IoTize.ORG

EV Charging

Operator's Guide

How to plan, price, and launch a profitable EV charging business in Pakistan

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Before you start

This guide is written for the person who has decided that EV charging is worth a serious look, and now has to turn that into a decision they can defend: which chargers, which sites, which pricing, which software, and what it will actually earn.

It is not a sales brochure. Most of what follows applies whether you buy software from IoTize or from anyone else. Where we do make the case for our own platform, we say so plainly and you can skip those parts.

Who this is for:

- Companies that make, assemble, import, or sell EV chargers, and want to sell a charging business instead of a metal box.
- Charge point operators (CPOs) who plan to own and run chargers as revenue-earning assets.
- Site hosts: malls, fuel stations, workplaces, housing societies, hotels, and hospitals with parking and a power connection.
- Fleet operators electrifying two-wheelers, three-wheelers, or vans who need depot charging that they can control and cost.
- New entrants who want to launch a charging brand and are starting from a blank page.

How to use it: Parts 1 to 3 are the market and the decision. Parts 4 to 8 are the build: hardware, software, sites, pricing, payments. Parts 9 to 11 are running it. The appendices are the working documents: a vendor question list you can send verbatim, a site scoring sheet, a glossary, and a pre-launch checklist.

If you only read two things, read **Part 3 (which model fits you)** and **Appendix A (the questions to ask any software vendor)**. Those two decisions cost the most to get wrong.

PART 1: THE OPPORTUNITY

1.1 What the numbers say

Pakistan's EV shift stopped being a forecast and became a policy schedule.

Figure	What it means for you
30% of new vehicle sales to be electric by 2030 (NEV Policy 2025–30 target)	The vehicle base you would be serving is being created by regulation, not by hoping
3,000 public charging stations planned nationwide by 2030	The gap between that number and what exists today is the market
80,000+ EVs on Pakistan roads by mid-2025, up from **567** in 2021	The curve has already turned. This is not a standing start
Rs 39.7 per kWh national commercial charging tariff, fixed at policy launch	Your input cost and your ceiling are both knowable, which makes the business modellable
28.6% global Charging-as-a-Service market CAGR, 2026 to 2033	The service layer, not the hardware, is where the growth is priced

Sources: Government of Pakistan NEV Policy 2025–30; Grand View Research market outlook. Figures are shown for context and are not a guarantee of any specific result. Policy numbers change, so verify before you build a business case on them.

1.2 The three forces actually driving this

Policy, not preference. Fuel retailers are required to convert a share of forecourts to charging. A national commercial charging tariff has been fixed. Targets are set to 2030. Demand for charging points is being manufactured by regulation, which is a far more reliable driver than consumer enthusiasm.

Two and three wheelers, not cars. This is the single most misread fact about Pakistan's EV market. The volume is in motorcycles, rickshaws, and delivery fleets, not in imported cars. That changes everything downstream: it favours AC charging in the 3.3 kW to 22 kW range over expensive DC, it favours small-value transactions over big ones, it favours turnover over dwell time, and it makes local wallet payments essential rather than optional.

The hardware is commoditising. Chargers are being imported and assembled locally at falling prices. On a spec sheet, they increasingly look the same. That is bad news if you sell boxes and good news if you buy them, because your differentiation and your margin have moved somewhere else: to the software, the brand, and the operation.

1.3 The uncomfortable part

Charging is not a licence to print money. It is an infrastructure business with real capex, real utilisation risk, and a genuine chance of building an expensive amenity that nobody uses.

The businesses that fail usually do one of three things: they buy hardware before they have chosen sites, they treat the software as an afterthought, or they never measure utilisation and so never learn which sites work. This guide is largely about not doing those three things.

PART 2: WHY A CHARGER WITHOUT SOFTWARE IS JUST A BOX

2.1 What an unmanaged charger cannot do

Buy a charger, mount it, energise it, and you have an appliance. It cannot tell you who used it. It cannot bill them. It cannot stop a session. It cannot tell you it has failed. You find out it is broken when a customer complains, or when you notice the revenue that never arrived.

Put concretely, an unmanaged charger costs you:

The gap	What it costs
No billing	You cannot charge per kWh or per session. The charger is a free amenity at best, a loss at worst
No visibility	No uptime, faults, or utilisation data. You cannot fix what you cannot see, or plan the next site
No brand	Drivers use somebody else's app. Every session builds their network, not yours
No local payments	International-only checkout fails in a market that runs on local wallets and bank rails
Lock-in	Closed networks tie your software to their hardware. Switching later means removing equipment from the wall
No recurring revenue	Sell a box, take the margin once, and never see the installed base again

2.2 The three layers of a charging business

Think of it as three layers stacked on top of each other. Most people budget carefully for the first and improvise the other two, then wonder why the numbers do not work.

