

remas

linking environmental
management and
performance

Issue 9 • 2005



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What is remas?

Remas is an ambitious and far-reaching three-year European study into the benefits of environmental management systems (EMS) in the context of regulation. The €2million project is co-financed by the LIFE Environment Fund, the Environment Agency, the Scottish Environment Protection Agency, the Institute of Environmental Management & Assessment and the Environmental Protection Agency (in Ireland).

By studying the performance of industrial sites and comparing those sites that have robust EMS, with those that have not, we will identify which factors are most valuable for the regulator. After all the data has been collated, measured and analysed, we will cascade our findings to key EU stakeholders. remas is committed to promoting the highest standards of environmental management practice and effective regulatory policy throughout Europe ... and, potentially, the world.



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Hello and welcome to our first issue for 2005 and the third and final year of our work on the remas project. Everyone who has had a role to play so far will know what a major task in data collation and measurement

this has been. We have now received the first significant data analysis report focusing on an initial sample of 57 sites across 10 industrial sectors. Although we clearly need to examine the results of a much larger number of companies, it is encouraging to see evidence of a strong link between having environmental management systems in place and improvements in environmental management. A recent European Commission report also gave a firm endorsement to our work. Turn to pages 4-6 to find out more about what these results are telling us.

We are now moving into the testing phase of the project. We have developed a number of models that we need to test to see how they work in the 'real world'. Having agreed which parts of an environmental management system companies need to focus on to improve performance, we will be trialling a formal approach to compliance with a set of 25 companies.

Further research has identified the 'top three' incentives to encourage companies to introduce an effective EMS. We will be asking another 25 sites to let us know more about what incentives would work for them. Articles on page 3 look at both of these trials.



A handwritten signature in black ink that reads "Martyn Cheesbrough".

Martyn Cheesbrough
remas Project Manager



Meet the team

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Remas criteria trial is launched

Last year the remas team worked hard to find out exactly which parts of an environmental management system (EMS) companies need to focus on to improve environmental performance.

The team talked to regulators, certifiers and industry, analysing their data to discover which parts were the most effective and workable ('the remas criteria'). The discussions concluded that a formal approach to regulatory compliance (that is a checklist to assess compliance with the site permit and environmental legislation) should be tested at a number of industrial sites.

The next step was to find 25 companies willing to introduce the remas criteria to their own environmental management practices. ***We approached companies that had completed the environmental surveys, who had either no formal environmental management system, or a formal EMS but had relatively low environmental performance scores. We also looked for a good spread of companies across mainland Europe to make sure any changes to the system would work across the EU.***

The trial began in early 2005, with the team helping sites to introduce a new compliance checklist. An effective EMS should deliver compliance with environmental legislation and influence performance improvement. Introducing the remas criteria will help to achieve this.

The trial and report will be completed by October 2005 and will be reviewed to see what effect the new compliance checklist has made in improving environmental performance.

European Commission recognises importance of remas work

A recent report by the European Commission on the uptake of EMAS (Eco-Management and Audit Scheme) has recognised the key role of the remas project.

The EMAS review was prompted by disappointing take-up of the standard, with the number of companies registering to the EMAS standard falling in recent years. One reason suggested was the alleged failure of governments to provide adequate incentives. Nearly all EU member states already provide some incentives for industrial companies and other

Testing top incentives

The remas team consulted the three key groups with a pivotal role in the area of environmental management. The team met with regulators, certifiers and people from industry to agree a 'top three' list of incentives for companies to introduce effective environmental management systems.

As we reported in issue 7, the top three incentives are:

- proportionate fees to provide real recognition for those who can demonstrate better performance;
- a partnership approach to inspection between inspectors and certifiers;
- regulating companies with many sites as one organisation.

Testing how companies react to these incentives and whether they would lead to more sites introducing an effective EMS was the next stage of the project. The remas team are contacting around 25 sites, which already have a formal environmental management system in place, and asking them to complete a questionnaire, exploring the incentives in more depth. If your site has registered to take part in the remas project and you wish to be considered for the trial of the incentives, then please contact the remas team.

At the same time, the remas team have been examining the incentives to see how they could be practically introduced within the context of regulation. Feedback from the questionnaires will be incorporated into this process to provide a balanced view on incentives.

