

AIR EMISSIONS MANAGEMENT

WHY DIGITALISATION OF AIR EMISSIONS MANAGEMENT
IS CRITICAL FOR COMPLIANCE & OPERATIONAL EXCELLENCE

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INTRODUCTION

Air emission monitoring and reporting is critical for the planet, quality of life and a sustainable business. According to the European Commission, more than 400 000 people in the EU prematurely die every year due to air pollution - more than 10 times the toll of road traffic accidents. Another 6.5 million people fall sick as air pollution causes diseases such as strokes, asthma and bronchitis.¹ And we are all aware of the rise in global temperatures and sea level change.²

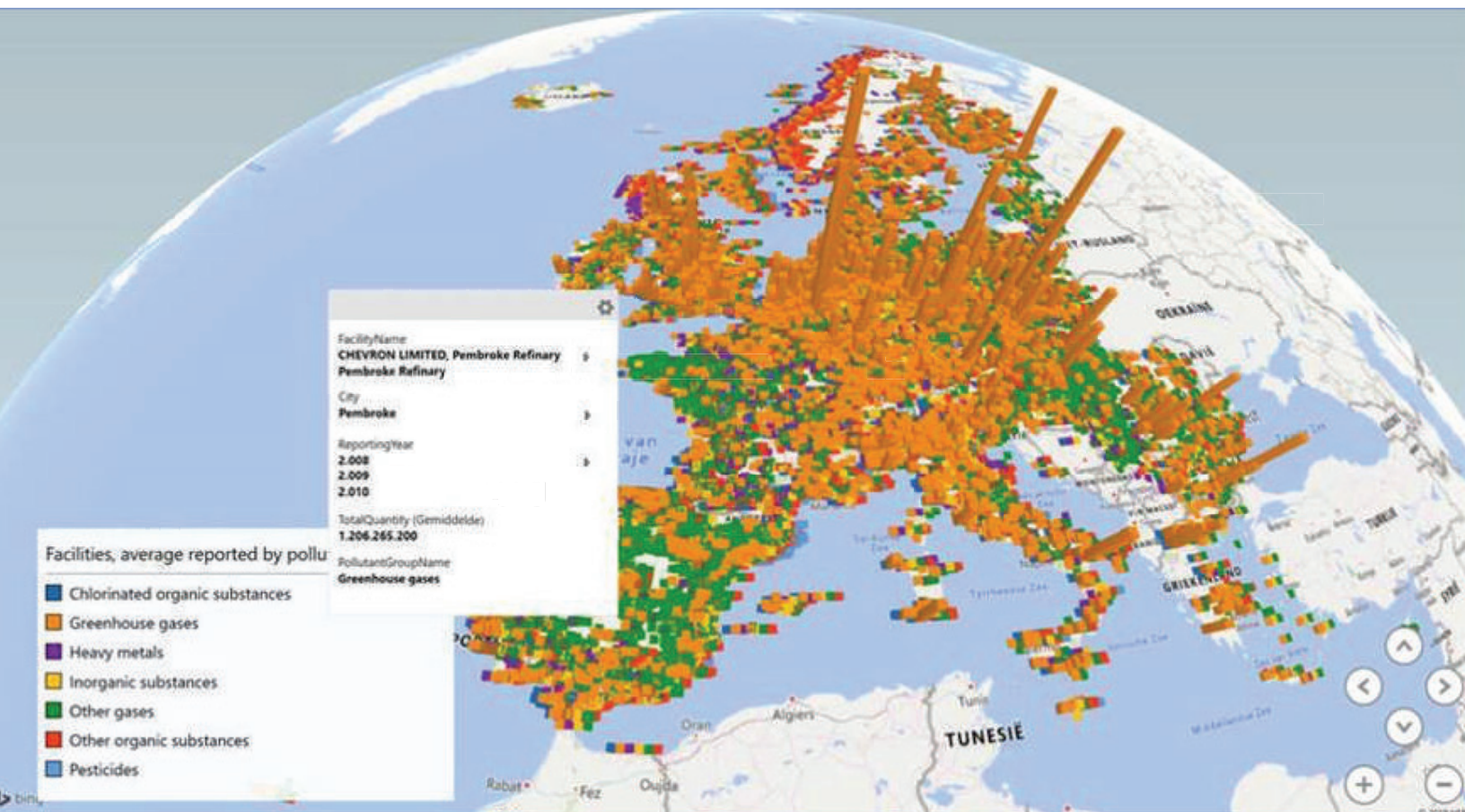
Organisations can positively impact the planet, improve air quality, and ensure regulatory compliance all while creating a more sustainable business. These are interchangeable and made possible through a strategy that is reflective of stakeholder inputs, organisational alignment of objectives, and a management system approach enabled by expert insight and efficiencies offered by digital solutions.



