Optimizing Oil Production & Gas Management with ROAM-AI

ROAM
AUTONOMOUS ENERGY SOLUTIONS

Executive Summary

ROAM-AI is at the forefront of the EnergyTech industry, leading innovation in artificial lift optimization for oil producers. Operating in a fiercely competitive and technically demanding sector, ROAM-AI sought to address the challenges associated with maximizing ESP performance while reducing operational inefficiencies and equipment failures. To achieve this, ROAM-AI needed a cutting-edge solution that not only improved ESP optimization but also adapted seamlessly to the dynamic conditions of oil production.

Example of ROAM-AI's advanced AI Software
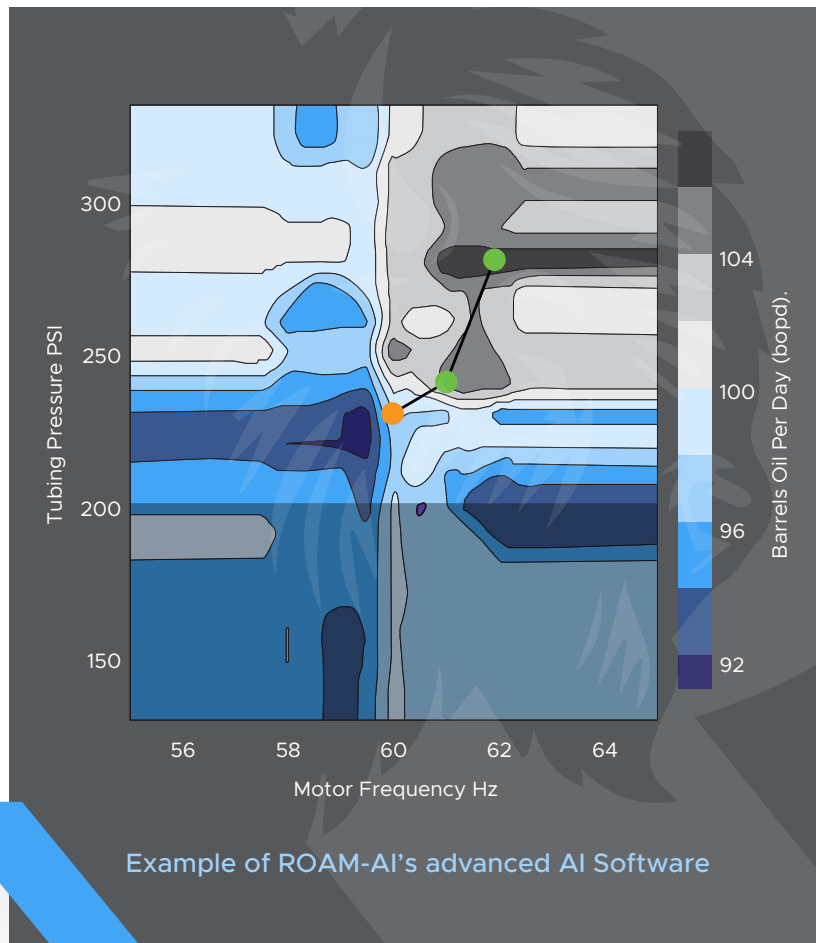
Achieving 3-8% Oil Production Improvement

ROAM-AI partnered with a client facing challenges in maintaining performance across three wells nearing transition from their existing electrical submersible pump (ESP) system. Through its advanced valve and optimization algorithms, ROAM-AI successfully extended the wells' conversion dates while significantly improving performance, surpassing the client's forecasts by double digits.

Updated production curves and newly added equipment have further enabled ROAM-AI to optimize performance, driving a 3-8% improvement in oil production across their portfolio.. The optimization process is remarkably efficient, taking as little as one day to install and less than two weeks to achieve optimal equipment conditions.

Stability & Optimization Redefined with Patent Pending Solution

This unique approach to ESP optimization stands apart in the market through its integration of hardware and software, unlike competitors who offer solely SaaS-based optimization. By introducing a second controllable parameter, tubing pressure, and pump speed, ROAM-AI achieves precise control and enhanced stability. This combination outperforms competitors who typically manage only average daily performance. The hardware ensures well stabilization and consistent flow by maintaining tubing pressure within a tight tolerance (Figure 1.1), while the software, powered by data from hundreds of wells, delivers optimal operating recommendations.

Combined, this leads to improved runtime, reduced downtime, and increased oil production, offering unmatched precision in well optimization.
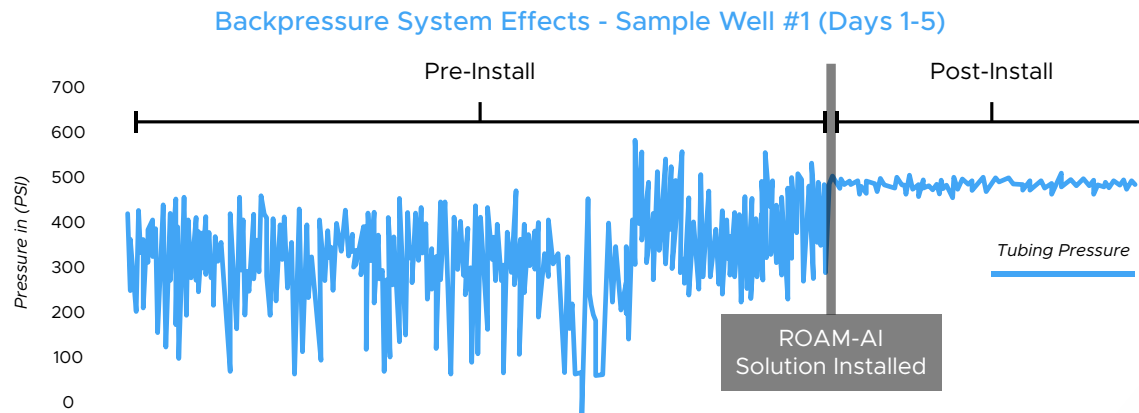
Backpressure System Effects - Sample Well #1 (Days 1-5)

Figure 1.1 Tubing pressure before and after ROAM-AI Backpressure System Hardware Installation

For less than the cost of a premium coffee, ROAM-AI autonomously optimizes your wells daily. Preventing just one monthly callout more than covers the investment. Smart, scalable, and self-funding.

