

SAP Functions in Detail
SAP xApps



SAP[®] xApp[™] EMISSIONS MANAGEMENT

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EXECUTIVE SUMMARY

To comply with environmental regulations, emissions management is a must. SAP® xApp™ Emissions Management (SAP xEM) by TechniData helps you get the job done with tools for controlling, measuring, and documenting emissions output. SAP xEM helps reduce the risk of costly fines and improves productivity by aligning compliance processes with existing workflow. It also supports new revenue streams by helping you trade emissions credits on the lucrative emissions trading markets.

COMPLIANCE AND OPPORTUNITY: THE POWER OF SAP® xEM

The Kyoto Protocol, the U.S. Clean Air Act, the EU IPPC Directive. Whether they're local, national, or international, regulations on greenhouse gas emissions are a significant challenge for companies operating complex, multifaceted manufacturing facilities. Clearly, the companies that can most efficiently manage, measure, and document emissions output will most easily achieve compliance, reduce their exposure to risk, and maintain a competitive advantage.

At the same time, incentives built into emissions regulations present new opportunities for significant revenue generation. By participating in emissions trading, companies that meet prescribed targets receive credits. They can then trade these credits like stocks to companies that haven't met their targets. The potential revenue that can be generated through such trading is well into the hundreds of millions of dollars, and companies that do it well stand to gain substantially.

So the question is, "What is the single most significant barrier to emissions standards compliance and successful emissions trading?" According to the experts, it's the persistent inability to easily access and use the multitude of systems and data that run the typical manufacturing plant. With emissions-related data and functionality trapped in heterogeneous systems scattered throughout an enterprise, emissions management is a difficult, time-consuming task at best.

What you need, then, is cross-functionality – free access to targeted emissions-related applications residing in disparate systems **and** the ability to unite these applications into a logical system dedicated to emissions management. This is exactly what SAP® xApp™ Emissions Management (SAP xEM) by TechniData does for your company.

Leveraging the powerful integration capabilities of the SAP NetWeaver™ application and integration platform, SAP xEM is a new breed of composite application that overcomes access barriers, aligns business processes, and enhances the flow of information throughout your enterprise. Unique capabilities include maintaining compliance status, monitoring and controlling plant emissions, tracking performance benchmarks, and communicating with key stakeholders both internal and external. SAP xEM helps improve your overall emissions management efforts – enhancing your risk management capabilities and helping you turn regulatory compliance into revenue-generating opportunities in the emissions trading markets.

CAPABILITIES THAT DRIVE EFFICIENT EMISSIONS MANAGEMENT

SAP xEM is based on industry best practices gained from a wide range of customers in more than 20 different industries. These best practices are aligned with existing business processes to ensure that SAP xEM's functions work with the existing flow of information exchanged between departments. Functions that help simplify emissions management include:

- Emissions scenarios and analysis
- Emissions tasks and compliance
- Emissions reporting and documentation
- Emissions trading and collaborative scenarios

EMISSIONS SCENARIO AND ANALYSIS

Emissions regulations invariably require detailed descriptions of the facilities and processes that emit gasses into the environment. Depending on the type of emissions regulated and the legal requirements entailed, these descriptions can differ dramatically. With flexible capabilities for modeling plant facilities, building scenarios, and analyzing processes, SAP xEM helps you generate descriptions at varying levels of detail. You can:

- Build structured representations of facilities and processes
- Generate records that detail emission type, source, amount, and environmental effects
- Automatically estimate complex emissions data
- Define and apply forecast scenarios
- Establish performance goals based on environmental key performance indicators (KPIs)
- Document all communications for shareholders, investors, and the public as required by various regulations

EMISSIONS TASKS AND COMPLIANCE

SAP xEM provides extensive support for determining, measuring, monitoring, and controlling emissions at manufacturing sites. Together, these features and functions provide sophisticated compliance management capabilities that enable your company to exercise its risk management responsibilities to the fullest extent. SAP xEM allows you to:

