



Repsol

Repsol’s EMISphere Project Leads to Transformational Changes for Enterprise-level Environmental Compliance

Repsol is one of the world’s leading integrated energy companies, with a broad footprint that extends across more than 40 countries on five continents. Repsol is the major Oil and Gas Company in Spain, based on its extensive upstream and downstream operations, including exploration and production, refining, distribution and marketing, petrochemicals and power generation. Among its key core values, Repsol is committed to maintaining compliance with legal and regulatory requirements and aiming for a neutral environmental impact.¹

Driving the Need for Company-wide Monitoring and Reporting

A decade ago, Repsol executives realized that increasing pressure from local regulators and rigorous European emissions legislation as well as from ESG investors meant that their company needed to establish more reliable and credible environmental management processes. Repsol’s legacy processes for calculating air emissions were disparate, labor intensive and time consuming. Each facility had its own process to create the required regulatory reports and documentation. Many consisted of a series of steps to copy information from source systems – such as PI, laboratory information management systems (LIMS) and production systems – then create and maintain hundreds of spreadsheets with all the necessary calculations and reports. Each process required a host of manual tasks, which had to be performed repeatedly by Health, Safety and Environmental (HSE) staff. As a result, these facility-specific processes left room for human error and provided only limited visibility across the company.

“We were concerned that we had a lot of systems in the refineries, but we needed to have that information in just one system so we could have a corporate-wide view of compliance,” said Víctor García Rodríguez, HSE IT Specialist for Repsol. That concern finally helped drive a decision to launch a major project called EMISphere that would centralize compliance by implementing an enterprise-level Environmental Information Management System (EMIS). After weighing several options, the company chose the Sphera® Essential™ solution.

“We decided to work with Sphera because of their experience implementing the ESuite Solution at other companies, and because of their profound knowledge of the tool. The great collaboration and hard work from both Sphera and Repsol

CHALLENGE

- Meet demands of stringent European multimedia emissions regulations
- Reduce use of inefficient spreadsheets and manual processes to support compliance
- Provide executives with enterprise-level visibility, enabling centralized compliance management

SOLUTION

Environmental Performance

- Air Emissions
- Water Usage & Discharge
- Waste Management
- Process Data Management

RESULTS

- Deployed a fully automated system to track compliance with complex air, waste and water management permits across facilities
- Performed more than 1 million calculations daily with 4000 signals integrated; and stored 5 million emissions calculations annually, eliminating need for 100s of legacy spreadsheets
- Enabled 99% automation for compliance-related tasks – reports are now just one click away
- Reduced time required for air and water emissions reporting on an annual basis from 3 months to 3 weeks
- Implemented 100+ customized business rules and system delivers 70+ tailored reports

Repsol's EMISphere Leads to Enterprise-Level Compliance

project teams contributed to finalize the project on schedule and at the same time exceeding expected results," said Amaia Zabaleta, HSE Tools Project Manager

Providing Corporate-Wide Visibility

Repsol launched the EMISphere project in 2012 with implementations at two facilities in Spain. The system was designed to streamline processes for monitoring and measuring compliance with air, water and hazardous waste permit limits at the company's refineries while delivering full visibility into its HSE performance. Repsol's project managers started with downstream assets because they thought that the data integration process would be complex and difficult, so they wanted to immediately test the new system's capabilities on the company's most challenging operations.

This initial phase of the project was a solid success. Repsol's team used the Sphera Process Data Manager module to seamlessly move data from their PI, LIMS and production systems directly into the EMIS. Furthermore, the system enabled a superior level of automation in terms of scheduling, validating and applying rules and calculations to process data in an auditable, transparent way.

As a result, the EMISphere implementation was expanded to five additional locations. Rodríguez said the second phase was an ambitious venture, because multiple project teams were now assuming parallel responsibilities with very demanding deadlines. Yet that challenge eventually became a benefit as non-HSE staff across the different sites became involved in the environmental management process, creating synergies and opportunities for improvement.

Improving Waste Management Processes

Among its many environmental permit requirements, hazardous waste management was a significant challenge. Waste management regulation holds companies to stringent standards in terms of waste reduction and towards ensuring the safe disposal of waste. Repsol's EMIS now enables the company to better manage its waste processes and delivers additional insight.

"Sphera has been a great partner in this extremely challenging project. Five complex downstream facilities have been simultaneously implemented in record time. Sphera extensive experience in EMIS projects and their profound knowledge of their product has been a key success factor in this project."

Amaia Zabaleta
HSE Tools Manager

"Waste management is a high challenge for Repsol. We are strongly monitoring waste management performance in Repsol, seeking and implementing waste reduction opportunities, and promoting waste management

optimization processes" Rodríguez said. "With the Sphera waste modeling capability, we have been able to establish a homogenous waste management process. We now have reliable data and are able to gain additional insight. This will help us not only from a compliance perspective but we can focus now on reducing waste generation, and in general, improve the process."

Enabling Improved Performance

Zabaleta and Rodríguez were pleased to highlight the numerous performance improvements that Repsol has achieved as a result of the project implementation:

- Air and water emission reports at each facility are now produced in 3 weeks instead of 3 months on an annual basis thanks to data automation.
- 99% automation for compliance-related tasks – reports are now just one click away.
- Complex business rules for each facility's regulatory requirements have been incorporated into the system, so most manual tasks have been eliminated, resulting in improved data integrity, quality and accuracy.
- System performs more than 1 million calculations daily with over 4000 signals integrated and stores 5 million emissions calculations annually.
- More than 100 customized business rules have been implemented; HSE staff can focus on QA/QC tasks, analysis or improvement initiatives rather than data entry.
- Reduced reliance on spreadsheets and manual processes resulting in increased traceability of environmental information and audit execution.
- The enterprise-level system now delivers more than 70 tailored reports.

In addition, having created a knowledge base of processes and procedures housed in their EMIS, Repsol is able to mitigate compliance risks due to staff changes because vital knowledge is retained.

Looking Ahead to Future Opportunities

Today, Repsol has a platform that empowers its executives to confidently manage its current portfolio and accommodate future acquisition growth.

"We've come a long way in the last three years, since we started the EMISphere project," said Rodríguez, noting that Repsol has enabled better strategic decision making with faster access to environmental reports and dashboard views of KPIs, so the company is better prepared for the challenges ahead.