MCP SERVER | NO CODE | CLOUD HOSTED

AEMO Australian Energy MCP for AI Agents

Analyzing real-time wholesale electricity spot prices across Australia's regions

AEMO Australian Energy MCP gives your AI agents instant access to Australia's National Electricity Market (NEM) intelligence. Pull real-time and historical wholesale electricity spot prices, track power generation breakdown by fuel type (solar, wind, coal), monitor regional demand changes, and analyze emissions data across all major Australian states.

F Quality Score 3.6/100

electricity-market | wholesale-pricing | renewable-energy | market-intelligence | real-time-data | power-generation

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vinkius.com/mcp/aemo-australian-energy

SCAN TO VIEW

The infrastructure that powers AI agents in the real world.

Vinkius connects AI to the world's software through secure, enterprise-grade infrastructure — enabling real-world execution at scale, built on the Model Context Protocol (MCP).

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the cloud infrastructure where AI agents connect 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.

AEMO Australian Energy MCP

12 tools available
Cloud-hosted on Vinkius

This MCP connects your AI agent directly to the OpenElectricity API, pulling deep, live insights into Australia's complex energy market. Forget manual spreadsheet downloads or fragmented dashboard views. You can now ask your agent specific questions—like 'What is the expected grid demand next week?' or 'How does the renewable proportion compare between NSW and QLD?' The system handles fetching everything from 5-minute interval spot prices to detailed pollution metrics.

Whether you're modeling the impact of a new wind farm, tracking compliance for emissions reporting, or just optimizing solar usage at home, your AI becomes an instant energy analyst. Because Vinkius hosts and manages this MCP, you connect once with any compatible agent client and get access to this entire suite of Australian market data.

It's about getting immediate answers on Australia’s grid health and tracking the renewable transition, all without writing a single API query.

Core Capabilities

01 — Analyze Wholesale Market Pricing

Retrieve real-time and historical wholesale electricity prices (RRP) for specific Australian regions like NSW, VIC, or QLD.

02 — Model Energy Generation Mix

Access total network generation data broken down by source, including solar, wind, coal, natural gas, hydro, and battery storage.

03 — Track Emissions Compliance Data

Query detailed pollution metrics (like NOx or PM2.5) reported to the National Pollutant Inventory for compliance reporting.

04 — Monitor Regional Grid Demand

Check electricity demand trends across the NEM with granular options, including 5-minute and hourly intervals.

05 — Identify Facility Output Status

Get specific generation output data for named facilities, such as a solar farm or wind park, over time.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/aemo-australian-energy** — connect your AI agent in three steps.

01 Subscribe to the AEMO Australian Energy MCP within Vinkius.

02 Enter your OpenElectricity API Bearer token (a free Community plan is available).

03 Instruct your AI client to query specific market questions, and it handles fetching the required historical or real-time energy data.

The bottom line is that you'll get actionable Australian electricity market intelligence without leaving your chat interface.

Built For

Anyone needing deep, verifiable insight into Australia's complex electrical grid—from optimizing solar use to writing environmental reports. If your job involves energy, infrastructure, or sustainability in the Australian market, this is for you.

Energy Analyst

You track spot prices and generation mix shifts to create comprehensive market reports showing price volatility across regions.

Sustainability Consultant

You monitor renewable energy proportions and emissions data to build environmental impact statements for clients.

Infrastructure Planner

You analyze regional demand patterns and facility registry data to plan where new power sources or transmission lines are needed.

What Changes When You Connect

01 Analyze immediate price action: Use the `get_market_data` tool to instantly pull current and historical wholesale electricity prices by region, essential for financial modeling.

02 Understand the grid mix in depth: Grouping data by fuel technology using `get_network_by_fueltech` lets you map exactly what percentage of power comes from solar versus coal right now.

03 Improve compliance reporting: The ability to pull pollution and emissions data via `get_pollution_data` streamlines environmental impact assessments significantly.

04 Optimize energy consumption: By checking the renewable proportion using `get_renewable_proportion`, homeowners or EV owners know exactly when prices are low and clean power is abundant.

05 Identify asset performance gaps: Use `get_facility_data` to track specific output from individual solar farms, wind parks, or battery installations over time.

Real-World Applications

Modeling the effect of new coal closures

A planner needs to understand how reducing capacity changes market stability. They ask their agent to compare historical power generation data (via `get_network_data`) before and after a major facility shutdown, mapping out potential spikes in spot prices.

Creating an annual emissions report

A sustainability team must prove compliance. They use the MCP to pull detailed pollution data via `get_pollution_data` for specific facilities across multiple years, ensuring their environmental reporting is accurate and defensible.

Optimizing EV charging schedules

An EV owner wants to minimize cost. They ask the agent to check both real-time market data (`get_market_data`) and the renewable proportion, identifying the cheapest times when solar power is peaking for optimal charging.

Comparing state energy resilience

A researcher needs a comparative view. They use `get_network_by_region` to pull generation and demand metrics across NSW, VIC, and QLD simultaneously, allowing them to visualize regional differences in grid health.

Patterns to Avoid

Assuming data is always available

✗ AVOID

Asking the agent for 'the total energy flow' without specifying a date range or interval. The query fails because the API needs time parameters.

✓ INSTEAD

Always specify your timeframe using `get_network_data`. For instance, ask for 'all power and demand metrics between 2023-01-01 and 2023-01-31' to guarantee a successful query.

Confusing facility data with network totals

✗ AVOID

Thinking that listing all facilities (`list_facilities`) is the same as knowing how much total power was generated. The former only lists assets; the latter requires output metrics.

✓ INSTEAD

To get actual generation figures, you must use `get_facility_data` and specify a facility ID alongside a time period.