1. **The asset layer.** The charger, the cabling, the civil works, the grid connection. One-time capex. Commoditising.
2. **The control layer.** The software that authorises, meters, controls, bills, monitors, and reports. Recurring cost. This is where the business actually lives.
3. **The demand layer.** The driver app, the map listing, the pricing, the brand. This is what decides whether the asset earns or idles.

The asset layer without the other two is a wall ornament that draws power.

2.3 What "managed" actually gets you

- **Revenue.** Per kWh, per minute, per session, flat, member versus public. You cannot bill what you cannot meter and authorise.
- **Uptime.** Fault alerts before drivers find the fault. Remote reset before a technician gets in a van.
- **Site intelligence.** Utilisation by hour, day, and site tells you which locations earn, which do not, and where charger number seven should go.
- **Brand and repeat use.** Drivers come back to the app that reliably finds them a free charger and takes their money without friction.
- **Control.** Load management so four chargers on one supply do not trip the site. Access rules so staff charge free and the public pays.

PART 3: WHICH MODEL FITS YOU

There are five realistic ways into EV charging. Picking the wrong one is the most expensive mistake in this guide, because it is the one you cannot cheaply reverse.

3.1 The five models

1. Own the charger, run your own brand (white label Platform as a Service).

You buy the hardware. You subscribe to software that runs it under your name. You keep the asset, the brand, the pricing, the customer, and the data. Highest control, highest upside, you carry the capex and the operating responsibility.

2. Own the charger, join somebody else's network.

You buy the hardware and list it on an existing network's app. Simplest to start. Their brand, often their pricing, their customer, their data. You become a supplier to their network rather than a business.

3. Charging as a Service (CaaS).

A third party owns, installs, and operates the charger. You provide the site and take a share. Near zero capex, near zero operations, and near zero control or upside. Sensible if you want an amenity, not a business.

4. Host only.

You provide parking and power to an operator and take rent or a revenue share. The lightest possible involvement.

5. Maker or seller with a software arm.

You make, assemble, import, or sell chargers, and you ship each one with a branded app and dashboard for your customer, while monitoring your entire installed base from one screen. Hardware margin plus recurring software revenue, plus a reason customers stay with you.

3.2 The comparison

	White label software (your charger, your brand)	Join a closed network	Full CaaS
Who owns the charger	**You**	You, but tied to their platform	A third-party provider
Whose brand drivers see	**Yours**	Theirs	Usually theirs or co-branded
Who sets pricing	**You**	Often them	Them, within the contract
Who owns the customer and data	**You**	Them	Them
Payment to your own account	**Yes**	Often no	No
Hardware freedom (OCPP, mixed brands)	**Yes**	Limited	Limited
Upfront hardware cost	You buy the charger	You buy the charger	Low, the provider funds it
Best for	Operators, hosts, and makers who want a real branded business	Hosts who just want a charger listed	Hosts who want zero capex and no operations

3.3 A four question decision

Q1. Do you make, assemble, import, or sell chargers?

Yes, go to model 5. You need a multi-tenant setup: one dashboard across every customer, each customer with their own branded, role-limited login. No, go to Q2.

Q2. Do you want drivers to see your brand, or somebody else's?

Somebody else's is fine, go to model 2. Your own, go to Q3.

Q3. Will you own the hardware, or should someone else own and operate it?

Someone else, go to model 3 or 4. You will own it, go to Q4.

Q4. Do you need to bill drivers and take payments under your own name?

Yes: model 1, white label Platform as a Service, is your fit. No, charging is free for staff or members: still model 1, minus public billing. You keep the branded app, dashboard, access control, and monitoring, and you can switch paid public charging on later.

PART 4: CHOOSING HARDWARE

4.1 AC or DC

	AC charging	DC fast charging
Typical power	3.3 kW to 22 kW	30 kW and above
Charge time	Hours	Minutes to under an hour
Cost per unit	Low	High, often 10× or more
Grid demand	Modest	Heavy, often needs upgrade works
Right for	Bikes, rickshaws, cars, dwell-time sites: malls, workplaces, housing, depots	Highways, fleet turnarounds, forecourts with throughput
The trap	Too slow for a site where nobody parks long	Buying it for a site whose customers park for two hours anyway

The Pakistan-specific point: because two and three wheelers lead adoption, AC in the 3.3 kW to 22 kW band covers most viable sites today. DC has a real place on highways and fleet depots, but it is where over-optimistic operators burn capital fastest. Match the charger to the dwell time, not to the brochure.

