



# A Vision for Progress

## Supporting the Oil and Gas Industry's Evolution with Armada

This report reflects discussions Armada conducted with key industry executives and companies about their desires for adaptation, efficiency, and environmental safety. It provides Armada-developed solutions that enhance exploration, optimize drilling, and ensure safety and compliance.

### Industry Trends and Drivers in Oil & Gas: Armada's Strategic Response

The oil and gas industry is at a crossroads and understanding challenges and leveraging trends is crucial for innovation. Armada's solutions are positioned to usher in an era of transformation.



### Internal Dynamics

#### Cybersecurity

Technology connected to older systems needs protection from cyber threats. Our platform provides partnered industrial cybersecurity solutions to ensure everything runs safely and without interruption.

#### Portfolio Management

Firms can review asset portfolios, shedding non-core assets, and pursuing strategic acquisitions with Armada's insights.

#### Workforce Management

Overcome an aging workforce and competitive labor market challenges with Armada technology that takes humans out of high-risk areas and workflows and leverages autonomous processes.

## External Forces

### Energy Transition

Armada supports integration and optimization for green energy and resulting in a smaller carbon footprint.

### Market Volatility

Fluctuating oil and gas prices demand agility. Armada's analytics enable quick adaptation, optimizing operations and costs.

### Regulatory Compliance and CSR

Armada ensures adherence and transparent ESG communication for safety and environmental compliance.

### Geopolitical Disruptions

Navigating geopolitics demands foresight. Armada's global data and AI tools help anticipate and mitigate impacts.

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## Embracing Disruption

Emerging technologies present significant opportunities for the industry.

### Digital Transformation

Armada's IoT and AI solutions streamline operations and boost productivity.

### Innovative Technologies

Armada can seamlessly integrate with drones, smart rigs, and leak-detection systems to extend asset lifespans.

### Remote and Predictive Monitoring

Minimize downtime and enhance productivity with our AI-driven asset monitoring and maintenance solutions.



## Drilling Trajectory Optimization and Equipment Monitoring

Drilling poses distinct challenges like trajectory deviations and sensor data overload. Armada's machine learning optimizes trajectories in real time and enables predictive failure analysis with Commander Edge and AI Apps.

## Advanced Safety and Compliance Monitoring

Safety and environmental compliance are paramount. Armada's technology enables comprehensive monitoring and management of drones, robots, and high-resolution cameras for hazardous tasks, replacing human involvement in dangerous areas. This integrated approach ensures coordinated management and data analysis across devices.

## Strategic Goals in Oil & Gas: Armada's Enabling Solutions

Dynamic markets and evolving regulations challenge the industry's ability to enhance revenue, cut costs, and manage risks. Armada's solutions play a crucial role in achieving these goals.



## Enhancing Revenue

**Challenge:** Oil price volatility requires maximizing production efficiency and seizing market opportunities to boost revenue.

**Solution:** Armada's AI-driven analytics enable real-time production process monitoring and optimization, enhancing revenue potential.

## Improving Margins and Reducing Costs

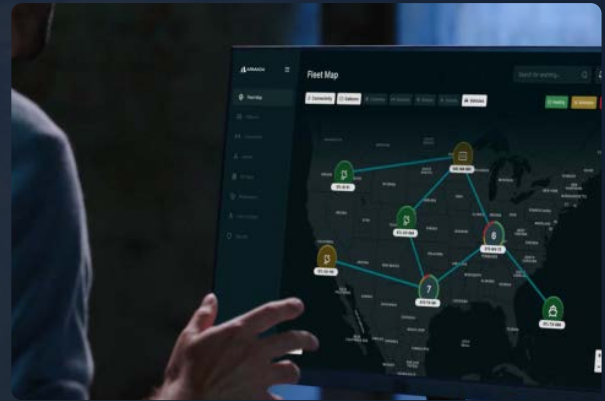
**Challenge:** The industry contends with high operational costs, and capital investments pressure margins.

**Solution:** Armada's Commander Edge and AI Apps lower operational costs and improve margins through predictive maintenance and resource optimization.

## Mitigating Risk

**Challenge:** Susceptibility to environmental hazards and market fluctuations requires robust risk management.

**Solution:** Armada's monitoring and predictive analytics enable early issue detection of spills, fires and equipment failures, and enhance risk assessment models with real-time data and predictive insights.