- Track, analyze, and record emissions measurement data
- Control interactive processes
- Exercise risk management responsibilities
- Evaluate existing emissions data and generate forecast scenarios to assess the effects of operational modifications
- Calibrate and maintain measurement equipment
- Manage workflow and role-based tasks
- Build triggers that automatically generate alerts when emissions values exceed plant limitations
- Measure the impact of excess emissions and determine corrective action
- Employ sophisticated scenarios and tools for indirectly measured emissions (such as greenhouse gas emissions, which are estimated using electricity consumption data)

EMISSIONS REPORTING AND DOCUMENTATION

The only practical way to demonstrate regulatory compliance is by meticulous reporting and documentation. Typically, reports must include data about emissions-related processes and a summary of measurement results over a specific period of time. With robust data warehousing capabilities, SAP xEM gives you the power to gather and integrate the required data. In addition, template-based import-export functionality – with links to Crystal Reports and Adobe reporting software – makes it easy to put that data into a readable printed format. SAP xEM helps you:

- Analyze and present data and scenarios
- Automatically generate and distribute data and reports on demand

- Manage role-based employee access to plant- and process-specific permits, as well as current laws and regulations in effect for a manufacturing facility
- Maintain up-to-date information regarding all authorities involved, such as addresses and contact persons

EMISSIONS TRADING AND COLLABORATIVE SCENARIOS

Many companies are excited by growing opportunities presented by emissions trading markets. But to gain admission to such markets, companies need to collect, document, and verify the required data for approval by the various authorities. Inaccurate data can lead to problems of counterfeit credits floating on emissions trading markets, which could lead to enforcement action for the responsible parties.

To mitigate your risk, SAP xEM provides sophisticated data management capabilities and reporting functions that easily adhere to the formats required by regulators. And to make the emissions trading process flow seamlessly from the larger emissions management process, SAP xEM provides integrated interfaces that connect to market places and trading platforms. These features help you comply with strict regulations and data provision requirements while enabling you to take full advantage of emissions trading markets without exposing your company to undue risk.



Figure 1: The SAP xEM User Interface

FUNCTIONAL COMPLETENESS AND EASE OF USE

SAP xEM delivers comprehensive, easy-to-use functionality that helps employees and managers alike execute emissions-related tasks. The user interface, for example, is a portal that provides role-based, single-point access to all emissions-management-related functions, minimizing the need for training. Integrated Web dialogs empower users to easily build emissions scenarios required for effective data maintenance. SAP xEM also helps you:

- Exercise risk management responsibilities
- Control interactive processes
- Evaluate existing emissions data and generate forecast scenarios to assess the effects of operational modifications
- Monitor emissions-related KPIs
- Measure the impact of excess emissions and determine corrective action

From high-level managerial duties to ground-level emissions compliance tasks, SAP xEM provides a comprehensive solution that helps you track, analyze, and document emissions with greater accuracy and productivity.

TECHNOLOGY THAT MAXIMIZES YOUR ROI

If your company is like many manufacturing companies today, you're less concerned with new infrastructure implementations and more interested in getting more performance and functionality out of your existing investments. That's the whole idea behind SAP xApps™ composite applications.

WHAT ARE SAP xApps?

SAP xApps are packaged composite applications – software that combines new business logic (the packaged part) with functionality borrowed from a wide range of preexisting components (the composite part). In other words, they use what you already have to help you do something entirely new. This, in turn, supports your efforts for continuous business improvement. Building on existing applications that may reside within or across enterprise boundaries, SAP xApps connect, automate, and improve specific business processes to fuel business innovation. They strongly leverage your existing IT investment and help you maximize the value of strategic assets.

