

---

# Digital solutions driving the future of sustainable mobility

## EV charging software solutions

Numocity – ABB EMobility company

Ravikiran Annaswamy – CEO Numocity Technologies

27 Sep 2023

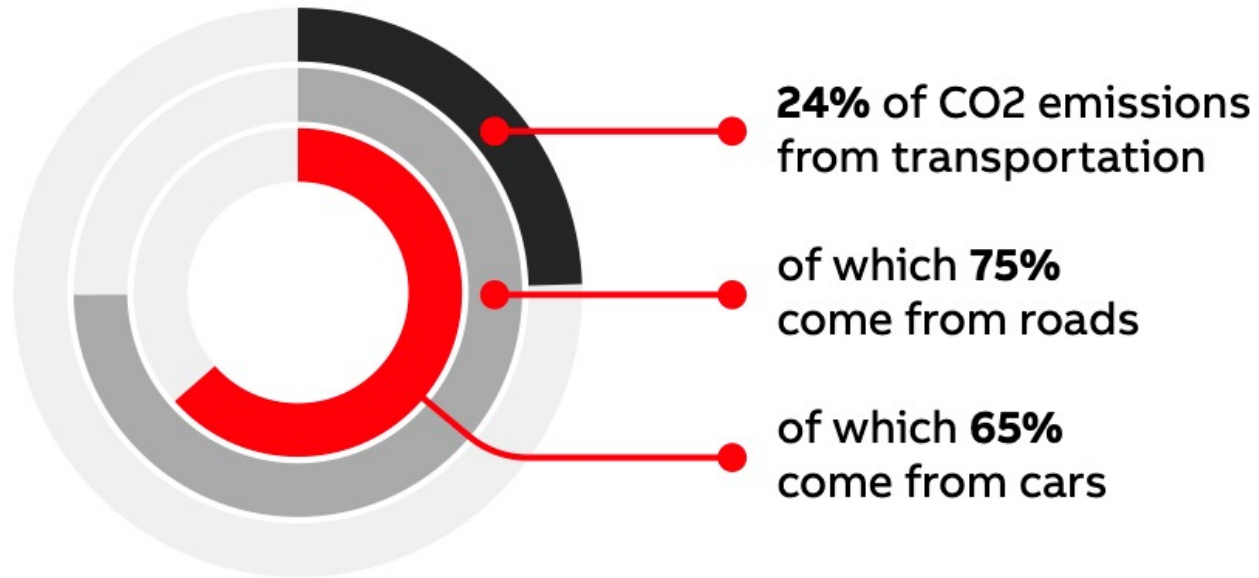
**Numocity**

**ABB**



# Personal journey towards clean mobility

Troubled by air pollution in cities



Clean mobility is to find alternatives to fossil fuels that pollute.

