

Environmental performance management has undergone a profound business transformation. Whereas it was formerly sufficient to track and report environmental emissions at a local facility level, environmental performance has become a corporate-wide concern. Effectively managed companies are now maximizing global operations by balancing emissions, pollution control device installation, emissions reduction projects and production.

opsAEM provides proactive emissions management across your enterprise. The software establishes baselines and targets and then allows you to manage them even as your business conditions change. The module supports project tracking so that equipment or facility investments or pollution abatement measures can be assessed to determine their actual impact vs. cost. Also, sources and locations are identified that are at risk of exceeding emissions allocations. This visibility allows users to either avoid or offset excess emissions, and ultimately provides flexibility in how you achieve compliance. By providing forecasted emission inventories, the software makes it possible to identify and correct problems before they occur, rather than dealing with the consequences of emissions exceedances.

Key Features

- Manage emissions inventory baselines and targets over time and organizational changes.
- Monitor emissions reduction project performance independent of production level changes.
- Use recent emissions rates, project and abatement data and a production plan to forecast emissions.
- Compare recent emissions to targets and forecast end of period performance.
- Analyze and compare internal and external project performance in relationship to projected returns on investment.
- Allocate emissions to joint venture operations.
- Account for varying percentages of project participation, equity share and control, including co-ownership, during project lifetimes.
- Export forecast, inventory and reduction data to emissions trading applications.
- Forecast based on productivity plans at individual facilities or across business units and regions.

GHG Reductions Report						Date: 04/11/2005
Reporting Year: 2004						Page: 1
Corporate GHG Reductions Rollup						
Facility: Production Unit 1.0 Ownership - 100% Production: 17,500 Tonnes Production Plan: 30,000 Tonnes Base Year Production: 33,600 Tonnes Target = 99.0% of facility baseline						
	Actual Reductions		Target Reductions		Intensity Ratio	Uncert
	(tonne)	(C/tonne)	(tonne)	(C/tonne)	Act/Tgt	(%)
CO2e						
Direct Sources	60	1.66	98	5.00	33.23	5
Indirect Sources	3	0.00	0	5.00	0.00	6
Facility Total	63	1.58	98	5.00	31.61	5
Facility: Production Unit 2.0 Ownership - 100% Production: 18,800 Tonnes Production Plan: 33,600 Tonnes Base Year Production: 30,000 Tonnes Target = 98.0% of facility baseline						
	Actual Reductions		Target Reductions		Intensity Ratio	Uncert
	(tonne)	(C/tonne)	(tonne)	(C/tonne)	Act/Tgt	(%)
CO2e						
Direct Sources	58	17.12	47	5.00	342.38	4
Process Sources	10	0.00	12	5.00	0.00	95
Facility Total	68	14.57	59	5.00	291.44	35
Facility: Production Unit 3.0 Ownership - 39% Production: 17,500 Tonnes Production Plan: 30,000 Tonnes Base Year Production: 30,000 Tonnes Target = 85.0% of facility baseline						
	Actual Reductions		Target Reductions		Intensity Ratio	Uncert
	(tonne)	(C/tonne)	(tonne)	(C/tonne)	Act/Tgt	(%)
CO2e						
Direct Sources	7,578	0.40	113	8.00	4.95	6.5
Sequestration Sinks	8	36.73	1	8.00	459.18	7.5
Facility Total	7,586	0.44	114	8.00	5.44	6
2004 Total CO2e Reductions	7,718	0.48	232	5.91	8.06	6

Easy-to-use reporting features let you automatically generate reports on corporate-wide greenhouse gas and other emissions reductions.

Measurable Benefits

- ▶ **Optimize Operational Flexibility:** Use forecasting to determine how to maximize overall productivity of a group of assets without exceeding local or regional (e.g., NOx, SO2, VOCs or GHG) limits in current or future reporting periods.
- ▶ **Track Projects:** Determine the cost-effectiveness of abatement, control and offset projects by calculating the actual emissions reductions to cost ratio, independently of fluctuating reduction demand.
- ▶ **Support Financial Management Decisions:** The software ties in with your emissions trading system to let you use emissions inventories and forecasts to support trading decisions and settlement activities.

Solving Real Environmental Management Challenges

Challenge: *Your company has established a target to reduce greenhouse gas emissions by 10% by 2010, using the year 2000 as a baseline year. In 2007 you acquire another company and the following year you retire 20% of your existing operations. In 2008 the CEO wants to know where the company stands with respect to meeting its 2010 goal. How does the baseline get adjusted? Where does the company stand on it's way to meeting the goal? What actions might be the most economically effective way of meeting the goal?*

Solution: *opsAEM allows you to track your current emissions position versus your target position. The software accommodates changes that result from mergers and acquisitions and adjusts baselines in accordance with these changes. Baseline and target changes are tracked over time. Internal emissions reduction project performance is tracked and compared to investment costs, taking into account production level changes. The software's forecasting capability allows you to project emissions to determine whether the ultimate reduction goal will be met. The effects of prospective abatement and offset projects on meeting the overall reduction goal can be ranked to help with future investment decisions or a decision to meet the goal through market mechanisms. Information stands up to third party verifiability and auditability standards. All this allows you to confidently report to your CEO on progress toward your 2010 targets, as well as giving you the information needed to ensure that you make the most cost-effective decisions while managing your ultimate emissions targets.*

Flexible Reporting

The data stored in opsAEM can be reviewed with standard reports, user-generated reports, or through the software's powerful ad-hoc reporter.

Examples include:

- ▶ **GHG Baseline:** GHG emissions inventory for baseline year used for calculating subsequent year reductions.
- ▶ **GHG Forecast:** Forecast year-end greenhouse gas emissions of CO₂e (carbon dioxide equivalent) against target values by facility.
- ▶ **Speciated Forecast:** Forecast monthly emissions of any pollutant from any source at any facility.
- ▶ **Project Summary:** Summary of all projects resulting from capital investments for capacity or productivity improvements, pollution control and/or offset projects.
- ▶ **Year-to-Date (YTD) Status Report:** YTD actual emissions vs. YTD target along with end-of- year (EOY) projection vs. EOY target.
- ▶ **GHG Reductions:** GHG emissions reductions and ratio of reductions to amortized project cost.
- ▶ **Speciated Reductions:** Reductions of any pollutant resulting from capital improvements or abatement projects.
- ▶ **Reduction Credit Tracking:** Renewable Energy Credits (REC), Emission Reduction Credits (ERC) and energy efficiency and sequestration offset projects.

To learn more about how opsEnvironmental can help reduce risk and improve environmental management at your facility or enterprise or to speak to a systems consultant, please contact us.

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