



BUSINESS PLAN · INDIA

EV Battery-Swapping Business

Swappable-battery network for EVs

ENERGY

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This document is confidential and prepared for planning purposes. All financial figures are illustrative model assumptions for an Indian MSME context and must be validated against live quotes, local rates and professional advice before any investment or borrowing decision.

1. Executive Summary

This plan sets out an **EV Battery-Swapping Business** in India — a Battery-as-a-Service (BaaS) network that lets electric two- & three-wheeler drivers swap a depleted battery for a charged one in seconds at swap stations, paying a **subscription or per-swap fee** instead of buying the battery. The operator owns the batteries & swap-station assets (charging/racks/software) and earns recurring energy-as-a-service revenue. It is a **capex/asset-heavy, utilisation- & network-density-driven** business whose economics hinge on **battery utilisation, cycle-life, energy cost & station density**, monetising India's EV adoption & the range/charging-time pain of commercial 2W/3W fleets.

India's EV transition — led by 2W & 3W (especially gig/delivery & passenger 3W) — faces range anxiety, long charging times & high upfront battery cost. Battery-swapping decouples the battery from the vehicle (lower vehicle price), gives instant "refuelling", & suits high-utilisation commercial drivers. A swapping business is an **asset-heavy energy-service platform**: heavy capex in batteries & stations, driven by **battery utilisation (swaps/battery/day), cycle-life/degradation, energy (charging) cost, network density & driver subscriptions**. Revenue is **subscription/per-swap**; success rests on utilisation, network density, battery-life management, energy cost, vehicle-OEM tie-ups & capital — it is capex-, utilisation- & network-driven.

This is an asset-heavy energy-service business — funded by promoter/VC equity plus debt/asset-financing for batteries & stations. This plan models a swapping network with **₹8 crore capital** (equity + battery/asset financing), building toward a network of stations & a subscriber base with revenue of **₹3 crore** in Year 1 scaling to **₹12 crore** by Year 3. *(EV battery-swapping/BaaS; subscription/per-swap × utilisation, capex/utilisation/network-density-driven — figures illustrative; asset-heavy, utilisation is make-or-break.)*

2. Business Description, Vision & Legal Structure

Concept: An EV battery-swapping / BaaS network - owned batteries & swap stations for 2W/3W drivers, earning subscription/per-swap; instant swap vs. charging wait.

Vision: To make EV energy as quick & convenient as refuelling.

Mission: Run a dense, reliable, high-utilisation swap network - charged batteries always available, at a fair subscription.

Legal structure options

- **Private Limited** — recommended for capex, asset-financing, OEM tie-ups & VC funding.
- **SPV / asset-co** — often used to hold & finance battery assets.

Regulatory anchor: battery-swapping operates within EV/battery-swapping policy (evolving), battery standards/safety (BIS/AIS), electrical/charging norms, fire & station safety, GST & (for incentives) FAME/state-EV-policy alignment; interoperability/standards are emerging. Battery utilisation, cycle-life, energy cost, network density, OEM/vehicle compatibility & capital determine success; it is capex-, utilisation- & network-driven, asset-heavy.

3. Promoter & Ownership

Led by a promoter with EV, energy, mobility or tech expertise & capital access. The team includes network/station operations, battery-asset & charging management, technology/software (swap/telematics), driver acquisition & OEM partnerships, finance & safety. Utilisation, network density, battery-life & energy cost are the differentiators. Ownership, equity & asset-financing are editable inputs.

4. Market Analysis — India

India's 2W/3W EV adoption is accelerating (gig/delivery, passenger 3W, commercial fleets), and battery-swapping suits high-utilisation drivers who value instant energy & lower vehicle cost. Demand is EV-adoption-/commercial-fleet-/convenience-driven & policy-supported. The market rewards utilisation, network density, reliability, battery-life/energy-cost management, OEM compatibility & capital; it is capex-, utilisation-, adoption- & standards-sensitive, met with density, utilisation, partnerships & capital.

Demand drivers

- **2W/3W EV adoption & gig/delivery** fleets.
- **Instant swap vs. charging wait** (high-utilisation drivers).
- **Lower vehicle cost** (battery decoupled/BaaS).
- **FAME/state-EV policy** & incentives.
- **Commercial fleet economics**.

Market sizing (illustrative framing)

Layer	Definition	Indicative scale
TAM	2W/3W EV energy/swapping in India	Large & fast-growing
SAM	City/segment & fleet	Substantial
SOM (Yr 1-3)	Stations / subscribers / swaps	Scaling

Target segments

- Gig/delivery 2W riders (high utilisation).
- Passenger & cargo 3W (e-autos/e-rickshaws).
- Commercial fleets & logistics.
- OEM/vehicle partnerships.

5. Competition & Competitive Advantage

Landscape: other swapping networks (Sun Mobility/Battery Smart/Bounce etc.), home/public charging, OEM battery models & fuel. The network competes on density/coverage, utilisation, reliability, price/subscription, battery-life & OEM tie-ups.