**Biofuels, Fuel Cells and Electric Mobility are seen as main alternatives**

•Source : ABB research report

# My first glimpses of EV in Jakarta

Airport to downtown

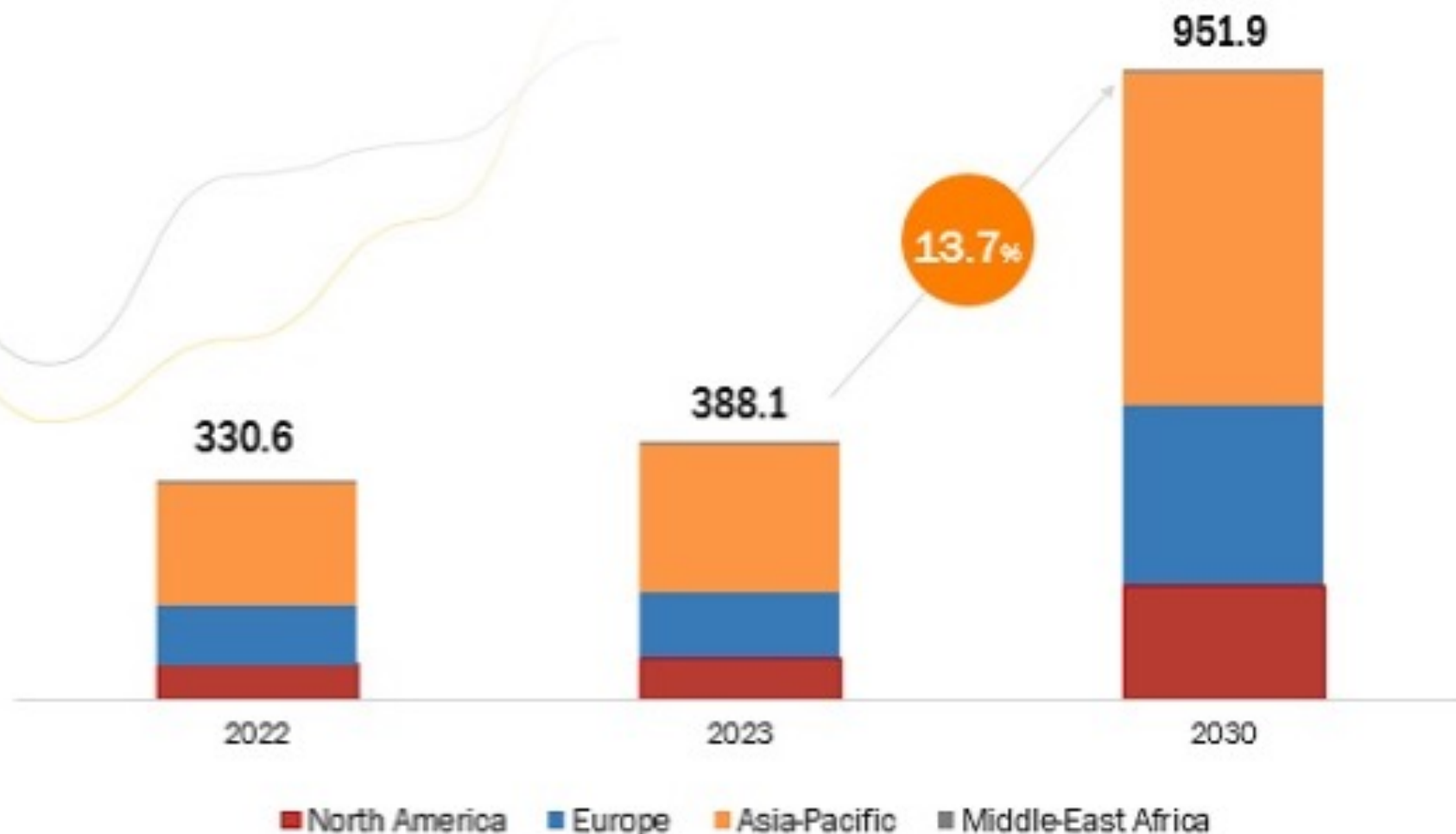


# ELECTRIC VEHICLE MARKET GLOBAL FORECAST TO 2030 (USD BILLION)



CAGR OF  
**13.7%**

The EV market is expected to be worth USD 951.9 billion by 2030, growing at a CAGR of 13.7% during the forecast period.

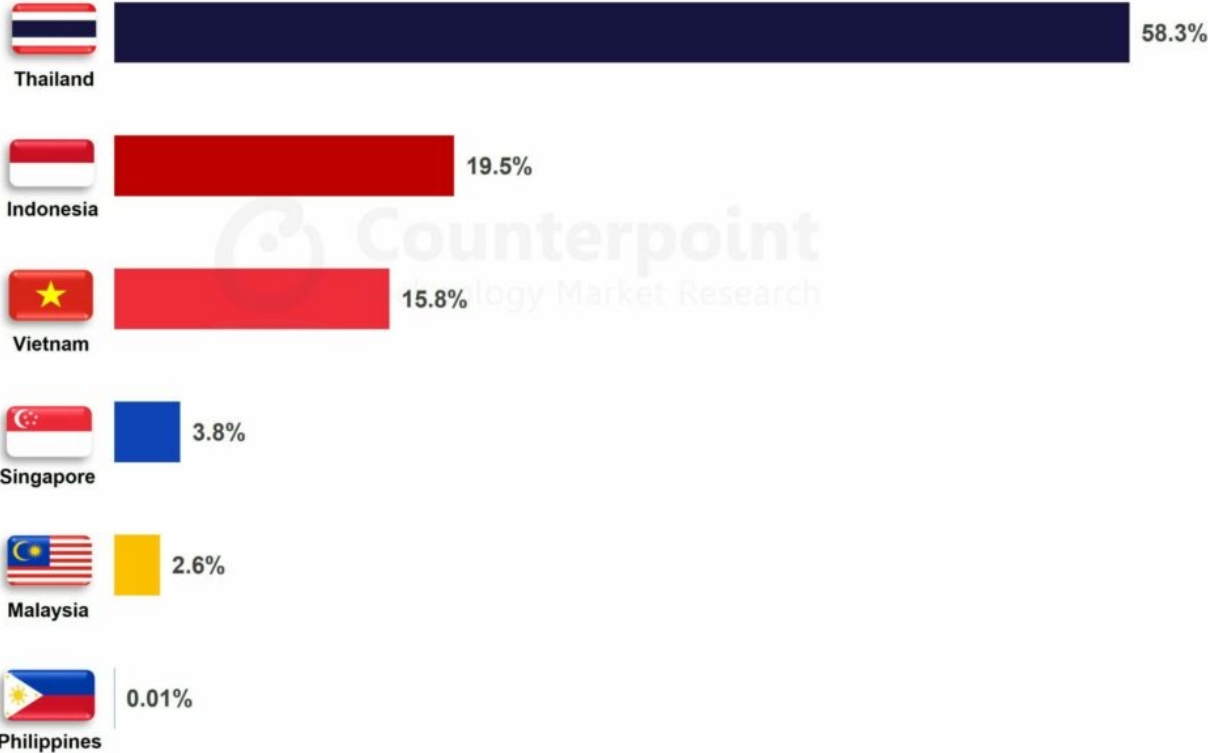


# EV in ASEAN market

Promotions to accelerate adoption



SEA Region EV Sales Share by Major Countries, 2022

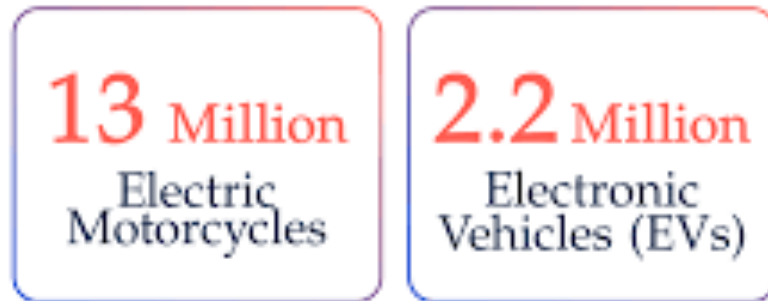


Source: Counterpoint's Global Passenger Electric Vehicle Model Sales Tracker, Q4 2022