## Implementing Armada's Solutions

### AI-Driven Analytics

Armada's AI Apps for data analysis, optimize production, and supply chain efficiencies.

### Predictive Maintenance

Armada's predictive solutions can foresee equipment failures and schedule proactive maintenance, minimizing downtime, and costs.

### Risk Management Frameworks

Armada's real-time monitoring and analytics identify and mitigate operational, environmental, and cybersecurity risks.

## Environmental, Health, and Safety

The industry's impact on the environment requires clean, sustainable energy production.

## EHS Challenges and Solutions

### Cybersecurity

Digital interconnection in oil and gas poses cybersecurity risks, potentially disrupting safety. Armada ensures operational security against cyber threats, ensuring continuity and safety.

### Workforce Management and Safety

Managing an aging workforce demands innovative recruitment and training. Armada's AI tools and automation reduce the need for manual tasks in hazardous conditions, enhancing workforce safety. VR and AI-augmented training programs prepare workers for safe operations.

### Regulatory Compliance

Balancing safety and environmental regulations while optimizing operations is complex. Armada's real-time monitoring ensures safety, environmental compliance, and AI analytics proactively manage compliance.

### Environmental Concerns

Oil and gas operations' environmental impact demands increased restrictions and compliance. Armada's technology optimizes operations to minimize waste and emissions, contributing to environmental sustainability.

## Armada's Transformative Impact

Enter Armada's Commander Edge, set to completely transform this landscape.

- Processing 3D images at the edge with AI shortening seismic study durations to days.
- Machine learning predicts open-hole wireline logging, reducing costly failures.
- AI-driven robots inspect welds and pipelines, bolstering safety.

By improving exploration accuracy, optimizing drilling, and enhancing safety and compliance, Armada enhances efficiency and environmental responsibility.



## In-Depth Exploration of Oil & Gas Use Cases with Armada

### Exploration and Seismic Analysis

**Challenge:** Traditional seismic analysis for exploration is laborious and slow.

**Solution:** Armada's EdgeAI transforms seismic data analysis with fast, accurate ID of hydrocarbon reservoirs through real-time processing.

### Drilling Optimization

**Challenge:** Drilling ops face trajectory deviations and equipment failures.

**Solution:** Armada's AI Apps optimize drilling trajectories and predict equipment failures, enhancing drilling efficiency and safety.

### Safety and Compliance Monitoring

**Challenge:** Ensuring safety and compliance in hazardous environments.

**Solution:** Armada's Commander Edge integrates with drones and sensors for enhanced monitoring, ensuring safety, and regulatory compliance.

Armada's EdgeAI and Commander Edge leverage real-time data processing and AI to enhance efficiency, reduce costs, and ensure compliance, driving sustainable energy production.

## Strategic Implementation of Armada's Innovations

### Cybersecurity Enhancements

Utilize Armada's secure platform to protect against cyber threats.

### Automated Training and Safety Programs

Leverage Armada's AI and VR tools for advanced workforce training and safety.

### Compliance and Monitoring Systems

Employ Armada's Commander Edge for continuous regulatory compliance monitoring.

### Emission Reduction Initiatives

Apply Armada's AI to identify and implement operational efficiencies for environmental sustainability.

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Armada's edge computing and AI solutions ensure workforce safety, environmental protection, and sustainable energy production, achieving stewardship and operational excellence.

### Upstream Challenges and Armada's Solutions

In the exploration and production segment, Armada addresses key challenges:

#### Exploration

Accelerates reservoir analysis, reducing time to production, and enhancing revenue potential.

#### Drilling

Optimizes drilling operations and predicts equipment failures, reducing costs, and enhancing safety.

#### Safety and Compliance

Enhances monitoring with drones and AI, improving safety and ensuring regulatory compliance.

Armada's solutions provide the tools to reduce operational costs, mitigate risks, and improve efficiency, paving the way for sustainable and safe energy production.

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# Forging Ahead Together

## A Pathway to Sustainable Excellence in Oil and Gas

Together, we can bring about a new era of innovation, efficiency, and value for the oil and gas industry.

Visit [armada.ai](https://armada.ai) to learn more.