



Sustainable Mobility Innovation:

Electric Fleet Implementation at Stellenbosch University

OVERVIEW OF THE INNOVATION

Tsebo Solutions Group has implemented a fleet of nine electric vehicles (EVs) at Stellenbosch University to support daily maintenance operations across campus. This initiative replaces traditional diesel-powered vehicles with a cleaner, more efficient transport solution, significantly reducing fuel consumption, carbon emissions, and operational costs. The introduction of electric mobility into facilities management represents a progressive shift towards sustainable campus operations, aligned with both environmental goals and long-term cost efficiency.

2. THE CHALLENGE

Maintenance operations across a large university campus require frequent transportation of personnel, tools, and equipment.

Traditionally, this reliance on diesel-powered vehicles resulted in:

- High fuel costs
- Increased carbon emissions
- Noise pollution in academic environments
- Ongoing maintenance costs associated with combustion engines

There was a clear need for a **more sustainable, cost-effective, and environmentally responsible solution.**

3. THE INNOVATION

Tsebo introduced a fleet of 9 electric vehicles, integrated into the daily operational model of the maintenance team.

Key features of the solution:

- Zero tailpipe emissions
- Reduced energy cost per kilometre
- Lower maintenance requirements compared to diesel vehicles
- Quiet operation, improving campus experience

This initiative forms part of a broader strategy to **embed sustainability into facilities management operations.**

4. MEASURABLE ENVIRONMENTAL IMPACT

Diesel Savings

Estimated diesel consumption avoided:

Average diesel consumption per vehicle per year

Total diesel avoided annually (9 vehicles)



900 litres

8000 litres per year

Carbon Emissions Reduction

CO₂ emissions per litre of diesel: ~2.68 kg CO₂

Estimated annual CO₂ reduction



21225,6 kg CO₂ avoided per year

Equivalent Environmental Impact

To contextualise the environmental benefit:

Equivalent trees required to offset this carbon



1012 trees per year

5. FINANCIAL IMPACT

Fuel Cost Savings

Average diesel cost per litre: R 25,00



Annual fuel savings: R200 000 per year

Maintenance Savings

Electric vehicles reduce:

- Engine servicing costs
- Oil and filter replacements
- Mechanical wear and tear



Estimated maintenance savings: R60 000 per year

IMPACT ON THE WESTERN CAPE ECONOMY

This innovation contributes to the regional economy through:

- Reduced operational costs for a major institution
- Reallocation of savings into infrastructure and services
- Support for sustainable energy adoption
- Demonstration of scalable green mobility solutions

BENEFICIARIES

- **Stellenbosch University** – Reduced operational costs and improved sustainability profile
- **Students and staff** – Cleaner, quieter campus environment
- **Tsebo employees** – Exposure to modern, sustainable technologies
- **Western Cape economy** – Adoption of green infrastructure practices

INNOVATION & NOVELTY

While electric vehicles are globally established, this innovation lies in:

- Integrating EVs into daily facilities management operations at scale
- Demonstrating practical, measurable impact in an institutional environment
- Aligning operational efficiency with sustainability goals

This represents a **context-specific adaptation of global green mobility trends to the Western Cape environment.**

SCALABILITY & FUTURE POTENTIAL

The model is highly scalable and can be extended to:

- Universities and schools
- Hospitals
- Corporate campuses
- Municipal service fleets

CONCLUSION

The introduction of electric vehicles into Stellenbosch University's maintenance operations demonstrates how operational decisions can deliver both environmental and economic value.

This initiative reduces emissions, lowers costs, and sets a benchmark for sustainable facilities management in the Western Cape.

