NAEM

NOVEMBER 2018

Planning for a Sustainable Future

Ideas that Will Shape EHS&S Management in the Year to Come

Sponsored by:

EY
Building a better working world

Contents

Introduction 3

About this research 5

Key trends:

Technology is poised to transform how companies identify, manage and eliminate EHS&S risks 7

Environmental, Social and Governance concerns are now clearly identified as business risks that need to be addressed at the board level 10

The integration of EHS&S into more aspects of the value chain requires capacity-building, new training 12

Clean energy and greenhouse gas commitments are now coming to fruition 14

The next era of sustainability will require a paradigm shift 17

Acknowledgments 21

Research Resources 23

About NAEM

The National Association for Environmental Management (NAEM) empowers corporate leaders to advance environmental stewardship, create safe and healthy workplaces and promote global sustainability. As the leading business community for EHS and sustainability decision-makers, we provide engaging forums, a curated network, peer benchmarking, research insights and tools for solving today's corporate EHS and sustainability management challenges. Visit NAEM online at naem.org.

Planning for a Sustainable Future

Ideas that Will Shape EHS&S Management in the Year to Come

Welcome to our latest report on the ideas and practices that will shape corporate environment, health and safety, and sustainability (EHS&S) management in the year to come.

As we did two years ago, NAEM conducted this research to understand what companies are doing, and more importantly, how they are thinking about their new sustainability strategies and initiatives. The following report is a synthesis of the key issues that are on the minds of – if not yet in the budgets of – corporate EHS&S leaders today.

When NAEM published its last trends report in 2016, those we spoke with described their latest goals in the context of an emerging expectation that businesses take a public stance on the environmental, social and regulatory issues that impact their stakeholders. They discussed plans for ambitious new clean energy projects and a need for a new way to measure success, in terms of scientifically-relevant, measurable impact. They also shared insights into some of the strategic conversations that were taking place behind closed doors, as their companies prepared their next generation of goals.

This year's report, our third, comes at a time when the work of the environmental health and safety, and sustainability leader has never been more important.

Against the backdrop of the latest report from the Intergovernmental Panel on Climate Change (IPCC), it is incumbent on business to forge a path forward that dramatically reduces the impact of our industrial production on the ecosystems on which we rely. Organizations of all sizes are now confronting the business risks associated with environmental degradation, biodiversity loss and social inequality.

The good news is that corporate leaders are clearly paying attention. Our results reveal that environmental, social and governance (ESG) risks are being evaluated at the board level and integrated into business plans. Companies are making public commitments to fight climate change within their sphere of influence. Shareholders, for their part, are asking detailed questions about corporate ESG governance through shareholder resolutions and routine inquiries.

The regulatory actions that may have once driven business to change have been firmly supplanted by an emerging cultural expectation that transparency, environmental stewardship and corporate responsibility are the costs of doing business today.

This seismic shift in thinking bespeaks the importance of millennials in the workforce, as well as the impact of those EHS&S professionals who have been leading change from within for more than three decades. And as many companies prepare to pass the baton from one generation of leadership to the next, they are building on this legacy, even as they are called to guide their organizations through a time of transformational change, facilitated by a wave of technological innovations.

While the role (and titles) of EHS&S professionals continues to evolve alongside the needs, the onus today is on integrating their knowledge into all aspects of the business operations; to build capacity among team members who need this knowledge to advance the company's goals; to transform promise of sustainability into shared value.

It's time, in other words, to put these aspirations into operation.

During her recent keynote address at NAEM's 26th annual conference, Janine Benyus described EHS&S professionals as "the keystone species of the business world." A contributor, in other words, whose very existence has an outsized impact on the health of the entire ecosystem. This report and the ideas contained within it are a testament to what this small-but-mighty band of leaders have achieved. It is also a beacon for those seeking new ideas to guide their own organizations ever onward.

About this Research

Research Approach

NAEM utilized both a qualitative and quantitative approach to arrive at the insights presented in this report. The process began in the spring of 2018, when NAEM staff interviewed a panel of thought leaders, experts and EHS&S decision-makers to identify the emerging ideas and practices.

NAEM then distilled the ideas gleaned from those interviews into a quantitative survey to understand the prevalence of these practices. The survey was distributed to NAEM's corporate members who are "in-house" EHS&S leaders within corporations from across industry sectors. The results are based on 79 completed responses and are integrated into the report as one piece of our analysis.

Our team then conducted focused interviews with practitioners about their specific programs. These are presented as case studies and use examples to help bring dimension to the analysis. The full list of those who contributed are listed at the end of this report.

In this report you will find quotes and ideas from our external panel integrated into the analysis as well as highlights from the quantitative survey. All quotes, however, have been anonymized for the presentation of these results. By sharing their perspectives with us, these contributors and their respective companies were neither responsible for the outcome of our findings, nor explicitly endorsed the veracity of the results.