Ignoring the complexity of regional data

✗ AVOID

Querying for 'the national average price' without considering state variance. This gives an inaccurate single number.

✓ INSTEAD

Use `get_network_by_region` or specify multiple regions in your prompt to force a comparison, recognizing that prices and demand vary significantly by Australian state.

The Right Fit

Use this MCP if you need verifiable, historical, or real-time market data about electricity pricing, generation mix, or emissions within the National Electricity Market. If your goal is simply to compare two unrelated datasets (e.g., comparing gas prices to oil prices), then this tool won't help—you need a general commodity tracking MCP instead. Don't use it if you only care about theoretical capacity; you must use tools like `get_facility_data` to get actual measured output over time, not just installed size.

AEMO Australian Energy MCP for AI Agents: Understanding Wholesale Price Volatility

Manually tracking Australia's wholesale electricity prices means jumping between state-specific dashboards and downloading data sets by the hour. You copy current spot rates into a spreadsheet, cross-referencing them with historical demand to calculate margin changes—it’s slow, error-prone, and you always lose context.

With this MCP, your agent pulls live market intelligence instantly. Just ask it for 'spot price trends' or 'regional demand shifts,' and the data is formatted ready for analysis. You get immediate, comprehensive answers that connect pricing to underlying energy sources.

AEMO Australian Energy MCP for AI Agents: Modeling Renewable Grid Integration

Before this, determining the percentage of clean power was guesswork. You had to manually calculate how much total generation came from solar versus coal across multiple regions just to create a single 'clean energy' metric.

Now you can ask for the renewable proportion directly using `get_renewable_proportion`. The MCP handles the complex math and data aggregation, giving you an accurate, real-time percentage of clean power hitting the grid.

AEMO Australian Energy: 12 Tools for Wholesale Pricing Data

Use these tools to retrieve market metrics, track pollution levels, check facility status, or get historical network data across the entire Australian energy grid.

#	TOOL	DESCRIPTION
01	`list_facilities`	Lists all energy facilities and generation units, allowing filtering by fuel type or status.
02	`get_facility_data`	Retrieves the actual output data over time for a specific named energy facility.
03	`get_market_data`	Gets detailed market information, including spot prices and demand figures, filtered by region and date range.
04	`list_metrics`	Provides a list of every single metric available for querying in the OpenElectricity API.
05	`get_network_by_fueltech`	Retrieves network data grouped by fuel technology type, helping map out the energy mix (e.g., coal vs. wind).
06	`get_network_by_region`	Gets network data specifically organized and grouped by Australian state or territory.
07	`get_network_data`	Fetches time series network data for power, energy, demand, and generation across customizable intervals (5m to 1y).
08	`get_plans`	Get available API plans and pricing tiers
09	`get_pollution_data`	Gathers pollution and emissions metrics from the National Pollutant Inventory, filterable by pollutant or facility.
10	`get_renewable_proportion`	Provides essential data tracking what percentage of Australia's electricity comes from renewable sources.
11	`get_market_updates`	Fetches recent market commentary and social posts regarding price spikes or outages.
12	`get_user_profile`	Checks your current API plan details, rate limits, and overall account usage statistics.

See It in Action

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

U What were the biggest price swings in Victoria last month?

Victoria Spot Price Analysis (Last 30 Days)

DATE RANGE	AVG. PRICE ($/MWH)	MAX SPIKE	PRIMARY DRIVER
Jan 1 - Jan 7	$85	$120	High demand, low wind output
Feb 1 - Feb 7	$62	$95	Strong solar penetration (Utility Solar)

The biggest spike occurred on Jan 3rd. The system shows that high industrial demand coincided with an unexpected drop in hydro generation, leading to the price surge.

U Show me how emissions changed compared to last quarter.

National Emissions Trend (NOx & SO2)

- **Metric:** Pollution Load (Tonnes)
- **Timeframe:** Q1 2024 vs. Q4 2023
- **Observation:** Total NOx emissions rose by 8% this quarter, while SO2 dropped 15%. This decrease is directly correlated with the increased capacity of battery storage units being brought online at major facilities.

U How are solar and wind impacting different states right now?

Current Regional Generation Mix Snapshot

- **NSW:** Dominated by coal (55%), but utility solar is adding 12%.
- **VIC:** Shows a robust mix. Wind accounts for 20%, while rooftop solar makes up 8%. This combination keeps the average price stable.
- **QLD:** High reliance on gas (40%) due to lower regional interconnection capacity.

Frequently Asked Questions

01 **How can I use the AEMO Australian Energy MCP for AI Agents to track wholesale electricity prices?**

You ask your agent for current or historical spot prices, and it instantly retrieves data by region (NSW, VIC, etc.). It makes complex market trends easy to visualize and analyze in natural language.

02 **Does the AEMO Australian Energy MCP cover emissions tracking?**

Yes. You can query detailed pollution metrics like NOx or PM2.5 from facilities using the MCP, which is crucial for generating accurate environmental reports and compliance documents.

03 **What kind of generation mix data can I get with AEMO Australian Energy MCP?**

The MCP gives you a full breakdown: total power generated by solar, wind, coal, gas, hydro, and battery. You'll know exactly how clean the grid is at any moment.

04 **Is AEMO Australian Energy MCP useful for optimizing home solar use?**

Absolutely. By combining real-time market data with the renewable proportion metrics, your agent can tell you when wholesale prices are lowest and clean power is peaking, helping you optimize self-consumption.

05 **Can I compare demand patterns across different Australian states?**

Yes. You use the MCP to pull network data grouped by region. This lets you see how electricity demand shifts between state boundaries, which is vital for grid planning and infrastructure investment.

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 `"aemo-australian-energy": { "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

AEMO Australian Energy 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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