# Indonesia EV Market

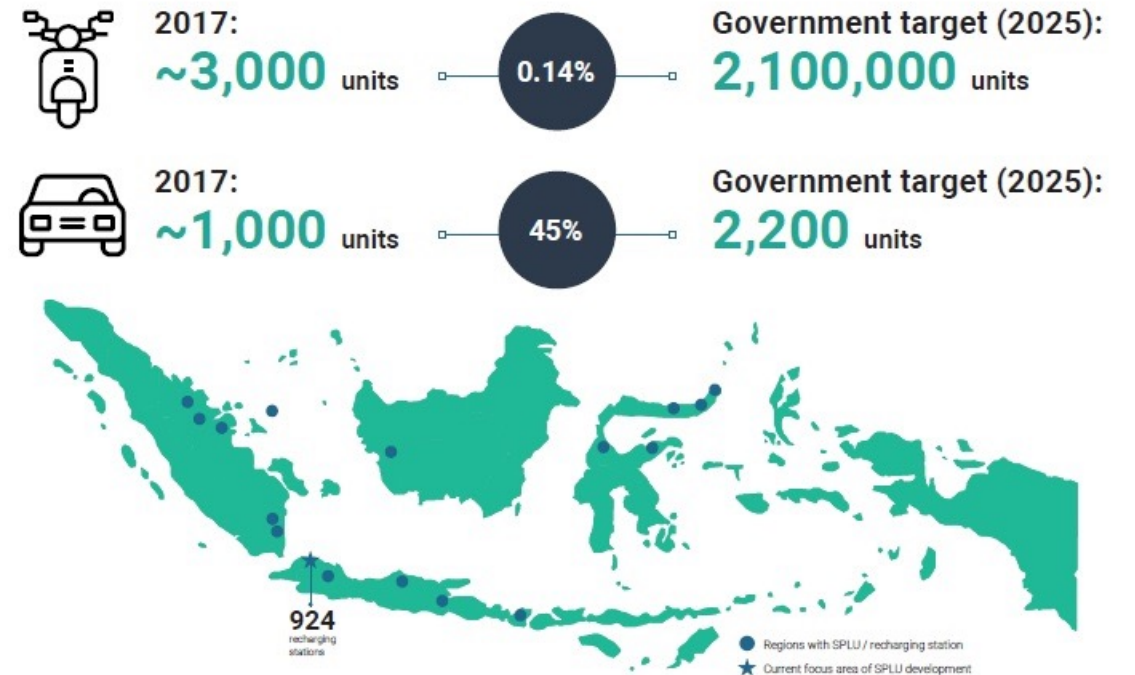
Poised for explosive growth

## Indonesia's Automotive Electrification Goals for 2030



YCP Solidiance

Source : <https://ycpsolidiance.com/article/indonesia-ev-market-2022>



Source : [Indonesia to Boost EV Adoption](#)