Notes on the analysis

To get a portrait of the prevalence of the emerging practices identified among leadership companies, the NAEM survey presented respondents with a list of practices, organized into the following six categories: Operational Footprint; Health and Safety; EHS&S Goals and Reporting; Supply Chain and Product Stewardship; Data Management and Technology; and Corporate Responsibility & Employee Engagement.

The survey respondents were asked to indicate whether they have a program in place already ("Yes"/ "No") or whether they are piloting, talking about or planning to launch such a program in the next three years ("Evaluating").

The results presented in this report were independently researched and analyzed by NAEM. The report sponsor did not influence the content of this publication.

Key Trends

Key Trend #1

Technology is poised to transform how companies identify, manage and eliminate EHS&S risks

Rapid advances in technology promise near-term innovations in how EHS&S leaders monitor their operations, train employees and flag risks before they become incidents.

Using or evaluating innovative software solutions to track EHS&S data is a now must for the majority of companies. As one technology expert told us: "We are seeing more discussions among companies to look not only at efforts to reduce environmental 'footprints' but also how technology can be applied across multiple sectors to reduce impact (referred to as the 'handprint.')"

"We're seeing these conversations around smart building management systems, sensors for better water use, improved safety monitoring, and worker voice initiatives."

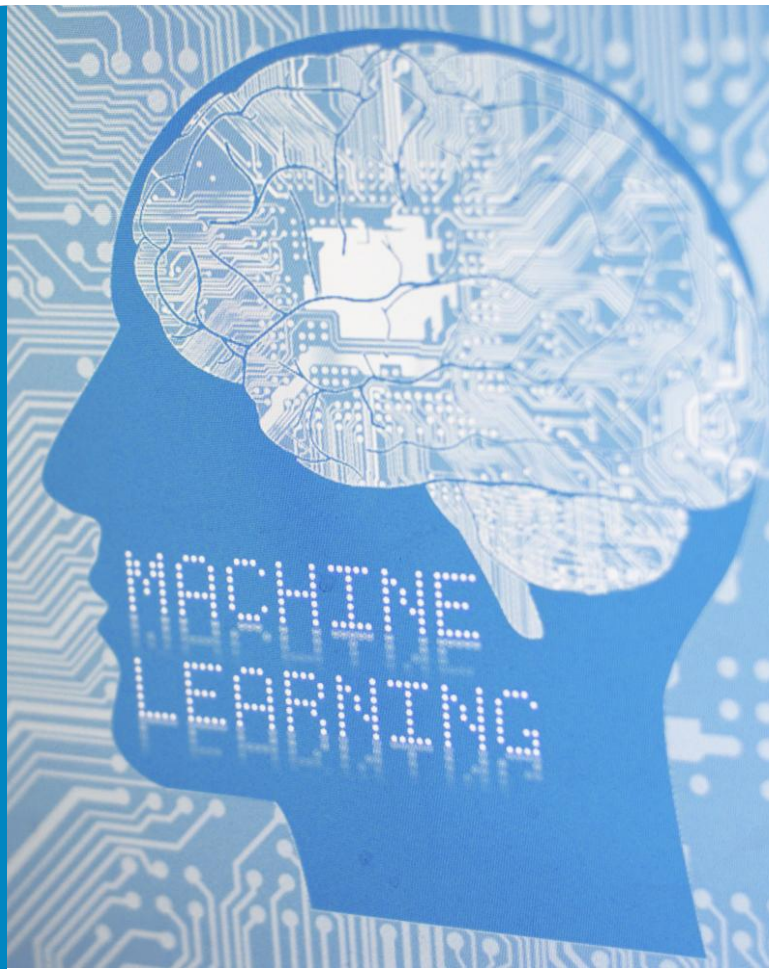
Imagine, for example, if your system could tell you if a line operator was at risk for an ergonomic injury based on the employee's movements in real time? How much healthier would a watershed be if the local wastewater facility could automate key functions to avoid exceedances? How much time could your company save if a software program could quickly itemize which aspects of a new regulatory requirement applied to your specific operations?

These are only a few of the breakthroughs that technology offers to EHS&S leaders today.

By introducing the use of smart sensors and wearable sensors, companies are amassing the raw inputs they need to need to create a 'big data' set they can use to dramatically reduce risks.

