

Transforming sustainability in the oil & gas industry



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Introduction

In the rapidly evolving landscape of the oil and gas industry, the shift towards sustainability and reduced greenhouse gas (GHG) emissions has become a primary goal. In this article, I hope to share insights from the collaborative efforts between a leading oil and gas company and Quest Global to address environmental challenges and drive progress toward a net-zero future.



Real change from the oil and gas industry

The oil and gas industry, divided into upstream, midstream, and downstream segments, plays a crucial role in global energy supply and the broader economy. This industry serves as the backbone for numerous sectors, providing essential byproducts used in everyday plastics, fertilizers, pharmaceuticals, and countless other applications. Acknowledging their significant contribution to greenhouse gas emissions and pollution, major players within the industry have taken the lead in the green revolution, demonstrating an unparalleled commitment to sustainability. These companies are investing heavily in renewable energy sources like wind, solar, and hydrogen while setting ambitious net-zero targets.

This proactive approach reduces environmental impact and ensures a balanced transition to a sustainable future. Fossil fuel companies are uniquely positioned to drive this change with their extensive infrastructure, financial resources, and technological expertise. Their leadership in clean energy initiatives is making significant strides in mitigating climate change while simultaneously supporting the global economy. This dual focus highlights the industry's understanding that sustainability involves creating a better tomorrow without causing hardship today. Their efforts are paving the way for a future where clean energy and traditional industrial needs coexist, underscoring the vital role of fossil fuel companies in achieving a sustainable and prosperous world. This commitment to sustainability is about adopting renewable energy and addressing the broader impact of greenhouse gas emissions. These emissions significantly contribute to global warming, leading to severe environmental and health consequences.



Our client's aspirational goal and its challenges

One of our strategic clients, a leader in the Oil and Gas industry, set for themselves an ambitious goal to reduce their net emissions by 40% by 2030, using 2015 levels as a baseline. Achieving this target required a granular evaluation of GHG emissions across their numerous assets and plants, which spanned upstream, midstream, and downstream segments. Despite their dedication, the client encountered several hurdles in their pursuit:

1. Need for specialized expertise: The client recognized the necessity for specialized skills to thoroughly assess GHG emissions across all assets and plants, aiming to enhance their capabilities to achieve the 2030 vision.

2. Optimal resource allocation: Balancing the available expertise with core engineering activities required strategic allocation to ensure focused efforts on sustainability initiatives.

3. Ensuring compliance and innovation: Developing robust assessment and mitigation strategies was crucial to meet regulatory requirements and sustainability commitments, showcasing the client's proactive approach towards environmental stewardship.



Quest Global's solutions & recommendations

Quest Global's approach to addressing the client's sustainability goals consisted of three key steps:

- **GHG quantification:** Conduct an assessment of the client's GHG emissions across all assets/plants, providing a clear understanding of their environmental impact.
- **Potential opportunities for reduction:** Identify areas where emissions could be reduced, focusing on both operational improvements and technological upgrades.
- **Recommendations:** Provide a set of strategic recommendations at the equipment, system, and asset levels to the client's investment considerations and business priorities.
- **No CAPEX:** Implemented equipment setting adjustments and process modifications that required no additional investment but provided immediate emission reductions.

- **Low CAPEX:** Suggested minor modifications, such as adding bypass valves, to enhance operational efficiency with minimal investment.
- **CAPEX-intensive:** Advised on significant upgrades and replacements of equipment to achieve substantial long-term benefits.



The impact & reduction in GHG emissions

Our collaboration yielded significant sustainability and business benefits for the client. Over 400 detailed recommendations were provided, all of which were accepted after thorough discussions with subject matter experts and asset owners. All of which were accepted after thorough discussions and modifications. These recommendations aspire to reduce GHG emissions by 3% to 8% per year per plant. Among the implemented solutions were the optimization of equipment to eliminate process gas flaring, the reduction of pilot purge gas emissions and the enhancement of real-time monitoring.

These measures significantly lowered the client's GHG emissions, contributing to their net-zero goals, and brought about substantial business benefits. The solutions improved the reliability and availability of equipment, reducing downtimes and enhancing production efficiency. The client realized considerable cost savings through improved energy efficiency and reduced power consumption.



The key success factors

Our combined success in this project can be attributed to several key differentiators that set Quest Global apart. These elements, combined with our client-centric approach, were instrumental in achieving the project's goals and delivering exceptional results.

What worked well for our client

- **Customized solutions:** The client appreciated our ability to provide customized solutions that were tailored to their specific needs and operational contexts. This bespoke approach ensured that the solutions were highly relevant and effective.

- **Seamless integration:** Our solutions were designed to integrate seamlessly with the client's existing processes and systems, minimizing disruptions and ensuring a smooth transition to more sustainable practices.
- **Proactive communication:** The client valued our proactive communication and transparency throughout the project. Regular updates and open dialogue ensured that they were always informed and could provide timely feedback, enhancing the overall effectiveness of the project.
- **Long-term partnership:** The client viewed our relationship as a long-term partnership rather than a one-off project. Our commitment to their success and our continuous support reinforced their confidence in our ability to deliver ongoing value.
- **Scalability of solutions:** The client recognized the scalability of our solutions, which could be expanded to other segments of their operations in the future. This potential for broader application further demonstrated the strategic value of our partnership.

Our differentiated approach

- **Consultative problem-solving:** At Quest Global, we pride ourselves on our consultative problem-solving approach. This might seem a tad bit trivial, but time and again, our clients have underlined our ability to listen, engage, and adapt, facilitating a seamless integration of our solutions into their operations as a key differentiator. Our partnership-driven approach builds trust and ensures that we deliver sustainable and impactful results.
- **Domain expertise:** Quest Global's extensive experience and holistic understanding of the industry's intricacies covering upstream, midstream, and downstream operations allowed us to navigate the sector's complexities with ease, providing insights and innovative yet practical solutions. Our deep knowledge of industry standards, regulatory requirements, and technological advancements enables us to deliver solutions that enhance operational efficiency and drive sustainability.
- **Engineering capabilities:** Quest Global's advanced engineering capabilities are at the heart of our solution delivery. We employ cutting-edge process design, surveillance, and remote monitoring technologies to ensure comprehensive and effective solutions. Our engineering capabilities ensure that we can address even the most complex challenges, providing clients with solutions that are effective and sustainable in the long term.



Learnings, takeaways, and conclusion

This project underlined the significance of adopting a structured approach to GHG emission quantification and identifying quick wins for immediate impact. At Quest Global, our ability to provide actionable, low-cost solutions demonstrated the immense value that expert partnerships can bring in driving sustainable transformation within the oil and gas industry. Through this initiative, we gained several key insights:

- 1. Structured approach:** A systematic methodology in assessing and addressing GHG emissions is vital for achieving significant and sustainable reductions.
- 2. Quick wins:** Identifying and implementing low-cost, high-impact solutions can provide immediate benefits and build momentum for larger, long-term sustainability projects.
- 3. Collaboration and expertise:** Leveraging specialized expertise and fostering strong collaborative relationships with clients are crucial for overcoming complex challenges and achieving ambitious sustainability goals.

This case study exemplifies how strategic partnerships and expert engineering solutions can drive significant progress toward sustainability goals in the oil and gas sector. Our differentiated approach ensured that the client could achieve a cleaner and more sustainable future, demonstrating the transformative power of combining industry expertise with innovative, actionable solutions.



For further information or queries, please reach out to us at info@quest-global.com