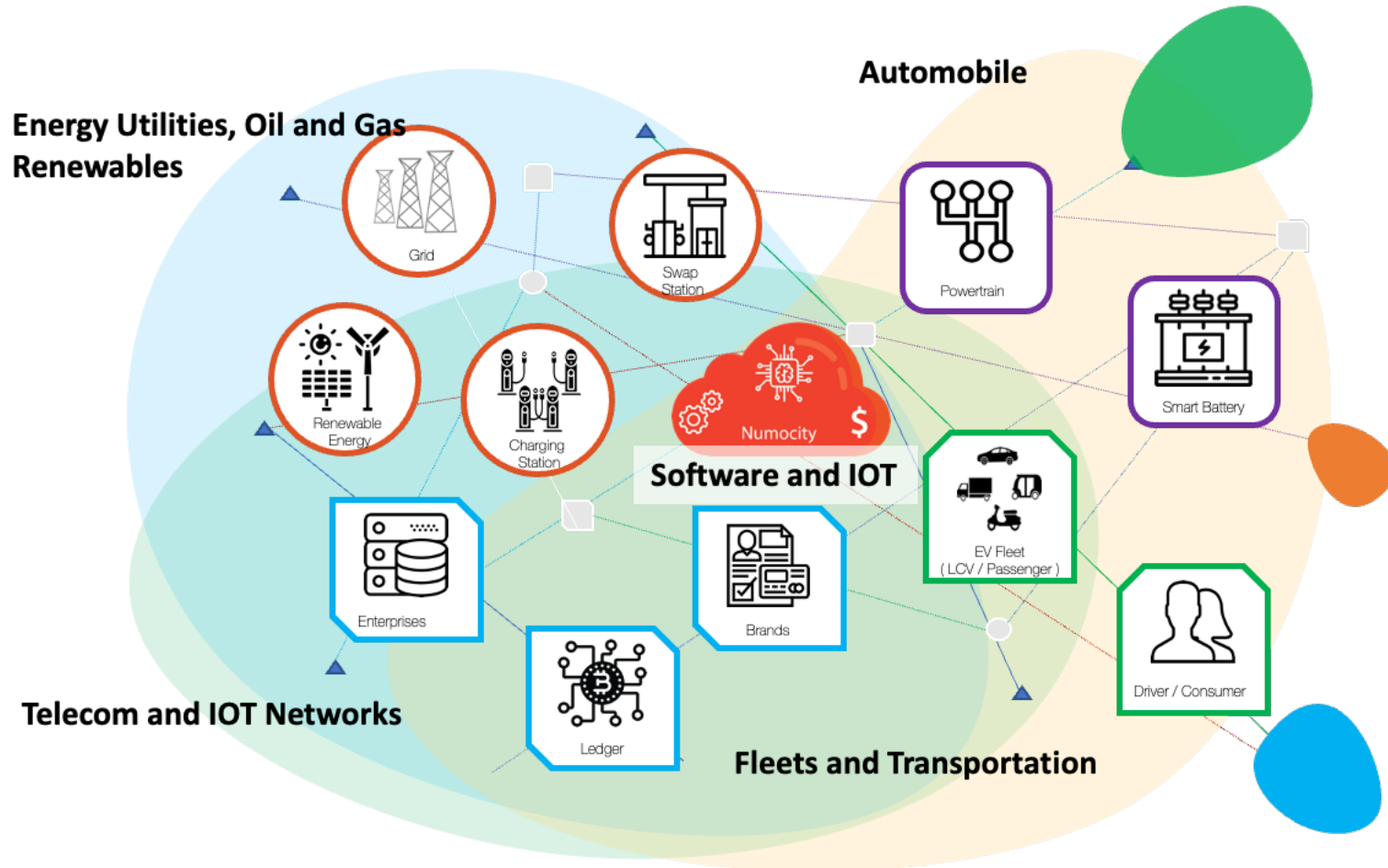
---

# Market need for digital platforms

Focus on EV Charging

# Connected Ecosystem is EV growth engine

New business models at intersection of multiple industries



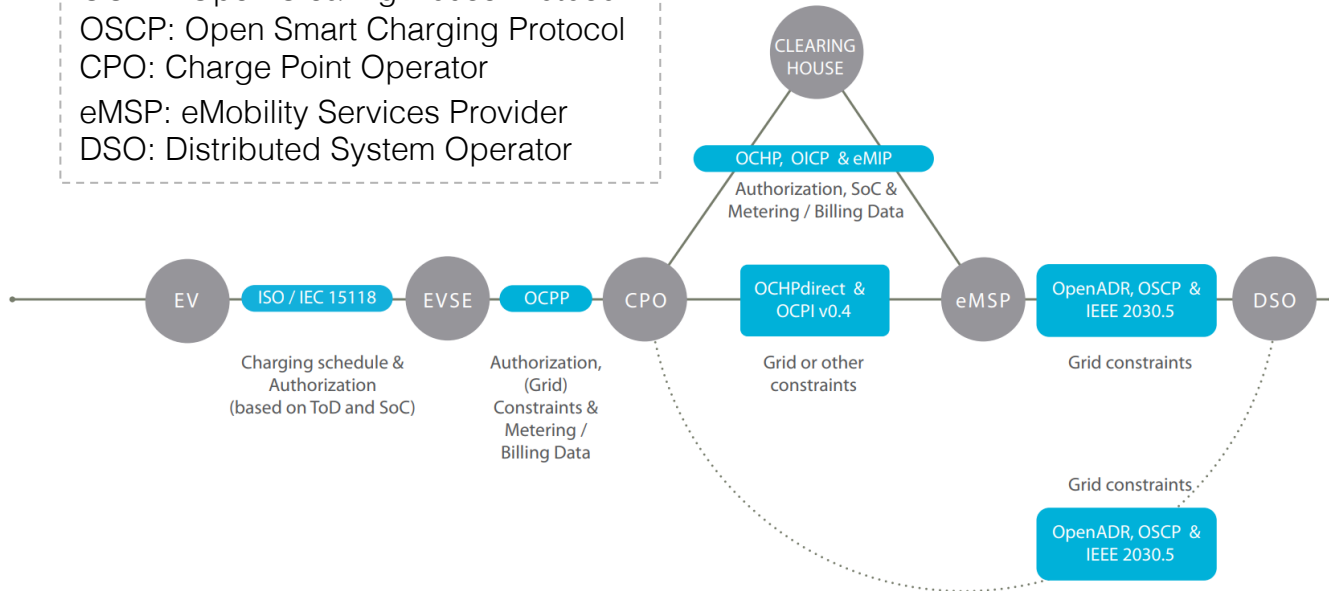
- Automotive Industry
  - Battery and Power Train
- Energy Industry
  - Renewable integration
- Telecom Industry
  - 5G and IOT
- Cloud and Software Industry
  - Edge computing and Big data



