# 512 Price Discovery in Inference Markets

**Why Not All AI Tokens Are Equal**

**Commodities Are Priced by Constraints, Not Labels**

In mature commodity markets, units are nominally identical — but **economically distinct**.

A kilowatt-hour is always one kilowatt-hour.
Yet prices vary dramatically based on:

- time

- location

- reliability

- source

- compliance guarantees

Inference tokens behave identically.

---

**What Actually Determines the Price of an Inference Token**

An inference token clears at a price defined by its **constraint envelope**, not by its nominal compute size.

Key pricing dimensions include:

**1. Latency Class**

- sub-5 ms (control-critical)

- sub-20 ms (interactive)

- sub-100 ms (batch-tolerant)

Lower latency tokens command structural premiums.
This is physics, not preference.

---

**2. Hardware Class**

- consumer GPU

- enterprise GPU

- specialized accelerator

Different failure modes, reliability, and throughput profiles
→ different clearing prices.

## 3. Energy Source & ESG Profile

Just as power markets differentiate:

- coal

- gas

- nuclear

- renewable

Inference tokens will be priced by:

- energy intensity

- carbon footprint

- heat reuse

- jurisdictional energy mix

For regulated buyers, **ESG-qualified inference** is not optional.

---

## 4. Jurisdiction & Data Sovereignty

Tokens executed under:

- EU data residency

- financial compliance zones

- defense-grade isolation

...carry embedded legal guarantees.

Those guarantees have cost.
And therefore price.

---

## 5. SLA & Finality Guarantees

Some tokens will include:

- uptime guarantees

- execution attestations

- irreversible settlement

Others will be best-effort.

Just like:

- firm power vs interruptible power

---

**Market Stratification Is Inevitable**

As in electricity markets:

- high-value tokens do not disappear
- low-value tokens are not useless

They clear in **different markets**.

This produces:

- premium inference
- spot inference
- interruptible inference
- green inference
- sovereign inference

No central planner chooses this.
Markets discover it.

---

**Why Price Discovery Forces Standardization**

Price discovery only works if:

- units are comparable
- attributes are disclosed
- settlement is final

This is why electricity required:

- standardized metering
- grid codes
- disclosure rules

Inference markets require the same.

512 provides:

- mandatory disclosure of constraints

- non-negotiable consent rules

- auditable finality

- universal exit

Without these, price signals collapse.

---

**The Quiet CFO Insight**

CFOs do not care about AI ideology.

They care about:

- cost curves

- predictability

- auditability

- compliance risk

Inference tokens with:

- known constraints

- known provenance

- known settlement

...are **financeable assets**.

Unconstrained inference is not.

---

**Locking Statement**

**A kilowatt is never "just" a kilowatt.
An inference token is never "just" compute.
Price emerges from constraints — and constraints require rules.**

512 does not set prices.

It makes prices possible.