MCP SERVER | NO CODE | CLOUD HOSTED

EV Home Charging Scheduler MCP

Plan your vehicle charging around off-peak electricity windows.

EV Home Charging Scheduler MCP gives your AI client the math it needs to manage electric vehicle charging. It calculates precise charging windows based on your specific off-peak electricity periods, battery capacity, and charger power. Instead of guessing, you can use your agent to determine exactly when to start a charge to hit your target state of charge while minimizing costs.

A+ Quality Score 100/100

ev | charging | electricity | optimization | battery

MAINTAINED BY VINKIUS CLOUD FOR AI AGENTS · OCTOBER 2026
vinkius.com/en/ai-agent-connect/ev-home-charging-scheduler

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

EV Home Charging Scheduler MCP

4 tools available
Cloud-hosted on Vinkius

Managing an electric vehicle means balancing battery needs with electricity costs. This MCP handles the math so you don't have to. You can give your AI client your specific off-peak hours and vehicle specs, and it will figure out the most efficient way to charge. It accounts for the energy lost during the conversion process and checks if your hardware can actually handle the load you're asking for. Whether you're trying to hit a specific percentage by morning or just want to make sure you're using the cheapest power available, this MCP provides the exact calculations for your charging schedule.

Core Capabilities

01 — Off-peak scheduling

Your agent uses this to align charging times with the cheapest electricity windows.

02 — Energy loss calculation

The AI uses this to account for heat and conversion losses when estimating battery gains.

03 — Hardware verification

Your agent checks if your specific charger can handle the requested energy transfer.

04 — State of charge math

The AI calculates the exact kWh needed to move between specific battery percentages.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/en/ai-agent-connect/ev-home-charging-scheduler** — connect your AI agent in three steps.

01 Connect your AI client to the Vinkius-hosted MCP.

02 Provide your vehicle battery capacity and current charge level to your agent.

03 Input your off-peak electricity window and charger power.

04 The agent uses the tools to calculate the optimal charging window and energy needs.

Connect the MCP to your preferred client and start asking your agent to run energy calculations.

Built For

This MCP is for anyone managing electric vehicle charging at home who wants to automate the math behind energy optimization.

EV Owners

Users who want to hand off the calculation of off-peak charging windows to their AI agent.

Smart Home Enthusiasts

People building automated energy management workflows using AI-driven logic.

Energy Analysts

Professionals who need quick, accurate kWh requirements for battery capacity modeling.

What Changes When You Connect

01	Reduces electricity costs by targeting off-peak windows.
02	Prevents hardware strain by validating charger capabilities.
03	Provides accurate energy requirements by accounting for conversion losses.

Real-World Applications

Nightly Charging Optimization

Your agent calculates exactly when to start charging to ensure you hit 80% charge by your morning commute using only off-peak power.

Hardware Compatibility Checks

Before you plan a long charge, your agent verifies if your current charger can actually deliver the required energy.

Energy Budgeting

You can determine the exact kWh needed for a specific trip based on your current battery percentage.

Efficiency Auditing

Use the efficiency tool to see how much energy is being lost to heat during your charging cycles.

Patterns to Avoid

Ignoring hardware limits

✗ AVOID

You tell your agent to charge at a high rate without checking if your home charger can actually pull that much power.

✓ INSTEAD

Always use `validate_charger_capability` first to ensure your hardware can handle the load you're planning.

Overlooking energy loss

✗ AVOID

You assume 10 kWh of electricity equals 10 kWh of battery gain, leading to a dead battery in the morning.

✓ INSTEAD

Run `summarize_charging_efficiency` to see how much energy is actually lost to heat and conversion.

Vague charging windows

AVOID

You ask your agent to charge the car whenever electricity is cheap without specific time constraints.

✓ INSTEAD

Use `calculate_charging_window` to define exact start and end times that align with off-peak rates.

The Right Fit

Connect this MCP if you want to automate the math behind your home charging schedule. If you don't care about electricity costs or hardware longevity, you don't need it. The deciding factor is whether you want your agent to handle the specific kWh and off-peak calculations for you.

EV Home Charging Scheduler 4 Tools

These tools handle the heavy lifting for battery math, hardware limits, and energy efficiency calculations.

#	TOOL	DESCRIPTION
01	`calculate_charging_window`	This tool determines the specific start and end times for a charging session. It also checks if your target charge level was actually reached within those times.
02	`get_energy_requirement`	Use this to find the exact amount of kWh needed to move your battery from one state of charge to another.
03	`summarize_charging_efficiency`	This tool provides a summary of energy lost to heat and conversion during the charging process.
04	`validate_charger_capability`	This tool checks if your charging hardware is physically capable of meeting the requested charge requirements.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U Calculate a charging schedule for my EV. I have 40% charge, I want 80%, a 75kWh battery, a 7kW charger, 90% efficiency, and an off-peak window from 2024-05-01T01:00:00Z to 2024-05-01T06:00:00Z.

The optimal charging window is from 2024-05-01T01:00:00Z to 2024-05-01T06:00:00Z. Total energy delivered to battery: 31.5 kWh. Target met.

U How much energy do I need to go from 20% to 90% on a 100kWh battery?

You need 70 kWh to reach your target charge level.

U Can a 3kW charger handle a 100kWh battery for a standard overnight charge?

The charger is capable of providing meaningful charge within a standard overnight window.

Frequently Asked Questions

01 **How does this MCP help save money on EV charging?**

It calculates the best times to charge based on your specific off-peak electricity windows, ensuring you use the cheapest power available.

02 **Which AI clients can use this MCP?**

You can use this MCP with any compatible client like Claude, Cursor, Windsurf, or VS Code.

03 **Does it account for charging losses?**

Yes, the summarize_charging_efficiency tool accounts for energy lost to heat and conversion during the process.

04 **Can I check if my charger is powerful enough?**

Yes, the validate_charger_capability tool checks if your hardware can meet your specific charging requests.

05 **Do I need to host the MCP myself?**

No, Vinkius hosts and manages the MCP for you. You just connect your client and start using the tools.

06 **How does the tool handle electricity costs?**

The tool uses the provided off-peak windows to schedule charging when electricity is cheapest, ensuring you maximize savings.

07 **What happens if the charger is too slow to reach the target SoC?**

The `calculate_charging_window` tool will return the scheduled time and report the unmet energy in kWh that could not be delivered within the window.

08 **Does this account for charging losses?**

Yes, you can provide an efficiency decimal to account for energy lost to heat and conversion during the charging process.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"ev-home-charging-scheduler": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

EV Home Charging Scheduler is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

INDEPENDENT PLATFORM DISCLAIMER

Vinkius is an independent platform and is not affiliated with, endorsed by, sponsored by, verified by, or otherwise authorized by EV Home Charging Scheduler. All third-party trademarks, logos, and brand names are the property of their respective owners. Their use in this document is strictly for informational purposes to identify service compatibility and interoperability.

DOCUMENT INFORMATION

Generated	October 2026
MCP Server	EV Home Charging Scheduler MCP
Server ID	`01a0ec1e-5994-724c-a4cf-9fb142fe0d3e`
Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

LICENSE & USAGE

This document is generated automatically by the Vinkius PDF Engine. Content reflects the MCP server configuration at the time of generation and may change as updates are deployed. For the most current information, visit vinkius.com/en/ai-agent-connect/ev-home-charging-scheduler.

© 2026 Vinkius · vinkius.com · support@vinkius.com