From a more technical perspective, an SAP xApp is an application that sits on top of other applications, enabling a cross-functional process that is composite, collaborative, and integrative in nature. To achieve this, SAP xApps depend on SAP NetWeaver, a powerful integration and application platform that unifies the benefits of a portal, business intelligence, and proven exchange technology. This provides an application-agnostic infrastructure that is decoupled from and independent of the contributing applications. So by augmenting your existing IT assets and orchestrating input from disparate, distributed sources, SAP xApps provide newly created, composite business logic that enable you to execute entirely new processes that cut across organizational and technical boundaries.

This is precisely how SAP xEM delivers its emissions management capabilities. SAP xEM extracts and integrates relevant emissions-related data from a wide range of systems. This data then forms the basis for ongoing emissions calculations.

For example, SAP xEM uses:

- Master data from mySAP™ Human Resources
- Material consumption data from mySAP Supply Chain Management
- Emissions-relevant substance data provided by the environment, health, and safety data capabilities of mySAP Product Lifecycle Management
- Equipment data and functional hierarchies provided by the asset life-cycle management capabilities of mySAP Product Lifecycle Management
- Plant maintenance cost data from mySAP Financials
- Emission certificate pricing data from third-party emission trading platforms

SAP xEM also enables comprehensive system collaboration to complete emissions-related processes. Thus, in addition to the data access capabilities listed above, SAP xEM also:

- Writes back to mySAP Product Lifecycle Management, providing plant maintenance orders that optimize workflow for compliance tracking
- Updates mySAP Financials so that emissions below the permitted level are treated as financial assets
- Submits buy or sell emissions certificate orders via third-party emissions trading platforms
- Delivers all required data to SAP Business Intelligence for reporting purposes

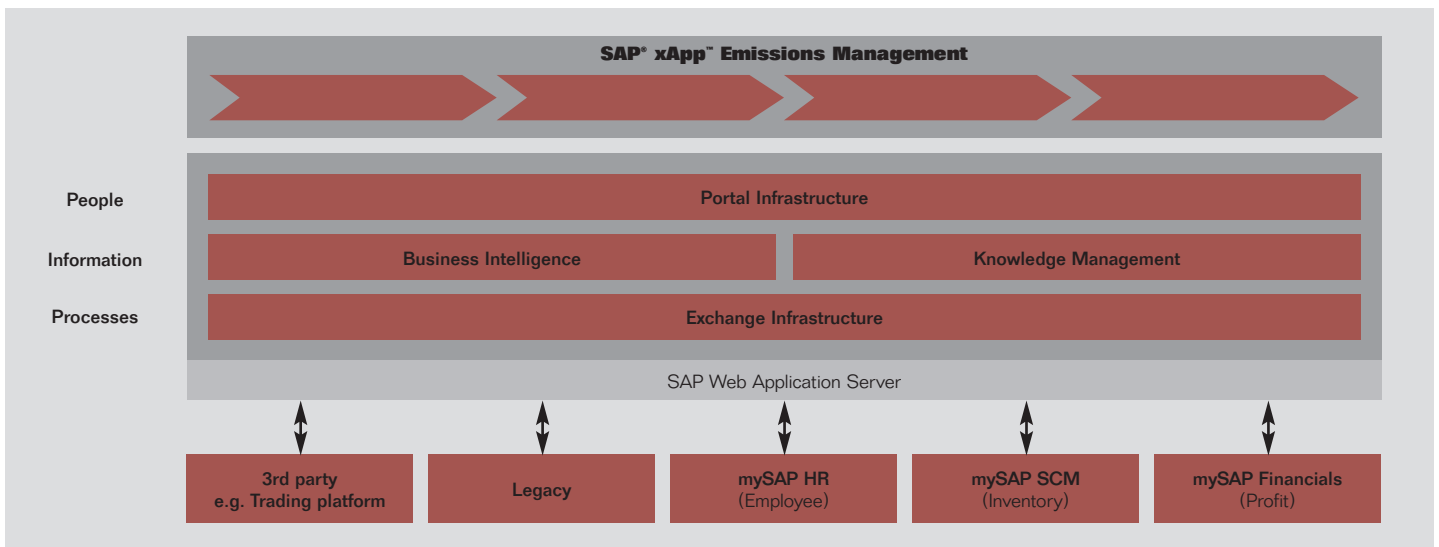


Figure 2: SAP xEM: A Cross-Functional Composite Application that Unifies People, Information, and Processes

With systems scattered across the enterprise and emissions data stored in isolated systems, the cross-functional nature of SAP xEM unites all of your emissions-related data and functionality into a single, logical system that helps overcome the barriers to successful emissions management and regulatory compliance.

