2025 Integrated Annual Report

Our Journey in Electric Micromobility

14 years providing safe and compliant, operational turnkey systems

Content Index

01 Letter from the CEO
02 Why Choose Leo
03 Our Certifications
04 Key Milestones
05 Leo Electric Consortium
07 Our Ecosystem in Action
08 Product Development Pipeline
09 Product Overview
10 Case Study: Delivery Fleets
11 Products: Electric Bicycles
14 Case Study: Power Grid
15 Products: Electric Mopeds & Motorcycles
17 Case Study: Singapore Military
18 Products: Electric Utility Vehicles
21 What's Next: Electrifying Agriculture
22 Products: Charging Infrastructure

From the CEO's Desk

Dear Valued Stakeholders and Partners,

For over 14 years, Leo Electric has been dedicated to a single mission: electrifying micromobility for the people, the public sector, and private enterprises. From supporting critical national projects with custom-built electric solutions to navigating complex urban infrastructure, our commitment has always been to drive sustainable, practical change.

Today, we are taking a significant step forward. In 2025, we proudly debuted the Leo Electric Consortium, where we have united leaders, experts and researchers in solar energy, battery storage and climate finance. This allows us to offer not just vehicles, but full turnkey electrification ecosystems—making adoption easier and more impactful for our partners worldwide.

We are strategically extending this integrated approach to capitalize on new ecosystem opportunities, such as agricultural electrification. Through the consortium, we provide farmers and rural communities with solar-powered charging, energy storage, and tailored electric utility vehicles—enhancing productivity, reducing waste, and enabling clean, cost-effective operations. This expansion is a natural extension of our core expertise, allowing us to apply our mission to sectors where electrification can drive immediate and meaningful impact.

This integrated model is the power of the Leo Electric Consortium. It is no longer sufficient to simply provide a vehicle; success hinges on providing the energy, the financing, and the long-term viability. Through our consortium, we now deliver a holistic value chain: seamless integration of solar microgrids and Battery Energy Storage Systems (BESS), securing the climate finance that makes these projects economically viable and unlocking additional revenue streams by transforming our clients' emissions reductions into high-integrity carbon credits or even tradeable energy in the ASEAN Power Grid. This is the new standard for electrification: a complete, de-risked partnership.

Yet, our core remains unchanged: we still deliver reliable, innovative, and purpose-built electric mobility solutions where they are needed most. We remain focused on our founding goal—powering holistic movement for people, businesses, and governments—now with a stronger, more integrated approach.

With gratitude and resolve,

Jeelian Leong

CEO - Leo Electric

1 September 2025

Why Choose Leo?

Longevity & Supply Chain Resilience

With 14 years of operation, we are a proven, resilient family business that has weathered industry-wide bans, economic shifts, and global disruptions. Our long-standing, solidified relationships with suppliers ensure a robust and reliable supply chain, guaranteeing the continuous availability of spare parts and components long after the sale. While others face breakdowns and abandoned products, we provide unwavering support, ensuring your investment is protected for the long term.

Engineering Expertise & Artisan Craftsmanship

We are engineers and artisans at our core, with deep roots in consumer electronics and precision manufacturing. This foundational expertise allows us to handle complex electronics engineering challenges that baffle our competitors—so much so that they often send their customers to us for repairs. We don't just sell products; we design, produce, and customize high-quality solutions to your exact specifications, delivering unparalleled reliability and performance.