4.2 Non-negotiable: OCPP

OCPP (Open Charge Point Protocol) is the open language chargers and management software use to talk to each other. It is what lets a charger from one company be run by software from another.

Insist on it. Specifically:

- **OCPP 1.6** is the widely deployed version. **OCPP 2.0.1** is the newer one with better security, smart charging, and device management.
- A charger that is not OCPP compliant is a charger you can only ever run with the vendor's own software, on the vendor's terms, at the vendor's price. That is not a hardware purchase, it is a marriage.
- OCPP is your exit route. If your software vendor disappoints you in year three, you change software, not chargers. Without it, changing software means changing steel.
- Beware the phrase "OCPP ready" or "OCPP compatible" on a spec sheet. Ask which version, which profile, and demand a live demonstration against a real management system before you order in volume.

4.3 What to check before you buy

- **Protocol.** OCPP 1.6 or 2.0.1, confirmed by demonstration, not by datasheet.
- **Connectors.** Match your actual vehicle mix, not the global average. Bikes and rickshaws have different needs than cars.
- **Power and phases.** Single phase or three phase, and whether your site supply can actually deliver it.
- **Metering accuracy.** You are billing on these readings. An inaccurate meter is a billing dispute waiting to happen, and a compliance problem.
- **Ingress and environment.** Outdoor units face dust, heat, and monsoon. Check the IP rating and the operating temperature range honestly against a Karachi or Lahore summer.
- **Connectivity.** Ethernet, WiFi, or 4G. On a forecourt, assume 4G and check signal before installation day.
- **Firmware updates.** Can it accept remote firmware updates? If not, every fix is a van and a technician.
- **Local support and spares.** An imported charger with no local spares is a two-month outage waiting to happen.
- **Warranty terms.** In writing, with a response time, from an entity that exists in Pakistan.

4.4 What we will and will not tell you

IoTize does not sell chargers, and we do not maintain a public list of approved brands. What we do is commission your specific models against the platform before you go live, so you find out on our time rather than in front of a customer.

Our software is compatible with OCPP 1.6 and 2.0.1 chargers, AC and DC. That is the claim we stand behind. Any vendor who tells you their software works with "every charger on the market" is telling you something they cannot possibly have tested.

PART 5: CHOOSING SOFTWARE

This is the part most buyers rush, and it is the part that determines whether the hardware earns.

5.1 The vocabulary, decoded

You will meet several terms that mostly mean the same thing. Do not let them confuse the comparison.

- **CPMS (Charge Point Management System).** The older term, tied to OCPP 1.6.
- **CSMS (Charging Station Management System).** The newer term, used in OCPP 2.0.1. Same job, the name changed with the protocol.
- **EVSE management software.** The same layer described from the hardware side. EVSE means the charger itself.
- **eMobility platform.** Emphasises running a public-facing network with a driver app.
- **White label EV charging software.** The same platform delivered under your brand: your logo, your app name, your colours.
- **Platform as a Service.** You own the charger, you subscribe to the software. **This is not the same as Charging as a Service**, where a third party owns and operates the charger and you rent the whole bundle. One distinction decides who owns your business.

5.2 Buy or build

Every technical founder asks this. The honest arithmetic:

Building means you own the roadmap and pay for all of it. You are hiring backend, mobile (twice, for iOS and Android), frontend, and DevOps. You are implementing OCPP correctly, including the awkward edge cases that only appear against real hardware in the field. You are integrating payment gateways. You are running uptime and security for a system that handles money. You are doing this for eighteen months while your competitors are selling.

Buying means you launch in weeks, you pay a recurring fee, and you accept somebody else's roadmap.

Build only if charging software is going to be your product, not your enabler. If your business is chargers, sites, or a fleet, buying is almost always right. If you buy, the thing that protects you is not a contract clause, it is OCPP and data export. Those are your exits.

5.3 The feature checklist

Print this. Score every vendor against it.