WHY ACCURATE AIR EMISSIONS DATA IS CRITICAL

AIR TRENDS & STAKEHOLDER PERCEPTIONS

The Aarhus Convention³ grants the public access to information and justice. The public has the right to participate in governmental decision-making processes on matters concerning the local, national and transboundary environment.



Emissions by category and EU geography. E-PRTR data covering reporting for 2007 to 2017 by EU Member States, Iceland, Liechtenstein, Norway, Serbia and Switzerland.⁴

The above plot was created using 2016 data from the EU's E-PRTR emissions data base and shows every facility that has reported data. As shown, virtually all of the EU has industrial activity that cause emissions. Note that this plot only includes facilities that exceed reporting thresholds.

Three recent examples underline the significance of the public's access to data:

1

At a former chemical plant in The Netherlands, much more nitrous oxide was emitted over a period of many years than the national emission calculations took into account. Because N₂O is a very strong greenhouse gas, recalculation was needed. At the time, reporting was not legally obliged, so from a compliance standpoint, the company had done nothing wrong. However, they felt the need to explain the situation, substantiated with data.⁵

2

Farmers in the vicinity of a waste incinerator were worried about their crops and cattle. Until recently, the incinerator addressed this by performing extra measures to clean up their process (not legally required). However, the parent organisation decided to discontinue the clean-up measures. Currently, the farmers and regional government are looking for means to legally compel the company to begin monitoring again⁶ and access to data is critical for their case.

3

Residents living near a steel mill did not trust particulate emissions data that was being reported publicly. A concerned group of residents started monitoring the particulate (graphite) levels themselves, and then shared that data on the internet and with local authorities. In this case, after over 2 dozen release incidents were detected, the local authorities opened a criminal investigation.⁷

The last example illustrates how important the general public is as a stakeholder, especially when they do not trust you. For your social license to operate, you must align with you neighbors and be transparent. If you do not, it is likely someone will eventually notice, and you may lose general trust with the public or even criminal charges.



COMPLIANCE & PROTECTIONS TO THE ENVIRONMENT

Directives and regulations are evolving as we speak, and pro-active transparency puts you ahead of the curve leading to less impact on your operations as regulations catch up to public demands. This is reflected by a growing number of companies that promote corporate responsibility reporting. Among many of these organisations, there is a true belief that conducting operations sustainably is the best way to do business.

Oftentimes, compliance is a natural consequence of a business operated sustainably. Transparency of information hinges on good practices and systems for data collection, management, and reporting. The tracking, reporting, and analytics available within digital air emissions solutions offer an organisation a foundation for meeting compliance and sustainability objectives while also providing the data transparency needed to satisfy stakeholder demands for information.