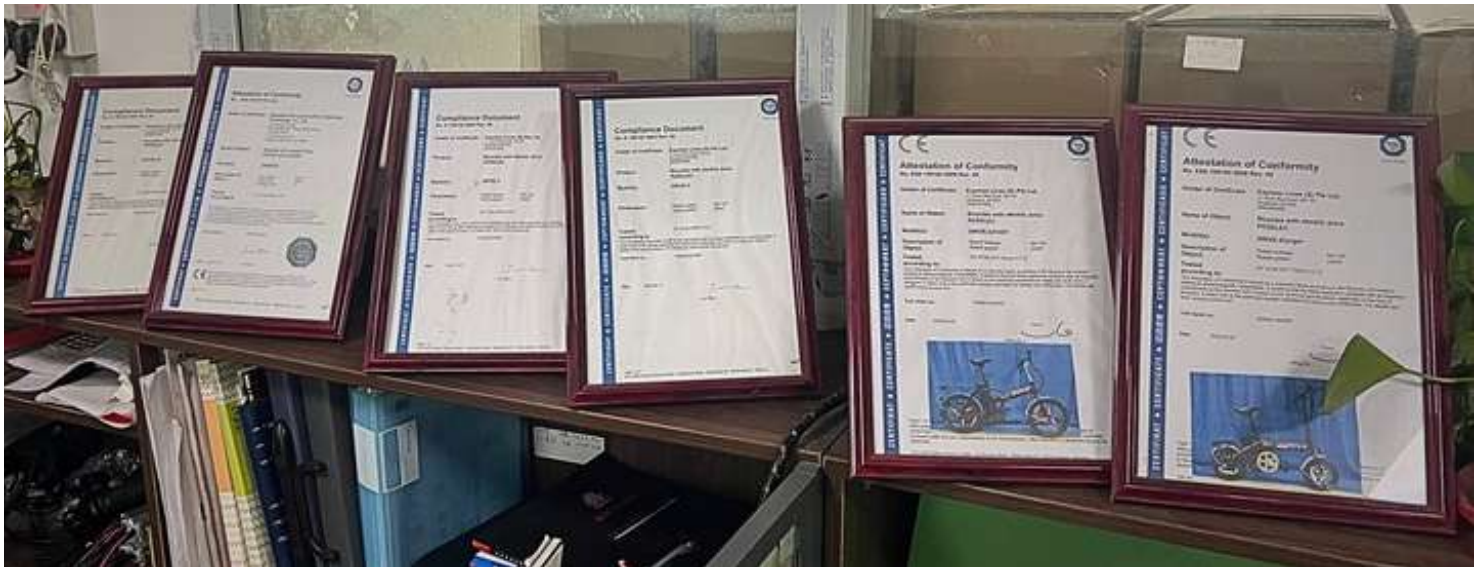
Obedience to Regulations & Proactive Partnership

We don't just follow regulations; we engage in continuous, proactive dialogue with government authorities to ensure full compliance and provide practical feedback from the field. This collaborative partnership ensures we operate within guidelines while helping shape practical policies. Our commitment to adaptation has made us a trusted, repeat provider of specialized solutions for sensitive government and infrastructure projects.

Service, Customization & Total Ecosystem Solutions

We are committed to total customer satisfaction with comprehensive after-sales service and bespoke customization. Recognizing that modern EV challenges demand holistic answers, we have evolved into a full turnkey provider. Through our consortium of ecosystem partners, we offer all-in-one solutions—from vehicles and charging infrastructure to energy systems—making us the single source for all your electrification needs, both locally and offshore.

14 Years of Certified Engineering Excellence:



Built to TÜV SÜD and UL Standards

For over 14 years, Leo Electric has proudly adhered to globally recognized safety and quality benchmarks through our enduring partnerships with TÜV SÜD and UL. These certifications are not merely badges—they reflect our unwavering commitment to engineering excellence, user safety, and environmental resilience. We have consistently evolved alongside updated standards, engaged in proactive dialogue with certifying bodies, and deployed rigorously tested solutions across all product lines. This disciplined approach ensures every vehicle and component we deliver meets the highest levels of performance, reliability, and regulatory acceptance—enabling trust in every ride.

Key Milestones

2016

Designed and delivered specialized off-road electric scooters for the Singapore Armed Forces, securing the contract through a competitive tender process that included 15 other companies.

2018

Successfully defended and won the same tender against renewed competition, reaffirming the Singapore Armed Forces' continued trust in our technical expertise and proven performance.

