



HEXAWARE

Leading Oil & Gas Provider Reduces Costs and CO2 Emissions

Leveraged AI/ML to optimize energy consumption
and improve efficiency

Case study

Client

| Client

- Challenge
- Solution
- Benefits
- Summary

The client is a major Oil & Gas processing facility, ranked among the world’s largest companies, boasting a workforce exceeding 90,000 employees across over 70 countries. They are at the forefront of leveraging cutting-edge technologies and pioneering innovative strategies in their quest to contribute to a sustainable energy future.



Challenge

Client

| **Challenge**

Solution

Benefits

Summary

The client faced substantial electricity consumption to meet global gas demand. Electricity expenses were a significant component of their operational costs, primarily due to gas compressors. The existing practice involved operating these compressors at full capacity, incurring substantial energy expenses. However, the client aimed to enhance energy efficiency and cut carbon dioxide (CO₂) emissions while sustaining robust and consistent production levels.



Solution

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To address this challenge, we harnessed Artificial Intelligence (AI) and Machine Learning (ML) while employing our Digital Traction methodology – a framework designed for organizing digital innovation initiatives to achieve the best results. Our solution for the client was an ML model that included the following components:

- Precisely replicate the plant’s operations
- Forecast the plant’s future evolution and accurately predict energy consumption
- Identify optimal configurations to enhance energy efficiency and reduce costs

Our collaborative approach, involving multiple functions, accelerated outcomes and facilitated agile iterations. Our methodology focused on the gradual application of data science, ensuring tangible results in each sprint. We rapidly experimented to develop an engine for efficient training, optimization, and benchmarking of various AI/ML models.

Additionally, we constructed a data library and created a practical digital twin solution that mirrors the plant’s operations. Using this system, we successfully executed numerous AI/ML models, pinpointing the optimal configuration that effectively minimizes energy consumption and significantly reduces CO2 emissions.



Benefits

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- Optimized energy efficiency with substantial reductions in CO2 emissions
- Enhanced the accuracy of electricity consumption forecasting by 50%, resulting in significant cost savings
- Reduced CO2 emissions equivalent to approximately 600 UK households
- Accelerated the introduction of future AI/ML initiatives for operational optimization
- Minimized operational disruptions, bolstered security, and boosted productivity through remote maintenance investigations



Summary

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Summary	Hexaware addressed the challenges by using AI and ML within a Digital Traction framework. The solution involved a precise ML model for simulating plant operations, predicting energy consumption trends, and optimizing settings for cost reduction. This approach streamlined results with agile iterations, data libraries, and practical digital twins. Benefits include reduced energy consumption, improved electricity consumption forecasts, significant CO2 emissions reduction, faster AI/ML project deployment, and enhanced operational efficiency.



About Hexaware

Hexaware is a global technology and business process services company. Our 27,000 Hexawarians wake up every day with a singular purpose; to create smiles through great people and technology. With this purpose gaining momentum, we are well on our way to realizing our vision of being the most loved digital transformation partner in the world. We also seek to protect the planet and build a better tomorrow for our customers, employees, partners, investors, and the communities in which we operate.

With 40+ offices in 19 countries, we empower enterprises worldwide to realize digital transformation at scale and speed by partnering with them to build, transform, run, and optimize their technology and business processes.

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