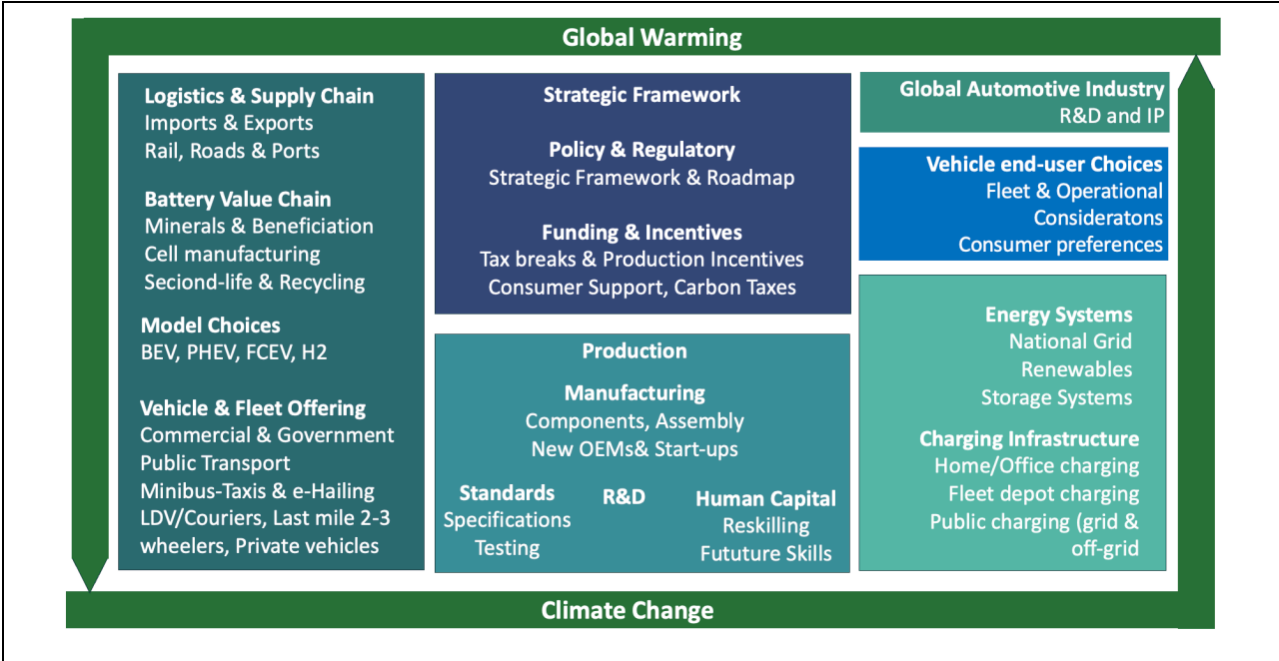
Industrial Development Corporation (IDC)

**Introduction**

The transition to New Energy Vehicles (NEVs) and electric mobility is crucial for reducing greenhouse gas emissions and tackling urban congestion and air pollution. The IDC required a comprehensive study to assess the feasibility and strategic implementation of NEVs in South Africa, focusing on various vehicle types, infrastructure and the battery value chain.

**Objectives**

The aim of the study was to identify opportunities in the NEV market that fall outside of the mainstream OEM (Original Equipment Manufacturer) supply chain, i.e. passenger vehicles. The study objectives included identifying opportunities in adjacent markets driven to adopt the electrification of transport due to environmental, social and governance factors such as shareholder value and a just energy transition within South Africa and Africa.



## Project Approach and Implementation

---

This project involved a detailed analysis of trends, opportunities, and practical steps for advancing NEV adoption. The project was implemented through several structured phases:

### **Phase 1**

- A) **Situational Analysis Report** undertook a comprehensive review of relevant literature and analysed the NEV segments in South Africa and Rest of Africa. Global and local NEV markets were reviewed, sales trends were analysed as well as technology and infrastructure.
- B) **Stakeholder Engagement** with key role players to form an understanding of the industry's readiness for NEV migration. This phase of the project included surveys, interviews, and open-ended questions with 90 stakeholders from various industries to collect data and opinions.
- C) **Strategy and Investment Report** captured the NEV market growth to substantiate developing industrial strategies as a catalyst to provide large scale funding to support the development of a NEV eco-system in South Africa and Africa. Recommendations for investment opportunities and strategic initiatives to support NEV adoption were developed.
- D) **Battery Value Chain Assessment Report** evaluated the 'Battery Value Chain' within the New Energy Vehicle (NEV) eco-system in South Africa and Africa. This report analysed the feasibility of local battery cell manufacturing, as well as identified necessary infrastructure developments.