2020

The COVID-19 delivery surge drove us to enhance e-bike comfort and load capacity while rigorously adhering to Singapore's TÜV SÜD-certified safety standards of strict materials, vehicle size and weight allowances.

2022

Selected by SP Power, Singapore's national power grid, to develop custom electric scooters for secure, efficient underground tunnel navigation.

2025

Building on our proven performance and reliability, SP Power has again selected us to continue providing customized electric vehicles, reaffirming their trust in our innovative solutions and consistent delivery for critical infrastructure needs.

What's Next?

We're launching next-gen utility electric micromobility, expanding into Nigeria, Ghana and the Philippines, and enhancing our platform with solutions from our consortium experts—driving global electrification with intelligence and reliability.

Leo Electric Consortium: Ecosystem Partners

The transition from traditional combustion engines requires more than just vehicles; it demands entirely new ecosystems. This is why Leo Electric founded a new consortium—a strategic alliance of world-class experts in solar microgrids, Battery Energy Storage Systems (BESS), climate finance, and carbon credit origination.
This unique, integrated approach allows us to deliver true turnkey solutions. We don't just provide electric vehicles; we deploy the complete enabling infrastructure: from solar-powered charging hubs and battery-swapping stations to securing climate financing and managing the entire carbon credit value chain for our partners.
By addressing the financial, infrastructural, and environmental challenges simultaneously, Leo Electric is uniquely positioned to de-risk and accelerate the clean mobility transition. We are the reliable, full-service partner built to tackle the ecosystem challenges of the 21st century and power the pivot to electric.

William Leong

Electronics Manufacturing,
Founder of Leo Electric

Mr. Leong brings 14+ years in micromobility and 4 decades of electronics manufacturing expertise from Toshiba, Panasonic and Samsung to guide product innovation and quality.

Sum Kun Shan

ESG Finance,
ex-EnterpriseSG

A 15-year energy transition leader, Kun Shan shapes decarbonization strategy and integrates sustainable infrastructure with commercial investment goals.

Garry Tay

Solar EPC & BESS,
B2GEnergies

Garry boasts 30 years in energy storage and EV innovation, shaping national standards and decarbonization solutions with the Energy Market Authority and EnterpriseSG in Singapore.

Cliff Chua

Carbon Credits Specialist,
XCarbon

Cliff is a seasoned decarbonization leader with 30+ years securing S$90M+ in funding and driving ESG strategy across telecom, infrastructure, and heavy industries.

Tsoi Mun Heng

Engineering Strategy,
Singapore Institute of Technology

Mun Heng leverages his distinguished engineering and Air Force command experience to drive technology strategy at the highest levels including the National Research Foundation in Singapore.

Jolin Lee

Project Management,
Singapore Government

Jolin integrates ESG goals into operations, leveraging 15 years in tech and engineering to drive sustainable, cost-effective, and stakeholder-aligned outcomes at state level with the Singapore government.

Alfred Foong

Energy & Technology
Quantum Energy Consulting

Alfred leverages 25 years in engineering, power systems, and intelligent infrastructure to drive sustainable innovation and resilient technology solutions.

The Ecosystem in Action: Beyond the Vehicle

At Leo Electric, we engineer partnerships as diligently as we engineer products. Our consortium model allows us to address every barrier to electrification, delivering true turnkey solutions.

Energy + Mobility: We don't just deliver electric wagons to a farm; we partner with EPCs to power them with a dedicated solar microgrid and charging hub. This eliminates fuel costs and ensures operational reliability, even off-grid.

Finance + Infrastructure: The upfront cost of transition is a major hurdle. Our climate finance experts structure deals—from leasing to co-investment—that make our ecosystem solutions accessible. We build the business case for sustainability.

Compliance + Credit: Electrification isn't just an operational win; it's a financial asset. We embed monitoring from day one to verify emissions reductions, generating tradeable energy and carbon credits that provide our partners with a new, sustainable revenue stream, creating a circular economic model.