The testing and reporting phase of the incentives will be completed by October 2005 when the remas project provides its recommendations in a final report to the European Commission.

organisations to register to the EMAS standard. The report goes on to say that take-up of EMAS tends to be highest where there is greatest official encouragement. A key priority for future research, according to the report, is to find out which types of incentive are most effective and why.

Commenting on the report, remas Project Manager Martyn Cheesbrough says: "the findings make very encouraging reading and are a firm endorsement of the significance of the work of the remas project."

Strong evidence of a link between EMS and improved site operations

A recent remas report has revealed strong evidence that an accredited environmental management system leads to an overall improvement in site systems and procedures.

The report was prepared by the Policy Studies Institute (PSI). Remas commissioned the PSI to develop a technique to analyse the increasing data gathered, and to comment on any trends in the first full sets of data. The PSI is one of the UK's leading independent research institutes, conducting research to promote wealth and improve quality of life. PSI has a reputation as an impartial evaluator of policy in the UK and Europe.

The report presented the results of a detailed analysis of the relationship between EMS, environmental management and environmental performance for a sample of 57 operating sites operating across 10 industrial sectors in the United Kingdom.

Here we take a look at what the initial data suggests about the link between EMS, site systems and procedures and environmental performance.

The chosen sample consisted of 57 sites operating within the UK. They represent different industrial sectors, including cement, combustion and paper and pulp. Some sites have an EMS in place, either EMAS or ISO14001, while others have no formal system.

The overall aim of the analysis was to find out if the data collection model used for these initial sites would provide conclusive results. It was also important to work out the number of sites that have to be analysed to give statistical confidence in the remas project findings.

The specific aims of the analysis were to find out if those companies that have an accredited certified environmental management system perform better in terms of their environmental management. In other words, do these companies have better systems and procedures in place for managing their impact on the environment. Where companies scored high on environmental management, the data was tested further to discover if this, in turn, led to improved environmental performance and, if so, which aspects of the company's environmental management have the greatest impact in reducing their risk to the environment.

What the data is telling us

EMS, management procedures and activities on site

- There is strong evidence that having a formal environmental management system leads to better environmental management (measured by a site's overall EMA score).
- EMAS seems to have a greater positive impact on environmental performance than ISO14001.
- For specific parts of environmental management (the 'remas criteria'), there is strong evidence that these are better implemented where a company has EMAS or ISO14001.

The table below gives a breakdown of the operating sites sample by industrial sector and EMS type

Industrial sector	EMS type			Total %	Total number
	EMAS	ISO 14001	No EMS		
Cement	62%	23%	15%	100%	13
Combustion	0%	89%	11%	100%	9
Inorganic chemicals	0%	67%	33%	100%	6
Organic chemicals	8%	42%	50%	100%	12
Paper & pulp	0%	60%	40%	100%	5
Other	0%	67%	33%	100%	12
Total	16%	54%	30%	100%	57

1 The "Other" sector comprises sites from the Aluminium, Food, Refining, Glass and Other Minerals sectors.

- There is no evidence that ISO14001 results in itself in an improvement in a site's commitment to training and awareness.

Overall environmental management and performance

- Within the current method and limited dataset, there is no evidence to indicated better environmental management (a high EMA score) leads to improved environmental performance in terms of absolute compliance or conduct (incidents and complaints) at the site.
- For releases to water, better environmental management seems to lead to improved performance in four of the six industrial sectors analysed.

Specific aspects of environmental management and performance

- There is no evidence that either commitment to training and awareness or documentation control have any effect on environmental performance.
- An environmental policy and compliance and conformance control appears to lead to better resource use in processes (raw materials, water, energy).
- Performance monitoring, environmental reporting and compliance and conformance control seem to have the most effect in reducing releases to air and water.

It is important to note that the conclusions for specific aspects of environmental management need further testing with a larger sample of sites and, therefore, could change.

Indeed, the report acknowledges that these results are tentative and recommends further study with a much larger number of sites. It also suggests that some of the indicators and scoring mechanisms may need revising.

Next steps

The remas team believes the report strongly confirms that they have been asking the right kind of questions, while acknowledging that they need to review how questions are scored and what terminology is used. While the initial set of 57 sites has highlighted interesting results, the sample is not big enough to provide solid evidence, nor the reasons for these results. Therefore, the team will set up a much larger data set, which will include countries from mainland Europe. We will have over 200 sites with completed quality assured data to test these findings further over the coming weeks.

We would encourage any sites which have not yet completed their surveys to do so as soon as possible.