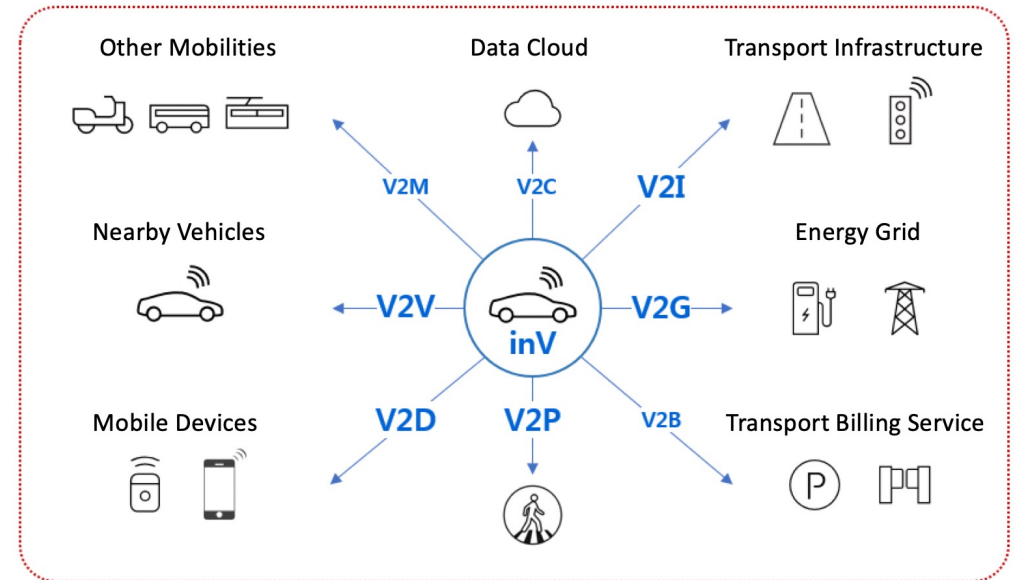
# Software and IoT powers EV adoption

Energy management is the key

EV: Electric Vehicle  
 EVSE: EV Supply Equipment (Charger)  
 OCPP : Open Charge Point Protocol  
 OCHP: Open Clearing House Protocol  
 OSCP: Open Smart Charging Protocol  
 CPO: Charge Point Operator  
 eMSP: eMobility Services Provider  
 DSO: Distributed System Operator



Standards driver interconnect



Connect IOT ecosystem

---

# New fuel stations being setup

Changing the way vehicles are fueled



Starts at home



At work



At Parking



At central hubs



At Public places



At Highways



At Transport Hubs



Wherever you are

# Digital solutions for EV Charging Industry

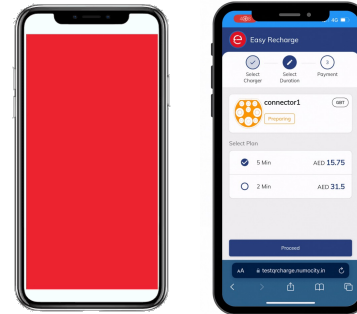
Key and essential component in the success of the ecosystem

## Charger Management System



- IT Back-office solution to launch EV charging services
- Seamless and innovative driver experiences for quick adoption
- Efficient operations and monetization tools to reach faster ROI in the business
- B2B Whitelabelled enterprise platform for faster go to market

## Home and Work platform



- A quick scan solution for easy and fast experience, wherein a user need not have to install any application to access the charge point.

## Roaming and Interconnect



- OCPI based roaming and interconnect – eMSP platform
- Targeted at Vehicle OEMs, EV Fleets and peer to peer connectivity

## Cloud based Load management



- Advanced functionality of protecting and managing load at a site – Building or charging hub
- Using OCPP based cloud load management

---

# Introducing Numocity and the product portfolio

Operational in over 15 countries

# Numocity, an ABB E-Mobility company

## Software for accelerating E-Mobility

- We offer cloud-based SaaS platforms for managing EV charging infrastructure (AC / DC). Our B2B solution is designed for Oil and gas companies, Utilities, Charge point operators, EV fleet operators, and Automotive companies .
- Market leader in the global E-Mobility software segment, including eMSP platform, load management and battery life analytics

70+

Charge point operators

6000+

Charge points

130k+

EV users

15+

Countries



Focused on emerging markets



Member of  
OCA



eMSP Hub



(Planned in 2023)

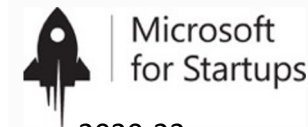
### Corporate acceleration



2018-19



2019-21



2020-23



2022-23

# Digital platforms enabler for E2E solutions

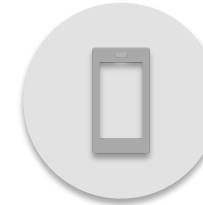
Generating and deriving value from EV Charging ecosystem



Cloud based IT  
Backoffice is a must for  
all EV Charging players



Product centric to  
solution centric



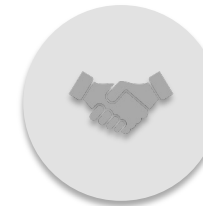
Digital platforms create  
new value with in E2E  
solutions



Recurring revenues



High margin business



Consultative led  
business

Flexible, Scalable, Secure Solutions



# Public Charging Networks

Addressing the range anxiety



# Numocity Solution highlights

Cloud based B2B software solution for energy delivery business



## Superior user experience

- Auto charge – Plug n Charge
- Route planner
- Future reservation
- Multiple languages and payment methods



## Efficient operations

- Smart fault management
- Easy monitoring
- Data and insights
- Load management
- Roaming and interconnect



## Smart monetization

- Flexible tariffs
- Advanced tax module
- Group, Franchise & Captive billing
- Subscription plans



## Consumer engagement

- Integrated external marketing tools
- Discounts and rewards
- Loyalty points
- Segmented notifications

Charger vendor agnostic, flexible cloud deployment, multiple payment methods, API first architecture, enterprise IT integration ( CRM/ERP ) , fleet management integration