Driver app

- ☐ Live charger map with real-time available, busy, offline status
- ☐ Nearest available charger, sorted by distance, busy units hidden
- ☐ Filters: connector, AC or DC, power, price, amenities
- ☐ One tap turn-by-turn navigation to the exact charger
- ☐ Reserve a charger before arriving
- ☐ QR or tap to start, remote stop from the phone
- ☐ Live session view: kWh, battery percent, time, cost
- ☐ In-app wallet and top-up
- ☐ Local payment methods drivers already use
- ☐ Receipts and full session history
- ☐ Push notifications: charger free, session done, low balance, fault
- ☐ Favourites, recents, ratings, fault reporting
- ☐ Urdu and English, low data usage
- ☐ iOS, Android, and a driver web portal

Operator back office

- ☐ Real-time fleet monitoring on one screen
- ☐ Remote start, stop, pause, reset, and power limiting
- ☐ Flexible pricing: per kWh, per minute, flat, time of day, member versus public
- ☐ Automatic charge detail records and invoicing
- ☐ User and access management: drivers, members, fleet accounts
- ☐ Smart charging and load management
- ☐ Fault and uptime alerts
- ☐ Reports: uptime, utilisation, energy, revenue, by charger, site, and day
- ☐ Role-based access and multi-site management
- ☐ Data export, on demand, in a usable format

Platform

- ☐ OCPP 1.6 and OCPP 2.0.1
- ☐ Hardware agnostic: mixed brands, AC and DC, one dashboard
- ☐ White label branding
- ☐ Role-based multi-tenant access: maker, operator, host, driver each see the right slice
- ☐ Local payment gateway support

- ☐ Deployment options: managed SaaS, and private cloud or on-premise if you need them
- ☐ Over-the-air firmware updates
- ☐ APIs and integrations for fleet, ERP, or accounting
- ☐ Scales from two chargers to thousands without re-platforming

Host access, if you have site partners

- ☐ Private, role-limited login showing only the host's own site
- ☐ Live status of that site's chargers
- ☐ Sessions and energy delivered at that location
- ☐ Revenue and the host's own share, daily and monthly
- ☐ Utilisation by hour and day
- ☐ Fault alerts for that site only
- ☐ Downloadable statements for the host's finance team

5.4 Red flags

- **They will not name their OCPP version.** They have not really implemented it.
- **Their software only runs their hardware.** That is a closed network wearing a platform costume.
- **No data export.** Your business is now hostage.
- **The driver app is an afterthought.** An unloved app means empty chargers.
- **No local payment story.** In this market, that is disqualifying.
- **They cannot show you a live dashboard.** Ask for a screen share against real hardware, today, not a slide.
- **The demo is all roadmap.** Ask which features are live right now and get the answer in writing.

5.5 Where IoTize sits, plainly

We are an IoT engineering company that has built connected devices and platforms since 2015. EV charging is IoT: sensors, connectivity, cloud, and control. Our model is **your charger, our application**. You own or buy the hardware. We provide the software layer: a branded driver app on iOS, Android, and web; an operator back office; role-limited host logins; OCPP 1.6 and 2.0.1 connectivity for AC and DC chargers; support for local payment gateways; smart charging and load management; over-the-air firmware updates; and APIs.

Commercially: the platform is licensed per charger, per month, with a one-time setup and onboarding fee covering app branding, charger commissioning, and payment gateway connection. Pricing scales with the size of your network. We quote against your actual sites and charger count rather than publishing a number that fits nobody.

Deployment: managed SaaS on our cloud is the recommended route for almost every operator. Private cloud and on-premise are available on request for enterprise deals.

Your data: fully exportable, whenever you want it.

PART 6: CHOOSING SITES

Site selection is where charging businesses are quietly won or lost. A great charger at a bad site loses money. An average charger at a great site prints it.

6.1 What makes a site work

Dwell time must match charge speed. This is the master rule. A mall where people park for two hours suits AC. A forecourt where people stop for eight minutes needs DC or it is pointless. Mismatch these and utilisation collapses regardless of how good everything else is.

Traffic of the right vehicles. Not footfall. Not cars in general. Electric vehicles of the type your chargers serve. A site with ten thousand visitors and no EVs is a site with no sessions.

Visibility and access. A charger nobody can see, reach, or park at might as well be in a cupboard. Basement level three is where charging revenue goes to die.

Power availability. The single most common nasty surprise. Existing supply capacity decides whether your project costs what you budgeted or three times that.

A host who wants you there. A reluctant host means blocked bays, disputed bills, and no help when something breaks.