Policy + Strategy: Our university partners and government advisors ensure our ecosystems are not only future-proof but also policy-compliant and strategically aligned with national and regional sustainability goals.

This is the Leo Electric Difference: A synergistic alliance that delivers the entire value chain, making your transition to a clean energy future seamless, scalable, and profitable.

The Ecosystem in Action: A Visual Blueprint

The Leo Electric Consortium is built on a simple, powerful vision: to provide a complete, de-risked pathway to electrification. This visual blueprint illustrates our full-stack, turnkey solution, demonstrating how we integrate energy, mobility, and finance to create a self-sustaining and profitable ecosystem for our partners.

Sustainable Energy Source

The journey begins with clean, reliable power. Our consortium partners deploy Solar Microgrids (represented by the solar panels on the house and charging stations) and Battery Energy Storage Systems (BESS) to generate and store their own energy. This eliminates reliance on volatile fuel prices and ensures operational resilience, even in remote or off-grid locations.

Smart Charging Infrastructure

The stored energy powers our Smart Charging Hubs and individual charging stations. These hubs are equipped with IoT fleet management tools, allowing for optimized charging schedules, remote diagnostics, and seamless integration with our vehicles. This ensures maximum uptime and operational efficiency for the entire fleet.

Purpose-Built Micromobility

Our ecosystem is completed by our range of purpose-built electric vehicles—from utility cars to electric scooters and mopeds. Each vehicle is designed for specific operational needs, ensuring that the right tool is available for every task, whether it's last-mile logistics, agricultural work, or critical infrastructure maintenance.

This integrated model is the foundation of our commitment to a seamless, scalable, and profitable transition to a clean energy future.

Product Development
Pipeline

Sodium-ion batteries

Leading the shift to sodium-ion batteries—fireproof, explosion-proof, and fast-charging—to deliver unmatched safety and practical energy under real-world conditions but also reducing reliance on scarce resources.

Safer public charging

Working with Singaporean authorities to deploy safer charging infrastructure, emphasizing compliance and alignment with national standards. This reflects our continuous partnership with regulators to align with safety and policy goals.

Climate finance integration

We are developing an automated climate finance platform that tracks and verifies emissions reductions to ensure high-integrity carbon credits, enabling transparent and credible sales in global compliance markets.

Holistic safety standards

Partnering with government agencies to advance safety standards and registration policies for EVs; promote responsible rider behavior, deter illegal modifications, enhance public safety through education, technical compliance, and smarter regulatory design; creating a more secure and sustainable mobility environment for all.

Product Overview

We specialize in crafting fully customizable electric mobility solutions designed to meet the precise needs of our clients. While our bestsellers depicted here serve as reliable starting points, we pride ourselves on adapting everything from powertrains and batteries to frames and software to your unique operational requirements. Beyond vehicles, we deliver an end-to-end ecosystem including smart charging infrastructure, IoT fleet management tools, and solar-integrated energy systems, ensuring seamless, scalable electrification. Whether for last-mile logistics, municipal use, or specialized industrial applications, we engineer not just products, but partnerships built on 14 years of resilience, innovation, and unwavering commitment to quality and compliance.

Client Case Study: Delivery Fleets

Optimizing Delivery E-Scooters for Singapore’s Urban Logistics

Developed delivery-focused electric bicycle fleets prioritizing rider comfort and load capacity (150kg max) while adhering to the Land Transport Authority (LTA)’s stringent regulations: 20kg weight, 70cm width, 25km/h speed cap, and UL2272 certification . Key innovations included ergonomic memory foam seats, hydraulic suspension for vibration damping, and a 48V 20Ah UL2272-certified battery enabling 80km range for full-day operations. Despite strict dimensional constraints, the design integrated detachable cargo racks (40kg capacity) and a lightweight 6061-T6 aluminum frame. All units passed LTA’s periodic inspections, ensuring compliance and rider safety. Rider feedback confirmed reduced fatigue and increased delivery efficiency, validating the balance of comfort, utility, and regulation adherence.