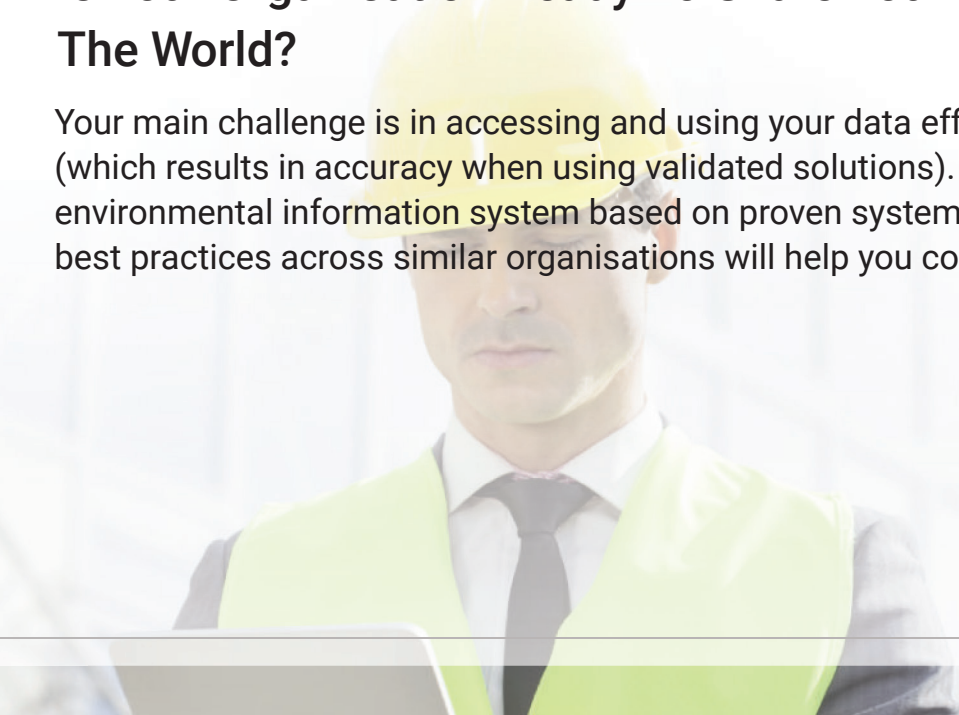
HOW DIGITAL SYSTEMS HAVE EVOLVED AIR EMISSIONS MANAGEMENT

Considering these recent environmental incidents (such as the 3 examples above), one thing remains certain: the public will increasingly demand that organisations transparently share their business practices and the impact they have on the environment and community. Therefore, going beyond compliance to meet the public's increasing demand is not a choice but expected and in the best interest of your organisation.

Organisations with digital systems in place to track, analyze and report on environmental performance are best positioned to respond to current demands for information and to prepare for demands as they emerge. For many organisations, data is often stored in disparate systems or even on paper and is difficult to share. With integrated, digitized tracking of compliance and environmental data, organisations are freed from bounds of paper processes and manual checklists that become increasingly difficult to manage – competing and shifting regulations to manage on-going tasks, communicate deadlines, track requirements, assign responsibilities, and report on findings in one easy to use system. Data insights drive informed decisions and increased transparency with stakeholders. In a review of 2,100 projects tracked in Gensuite's Sustainability Reporting application, the 3,000+ global sites have saved over \$81 million dollars and realized a 29% decrease in greenhouse gas emissions and a 13.5% reduction in water consumption.

Is Your Organisation Ready To Share Your Data With The World?

Your main challenge is in accessing and using your data efficiently and consistently (which results in accuracy when using validated solutions). An integrated environmental information system based on proven system leveraging and sharing best practices across similar organisations will help you conquer this challenge.



BEST PRACTICES FOR MANAGEMENT OF AIR EMISSIONS DATA

Beyond the powerful features best in class commercial off-the-shelf applications provide, leveraging the following best practices can help you prepare for digitalisation:

1 CONFIGURE TRANSPARENT CALCULATIONS

Calculations and their intermediate steps are configured to be transparent. Because requirements for emissions reporting are not unique to your organisation, we promote the use of best practice templates successfully used and shared across customers. This results in a better system with higher quality calculations and reporting that can be setup and maintained at lower cost. Leveraging proven calculation templates such as combustion, tanks and GHG helps with training and management of change. If a methodology changes from either ever changing regulations or a change in data collection methodology, you need to make a single change to a given formula, and it will cascade to all affected formulas.

2 CHOOSE THE RIGHT DATA ENTRY METHODOLOGY

There are a variety of ways to enter data. Different users have different needs for the system, so choosing the right method for different types of employees to enter data has a direct impact on the usability of the system. Consider the following methods and what methods would work best for each roll in your organisation:

- ▶ **Data Entry Forms** : Simple and easy to use data entry forms help users to capture required and important information manually and using mobile tools. These data entry forms are appropriate for frontline users of the system and make it easy for frontline employees to enter data.
- ▶ **Import** : The ease of the import function makes it easy for EHS professionals to enter large amounts of data at one time. This feature is particularly useful for organisations with decentralized assets that may have little to no infrastructure available.

- ▶ **Integrations** : Manual data entry is prone to human error. If your data is stored in a data historian, or another system you should integrate directly. This will allow you to pull data into the system at a specified interval.