The business's edge

- **Network density & coverage (convenience).**
- **Battery utilisation & reliability.**
- **Battery-life & energy-cost management.**
- **OEM/vehicle compatibility & tie-ups.**
- **Driver economics & subscription value.**

6. Products & Revenue Model

Stream	Model	Basis
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Swap subscription (unlimited/plan)	Monthly subscription	Core recurring
Per-swap / pay-as-you-go	Per-swap fee	Usage
Fleet / B2B contracts	Contracted subscription	Volume/utilisation
BaaS to OEMs (battery lease)	Lease/subscription	Asset monetisation
Energy/second-life & data	Ancillary	Upside

Revenue is recurring **subscription/per-swap** on batteries the operator owns — economics = swaps × price (or subscription) × **battery utilisation** — energy (charging) cost — battery depreciation/cycle-life — station/opex, geared by capex. High **utilisation & network density** are make-or-break; battery-life, energy cost, OEM tie-ups & capital drive it — the decisive swapping levers (asset-heavy energy-service).

7. Go-to-Market — Network & Drivers

- **Station rollout & density** (target high-EV-density corridors).
- **Driver/fleet acquisition** (gig/delivery/3W).
- **OEM/vehicle tie-ups** (compatibility, BaaS).
- **Subscription value & reliability.**
- **Utilisation ramp** (density → utilisation flywheel).

Growth approach

Roll out stations in dense EV corridors → acquire drivers/fleets & OEM tie-ups → drive utilisation (swaps/battery/day) & subscriptions → manage battery-life & energy cost → densify network (convenience → more drivers → utilisation flywheel) → scale with capital. Density, utilisation, battery-life & partnerships build the network; utilisation is the make-or-break economic lever.

8. Operations Plan (asset-heavy network)

- **Assets:** battery packs (the major capex), swap stations (racks/chargers), software/telematics — capital-intensive.
- **Operations:** charging management, battery health/BMS monitoring, swap availability, station uptime, logistics.
- **Battery-life:** cycle-life/degradation management, warranty, second-life — key to asset economics.
- **Energy:** charging cost (tariff/solar), load management — a core variable cost.
- **Tech & safety:** swap app, telematics, battery standards/safety (BIS/AIS), fire safety.

Network workflow

Stage	Activity	Metric
Deploy	Stations/batteries	Density/capex
Acquire	Drivers/fleets/OEM	Subscribers
Operate	Charge/swap/uptime	Utilisation/uptime
Manage	Battery-life/energy	Cycle-life/energy-cost
Scale	Densify/utilisation	Swaps/battery/day

9. Regulatory, Licences & Compliance (India)

- **Policy:** EV/battery-swapping policy (evolving); FAME/state-EV incentives; interoperability/standards.
- **Battery/safety:** BIS/AIS battery standards; fire & electrical safety; station norms.
- **Electrical:** charging/connection; load; DISCOM.
- **General:** company/SPV; GST; asset-financing; insurance.

10. Organisation & Manpower Plan

Role	Yr 1	Yr 2	Yr 3
Founders / leadership	2	3	4
Network & station operations	10	24	45
Technology & battery/asset management	5	10	17
Driver/fleet acquisition & OEM	5	11	20
Finance, safety & admin	3	6	10
Total	25	54	96

11. Implementation Timeline & Milestones

Phase	Timeline	Milestone
Setup	Month 0–4	Entity, tech, batteries/stations, OEM tie-ups, first stations
Launch	Month 4–12	Network rollout, drivers, utilisation ramp, ₹3cr revenue
Densify	Year 2	Station density, utilisation, fleets, ₹7cr
Scale	Year 3	₹12cr revenue; utilisation & density economics

12. Financial Plan (Illustrative)

All figures are illustrative model assumptions for an Indian context, shown so the promoter can replace them with live rates. They are not projections of guaranteed results. Battery-swapping is asset-heavy; battery capex & utilisation (swaps/battery/day) are make-or-break; energy cost & battery cycle-life/degradation are core variables; funded by equity + asset-financing.

12.1 Capital & means of finance (initial)

Requirement	₹
Battery packs (major asset)	4,50,00,000
Swap stations (racks/chargers/software)	2,00,00,000
Technology, telematics & setup	80,00,000
Working capital & pre-operative	70,00,000

Total capital	8,00,00,000
Promoter/VC equity	4,00,00,000
Debt / battery-asset financing	4,00,00,000

12.2 Projected Profit & Loss (3 years)

Particulars	Year 1	Year 2	Year 3
Subscription / per-swap revenue	2,70,00,000	6,30,00,000	10,80,00,000
Fleet/B2B, BaaS & ancillary	30,00,000	70,00,000	1,20,00,000
Total revenue	3,00,00,000	7,00,00,000	12,00,00,000
Energy (charging) cost	90,00,000	2,00,00,000	3,30,00,000
Station ops, rent & labour	1,10,00,000	2,20,00,000	3,40,00,000
Battery depreciation / cycle-life & tech	1,00,00,000	1,70,00,000	2,40,00,000
Interest & overheads	50,00,000	80,00,000	1,10,00,000
Total expenses	3,50,00,000	6,70,00,000	10,20,00,000
Profit before tax	(50,00,000)	30,00,000	1,80,00,000
Path	Invest/ramp	Turning	Profitable at utilisation

12.3 Unit economics & key ratios

- **Swaps × price × battery utilisation:** each battery generates revenue only when swapped; **utilisation (swaps/battery/day)** is the make-or-break — high utilisation spreads battery capex & station cost, low utilisation destroys the model.
- **Energy cost & cycle-life:** charging cost (tariff/solar) & battery degradation/cycle-life are the core variable/asset costs; managing them (and second-life) drives per-swap contribution.
- **Network density flywheel:** density → convenience → more drivers → higher utilisation → better economics; capex & capital are needed to reach density; early years invest, profitability comes at utilisation/density.