Delivery Electric Bicycle

Singapore's most popular delivery e-bike: the ECO Drive Classic. While others sacrifice critical wheel size for battery space, we refuse to compromise. Our 20" wheels provide all-day comfort, and our swappable batteries ensure you never stop earning.

EN15194 Certified

150kg Max Load
48v15aH Battery
250W (500W Peak) Motor

20km/h Speed
25km Range

Sports Electric Bicycle

Built to dominate any terrain with a formidable 1500W motor, reaching 60km/h and conquering 35-degree gradients. Experience precision-controlled stability with a CNC-machined full suspension system and aggressive 20"x4.0 fat tires. The advanced dual battery system delivers up to 80km of range, putting powerful riding modes at your command. For those who demand high-performance electric mobility for all terrains.

Hydraulic suspension with rear hydraulic shock absorber
Seat extendable to 21.5"

150kg Max Load
48v20aH Battery (upgradeable)
750W (1500W Peak) Motor

60km/h Speed
80km Range

Cargo Electric Bicycle

Featuring a 2-cubic-feet cargo compartment seamlessly integrated below the seat, offering secure storage for tools, gear, or groceries. This practical design doesn't sacrifice power—a robust 2000W motor tackles 30-degree inclines with ease, while the long-range removable 48V battery delivers up to 80km on a single charge. Equipped with heavy-duty 20"x4" tires, a lockable suspension fork, EABS-enhanced disc brakes, and integrated lighting, it confidently blends rugged capability with everyday utility.

UL2849 Certified

250kg Max Load
48v20aH Battery (upgradeable)
750W (1500W Peak) Motor

60km/h Speed
80km Range

Client Case Study: National Power Grid

Delivering Fire-proof Electric Scooters for SP Group's Underground Operations

Designed and delivered specialized electric scooters for SP Group's underground tunnel operations, featuring fire-resistant and explosion-proof construction to meet strict safety requirements in high-risk environments. Equipped with high-torque 1000W motors, IP67-rated sealed powertrains, and UL 2272-certified battery systems, these vehicles reliably navigate steep gradients and confined spaces while ensuring operational safety and compliance with Singaporean utility standards. All units underwent rigorous validation for performance, environmental resistance, and functional safety under simulated tunnel conditions.

Electric Moped

Built for the urban ride, this high-power electric moped combines sleek, modern styling with commanding performance. Its robust electric drive delivers instant acceleration and smooth handling, supported by hydraulic front suspension and wide 130/60-13 tires for superior stability. Equipped with front and rear disc brakes, a digital speedometer, and generous under-seat storage, it offers both practicality and confidence in every commute. Powerful, agile, and designed for city life—this is electric mobility redefined.

Front and rear disc brakes
Hydraulic suspension

300kg Max Load
72v50aH Battery (upgradeable)
2000W Motor

80km/h Speed
100km Range

Electric Motorcycle

Born to carry the load, this robust electric motorcycle is engineered for professionals who demand both power and practicality. Its high-torque 3000W motor delivers confident acceleration and a top speed of 100 km/h, even when fully laden. With an exceptional 200 km range, it's built for all-day missions without frequent recharging. Batteries are removable but for ultimate flexibility, customize with DC fast-charging—compatible with electric car charging networks—or rely on standard AC fast charging. Durable, agile, and designed for work, it's the ultimate tool for urban delivery, logistics, or tradespeople who refuse to compromise on performance or endurance.

AC/DC charging inlet
Front and rear disc brakes
Hydraulic suspension

600kg Max Load
72v100aH Battery
3000W Motor

100km/h Speed
200km Range

Client Case Study: Singapore Military

Delivering Certified Tactical Micromobility for Singapore MINDEF

Our engineering integrates rigorous validation with full regulatory adherence. Our tactical scooters feature IP67-rated powertrains and 6061-T6 aluminum frames, developed using methodologies aligned with MIL-STD-810G to ensure performance under extreme tropical, vibrational, and off-road conditions. Despite this military-grade durability focus, all production models are fully certified to TÜV SÜD EN 15194 and UL 2272, meeting all LTA requirements for safety, electrical integrity, and public road use in Singapore.