## Home and Work Charging

Reliable charging used most times

# QR Recharge - No App Solution

Apartments & Condos



Hotels/Airbnb



Parking Malls



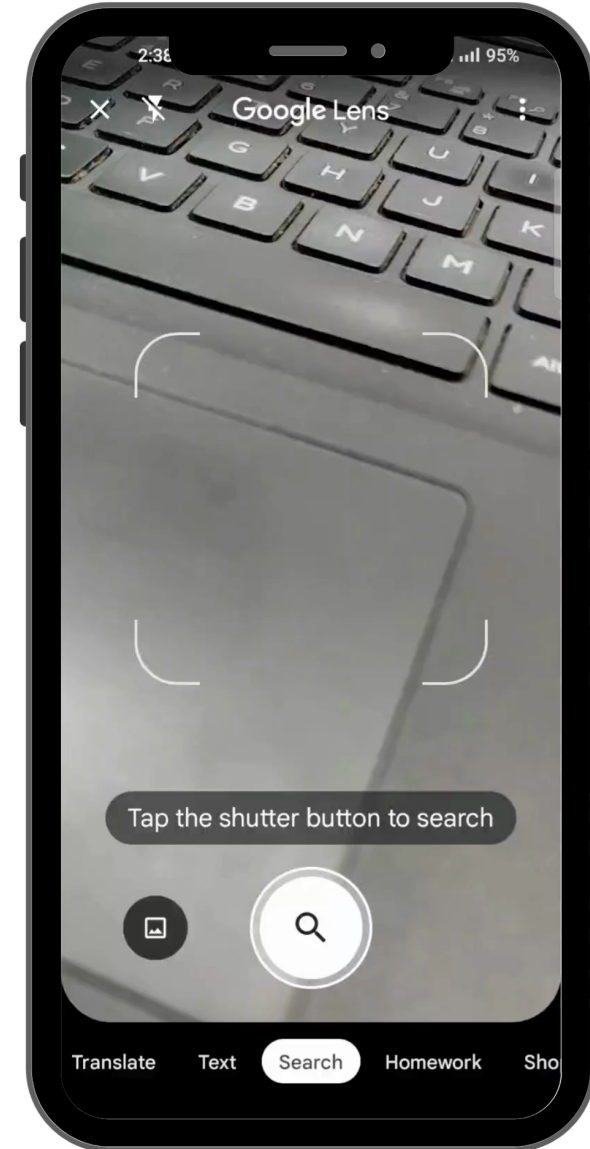
Hospitals



Workspaces



Shopping Malls

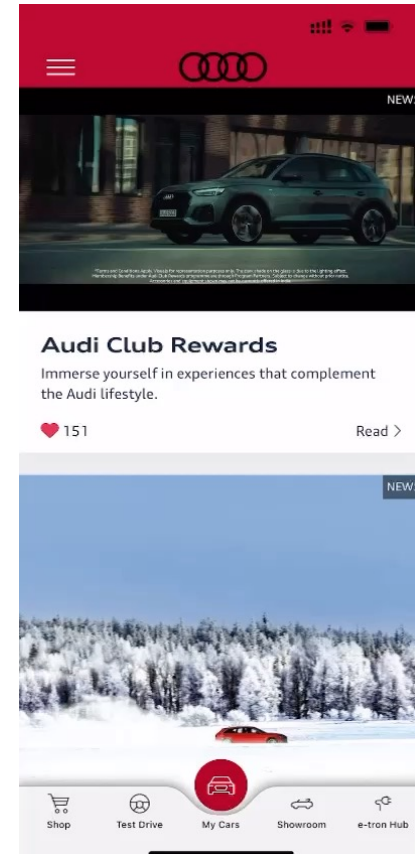
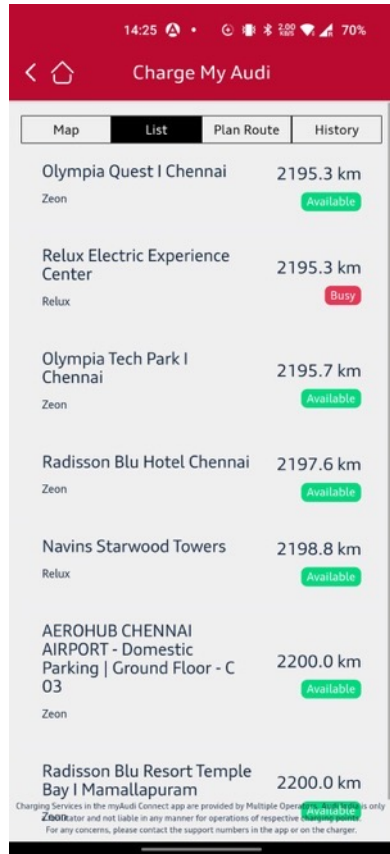
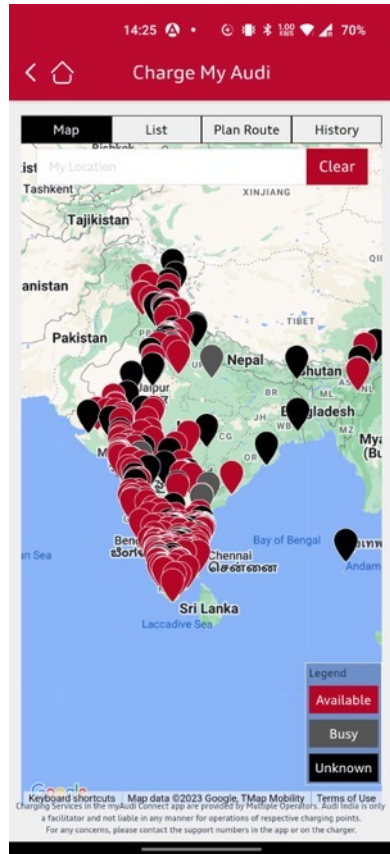
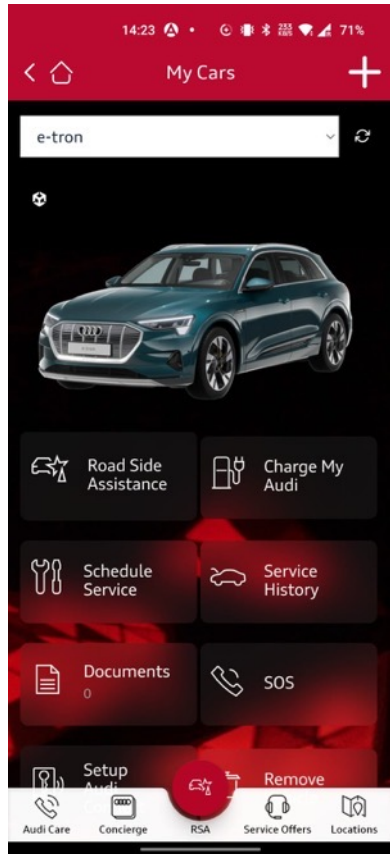




