The image shows the silhouettes of several oil pumpjacks against a bright, orange-hued sunset sky. The sun is low on the horizon, creating a strong backlight effect. The pumpjacks are dark, industrial structures with long, angled arms and counterweights. The overall scene is a classic representation of oil extraction in a dramatic, high-contrast light.

Driving Sustainability in the Oil and Gas Industry

The **oil and gas industry** is a major contributor to global carbon emissions, responsible for approximately **42% of global CO₂ emissions** from energy production and consumption.

The sector's activities, from exploration and extraction to refining, transportation, and **end-use combustion**, generate significant amounts of greenhouse gases (GHGs), making it a key target for global decarbonization efforts.

The image depicts a large, complex offshore oil platform situated in the middle of the ocean. The platform is a dense network of yellow-painted steel beams, pipes, and structural supports. In the background, the sun is setting, casting a golden glow across the sky and reflecting on the dark, choppy water. The platform's structure extends from the foreground towards the horizon, with various levels and cranes visible. The overall atmosphere is one of industrial scale against the vastness of the natural world.

As the world transitions to a low-carbon economy, oil and gas companies face increasing regulatory pressures, investor demands, and market shifts towards cleaner energy sources.

At Zero Carbon One, we offer a comprehensive suite of Greenhouse Gas (GHG) auditing, benchmarking, and emissions reduction services, tailored specifically for the oil and gas sector. Our goal is to help companies reduce their carbon footprint, meet regulatory requirements, and position themselves as leaders in the transition to a sustainable future.

Oil and Gas Industry: A High-Emissions Sector

The oil and gas industry contributes a significant portion of global GHG emissions, primarily through Scope 1, Scope 2, and Scope 3 emissions. These emissions arise from a wide range of activities, including

• Scope 1

Direct emissions from company-owned or controlled sources, such as flaring, fuel combustion in exploration, drilling, extraction, and refining processes. These activities account for approximately 15% of the industry's total emissions.

• Scope 2

Indirect emissions from the purchase of electricity, steam, heat, or cooling to power operations like refining, pipeline pumping, and offshore platforms. Scope 2 emissions make up about 5-8% of total oil and gas emissions, driven by energy-intensive operations.

• Scope 3

Indirect emissions that occur in the broader value chain, particularly from the combustion of sold oil and gas products (such as gasoline, diesel, and natural gas) by consumers. Scope 3 accounts for 75-80% of the sector's total emissions, making it the largest contributor to the industry's carbon footprint.

The Decarbonization Roadmap for the Oil and Gas Industry

Decarbonizing the oil and gas industry is crucial for meeting global climate targets. According to the International Energy Agency (IEA), to limit global warming to 1.5°C, emissions from the sector must decline by nearly 40% by 2030. Achieving these reductions requires transformative changes across all operational levels and supply chains.

1. Reducing Scope 1 Emissions

Operational Efficiency and Methane Control Direct emissions from extraction, refining, and on-site fuel use contribute significantly to the oil and gas industry's carbon footprint.

At Zero Carbon One, we assist companies in deploying cutting-edge technology to detect and minimize methane leaks, reduce flaring, and enhance overall energy efficiency at production sites.



Methane Monitoring and Leak Detection:

Methane is up to 25 times more potent than CO₂ in trapping heat, making it a critical target for emissions reductions. We provide advanced methane monitoring technologies that detect leaks in real-time, enabling swift interventions to prevent environmental and operational losses.

Flaring Reduction

We support oil and gas companies in minimizing flaring by capturing flared gas for reuse, reducing waste and emissions while optimizing production efficiency.



2. Reducing Scope 2 Emissions: Renewable Energy Integration

Energy-intensive processes such as refining and drilling are significant contributors to Scope 2 emissions. We help oil and gas companies transition to renewable energy sources, such as wind, solar, or geothermal, to power their operations.

Energy Efficiency Audits

Our team conducts energy audits to identify inefficiencies in power usage and suggest upgrades, such as waste heat recovery, that lower energy consumption and reduce emissions.

Renewable Energy Solutions

We assist in integrating renewable energy into day-to-day operations, from using solar energy for remote field operations to wind energy in offshore platforms.

