MCP SERVER | NO CODE | CLOUD HOSTED

U.S. EIA Energy Data MCP

Analyze American energy production and market shifts.

U.S. EIA Energy Data provides your AI agent with direct access to official U.S. energy statistics from the Energy Information Administration. It lets you track real-time electricity generation, monitor regional fuel prices, and analyze historical trends for petroleum, natural gas, and renewables using simple conversation.

A+ Quality Score 100/100

energy-statistics | market-oversight | fuel-prices | renewable-energy | historical-data | energy-analysis

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vinkius.com/mcp/us-eia-energy-data

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.

U.S. EIA Energy Data MCP

10 tools available
Cloud-hosted on Vinkius

You can get deep into American energy market data without leaving your chat window. This MCP connects directly to the U.S. Energy Information Administration's official API, giving your agent access to massive datasets on everything from coal distribution to solar capacity. You don't need to navigate government websites or download spreadsheets; you just ask a question and get the answer.

Need to compare current natural gas production levels against last quarter's figures? Your AI client handles it. Want to know which regions are leading in wind power consumption? It pulls that data instantly. By connecting this tool through Vinkius, your agent can orchestrate complex energy research and market analysis just by talking to it. You analyze the entire scope of U.S. energy production—petroleum, electricity, coal, gas, and renewables—all within a single workflow.

Core Capabilities

01 — Assess overall energy health

Quickly get high-level summaries of current U.S. energy production across all major sources.

02 — Track fuel price variations

List detailed and regional price data for gasoline, crude oil, and other key fuels.

03 — Monitor electricity generation trends

Retrieve current retail sales and detailed generation statistics across different U.S. states and regions.

04 — Analyze renewable capacity

Access the latest stats on wind, solar, and hydro energy contributions to the national grid.

05 — Retrieve time-series historical data

Pull specific metrics—like natural gas supply or coal production—over extended periods of time.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/us-eia-energy-data** — connect your AI agent in three steps.

01 Connect the U.S. EIA Energy Data MCP to your AI client.

02 Provide your unique API key after completing free registration with the U.S. EIA.

03 Ask a natural language question, like 'What were solar generation figures last month?' and let your agent retrieve the data.

The bottom line is that you turn complex energy research into simple conversational queries.

Built For

This MCP is essential for anyone who needs authoritative, up-to-date views of U.S. energy markets. It targets analysts and planners whose jobs involve monitoring resource constraints or predicting commodity shifts.

Energy Analyst

Uses this to quickly compare regional fuel prices against historical production volumes for reports.

Sustainability Officer

Monitors renewable energy growth and consumption statistics to plan corporate ESG initiatives.

Operations Manager

Gathers official U.S. energy metadata and historical data series to validate operational forecasts.

What Changes When You Connect

01 Check regional fuel price variations instantly with `list_regional_fuel_prices`. You get detailed comparisons for gasoline and diesel without needing a separate mapping tool.

02 Monitor renewable sources easily. Use `list_renewable_energy_stats` to track wind, solar, and hydro contributions across the U.S. grid in one query.

03 Get historical context with `get_energy_series_data`. Instead of guessing trends, you pull exact time-series data for any metric over decades.

04 Stay updated on core commodities. Use `list_petroleum_prices` to get current crude oil and gasoline market rates right when you need them.

05 View regional power stats using `list_electricity_generation`. You can break down who is generating electricity and where, by state or region.

Real-World Applications

Forecasting quarterly fuel costs

A logistics manager needs to predict diesel costs across five states next quarter. They ask their agent to combine data from `list_regional_fuel_prices` and then use `get_energy_series_data` on the historical trends, generating a reliable cost forecast.

Assessing climate impact reports

A sustainability consultant needs to show the growth of renewable energy vs. coal. They run `list_renewable_energy_stats` and then immediately follow up with `list_coal_production` to create a clear, comparative picture for their report.

Validating corporate resource claims

An energy firm needs hard numbers on natural gas supply. They use `list_natural_gas_production` to get the latest national figures and then use `quick_us_energy_audit` for a quick, overall market health check.

Comparing power generation sources

A state utility planner needs to know how much electricity came from wind vs. nuclear last month. They query `list_electricity_generation` and then refine the data using `list_energy_categories` for granular detail.

Patterns to Avoid

Mixing up energy types

✗ AVOID

Trying to find the price of coal distribution by asking only about petroleum prices.

✓ INSTEAD

Use `list_coal_production` for specific data on coal, or start with `list_energy_categories` if you aren't sure which dataset contains the info you need.

Asking for vague summaries

✗ AVOID

Saying 'Tell me about energy.' This will result in a useless wall of text.