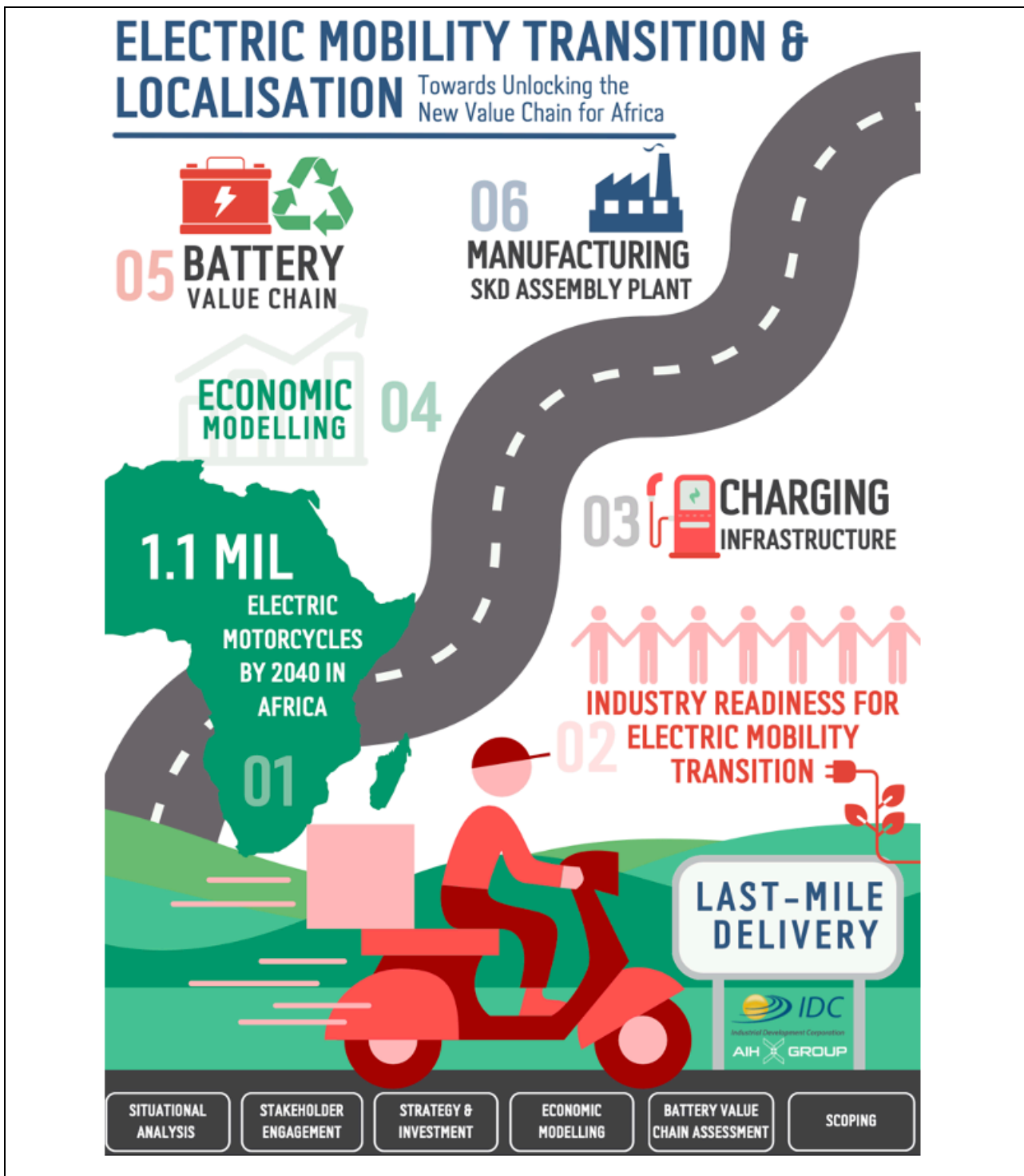
- E) **Economic Modelling Tool** developed to model the impact of each segment and visually analysed the study via a dashboard interface. This tool analysed the financial impact and potential growth of the NEV market in South Africa. An **Economic Modelling Handbook** was developed to serve as a guide on how to use the tool.

## Phase 2

- A) **Scoping Report** pre-feasibility study on the highest ranked opportunities. The final product should be able to guide the IDC and other stakeholders to decide on investments that will yield positive economic and developmental benefits for South Africa, SADC, and Africa.

### Challenges That Had to Be Overcome

Data availability was addressed by obtaining information through estimates and assumptions for analysis. The project scope was expanded to accommodate additional stakeholder requirements, ensuring a comprehensive assessment. Addressing stakeholders' pre-conceived ideas about NEVs was achieved through thorough analysis and expert interactions. Additionally, managing the timeline efficiently ensured the delivery of a detailed report.



## Outcomes

---

The study identified opportunities for reducing energy consumption and GHG emissions through the adoption of NEVs. Developing standardised battery swapping infrastructure, promoting local manufacturing of NEV components and enhancing charging infrastructure were key interventions recommended. The study also emphasized the importance of supporting policies and incentives for NEV adoption. It highlighted the potential benefits of international partnerships and technology transfer to accelerate NEV development in South Africa.

The study recommended, inter alia, developing charging infrastructure with battery swapping capabilities and monitoring the local battery value chain. While the battery charging infrastructure and battery swapping opportunities can be implemented together with a two- and three-wheeler assembly plant, the localisation of battery value chain is not considered feasible at this juncture. Market and technology developments of the latter project need to be monitored to identify when project financial parameters become feasible.

By focusing on these key components, the NEV value chain localisation project aims not only to enhance manufacturing capabilities but also to drive innovation and contribute to the sustainable development goals of the region. As such, it represents a strategic opportunity to position South Africa as a leader in the emerging market for electric and ICE vehicles.

## Lessons Learnt

---

Ensuring access to accurate and complete data is crucial for effective analysis and planning. Early and continuous engagement with stake-holders fosters buy-in and enhances the quality of insights. Flexibility in project management allows for the successful execution of complex projects. Strategic long-term planning and investment in infrastructure, policy support, and industry collaboration are essential for sustainable NEV adoption.

The IDC project underscores the potential for South Africa to become a leader in the NEV market through strategic investments and collaboration. This initiative is poised to contribute significantly to environmental sustainability and economic growth, demonstrating the value of comprehensive and well-coordinated efforts in advancing new energy technologies.

The project lead is Owen Smith. Contact him at [owen@autoih.co.za](mailto:owen@autoih.co.za) or via [info@autoih.co.za](mailto:info@autoih.co.za) and please visit our web at [www.autoih.co.za](http://www.autoih.co.za)