3. Reducing Scope 3 Emissions

Managing the Full Value Chain

Scope 3 emissions, particularly from the end-use combustion of oil and gas products, present the biggest challenge for the industry. Reducing these emissions requires a concerted effort across the entire value chain, including fuel efficiency improvements, sustainable sourcing, and customer engagement.

Carbon Footprint of Products

We assess the lifecycle emissions of oil and gas products, helping companies track emissions from raw material extraction to end-user combustion. Our data-driven insights provide the foundation for strategies that reduce product-related emissions.



Chain Optimization

By optimizing logistics and transportation routes, promoting sustainable sourcing, and utilizing carbon offsets, oil and gas companies can significantly reduce Scope 3 emissions.

Carbon Capture, Utilization, and Storage (CCUS)

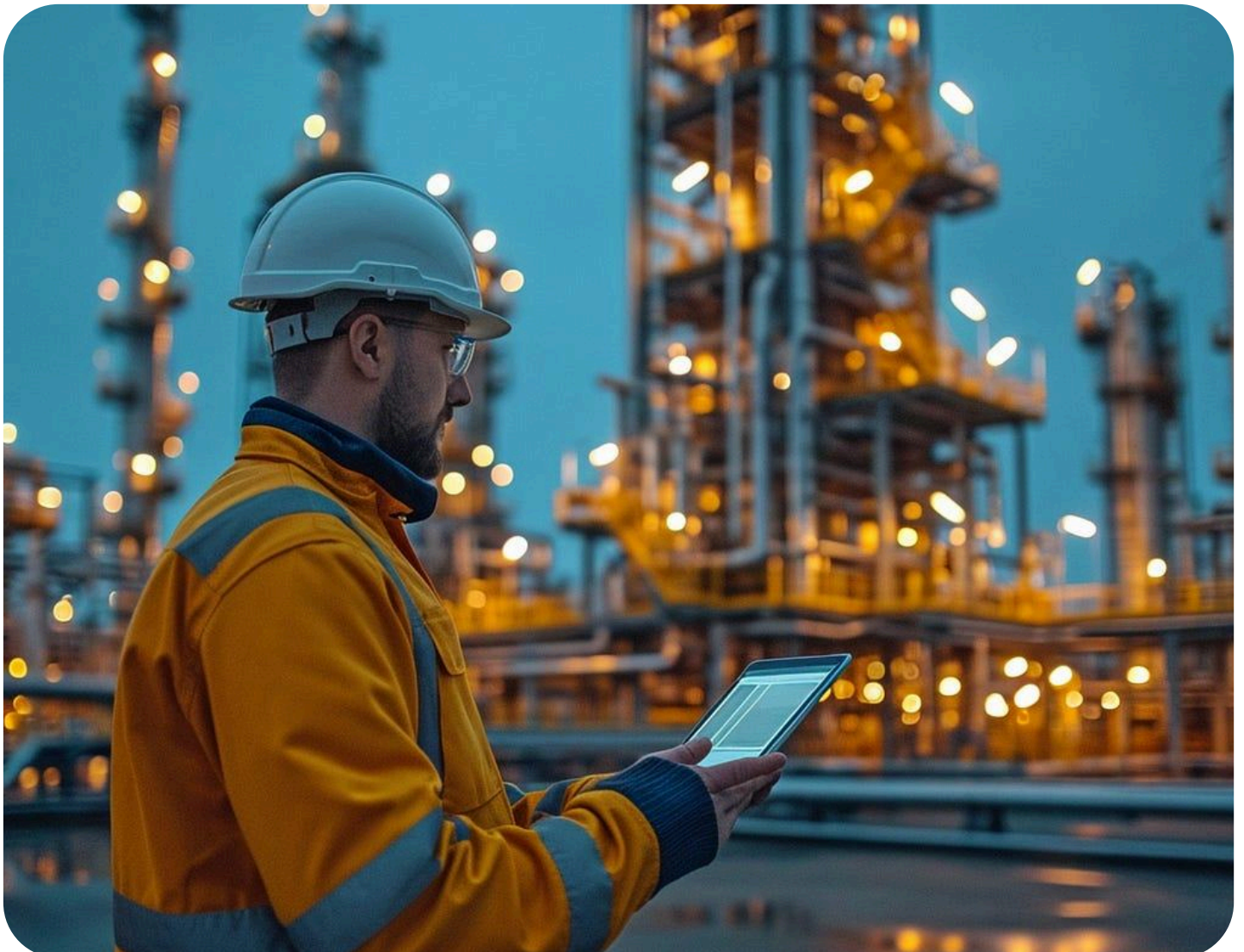
We help companies implement CCUS technologies to capture CO₂ emissions from refining and end-use combustion, store them underground, or repurpose them for industrial uses. This is a crucial tool for reducing both Scope 1 and Scope 3 emissions.