6.2 Site types and what they need

Site	Charger type	What the platform gives it	Who charges there
Fuel station forecourt	DC, plus AC for bikes	Public paid charging, per-kWh billing, uptime monitoring	Cars, bikes, rickshaws on the go
Shopping mall or retail park	AC	Access control, tariffs by hour, revenue reporting	Shoppers, staff, visitors
Two and three wheeler hub	AC, high turnover	QR start, small-value local payments	Riders, delivery fleets, rickshaws
Workplace or campus	AC	Members-only access, free or subsidised staff charging	Employees, company vehicles
Housing society or apartments	AC	Resident accounts, shared charger scheduling	Residents
Fleet or logistics depot	AC, DC for vans	Fleet-only access, load management, cost per vehicle	Company two and three wheelers, vans

Site	Charger type	What the platform gives it	Who charges there
Highway or motorway stop	DC	Remote fault handling, public billing	Long-distance car and fleet drivers

6.3 The power question, asked properly

Before you commit to any site, get answers to these:

1. What is the existing sanctioned load, and how much headroom is there right now?
2. What does the site already draw at peak? Your chargers arrive on top of that, not instead of it.
3. Single phase or three phase?
4. What would a supply upgrade cost, and how long would it take? Get this in writing before you sign anything.
5. Is there a backup supply, and should chargers be on it or excluded from it?
6. How far is the run from the distribution board to the parking bays? Cable and trenching are real money.

Load management is the cheap answer to an expensive problem. Rather than upgrading a supply to run four chargers at full power simultaneously, smart charging balances the draw across them so the site never trips. Four chargers sharing capacity intelligently will usually out-earn two chargers at full power, and cost far less than the upgrade. Make sure your software does this before you pay an electrician to solve it with copper.

PART 7: PRICING AND ECONOMICS

7.1 Your inputs

Energy cost. What you pay per kWh, including the commercial tariff structure and any demand charges. This is your floor.

The commercial charging tariff. A national commercial charging tariff was fixed near **Rs 39.7 per kWh at policy launch**. Confirm the current figure and its applicability to your connection before modelling, because tariffs get revised.

Capex. Chargers, cabling, civil works, signage, any supply upgrade. The upgrade is the line item that ruins budgets.

Opex. Software subscription, payment gateway fees, maintenance, insurance, host rent or revenue share, and your own time.

7.2 The three revenue levers

Sessions. Every paid session earns a margin over your energy cost. More uptime and better sited chargers mean more sessions. This is a volume game.

Pricing. Per kWh, per minute, time of day, and member versus public tariffs let you match price to demand. A charger priced identically at 3am and 7pm is leaving money on the table.

Utilisation. The number that decides everything. Real usage data tells you which sites earn and which do not, so charger number seven goes where it pays instead of where somebody had a hunch.

7.3 How to model it

Build this in a spreadsheet before you buy anything. The structure matters more than the numbers, because the numbers are yours:

```
Per charger, per month:

  Sessions per day            [ your estimate, be pessimistic ]
  x  Average kWh per session  [ from your vehicle mix ]
  x  30 days
  =  Monthly kWh delivered

  Monthly kWh x your price per kWh          =  Gross revenue
  Monthly kWh x your energy cost per kWh    =  Energy cost
  Gross revenue - energy cost               =  Gross margin

  Less: software subscription per charger
  Less: payment gateway fees
  Less: host rent or revenue share
  Less: maintenance provision
  =  Net margin per charger per month

  Capex per charger / net margin per month  =  Payback in months
```

Be honest about sessions per day. It is the input every optimistic model gets wrong, and it is the only one that really matters. Model a pessimistic case, a realistic case, and an optimistic case. If the pessimistic case does not survive, the site does not work.

Then measure it. The entire point of managed software is that after month one you replace your estimate with your actual number. Every site after that is planned with data instead of hope.

7.4 The costs software removes

- **Truck rolls.** Remote monitoring and fault alerts mean you diagnose from a desk and dispatch only when you must.
- **Manual reconciliation.** Automatic charge detail records and invoicing per session, rather than a spreadsheet and an argument.
- **Blind site selection.** Utilisation reporting turns the next site from a guess into a decision.

- **Revenue leakage.** Sessions that were never billed, chargers offline for a fortnight before anyone noticed, disputes you cannot settle because you have no record.

7.5 A representative scenario

Illustrative only, not a specific customer.

A retail site host in Karachi installs four AC chargers at a mall and lists them on a generic app. Sessions happen. But the host cannot see uptime, cannot set peak pricing, and payments are messy.

The host moves the same four chargers onto white label software: a branded app, per-kWh pricing that rises at peak shopping hours, fault alerts, and local payment settling to the host's own account. With the same hardware, the host now sees which of the four chargers earns, sets a higher evening tariff, catches an offline unit the same day it fails, and reports revenue per charger to the mall's finance team.

The change was software, not steel.

PART 8: PAYMENTS

8.1 The rule

A charging business only works if drivers can pay the way they already pay for everything else. International-only card checkout is a dead end in this market. If your driver has to hunt for a card to buy Rs 150 of electricity for a rickshaw, you have lost the session and probably the customer.