SAP xEM POWERED BY SAP NetWeaver

The SAP NetWeaver application and integration platform powers SAP xEM. SAP NetWeaver connects people, information, and processes across heterogeneous technologies and organizations. Based entirely on open standards, SAP NetWeaver interoperates with commonly used technologies, such as Java 2 Platform, Enterprise Edition (J2EE), Microsoft .NET, and IBM WebSphere.

SAP NetWeaver provides the following core capabilities for SAP xEM:

- **System interoperability**
With proven integration broker capabilities, SAP NetWeaver unifies underlying systems using XML- or SOAP-based communication between application components from various sources and vendors. It also enables companies to define software components, interfaces, mappings, and content-based routing rules.
- **Process integration**
Powerful business process management capabilities allow SAP xEM to borrow functionality from existing components and remap processes for newly defined workflows.

- **Information abstraction**

The portal capabilities of SAP NetWeaver deliver a consistent user interface and universal access to unstructured information. Knowledge management functionality supplies integrated search, taxonomy, classification, content management, publishing, and related workflows. Finally, robust business intelligence features enable you to integrate and analyze relevant information and deploy customized, interactive reports and applications that support decision making at every level.

- **Master data management**

The master data management capabilities of SAP NetWeaver help you consolidate content, harmonize master data, and maintain it all from a central location. They also support meticulous, enterprise-wide data object distribution. This enables dependable cross-system data consistency – regardless of system location or vendor origin.

By leveraging the capabilities of SAP NetWeaver, SAP xEM helps you realize efficient emissions management quicker and easier. A phased implementation approach helps minimize disruptions while delivering performance, functionality, and return on investment in an exceptionally short time span. And best of all, SAP NetWeaver does not need to be purchased separately; all required capabilities are packaged with SAP xEM.

VALUE THAT BOOSTS COMPETITIVE ADVANTAGE

In the end, efficient emissions management is a competitive differentiator that can dramatically impact business performance. Companies that fail to comply risk costly fines and other legal action; those that manage the process efficiently can build invaluable trust with regulatory authorities and significantly reduce the cost of compliance over the long term. And for companies that truly master emissions management, the revenue-generating potential presented by emissions trading markets can help turn compliance into new business opportunities.

Specifically, SAP xEM will help you:

- **Assure compliance**

To comply with emissions regulations, you need meticulous measurements and verifiable documentation. SAP xEM provides the tools to track emissions output and report your findings in the required format. It also facilitates complete external audit procedures.

- **Improve performance**

When it comes to compliance, your goal is to get the job done with the greatest degree of efficiency. SAP xEM will vastly improve your emissions tracking and reporting productivity – helping you drive down the cost of compliance over the long term.

- **Serve stakeholders**

SAP xEM helps reduce your exposure to risk and provides the necessary transparency to inform stakeholders and manage public inquiries. It also enhances overall manufacturing productivity by aligning existing business processes with the tasks required to fulfill environmental regulations.

SAP xEM provides a functionally complete set of tools for emissions-related analysis, tracking, and management. And because it's a packaged composite application, SAP xEM leverages your existing resources to minimize total cost of ownership and maximize the value of your strategic assets.

FIND OUT MORE

To learn more about how SAP xEM can help you save money and improve productivity through efficient emissions management, call your SAP representative or visit us online at www.sap.com/xapps

www.sap.com/contactsap