# Roaming and interconnect platform

Vehicle OEMs and peer to peer networks

# Roaming and Interconnect – Audi India





# Cloud based load management

Hub optimization and protecting buildings

# Optimized renewable energy usage

Using battery swap stations for energy storage



<https://ecofriend.com/10-solar-powered-charging-stations-ev-commutes-completely-green/>

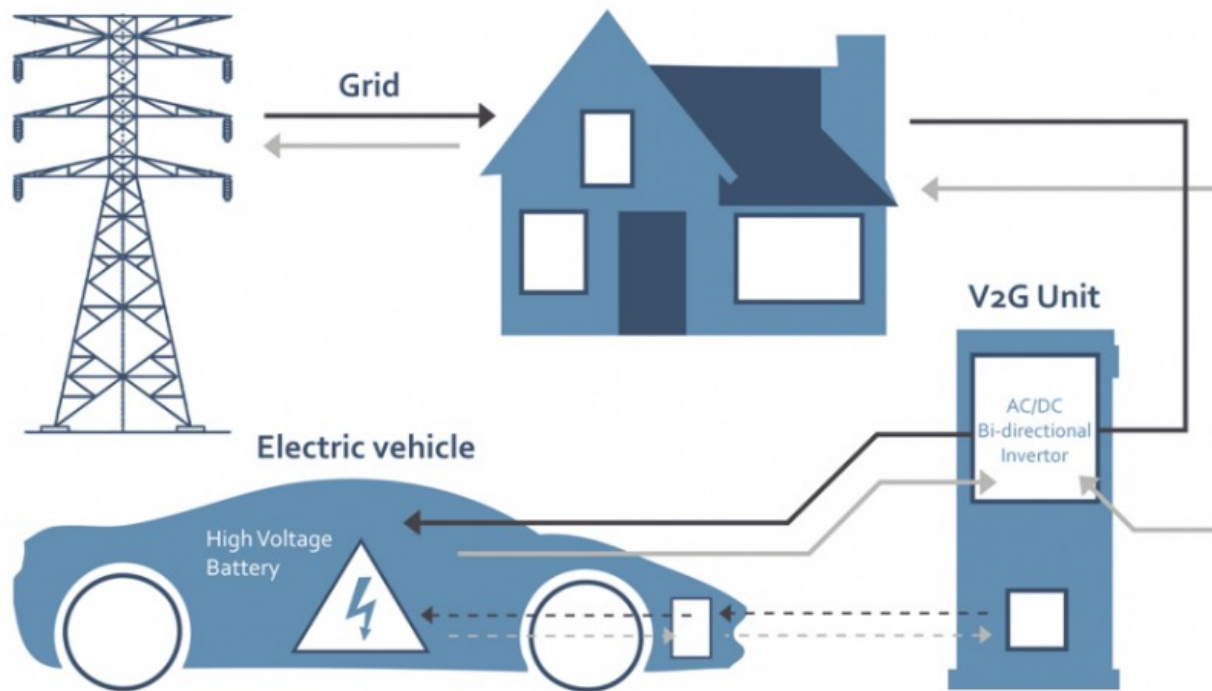


Image source : Best Magazine

Are we Carbon Neutral with EV 's ?

# Smart load management

Optimally utilizing the energy available at site



- Site planning with sub stations, transformers and smart meters
- Energy capacity management with smart charging
- Grid balancing – Load and harmonics
- Building energy management
- Dynamic Price management
- Bidirectional EV chargers

## Smart Applications:

V2H – Vehicle to Home

V2G – Vehicle to Grid

VPP – Virtual Power Plants

---

# Numocity platforms - Key success factors



# Experience with international markets

Established process for onboarding standards compliant chargers, currency, language and payment gateways

## Chargers

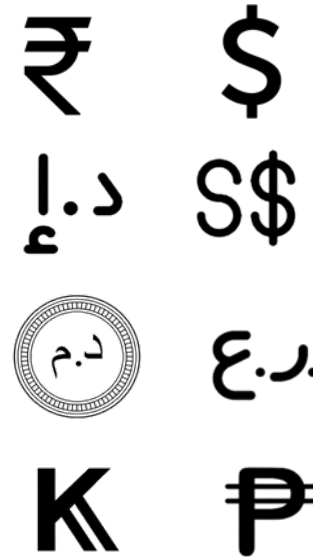


and 25 more

## Payment Gateways



## Currencies



## Languages



# Technology platform and delivery capabilities

Leveraging best practices and capabilities within ABB globally

## Built in-house

- Using latest technologies. micro services, CI/CD processes
- Scalable and secure