Gathering the data

We take a look at what data we collected and how we gathered the detailed information for this important first stage analysis.

By completing questionnaires on environmental management and performance, each of the 57 sites provided data for the team to analyse. All information was checked by the remas team and confirmed by local Environment Agency inspectors who knew the sites well, as part of the quality control process.

Environmental management

Each site received an overall score for environmental management (EMA), as well as individual scores for each of the elements that make up environmental management, also known as the 'remas criteria'.

The scores were based on the site's response to 56 multiple-choice questions. This simple scoring system was developed as a result of work with industry and regulators. Sites were scored by comparing their responses to the ISO14001 standards, the IPPC (DIRECTIVE 96/61) European benchmarks, and the site's compliance history.

Environmental management measures

Measure	Remas criteria	No. of questions within survey
EMA11	Environmental policy	4
EMA12	Operational and risk management	13
EMA13	Commitment to training and awareness	4
EMA14	Compliance and conformance control	8
EMA15	Performance monitoring	13
EMA16	Open communication culture	7
EMA17	Documentation control	2
EMA18	Management review	5
EMA19	Reporting environmental performance	6
EMA	Overall	56

Continued on page 6

To receive a high EMA score, a site had to show not only that it had systems and procedures in place, but also prove that these are used to make a difference to the way it operates in relation to the environment. For example, for a site to receive a top score for training and awareness, the site would need to have proper training procedures and only allow competent staff to carry out work.

Environmental performance

Supplying information on environmental performance, sites had to first select the correct business sector and then, select the most significant environmental performance indicators for their site. Having chosen these individual indicators, sites then had to enter environmental performance data for each indicator.

Environmental performance measures

Measure	Description	No. of indicators
EP1	Compliance	5
EP2	Conduct	2
EP3	Process efficiency – raw materials	1
EP4	Process efficiency – water	1-2
EP5	Process efficiency – energy	1-3
EP6	Releases – air	1-3
EP7	Releases – water	1-3
EP8	Releases – land	1-3

For compliance, the five indicators represent different measures of non compliance, for example the number of formal enforcement actions taken out against the site by an environmental regulator.

For conduct there are two indicators – the number of substantiated complaints received and the number of unresolved complaints.

For the process efficiency and release measures the indicators are specific for each sector.

Quality assuring the data

After sites provided data, it was quality assured before being analysed. The remas technical team checked that sites had answered the right questions, did not give contradictory answers and had selected the correct indicators. They also did more checks with the regulator to make sure the environmental performance data was correct before being analysed and also to ensure responses were consistent.

Sites have first

From December 2004, over 200 sites that had completed both the environmental management and environmental performance parts of the survey have been able to view graphs which provide instant feedback on their performance.

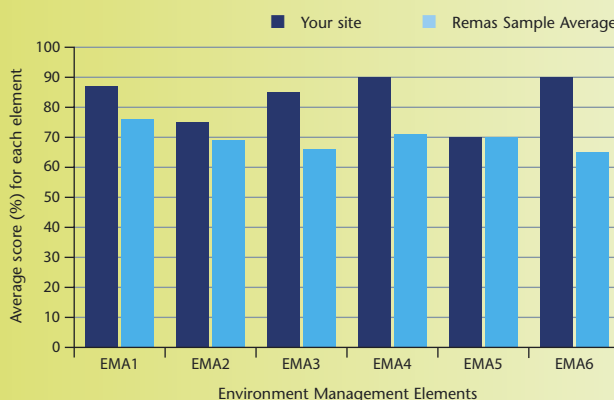
Sites, once logged in, can follow the icon to the graphing module. There are over 30 graphs that the site can choose to display.

Not only can the site display their own remas score, but they can compare their score with participating sites either within their own sector, within their country or with the whole of the remas dataset.

Sites will be able to see at a glance where they can improve or where they perform better than others.

Sites should be aware that this interim feedback is likely to change as more datasets pass through quality assurance and are completed. In a few months time, once the data collection and analysis has been completed, remas will provide participating sites with tailored, confidential reports.

