

M C P S E R V E R

N O C O D E

C L O U D H O S T E D

Appliance Energy Cost Comparison MCP.

Calculate the real cost of running your home appliances.

Appliance Energy Cost Comparison MCP helps you figure out how much your household devices actually cost to run. Instead of guessing, you can use your AI client to calculate monthly electricity bills, determine the total cost of ownership, and compare different appliances to see which ones are the most economical over time.

A+ Quality Score 100/100

energy

cost

appliance

electricity

tco



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.

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.

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.

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

Encryption at rest

Ed25519

PKI vault signatures

24h TTL

Ephemeral session keys

V8 Isolate

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.

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.

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.

06 — Honeypot Trap System

Phantom credentials are injected into isolated environments. If a honeypot 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.

FinOps

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

Firewall & DLP

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

Agent Activity

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

Tool Health

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

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.

Appliance Energy Cost Comparison MCP

4 tools available

Cloud-hosted on Vinkius

Stop guessing how much a new dishwasher or dryer will add to your monthly utility bill. This MCP gives your AI client the math skills to handle complex energy cost calculations. You can input wattage or annual kilowatt-hour usage to see exactly what a device will cost you over its lifetime. It goes beyond just electricity, allowing you to factor in the initial purchase price to find the true total cost of ownership. Whether you are deciding between two different models or trying to see how changing your daily habits might lower your bill, this tool provides the specific numbers you need to make a smart financial decision for your home.

Core Capabilities

01 — Energy Expense Calculation

Your agent calculates monthly and lifetime electricity costs based on wattage.

02 — Total Ownership Analysis

Your agent combines purchase prices with energy costs to find the full TCO.

03 — Economic Ranking

Your agent sorts multiple appliance options by their total economic impact.

04 — Behavioral Impact Modeling

Your agent shows how different usage patterns change your energy bill.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/appliance-energy-cost-comparison — connect your AI agent in three steps.

- 01 Subscribe to the MCP on Vinkius.
- 02 Connect your client like Claude or Cursor using the one-click setup.
- 03 Ask your agent to perform a specific calculation or comparison.
- 04 Receive precise cost data and rankings directly in your chat interface.

Get running in minutes by connecting your preferred client to the Vinkius hosted MCP.

Built For

This MCP is built for anyone managing a household budget or looking to reduce utility expenses.

Homeowners

Use the AI to compare appliance models before making a purchase.

Budget Analysts

Hand off energy data to the agent to calculate long-term household liabilities.

Sustainability Consultants

Use the tool to model how different usage behaviors impact energy consumption.

What Changes When You Connect

- 01 Calculates lifetime costs instead of just upfront prices.
- 02 Compares different usage patterns to find savings.
- 03 Ranks multiple devices to identify the most economical options.

Real-World Applications

Pre-purchase Comparison

Compare two different refrigerators to see which one is cheaper to run over ten years.

Budget Planning

Estimate how much a new laundry setup will add to your monthly utility budget.

Behavioral Adjustments

See how much money you save by running your dishwasher during off-peak hours.

TCO Audits

Calculate the full cost of an old appliance to decide if it is time for a replacement.

Patterns to Avoid

Ignoring the purchase price

❌ AVOID

You only look at the monthly electricity cost to decide if a cheap dryer is a good deal.

✓ INSTEAD

Always factor in the upfront cost to see the real impact. Use ``evaluate_total_ownership_cost`` to get the full picture of what you'll actually spend.

Static usage assumptions

❌ AVOID

You assume your dishwasher will always run the same way every single day for ten years.

✓ INSTEAD

Real life is messy. Use ``compare_usage_scenarios`` to see how changing your habits or frequency changes your long-term bills.

Comparing apples to oranges

❌ AVOID

You try to pick a winner by looking at the wattage of three different refrigerators without a common metric.

✓ INSTEAD

Get a standardized list. Use ``rank_appliances_by_economy`` to sort your options by their total economic impact.

The Right Fit

Connect this MCP if you manage a household budget or need to model energy expenses for sustainability consulting. Do not connect it if you only care about the sticker price of an appliance. The decision comes down to whether you need to know the lifetime cost or just the initial purchase cost.



4 Tools for Appliance Energy and Cost Analysis

These tools handle everything from basic wattage math to full lifetime ownership calculations. You can model usage habits or rank multiple models to find the best value.

#	TOOL	DESCRIPTION
01	calculate_appliance_energy_costs	This tool calculates monthly and lifetime electricity expenses for a specific device.
02	compare_usage_scenarios	Use this to see how changing your daily habits or usage patterns affects your long-term energy spending.
03	evaluate_total_ownership_cost	This tool determines the full amount of money needed to buy and operate an appliance over its entire lifespan.
04	rank_appliances_by_economy	This tool generates a prioritized list of multiple appliances based on their total economic impact.

See It in Action

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

U How much will a 1500W dryer cost to run for 1 hour every day for 10 years if electricity is \$0.15 per kWh?



The monthly energy cost is \$6.75 and the lifetime energy cost over 10 years is \$81.00.

U I bought a dishwasher for \$500. Its lifetime energy cost is \$150. What is the total cost of ownership?



The total cost of ownership is \$650.00.

U Rank these appliances by total cost: Fridge (\$800 TCO), Microwave (\$150 TCO), Oven (\$500 TCO).



1. Microwave (\$150), 2. Oven (\$500), 3. Fridge (\$800).

Frequently Asked Questions

01 What can this MCP calculate?

It calculates monthly and lifetime energy costs, total cost of ownership, and economic rankings for appliances.

02 Which AI clients can I use with this MCP?

You can use any MCP-compatible client, including Claude, Cursor, Windsurf, and VS Code.

03 How does it handle total cost of ownership?

It combines the initial purchase price of an appliance with its projected energy expenses to give you a full TCO.

04 Can I compare different ways of using my appliances?

Yes, you can use the usage scenarios tool to see how changing your behavior affects your energy spend.

05 Do I need to host the MCP myself?

No, Vinkius hosts and manages the MCP for you, so it is ready to use immediately after you connect.

06 How do I calculate the total cost of an appliance?

You can use ``evaluate_total_ownership_cost`` by providing the initial purchase price and the lifetime energy cost calculated via ``calculate_appliance_energy_costs``.

07 Can I compare multiple appliances at once?

Yes, use ``rank_appliances_by_economy`` with a list of appliance data to get a prioritized ranking based on total cost.

08 How does changing my usage affect my bill?

The ``compare_usage_scenarios`` tool allows you to input your current costs and a new proposed usage duration to see the potential monthly savings.

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 <code>"appliance-energy-cost-comparison": { "url": "..."} </code>
 Windsurf	MCP Settings → <code>mcp_settings.json</code> → 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

Appliance Energy Cost Comparison 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

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Platform	Vinkius Cloud for AI Agents
Endpoint	https://edge.vinkius.com/{token}/mcp

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