

# **From Data to Decisions**

## **Why the Real Frontier in Oil & Gas AI Is Human Competency**



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## **Executive summary**

Artificial intelligence has proven it can process oil and gas data faster than anyone imagined a decade ago. What it has not yet done at scale, for most operators - is turn that processing power into better decisions made by capable people on the asset. This paper argues that the industry's AI ceiling is no longer a compute problem; it is a competency problem. The organizations that win the next phase will be those that convert their accelerating data advantage into verified human performance. EON's Genesis platform is built precisely for that conversion: it ingests an operator's own engineering data and produces a workforce that has trained, practiced, and been assessed to a provable standard before executing live.

### **1. The adoption paradox**

The oil and gas industry is investing heavily in AI and getting less back than it hoped. A 2026 McKinsey survey of oilfield-services and equipment executives found that fewer than a quarter of companies had advanced beyond AI pilots, even though more than three-quarters expected generative AI to deliver operational efficiencies. This is not an isolated finding. Across industries, McKinsey's State of AI research shows roughly two-thirds of organizations have not yet begun scaling AI across the enterprise - most remain stuck in experimentation.

The gap between expectation and realized value is the central story of enterprise AI today. A recent Quartz analysis by Sheridan Hanson framed it well: the industry's AI challenge is increasingly about turning technical capability into useful operational decisions. The tools work. The decisions - and the people who make and execute them - are the constraint.

### **2. Speed is real, but speed is not the outcome**

The processing gains are not hypothetical. In 2025, BP reported that AI had compressed seismic-data interpretation in the Gulf of Mexico from six-to-twelve months down to eight-to-twelve weeks, helping geoscientists decide where to drill

and anticipate difficulties far earlier. That is a genuine, order-of-magnitude improvement.

But a faster answer is only valuable if the organization can act on it. Seismic insight still resolves into physical work: a well drilled, a facility commissioned, a shutdown sequenced, a maintenance procedure performed under pressure. Every one of those actions is executed by a human being whose competency - not the model's speed - determines whether the insight becomes value or becomes an incident. Oil and gas generates immense volumes of information across wells, equipment, maintenance histories, and production systems. AI has expanded how much of that information can be produced and processed. The unsolved question is how much of it the workforce can meaningfully act upon.

### **3. The reskilling bottleneck the industry admits to**

The industry is unusually candid about where the constraint sits. EY's 2025 Future of Energy Survey - conducted across more than 1,000 energy-sector respondents - found that 85% of oil and gas and chemicals executives believe their organization's ability to reskill employees will determine its success over the next five years. Yet only 29% say they are currently retraining their existing workforce.

That 56-point gap between recognized priority and actual practice is the single clearest signal in the data. Executives know that workforce capability is the deciding variable. Most have not operationalized a way to build it at the speed the technology is moving. Traditional reskilling - classroom time, expert-led shadowing, scarce trainer availability, and no reliable measure of whether learning transferred to competence - cannot keep pace with an AI-accelerated operating environment.

## 4. Why processing power alone cannot close the gap

There is a category error at the heart of much oil and gas AI spending: treating faster data processing as if it were the same thing as better operational readiness. It is not. Consider the distinction:

- Data-processing AI answers what is true about the asset - where the oil is, when equipment will fail, how a system is performing.
- Capability answers whether our people can act on that truth correctly, safely, and repeatedly.

An operator can have the fastest seismic interpretation in the industry and still face an incident because a technician performed a procedure incorrectly. The two capabilities are complementary, but only one of them has been the focus of investment. The result is an industry rich in insight and thin in verified readiness - exactly the imbalance the adoption and reskilling data describe.

## 5. EON's model: train, practice, assess

EON closes the loop between data and decision by converting an operator's own engineering knowledge into executable competency. The Genesis platform ingests the industry's native artifacts - standard operating procedures, CAD files, and P&IDs - and transforms them into photoreal simulations in which industrial workers do three things:

- Train on the procedure in an environment that mirrors the real asset.
- Practice the task repeatedly, including rare and high-risk scenarios that are unsafe or impossible to rehearse live.
- Are assessed on competency, producing an objective, auditable record of performance.

This is the mechanism by which AI actually extends human engineering capacity - the claim at the center of the industry conversation. It does not merely give engineers more information; it expands how much of that information becomes acted-upon capability. Knowledge trapped in a document becomes a skill a named individual has demonstrably mastered.

## **6. The differentiator: verifiable proof before live execution**

The assessment layer is what separates EON from both traditional training and pure data-processing AI. Most training systems record that a person attended. EON produces evidence that a person can perform before they touch the live asset.

For high-consequence, HSE-critical operations, this is decisive. It converts workforce readiness from an assumption into an auditable fact. Operations leaders, safety officers, and regulators can point to verifiable proof that each individual met a defined competency standard for a specific task. In an industry where a single procedural error can carry catastrophic cost, provable readiness is not a training nicety - it is a risk-management primitive.

## **7. Turning proprietary data into a capability advantage**

Because Genesis is built on the operator's own SOPs, CAD models, and P&IDs, the competency it builds is specific to the operator's real assets and procedures - not generic content. This has three consequences:

1. Speed to scale. Existing engineering knowledge becomes training content without waiting on scarce expert trainers, directly addressing the reskilling capacity gap.
2. Consistency across geographies. The same verified standard can be delivered across sites and countries - relevant for operators running distributed, multi-country workforces.

3. A compounding data-to-capability loop. As AI accelerates the generation of operational insight, EON accelerates the workforce's ability to act on it, so the two advantages reinforce rather than diverge.

## **8. Conclusion: the competency layer is the missing infrastructure**

The industry's AI investment has, so far, been overwhelmingly weighted toward reading the asset faster. That work is valuable and should continue. But the returns will remain capped until an equivalent investment is made in the layer that converts insight into verified human action. The data is unambiguous: adoption is stalling past the pilot stage, executives name reskilling as the deciding factor, and only a minority are acting on it.

EON exists to close that gap. By turning an operator's own engineering data into a workforce that has trained, practiced, and been proven competent, EON positions human capability not as a soft afterthought to AI, but as the infrastructure that finally lets the industry act on everything AI can now see.

Prepared by EON - an AI-first workforce-capability platform operating across more than 80 countries. EON's Genesis platform converts SOPs, CAD files, and P&IDs into photoreal simulations where industrial workers train, practice, and are assessed on competency, producing verifiable proof each person can perform before doing it live.

Sources: EY Future of Energy Survey (March 2025); Reuters reporting on BP Gulf of Mexico seismic processing (March 2025); McKinsey survey of oilfield-services and equipment executives (2026) and McKinsey State of AI (2025); framing informed by Quartz, "Can AI extend human engineering capacity in oil and gas?" by Sheridan Hanson.