## Localization

- Multi language support
- Multiple payment gateway support
- Support across time zones

## Data privacy and security

- Data is owned by the customer, ABB is only software license provider
- Privacy policies in the product

## Platform security

- Platform penetration tested ( VAPT )
- Coding of high standards – scanned with Black duck scans

## Organizational security

- Going through ISO 27001 certification

## Standards compliant

- Supports OCPP 1.6J, 2.0 standards
- Supports OCPI 2.2 standard
- Member of open charge alliance (OCA)

## Project Management

- Dedicated project manager
- Agile workflows
- Change request process

## Product support

- L2/L3 technical support for the product
- Service desk for tickets
- Hotline for emergencies
- Local support from ABB team

# Pay as you grow : Pricing model for Software solutions

OPEX model to support our customers

## One time set up fee

For whitelabelling the platform,  
branding etc.

+

## Annual platform fee

Cloud hosting, Software license,  
Support costs (As per agreed SLA).

+

## Per charger fee

For data, control, and support for  
chargers added to the network

Or

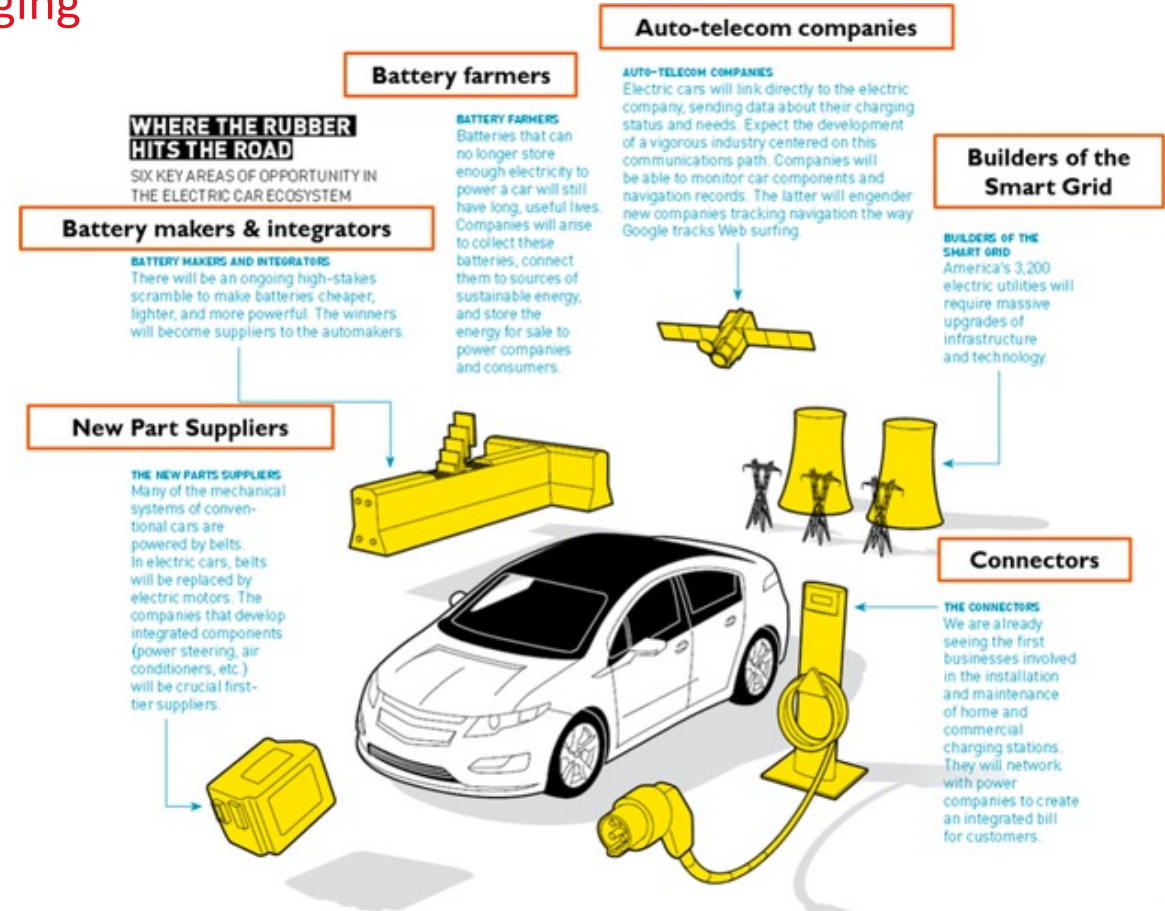
## Revenue share per transaction

For data, control, and support for  
chargers added to the network

# Success factors in the EV ecosystem

A combination of supportive policies, accessible charging infrastructure, and innovative technology

Success in the electric vehicle (EV) ecosystem relies on factors like government incentives, charging infrastructure, affordable models, technology advancements, and environmental consciousness, all working together to promote EV adoption and sustainability.



7 AFFORDABLE AND  
CLEAN ENERGY



Numocity

# #EVOlve

Join in our mission to achieve  
SDG 7 and light up the world with  
sustainable energy solutions!

## Thank you!



THE GLOBAL GOALS