8.2 What to insist on

- **Local wallets and bank rails.** Support for local payment gateways and wallets, including Easypaisa and JazzCash, plus card and account-based methods.
- **Small-value transactions that do not hurt.** Two and three wheeler sessions are small. Gateway fees that are fine on a Rs 5,000 transaction are brutal on a Rs 150 one. Model this before you sign a gateway contract.
- **In-app wallet and top-up.** Lets a driver pre-load once and then charge in two taps, which cuts payment friction to near zero and improves your cash position.
- **Money that settles to you.** Charging revenue should settle through your own payment gateway account, directly into your business account. Your software vendor should never hold your funds. Ask this question explicitly and get the answer in writing.
- **Transparent receipts.** Every driver gets an in-app receipt and history. Every session lands in your reporting for reconciliation. This is not a nicety, it is how billing disputes get closed in thirty seconds instead of thirty days.

8.3 The compliance angle

Because a national commercial charging tariff has been fixed, transparent per-kWh billing is not just convenient, it is how a compliant, trusted charging business runs. Metered, recorded, receipted sessions are what let you demonstrate what you charged and why.

PART 9: REGULATORY AND COMPLIANCE

Broadly, before you energise a commercial charging site, you should have established:

1. **Licensing and registration.** What NEPRA requires for a commercial EV charging station of your type and scale, and whether your model needs a licence, a registration, or neither.
2. **Tariff applicability.** Which tariff applies to your connection, and whether the commercial charging tariff applies to you as an operator.
3. **Electrical compliance.** Installation to code, by a certified contractor, with the paperwork retained.
4. **Metering.** Accuracy and any requirement for approved metering where you bill customers on the reading.
5. **Local approvals.** Building, parking, fire, and signage permissions from the relevant local authority.
6. **Consumer and tax obligations.** Receipts, records, and applicable taxes on the sale of charging services.
7. **Data and privacy.** You will hold driver identities, locations, and payment records. Know your obligations before you hold them, not after.

None of this is a reason not to proceed. All of it is a reason to have the conversation before the concrete is poured.

PART 10: RUNNING IT

10.1 The KPIs that matter

KPI	Why	What good looks like
Uptime	An offline charger earns nothing and repels the driver permanently	Track per charger, per site. Alert on any deviation, not on a monthly report
Utilisation	The number that decides your next investment	Hours in use as a share of hours available, by hour and day
Sessions per charger per day	The pulse of the business	Trend it. A falling trend at a good site means a problem you have not found

KPI	Why	What good looks like
Energy delivered	Your revenue driver and your cost driver	Per charger, per site, per day
Revenue per charger	Which assets earn	Compare across sites ruthlessly
Mean time to repair	Every hour offline is inventory rotting	From alert to resolved, tracked and shortened
Failed session rate	The silent killer	Sessions that started and did not complete, or that failed to authorise

10.2 The operating rhythm

Daily: check the fault and offline alerts. Anything down gets triaged the same day.

Weekly: review utilisation by site and by hour. Check the failed session rate. Look for chargers whose usage has quietly dropped.

Monthly: revenue per charger against your model. Host statements out. Tariff review: is peak pricing doing what you expected?

Quarterly: site-by-site decision. Which sites get another charger, which get their charger moved, and what does the pattern say about the next ten sites.

10.3 Support that does not need a van

The difference between a charging business that scales and one that does not is usually how many problems get solved without anyone driving anywhere. Insist on:

- **Remote diagnostics.** Read logs, see the fault code, understand the problem from your desk.
- **Remote reset.** A large share of charger faults are cleared by a restart. That restart should be a button, not a journey.
- **Over-the-air firmware updates.** Push a fix to one charger or the whole fleet from the dashboard. Fewer truck rolls, faster fixes, lower warranty cost.
- **Role-based access.** Your support team, your host, and your customer each see exactly what they should and nothing else.

10.4 If you make or sell chargers

Everything above applies, and one more thing does. Every charger you ship should report into **one multi-tenant dashboard**: which units are online, which are faulting, firmware versions, usage,

uptime, across every customer and every site. Each operator or host you sell to gets their own branded, role-limited login, cleanly separated from the rest.

That single capability changes your business model. You stop being an importer competing on price and become a vendor who ships a charging business: hardware, plus a branded app, plus a live dashboard, plus remote support. You add recurring software and support revenue on top of one-time hardware margin. And the installed base you already sold stops being invisible and starts being a reason customers stay.