✓ INSTEAD

Be specific. Start with `list_petroleum_prices` and then ask to compare that data against what `quick_us_energy_audit` provides.

Ignoring regional variance

✗ AVOID

Assuming the national average for gas prices applies everywhere.

✓ INSTEAD

Always run `list_regional_fuel_prices`. It gives you the necessary breakdown to avoid using inaccurate averages in your reports.

The Right Fit

Use this MCP if your primary need is authoritative, time-stamped data about U.S. energy sources (coal, gas, oil, electricity). You should use it when comparing physical resource volumes or market prices over time.

Don't use this if you are analyzing financial performance of a specific company (that requires internal accounting tools) or if your need is purely geopolitical commentary without data backing it up. If you only need to know 'what the general feeling in the market is,' this won't help; you need qualitative research instead of raw stats. But if you need to prove a trend, start with `get_energy_series_data` for maximum control over your time frame.

Energy reporting used to feel like detective work.

Right now, checking energy trends means bouncing between multiple government websites. You download a CSV on petroleum prices, open another tab for renewable capacity reports, and then manually cross-reference the dates and regional names across three different spreadsheets just to build a simple comparison chart.

With this MCP, you talk to your agent once. It pulls the data from all those disparate sources—fuel costs, generation rates, and commodity prices—and hands you one clean, structured answer ready for analysis.

The U.S. EIA Energy Data MCP gives you full market visibility.

You stop spending hours downloading specific data points like `list_coal_production` or running separate queries for `list_natural_gas_production`. It groups the complexity into one simple interaction.

Your agent acts as a single, unified API layer. You gain instant access to official, cross-referenced U.S. energy market intelligence.

U.S. EIA Energy Data: 10 Tools

These tools let your agent retrieve everything from current regional fuel price variations to long-term time-series data on coal, gas, and electricity.

#	TOOL	DESCRIPTION
01	`get_eia_api_metadata`	Retrieves basic information about the current connection status for the EIA API.
02	`quick_us_energy_audit`	Provides a high-level summary of U.S. energy production across all major sources right now.
03	`list_renewable_energy_stats`	Lists the latest data on U.S. renewable energy generation and consumption figures.
04	`get_energy_series_data`	Retrieves time-series data for any specific, defined energy metric over a chosen period.
05	`list_energy_categories`	Lists all the different types of energy data categories available through the EIA API.
06	`list_coal_production`	Provides U.S. coal production and distribution statistics for regional analysis.
07	`list_electricity_generation`	Lists detailed data on U.S. electricity generation and retail sales by region.
08	`list_natural_gas_production`	Provides statistics on U.S. natural gas production volumes and supply levels.
09	`list_petroleum_prices`	Lists current data for U.S. petroleum and gasoline prices.
10	`list_regional_fuel_prices`	Identifies variations in fuel costs across different geographic regions of the U.S.

See It in Action

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

U List current petroleum prices in the U.S.

I've retrieved the latest petroleum prices, including WTI Crude ($75.20/barrel) and Retail Gasoline ($3.45/gallon). Would you like to see regional price variations for gasoline?

U Show me electricity generation stats for renewable energy.

In the latest period, Wind generated 45,000 MWh, Solar provided 12,000 MWh, and Hydro contributed 15,000 MWh to the U.S. grid. Should I pull the historical growth trend for Solar energy?

U Check the latest natural gas production levels.

Total U.S. Dry Natural Gas production is currently at 102 billion cubic feet per day. Underground storage levels are at 3,200 Bcf. Would you like to see the breakdown by production state?

Frequently Asked Questions

01 **How do I check historical electricity generation data with the U.S. EIA Energy Data MCP?**

Use `get_energy_series_data` by specifying 'electricity generation' as the metric and providing your desired date range. This lets you pull consistent, time-stamped records.

02 **Can I compare gasoline prices to crude oil using list_petroleum_prices?**

Yes. The `list_petroleum_prices` tool retrieves both WTI Crude and Retail Gasoline data in the same call, allowing for direct comparison of current market values.

03 **What is the best way to see renewable energy breakdown?**

Run `list_renewable_energy_stats`. This function provides a detailed summary that separates and quantifies contributions from wind, solar, and hydro sources for you.

04 **Which tool should I use to check regional fuel price differences?**

You must use `list_regional_fuel_prices`. This specific tool is designed to pinpoint variations in costs across different U.S. regions, which national averages miss.

05 **How do I get a quick overview of the entire energy market?**

Call `quick_us_energy_audit`. It immediately provides a high-level summary across all major sources (gas, coal, oil, etc.), giving you a starting point for deeper analysis.

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 `"us-eia-energy-data": { "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

U.S. EIA Energy Data 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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