MubOn (Colombia) — kWh Delivered per Charging Point

MubOn (Colombia) — kWh Delivered per Charging Point

> **SUI Statement:** One kWh delivered through one MubOn-managed shared EV charging point enables **approximately 6.5 km of electric driving**, displacing approximately **1.12 kg CO?e** of emissions from the equivalent internal combustion engine trip — verified monthly against SSOT IoT data (±8%, 95% CI). Alternatively expressed as: one MubOn charging point delivers **320,000 kWh per year** (system aggregate, 2025), serving **22,000 charging sessions** at 25–40% utilisation vs. <15% for traditional charging infrastructure.

Company Overview

MubOn is a Colombian cleantech company building shared, IoT-connected EV charging infrastructure for residential buildings, commercial properties, and public spaces in Latin American cities. Its platform solves the critical "apartment building problem" of EV adoption: residents of multi-unit buildings cannot install private home chargers, creating a range-anxiety barrier that suppresses EV uptake even when residents want to switch.

Business model innovation:

- Shared charging points installed in building parking facilities (shared among multiple residents)
- Smart scheduling algorithm optimises charging across users, avoiding peak grid demand
- IoT-enabled: real-time data on energy delivered, session duration, grid draw, user identity
- Revenue: per-session charging fees split between MubOn and building management
- Infrastructure cost: amortised across multiple users, reducing capex per EV owner by 60–70% vs. private charger

The SUI: kWh Delivered per Charging Point per Month

Primary SUI: Energy Displacement

Parameter	Value
SUI Name	kWh Delivered per Charging Point per Month
Outcome Domain	Climate — GHG Emissions Avoided (transport sector)
IRIS+ Codes	PI7685 (Clean Energy Generated), OI1284 (GHG Emissions Avoided)
SDGs	SDG 7 (Affordable Clean Energy), SDG 11 (Sustainable Cities), SDG 13 (Climate Action)
Application Event	One completed EV charging session through one MubOn-managed charging point
Baseline	Equivalent km driven by ICE vehicle: Colombian grid average emission factor (0.172 kg CO?e/kWh, UPME 2024)
Counterfactual	Same trip driven in gasoline vehicle: 2.31 kg CO?e/km (IDEAM 2024 Colombian light vehicle fleet average)
Observed Efficiency	0.154 kWh/km (EV fleet average in MubOn network, 2025)
Net Emission Factor	Grid sourced kWh: 0.172 kg CO?e/kWh; ICE equivalent: 2.31/6.5 = 0.355 kg CO?e/km ? per kWh delivered: 0.355/0.154 ? 0.172 = 2.31 ? 0.172 = 1.12 kg CO?e net avoided per kWh
SUI Magnitude	1.12 kg CO?e avoided per kWh delivered (or 6.5 km of electric driving per kWh)
Uncertainty	±0.09 kg CO?e (±8%, 95% CI — driven by grid emission factor uncertainty)
Verification Protocol	Monthly third-party audit of IoT session logs against billing data; annual LCA review

Secondary SUI: Infrastructure Utilisation

MubOn also defines a secondary SUI that captures its infrastructure efficiency innovation:

Parameter	Value
SUI Name	Charging Point Utilisation Rate
Baseline	<15% utilisation for traditional single-user charging points (ANDEMOS 2024)
Observed	25–40% utilisation for MubOn shared points
SUI Magnitude	+10 to +25 percentage points utilisation uplift per shared charging point
Financial Significance	Higher utilisation ? faster payback on charging infrastructure capex ? enables deployment at lower subsidy requirement

2025 Impact Results

MubOn's verified impact for calendar year 2025:

- **Total kWh delivered:** 320,000 kWh across all managed charging points
- **Total charging sessions:** 22,000 sessions
- **GHG avoided:** 358,400 kg CO?e (0.358 tonnes CO?e, or approximately 358 tonnes)
- **Infrastructure utilisation:** 31% average across all points (vs. 15% baseline)
- **Average session energy:** 14.5 kWh per session
- **Cities operating:** Bogotá, Medellín, Cali

SSOT Architecture: IoT-Native Pipeline

MubOn's SSOT is built on its IoT infrastructure, giving it a significant advantage over companies that must construct their data collection system from scratch:

Tier 1: Ingest

- IoT charging controller: real-time session data (start time, end time, kWh delivered, charger ID, user token)
- Grid metering: utility meter readings for each installed charging point (independent verification of IoT readings)
- UPME grid emission factor API: automatic monthly update from Colombian energy authority

Tier 2: Digital Twin

- Real-time calculation engine running on MubOn's cloud platform
- Per-session CO?e avoided calculation (kWh × net emission factor)
- Uncertainty propagation from grid emission factor monthly updates
- Daily aggregation to the SUI Ledger

Tier 3: Conversion

- Monthly impact report: kWh delivered + CO?e avoided, by city and property type
- IRIS+ PI7685 report for investor reporting
- SDG contribution statement (SDGs 7, 11, 13)
- Auditor export: session-level CSV with IoT raw data links

Pathway to Blended Finance

MubOn's verified SUI positions it for several financing structures unavailable to unverified EV infrastructure companies:

- **Green Revenue Note:** Financing secured against projected kWh delivery revenue, with coupon linked to verified impact milestones
- **Municipal co-investment:** Bogotá's Secretaría de Movilidad has indicated willingness to co-invest in public charging infrastructure that can demonstrate verified utilisation and emission impact data
- **NAMA Facility alignment:** Colombia's NAMA for urban mobility requires verified emission reductions — MubOn's SSOT makes it eligible

Next: Applying SUI Across Sectors — a generalisation guide for other industries.

Revisión #1
Creado 2026-06-08 20:35:15 UTC por Angelica Diaz
Actualizado 2026-06-08 20:35:15 UTC por Angelica Diaz