PART 11: THE FIRST 90 DAYS

Days 1 to 30: decide.

Pick your model from Part 3. Shortlist and score sites using Appendix B. Get the power answers in writing. Model the economics with pessimistic inputs. Shortlist software vendors using Appendix A and make them demonstrate against live hardware.

Days 31 to 60: commit and build.

Choose OCPP-compliant hardware matched to your dwell times. Sign the software agreement. Brand the app, portal, and dashboard: your logo, name, and colours. Connect your payment gateway. Do the electrical works. Commission each charger against the platform, not just against the wall.

Days 61 to 90: launch and learn.

Go live on one site, not five. Set your opening tariff. Watch utilisation daily. Fix what breaks. After thirty days of real data, replace every estimate in your model with a fact, then decide where charger number five goes.

The rule: one site live and measured beats five sites planned. The data from site one is worth more than the guesswork behind sites two through five.

PART 12: TEN MISTAKES THAT COST REAL MONEY

1. **Buying hardware before choosing sites.** The site dictates the charger. Never the reverse.
2. **Treating software as an afterthought.** The box is the cheap part. The control layer is the business.
3. **Ignoring dwell time.** DC where people park for two hours. AC where they stop for eight minutes. Both fail.
4. **Not checking the power supply first.** The upgrade quote is the number that kills projects, and it always arrives late.
5. **Skipping OCPP.** You have not bought a charger. You have signed a marriage contract with one vendor.
6. **Building your own platform.** Eighteen months and a team, to arrive where you could have started in six weeks.

7. **Ignoring local payments.** A driver who cannot pay easily is a driver who does not come back.
8. **Never measuring utilisation.** You cannot improve, price, or plan what you do not measure.
9. **Launching five sites at once.** Five times the capital at risk, with zero data behind any of it.
10. **Accepting a platform with no data export.** The day you want to leave is the day you find out you cannot.

APPENDIX A: QUESTIONS TO ASK ANY SOFTWARE VENDOR

Send this list verbatim. Ask for written answers. The answers, and the speed of them, tell you most of what you need to know.

Protocol and hardware

1. Which OCPP versions do you support, exactly? 1.6, 2.0.1, or both?
2. Can I connect chargers from multiple brands and see them on one dashboard?
3. Do you support AC and DC?
4. Will you commission my specific charger models before I go live?
5. If I leave you in three years, do I keep my chargers and simply change software?

Features, live versus roadmap

1. Which of your features are live in production today, and which are roadmap? Please mark each one.
2. Can I see a live dashboard against real hardware on a screen share?
3. Is there a driver app on both iOS and Android, and a driver web portal?
4. Does the app show real-time availability, navigation, and reservation?
5. Do you support smart charging and load management?
6. Do you support over-the-air firmware updates?

Money

1. How is the software priced? Per charger, flat, revenue share, or licence?
2. Is there a setup or onboarding fee, and what does it cover?
3. What is the minimum term and the notice period?
4. Are there charges for extra sites, extra users, extra hosts, or API access?

Payments

1. Which local payment gateways and wallets do you support?
2. Whose account does charging revenue settle into? Do you ever hold my funds?
3. What are the payment fees, and how do they behave on small-value transactions?

Branding and access

1. Is the driver app fully white labelled with my name, logo, and colours?
2. Can each site host get their own login that shows only their site?
3. If I sell chargers, can each of my customers have their own branded, role-limited login under my dashboard?

Data and deployment

1. Can I export all of my data, on demand, in a usable format?
2. What are my deployment options: managed cloud, private cloud, on-premise?
3. Where is my data stored, and who can access it?

Support

1. What is your support model, and what response times do you commit to?
2. Who commissions the hardware, and who fixes it when OCPP misbehaves?
3. Can you name customers running your platform in production today?

APPENDIX B: SITE SCORING SHEET

Score each candidate site 1 to 5. Anything below 3 on power or dwell match is usually fatal regardless of the total.

Criterion	Score 1 to 5	Notes
Dwell time matches charge speed		The master criterion
Volume of the right EV types		Bikes, rickshaws, cars, fleet
Existing power headroom		Below 3 usually means an upgrade quote
Visibility and ease of access		Basement level three scores 1
Host is genuinely willing		Reluctant host, blocked bays

Criterion	Score 1 to 5	Notes
Parking bay availability and protection		Can the bay be reserved for charging
Cable run distance from the board		Real money, often overlooked
Nearby competing chargers		Not always bad, sometimes it validates demand
Connectivity: 4G signal or wired		Check on site, not on a map
Security and lighting		Vandalism and night usage
Expansion room for more chargers		Can site one become site one with six chargers
Total (out of 55)		

APPENDIX C: GLOSSARY

AC charging. Alternating current charging, typically 3.3 kW to 22 kW. Slower, cheaper, right for dwell-time sites.