12.4 Projected Cash Flow — Year 1 (quarterly, illustrative)

Particulars (₹)	Q1	Q2	Q3	Q4
Opening balance	70,00,000	55,00,000	48,00,000	45,00,000
Revenue collections	50,00,000	70,00,000	85,00,000	95,00,000
Energy, ops & operating	65,00,000	77,00,000	88,00,000	95,00,000
Closing balance	55,00,000	48,00,000	45,00,000	45,00,000

Swapping is asset-heavy with utilisation the make-or-break; early years invest in batteries/stations/density before utilisation covers cost. Utilisation ramp, density, energy-cost/battery-life management, asset-financing & capital runway manage cash; the key risks are low utilisation, battery degradation/cost, energy cost, standards/interoperability & capital intensity — met with density, utilisation, battery management, OEM tie-ups & funding.

12.5 Key Performance Indicators to Monitor

- **Utilisation:** swaps/battery/day; station utilisation; subscribers.
- **Assets:** battery cycle-life/degradation; battery/station count; density.
- **Economics:** energy cost/swap; contribution/swap; per-battery revenue.
- **Finance:** EBITDA; capex/battery; utilisation break-even.

13. Funding Requirement & Bankability

This network is **asset/capex-intensive**: ₹8 crore split **₹4 crore equity + ₹4 crore debt/battery-asset financing** for batteries (the major asset), stations & tech. Fundability rests on utilisation trajectory (swaps/battery/day), network density, battery-life/energy-cost economics, OEM tie-ups & the path to profitability; investors/lenders assess utilisation, unit economics & asset quality. Early years invest/ramp (losses) with profitability at utilisation/density (Year 2–3). Battery utilisation, network density, battery-life & energy cost underpin the model. *(Business model, not investment advice; EV/battery-swapping policy & safety standards apply & are evolving.)*

13.1 Funding utilisation (initial ₹8 crore)

Use of funds	₹	% of total
Battery packs (major asset)	4,50,00,000	56.25%
Swap stations (racks/chargers/software)	2,00,00,000	25%
Technology, telematics & setup	80,00,000	10%
Working capital & pre-operative	70,00,000	8.75%
Total	8,00,00,000	100%

14. Risk Analysis & Mitigation

Risk	Mitigation
Low utilisation (the #1 risk)	Density, driver/fleet acquisition, OEM tie-ups, corridor focus
Battery degradation / cost	BMS/health management, warranty, second-life, quality cells
Energy cost	Tariff optimisation, solar/off-peak charging, load management
Standards / interoperability / policy	Standards adherence, OEM compatibility, policy tracking
Capital intensity / funding	Asset-financing, phased density, utilisation-led scaling, capital

15. SWOT Analysis

Strengths EV-adoption tailwind; instant-swap convenience; recurring subscription; density flywheel; lower vehicle cost (BaaS).	Weaknesses Asset/capex-heavy; utilisation-critical; battery degradation/energy cost; standards/interoperability-dependent; early losses.
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Opportunities	Threats
2W/3W EV & gig fleets; FAME/state-EV; OEM/BaaS tie-ups; solar-charging; second-life; new cities.	Charging-tech competition; utilisation shortfall; battery-cost/tech shifts; standards/policy; capital-intensity.

16. Recommended AiSevak Tools for This Business

This battery-swapping network would use AiSevak's Energy vertical tools in delivery:

- **Network ops:** station/battery-utilisation & swap/telematics, battery-health/cycle-life & energy-cost, driver/fleet-acquisition tools.
- **Business & compliance:** asset-financing/capex & FAME/EV-policy, battery-safety/standards & OEM-tie-up tools (with Finance & Legal verticals).
- **Practice:** Business Plan, utilisation/unit-economics and Break-even modelling tools to plan & monitor the network.

17. Key Assumptions & Notes

- EV battery-swapping/BaaS: owned batteries + swap stations for 2W/3W, recurring subscription/per-swap; asset/capex-heavy energy-service.
- Economics = swaps × price × battery utilisation – energy cost – battery depreciation/cycle-life – station/opex; utilisation (swaps/battery/day) & network density are make-or-break.
- Funded by equity + debt/battery-asset financing; EV/battery-swapping policy, FAME/state-EV, BIS/AIS battery & fire safety apply (evolving); early-year investment before utilisation profitability.
- Utilisation, density, battery-life, energy cost, OEM tie-ups & capital drive economics; figures illustrative; business model, not investment advice.

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