3 CREATE A DATA VALIDATION PROGRAM

Reviewing large amounts of data in its native format is tedious and prone to human error. Benchmark can be used in conjunction with most off the shelf business intelligence (BI) tools to create data visualizations so you can perform QA before even creating your reports. Traditional data validation focuses on finding issues. Using Benchmark together with BI tools allows for effective analysis of virtually all data that does not have issues and use this good data to identify and learn of opportunities for improvement.



HARNESSING DIGITALISATION TO ADDRESS COMPLIANCE AND BEYOND

Digitalisation of air emissions programs helps to strengthen regulatory compliance through automated system processes. Consider the documentation involved with maintaining compliance to air emissions regulations. With many moving parts, managing these aspects becomes easier and more efficient with a digital system. The documentation and translation of key compliance obligations and activities into assignments for the responsibility or ownership within facility teams for action can now be completed with the click of a button. Assign and manage tasks with auto-generated notifications for completion, with charting and reporting available to view performance and task adherence, to manage compliance from your digital device.

One aspect of compliance many organisations struggle with is keeping up with the ever-changing regulations. With automated regulatory checks and alerting based on permit requirements, thresholds and operational/compliance data, a digital solution takes the guess work out of regulatory and permit requirement changes. With a Permit Management solution, organisations can create a repository of scenarios for employees to follow in specific situations preparing them for unexpected changes, as well as quickly reference key permit details necessary for response to regulatory inquiries and management of change considerations.

MOVING BEYOND COMPLIANCE

Digitalisation of emissions and sustainability programs has significant operational performance benefits. Digital solutions can inform decision making, including identification of opportunities to streamline process and work stream activities and enablement of system interoperability where operational and compliance systems work together towards a common objective. With routine status updates, automated regulatory checks on permit requirements, and site obligations assigned to individuals responsible for carrying out process and compliance tasks, organizations can have confidence that requirements are being addressed and employees are able to focus on essential job functions. A Compliance Calendar solution offers organizations an easy way to increase visibility across sites to compliance and operational tasks and obligations and ensure accountability through automated responsibility assignment and tracking of obligations to closure.

“To Measure Is To Know”

By using a system to consistently account for air emissions, it will be possible to focus and be more effective on reducing and preventing air emissions where it matters most to your organisation. Also, knowing more accurately what matters and what to focus on, puts you in a better position to be more transparent and increase the trust among your stakeholders.



BENCHMARK GENSUITE ENVIRONMENTAL COMPLIANCE & SUSTAINABILITY SOLUTIONS

The following summarizes digital solution benchmarks for enabling a robust compliance and sustainability system, where each module focuses on the streamlining and management of key environmental compliance aspects, with a focus on emissions compliance and energy sustainability.

AIR LOG

With Air Log from Benchmark Gensuite, organisations can inventory emissions sources, permit requirements and limits, and establish workflows to ensure recordkeeping and deviation follow-ups are completed as required. Facilities can streamline data entry, customize emission factors, and receive email notifications to alert of upcoming recordkeeping obligations and permit deviation warnings and misses.

COMPLIANCE CALENDAR

Benchmark Gensuite's Compliance Calendar allows organisations to establish an institutional memory of regulatory and organisational task completion that can be prepopulated with business-defined tasks applicable to the organisation. Track and update status of on-going site obligations established as calendar tasks, communicate deadlines, and assign to responsible parties to track completion of tasks.

PERMIT MANAGER

Manage actionable requirements on permits, decrees, and other regulatory documents using Benchmark Gensuite's Permit Manager to organize, maintain, and simplify site permits into operational requirements. Document revision, renewal, and expiration dates, outline permit-required activities, and assign responsibility to maintain organisational compliance.

SUSTAINABILITY REPORTING

With Benchmark Gensuite's Sustainability Reporting, organisations can establish an energy resource footprint to define and collect performance indicators that are material to your operations. Automatically convert site-reported values and calculate emissions based on industry-standard emission factors, quickly analyze sustainability data, and measure progress towards goals and target with robust charting and reporting capabilities.

PARTNERING FOR COMPLETE DIGITALISATION SOLUTIONS

Whether just starting your digitalisation journey or expanding for new functionality to meet compliance or sustainability goals, Benchmark Gensuite's Environmental Compliance and Sustainability solutions will help your organisation meet your critical compliance and operational excellence needs. Coupled with Huco Consulting's regulatory and program consulting expertise in sustainability and emissions management, you can initiate and expand your digital solution to effectively manage air emissions, while improving compliance, saving time and costs, and automating.



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