CaaS (Charging as a Service). A third party owns, installs, and operates the charger. You subscribe to the whole bundle.

CDR (Charge Detail Record). The record of a single session: who, where, when, how much energy, how much money. Your billing evidence.

CPO (Charge Point Operator). The company that runs the chargers.

CPMS (Charge Point Management System). The backend software that manages chargers. Older term, tied to OCPP 1.6.

CSMS (Charging Station Management System). The same thing, newer term, used in OCPP 2.0.1.

DC fast charging. Direct current charging, 30 kW and above. Faster, far more expensive, right for throughput sites.

Dwell time. How long a vehicle stays parked at a site. The number that decides AC versus DC.

eMSP (eMobility Service Provider). The company that faces the driver with an app and an account.

EVSE (Electric Vehicle Supply Equipment). The charger itself.

Load management (smart charging). Balancing power draw across several chargers so a site never exceeds its supply.

Multi-tenant. One platform serving many separate customers, each seeing only their own data.

OCPP (Open Charge Point Protocol). The open standard that lets any compliant charger talk to any compliant management software. Your protection against lock-in.

OTA (Over the Air). Updating charger firmware remotely, without a site visit.

Platform as a Service. You own the charger, you subscribe to the software that runs it. Your charger, our application.

Roaming. Letting drivers from one network charge on another.

Utilisation. The share of available time a charger is actually in use. The KPI that decides everything.

White label. Software delivered under your brand rather than the vendor's.

APPENDIX D: PRE-LAUNCH CHECKLIST

Decision

- ☐ Model chosen from Part 3, and it survives Q1 to Q4
- ☐ Economics modelled with pessimistic, realistic, and optimistic session counts
- ☐ Pessimistic case still works

Site

- ☐ Sites scored with Appendix B
- ☐ Power headroom confirmed in writing
- ☐ Upgrade cost and timeline confirmed in writing, if needed
- ☐ Host agreement signed, including bay access and revenue share
- ☐ Connectivity verified on site

Hardware

- ☐ OCPP version confirmed by demonstration, not datasheet
- ☐ Charge speed matches dwell time
- ☐ Connectors match the actual vehicle mix
- ☐ IP rating and temperature range honest for the location
- ☐ Local spares and written warranty in place
- ☐ Remote firmware update capability confirmed

Software

- ☐ Feature checklist scored, live versus roadmap in writing
- ☐ Live dashboard seen against real hardware
- ☐ Data export confirmed
- ☐ Pricing, term, and notice period understood

- ☐ Branding applied: app, portal, dashboard
- ☐ Host logins configured
- ☐ Every charger commissioned against the platform

Payments

- ☐ Gateway connected and tested end to end with a real transaction
- ☐ Settlement confirmed into your own business account
- ☐ Fees modelled on small-value transactions
- ☐ Receipts verified

Compliance

- ☐ Licensing or registration position established
- ☐ Tariff applicability confirmed
- ☐ Electrical certification complete
- ☐ Local approvals in hand

Launch

- ☐ One site, not five
- ☐ Opening tariff set
- ☐ Alerting configured and tested
- ☐ Daily, weekly, monthly review rhythm assigned to a named person
- ☐ Thirty-day data review scheduled

YOUR CHARGER. OUR APPLICATION.

If you have worked through this guide, you know what you want to build. IoTize supplies the layer that makes it a business.

One platform, three winners: the charger company sees its whole fleet, the host sees its own site and its share, and the driver finds the nearest free charger, navigates to it, and pays in seconds.

- **OCPP 1.6 and 2.0.1**, AC or DC. Bring the hardware you already chose.
- **Branded driver app** on iOS, Android, and web. Your name, your logo, your colours.
- **Operator dashboard** for monitoring, pricing, billing, and reporting.
- **Role-limited host logins**, so every venue sees its own site and its own share.
- **Local payment gateway support.** Revenue settles through your own gateway account, into your business account. We never hold your funds.

- **Managed SaaS**, priced per charger per month. Private cloud and on-premise available on request.
- **Your data, fully exportable.**

Bring your charger list and your sites, and we will map the fastest route to launch. No obligation.

Talk to our team: https://iotize.org/contact/

IoTize.ORG. Industrial IoT engineering since 2015. Built in Pakistan, running anywhere OCPP does.

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