

# Energy Market Drivers Series



## **Beyond the Barrel: How Digital Tokens and Generative AI Are Reshaping Energy**

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Emerging technologies are actively transforming how energy companies operate, transact, and compete. From blockchain-enabled digital tokens to the rapid rise of generative AI, these tools offer significant upside, but also introduce legal, regulatory, and operational risks. This Alert explores what energy companies need to know now.

### **1. Technology Is Now a Core Driver of Performance and Value**

Adoption of advanced technologies is directly impacting:

- Operational efficiency
- Emissions reduction
- Cost control and uptime

Companies leveraging AI, sensors, and analytics are:

- Producing more efficiently
- Reducing compliance risk
- Gaining a competitive edge

### **2. Digital Tokens Go Far Beyond Cryptocurrency**

Digital tokens are used to create blockchain-based representations of:

- Asset ownership (e.g., royalties, working interests)
- Contract rights
- Units of value or access rights

Built on distributed ledger technology, they enable:

- Secure, transparent recordkeeping

- Programmable transactions and automated settlement

**Key distinction:** Tokens can be fungible or non-fungible, depending on their structure.

### 3. Tokenization Can Help Transform Energy Transactions

Practical use cases include:

- Fractional ownership of energy assets
- Tokenized royalty or production interests
- Streamlined commodity trading and settlement

Platforms like VAKT demonstrate:

- Faster settlement cycles
- Reduced administrative burden
- Improved auditability

**Business impact:** Lower transaction costs and broader market participation.

### 4. Adoption Barriers for Digital Tokens Remain Significant

Key challenges include:

- Regulatory uncertainty (securities, tax, and financial regulations)
- System fragmentation across energy data platforms
- Integration complexity with existing infrastructure

Successful implementation requires targeted use cases and strong governance, not wholesale transformation.

### 5. Generative AI Is Unlocking New Operational Capabilities

Tools like ChatGPT and Microsoft Copilot enable:

- Natural-language querying of complex operational data
- Predictive maintenance insights
- Automated reporting and documentation

AI can also:

- Identify anomalies in equipment performance
- Translate data into actionable insights

- Serve as a knowledge repository for field and office teams

## 6. AI Use Cases Span the Entire Energy Industry

- **Operations:**
  - Equipment monitoring and failure prediction
  - Maintenance automation and workflow generation
- **Business and Legal Functions:**
  - Contract review and due diligence
  - Market analysis and reporting
  - Regulatory and compliance documentation
- **Cybersecurity:**
  - Threat detection and incident response support
- **Customer & Vendor Interaction:**
  - AI-driven chatbots and communication tools

## 7. AI Introduces New Legal and Risk Considerations

Key concerns include:

- Liability exposure (e.g., whether AI outputs create legal risk)
- Data quality and reliability
- Cybersecurity and confidentiality risks
- Rapidly evolving regulatory frameworks

**Takeaway:** Governance and internal policies are essential for responsible deployment.

## 8. Competitive Advantage Will Favor Strategic Adoption

Companies that move beyond experimentation and:

- Integrate AI into workflows
- Identify high-value tokenization use cases
- Invest in data infrastructure

Will benefit from:

- Faster decision-making
- Lower operational costs
- Better resource allocation

### The Bottom Line

Digital tokens and generative AI are shifting how energy companies operate and transact. While both technologies offer meaningful efficiency gains and new business models, they also introduce complexity across legal, regulatory, and operational domains.

Energy companies that take a measured, strategic approach, focusing on governance, targeted implementation, and risk management, are best positioned to unlock value while avoiding costly missteps.

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