Validating this breakthrough methodology are peer-reviewed research publications presented at industry conferences that detail the extensive data science foundations supporting ROAM-AI's innovative approach.

AI-Based Approach for ESP Optimization

Autonomous ESP Optimization

Gas Management — Reducing Complexity During Production

Gas management is a critical operation in oil production. ROAM-AI effectively addresses the challenge of maintaining consistent fluid flows as gas, oil, and water travel to the surface. Pressure fluctuations can cause gas to fall out of the solution, leading to inefficiencies and potential losses.

ROAM-AI's patent pending technology dramatically adjusts surface pressure, ensuring stable flow and preventing gas breakout. This capability not only streamlines operations but also reduces the complexity associated with managing mixed fluids during production.
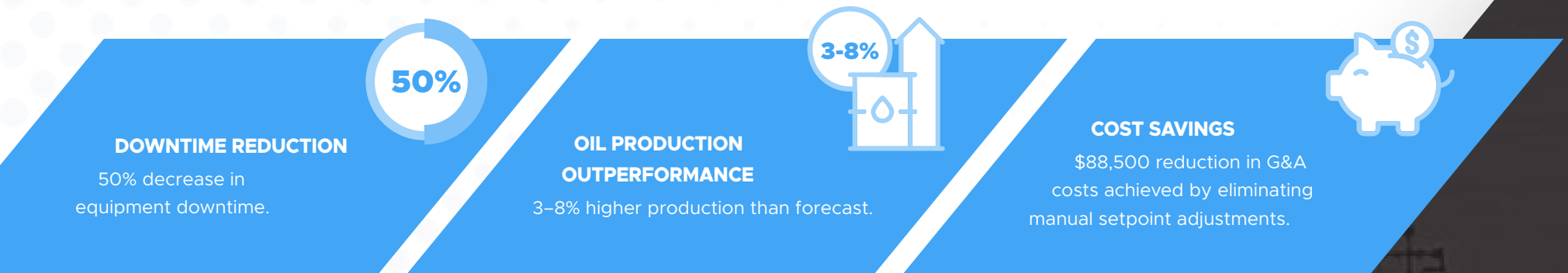
Transforming the Future of ESP Operations

ROAM-AI targets a significant market in the Permian Basin, where 50%-75% of wells could benefit from its solution in both the Midland and Delaware Basins. This includes an estimated 3,000-5,000 ESP wells drilled annually.

By improving the predictability and efficiency of ESPs, ROAM-AI reduces the perceived risks tied to their adoption. With ESPs capable of managing large volumes but constrained by high electricity use and relatively short lifespans (3-5 years), ROAM-AI's solution directly addresses these limitations, increasing their viability and promoting wider adoption across the market.

From Pilot to Fleet-Wide Success

One of ROAM-AI's standout achievements is its partnership with a Permian Operator, focused in the Delaware Basin. Faced with recurring gas disruptions in its ESP operations, this operator turned to ROAM-AI to improve performance and scale solutions across its portfolio.

A pilot program was launched across 10% of the wells, with objectives to address gas breakout issues and validate scalability parameters. Third-party partners were engaged to ensure a data-driven, risk-mitigated implementation. The results were transformational, meeting and exceeding expectations across key performance indicators (KPIs):

50%

DOWNTIME REDUCTION

50% decrease in equipment downtime.

3-8%

OIL PRODUCTION OUTPERFORMANCE

3–8% higher production than forecast.

COST SAVINGS

$88,500 reduction in G&A costs achieved by eliminating manual setpoint adjustments.

The initial tuning phase for the pilot wells required three weeks; however, the operator's current tuning average has drastically improved to less than one day. Encouraged by these outcomes, the operator scaled the solution from 10% of wells, to 25%, and ultimately to the entire fleet of ESP lifted wells. Additionally, the majority of the fleet runs fully autonomously, powered by ROAM AI's Autopilot feature. This demonstrated ROAM-AI's ability to deliver scalable results and efficient performance management across large operations.

Results-Oriented Impact

This innovative combination of hardware and software has proven ROAM-AI's ability to optimize well performance, reduce operational inefficiencies, and drive cost savings while giving field teams more time to focus on development planning and strategic asset optimization. Through partnerships with industry leaders like this Delaware Basin operator, and its focus on scaling solutions effectively, ROAM-AI is setting a new standard in oil production optimization. With a track record of benefiting both new and aging wells, the company is well-positioned to lead advancements in oilfield technology.

Take the Next Step

- Transform your oilfied operations with groundbreaking autonomous energy solutions from ROAM-AI.
- Maximize uptime, increase production, extend pump life, reduce costs and achieve unparalleled scalability.
- Reach out today to see how ROAM-AI can elevate your well performance and deliver measurable results.

CONTACT ROAM-AI NOW TO UNLOCK YOUR WELL'S FULL POTENTIAL.

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