Agricultural Electric Wagon

Built for the farm: a rugged electric utility wagon designed to handle demanding agricultural tasks. With a robust 300 kg payload capacity and the ability to climb 30-degree slopes, it navigates rough terrain and steep inclines with ease. The spacious, open-bed design offers practical hauling for crops, feed, or equipment, while hydraulic suspension and drum brakes ensure stable, controlled rides in uneven fields. Dependable, efficient, and emission-free—this electric wagon is made to work hard from dawn till dusk.

Front and rear disc brakes
Hydraulic suspension

300kg Max Load
72v50aH Battery (upgradeable)
1500W Motor

60km/h Speed
80km Range

Passenger Electric 3-wheeler

Introducing a versatile electric three-wheel passenger vehicle designed for modern urban mobility. Powered by a robust 3000W motor and a high-capacity 72V battery, it reaches speeds up to 60 km/h and handles inclines up to 20 degrees. With an 80 km range and a 500 kg load capacity, it offers ample space for passengers and cargo. Ideal for shared transport, delivery services, or commercial use, this efficient trike combines practicality with zero-emission performance.

Front and rear disc brakes
Hydraulic suspension

500kg Max Load
72v100aH Battery (upgradeable)
1500W Motor

60km/h Speed
80km Range

Delivery Electric 3-wheeler

Purpose-built, zero-emission solution for urban deliveries. Designed to turn heads and meet demands, this compact yet capable mini-truck is offers 80km range on a single charge. With a generous 300 kg carrying capacity and the ability to climb steep 30-degree inclines, it effortlessly navigates crowded streets and hilly terrain. Its functional 2000*1200*1000 mm frame provides ample secure storage, while hydraulic suspension and drum brakes ensure a smooth and safe ride. Perfect for deliveries, mobile vending, or daily logistics —this practical electric trike is built to work hard and operate cleanly. Refrigerated cold-chain option available for customization.

Front and rear disc brakes
Hydraulic suspension
Refrigeration (upgradeable)

300kg Max Load
70v50aH Battery (upgradeable)
1500W Motor

60km/h Speed
80km Range

What's next: Electrifying Infrastructure, Strengthening Communities

Using solar to power farmers to use electric wagons, refrigeration & productivity tools

Recognizing a critical gap in agricultural efficiency, Leo Electric now empowers farmers with specialized electric wagons and micromobility solutions. These vehicles enhance on-site productivity by enabling easier transport of goods and are complemented by electric cold chain options to significantly reduce spoilage. Furthermore, the Leo Electric Consortium offers integrated solar street lighting and microgrid solutions, turning farms into smarter, more sustainable, and waste-free operations. This holistic approach merges clean mobility with renewable energy to transform rural productivity.

Charging Solutions

We go beyond manufacturing vehicles by deploying the smart infrastructure that makes electric mobility viable. Our network of automated battery-swapping lockers and solar-assisted charging stations provides a turnkey solution tailored to your market's needs.

Each secure charging compartment features:

- High-Efficiency Charging (>92%) with RS-485 communication
- Flexible Power Output (48V-72V) supporting a wide range of light EVs
- Intelligent Management with automatic recognition, full-charge cutoff, and remote monitoring via TCP/IP
- Rugged & Safe Design built from galvanized steel with IP54 rating, fireproofing, and thermal management

From dense urban cores to remote solar-powered microgrids, we deliver the full ecosystem—ensuring your transition to electric is seamless, scalable, and sustainable. We don't just sell EVs; we enable entire communities to electrify.

RS-485
TCP/IP Protocol

IP54 Waterproofing
Fireproofing
Thermal Management

Customizable compartments

2025 Integrated Annual Report

Together We Thrive – Sustainably & Resiliently

Thank You

Singapore, Indonesia, the Philippines, Ghana, Nigeria

+44 7547 603 005

www.leo-electric.com