Emissions Impact

The oil and gas industry is responsible for **13% of global methane emissions**, and methane has a global warming potential significantly higher than CO₂. Tackling methane is critical for near-term climate action.

Transitioning to cleaner energy and optimizing operations could reduce the industry's emissions by **10-15% by 2030**, according to the IEA.

Investments in Carbon Capture, Utilization, and Storage (CCUS) are expected to play a pivotal role, capturing up to 6 gigatonnes of CO₂ annually by **2050**, according to the **Global CCS Institute**.





How Zero Carbon One Helps Solve the Industry's Challenges

At Zero Carbon One, we address the complex challenges faced by the oil and gas sector with a suite of services that help companies decarbonize across all scopes.

Methane Emissions Monitoring and Reduction

We deploy advanced methane detection systems, allowing companies to monitor emissions in real-time and reduce methane leakage. By preventing leaks and reducing flaring, companies can both enhance operational efficiency and meet global methane reduction targets.

Blockchain-Verified Carbon Credits

Our blockchain-verified carbon credits provide transparency and accountability in offsetting emissions. These credits can be used to meet regulatory obligations, such as the EU Emissions Trading System (EU ETS) and the Carbon Border Adjustment Mechanism (CBAM).

Energy Audits and Renewable Integration

Our energy audits help oil and gas companies optimize energy use in refining, transportation, and drilling. We recommend efficiency upgrades and facilitate the integration of renewable energy sources, significantly reducing Scope 2 emissions.

Supply Chain Emissions Management

We offer solutions to help companies track and reduce emissions throughout their supply chains. By partnering with sustainable suppliers, optimizing logistics, and utilizing carbon capture, oil and gas companies can reduce Scope 3 emissions.

Carbon Capture and Storage (CCUS)

Zero Carbon One supports the implementation of CCUS projects to capture CO₂ emissions from industrial processes and store them underground or repurpose them for other applications.

This technology is vital for achieving deep emissions reductions across Scope 1 and Scope 3.



Benefits of GHG Audits for the Oil and Gas Industry

Regulatory Compliance and Risk Mitigation

The oil and gas industry faces stringent regulations, including emissions caps, carbon pricing, and environmental compliance standards. Our GHG audits help companies navigate these regulations, ensuring compliance while mitigating financial risks.

Operational Efficiency and Cost Savings

By optimizing energy use, improving methane management, and reducing flaring, companies can lower operational costs while minimizing their environmental impact. Our audits identify key areas for efficiency gains, resulting in cost savings and reduced emissions.

Sustainable Market Leadership

As the global energy market transitions toward sustainability, oil and gas companies that lead in emissions reduction will enhance their reputation and secure their position in a low-carbon economy. By adopting CCUS technologies and reducing methane emissions, companies can differentiate themselves as leaders in environmental stewardship.

Long-Term Decarbonization Strategy

Our data-driven approach helps companies develop a long-term decarbonization strategy that aligns with global climate goals. From integrating renewable energy to reducing emissions across the value chain, we support the oil and gas industry in its journey toward a sustainable future.

Partner with Zero Carbon One

At Zero Carbon One, we are committed to helping the oil and gas industry reduce emissions, optimize operations, and navigate the global energy transition.

Our GHG auditing, emissions reduction, and sustainability services are designed to position companies as leaders in a decarbonized world.

Contact us at

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to learn more about how we can help your company meet its sustainability goals and thrive in the low-carbon economy.