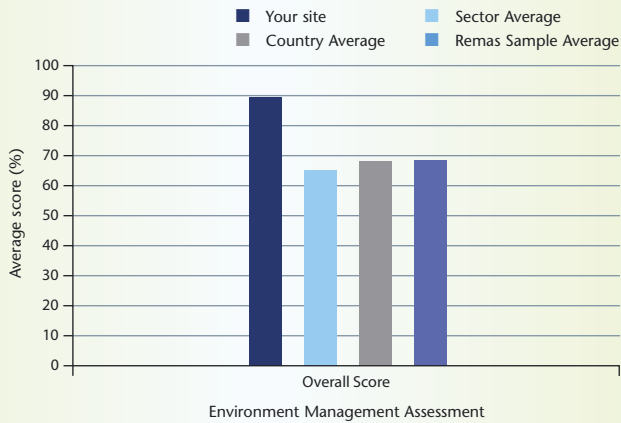
Remas EMA score (%) by element (your site compared with remas sample)



Example 1. This site scores well when they compare their environmental management scores to the rest of the participating sites.

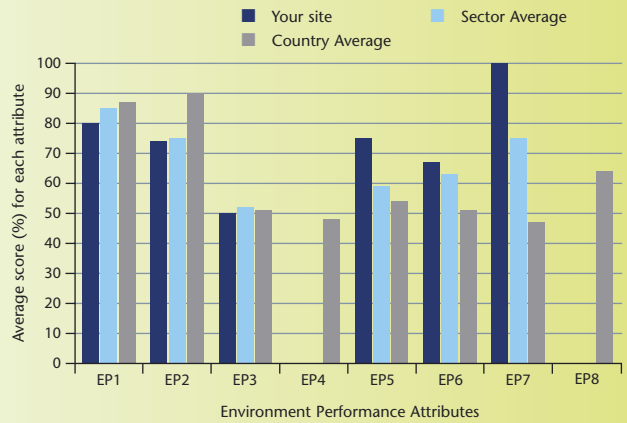
sight of their results

Remas score (%) for EM (your site compared with remas sample, country and sector)



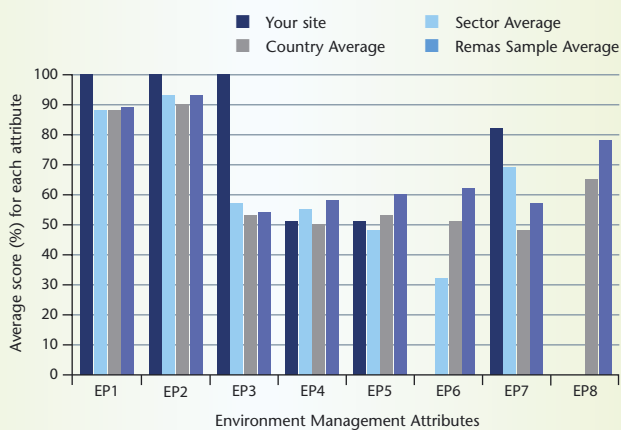
Example 2. This site's overall environmental management score is much higher than the average for their business sector, country and the whole remas sample.

Remas EP score (%) by attribute (your site compared with your sector and country)



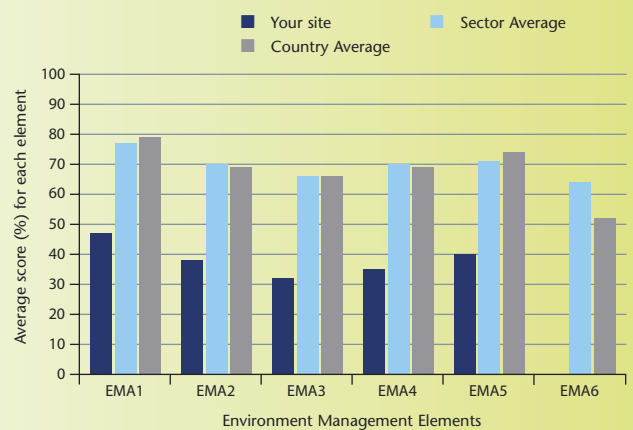
Example 3. This site can see where its environmental performance is better than the average and where they have room for improvement.

Remas EP score (%) by attribute (your site compared with your sector, country and remas sample)



Example 4. This site has areas of environmental performance that are very good, but has room for improvement in others.

Remas EMA score (%) by element (your site compared with your sector and country)



Example 5. When comparing their environmental management scores to others in their sector and country, this site clearly has room for improvement.

“If something is sustainable, it means we can go on doing it indefinitely. If it isn't, we can't.”

Jonathon Porritt

“The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired in value.”

Theodore Roosevelt

“There must be a better way to make the things we want, a way that doesn't spoil the sky, or the rain or the land.”

Sir Paul McCartney