A Smarter Way to Manage Waste

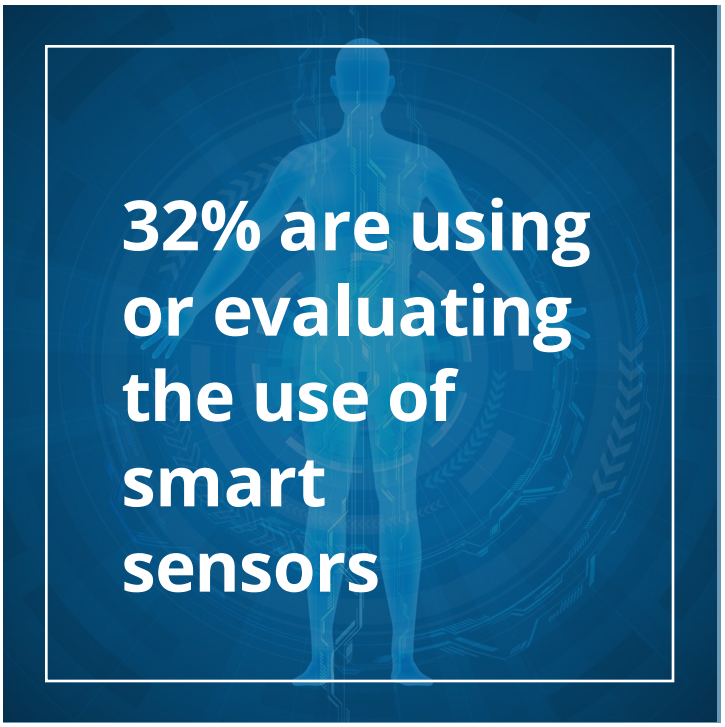
One machine learning platform automates decision making on unsaleable items (think leaking detergent or expired hair dye) for retailers. It provides retail employees with a barcode scanner connected to a database which advises employees about the hazardous materials contained in the products and the best way to dispose of them: donation, recycling or landfill. The scanner also identifies the hazardous chemicals and details the necessary method of disposal. In a world where disposal costs can vary from ten cents to ten dollars per pound, it pays to be knowledgeable about waste removal.



Key Trend #1

Other exciting opportunities that leading-edge companies are either using or currently evaluating are: the use of drones (14%) , virtual reality (16%) and machine learning (20%). One respondent reflected on the changes in the field in her lifetime:

"When I worked [in aerospace] we had to take down two million gallon above-ground storage tanks that were filled with jet fuel, to do a required regulatory inspection, every ten years. It's an integrity test of the tank so it doesn't fail. But think about a sensor that you could have to do predictive corrosion, and oh by the way that sensor can then do 3D modelling on the intricacies of actual material, the steel. And then you could go in with drones, to do up front, you know video, you could even take samples with a drone. I mean just think of the cost, the health and safety considerations, down-time to the business. It's amazing."



Technology and artificial intelligence is transforming so many different aspects of a business, but EHS in particular...I've been around a long time and I'm an engineer by training, so this is transformational, and this is going to change what the new EHS professional is going to be in the future.

Key Trend #2

Environmental, Social and Governance concerns are now clearly identified as business risks that need to be addressed at the board level

Under pressure from stakeholders, customers and investors, our latest findings reveal that companies are evaluating ESG risks at the very highest levels of their governance.

Environmental, Social and Governance (ESG) is one of the fastest growing issues on the minds of Wall Street, business customers and the public. NAEM's latest findings reveal that the tipping point for action is upon us and corporate boards recognize that environmental and social matters carry substantial risk and opportunity with them. Among those NAEM surveyed, 61 percent indicated that their board of directors reviews the company's sustainability metrics and another 22 percent indicated that their board is currently planning to do so.

Key Trend #2

"The significant increase in focus by institutional investors is changing expectations for companies and driving new conversations – we've definitely seen a significant shift in a relatively short period of time."

Investor inquiries and stakeholder demand for transparency are key business drivers for this interest, but so too are very real concerns about the financial risks posed by issues such as climate change.

As one participant told us:

"When polled, world leaders put all the environmental stuff right at the top [of their risk assessments]: extreme weather, involuntary migration of people, food crises, water crises. All of those are right at the top of their risk list, so those are all things that are continuing to grow [in attention."

Integrated reporting has finally gained traction

The march toward integrated reporting continues. Eighteen percent of NAEM respondents indicated that their company includes sustainability data in its 10K filing and another 24 percent are currently evaluating the practice. Forty-nine percent utilize or are currently evaluating integrated reporting. Clorox, Entergy, Intel, Pfizer and Southwest Airlines are all examples of public companies that recently produced an integrated annual report. The broad swath of industries represented in those examples demonstrates that integrated reporting is possible for any company.

According to NAEM's survey, 42 percent of respondents have publicly stated climate change is a business risk and an additional 20 percent are planning to do so.

> **I think everybody's looking at this. There's no doubt in my mind. I mean this could be business interruption...[Many companies are] not putting it into their SEC filing, but they certainly are looking at it. It's a business continuity issue.**

Key Trend #3

The integration of EHS&S into more aspects of the value chain requires capacity-building, new training

Translating EHS&S from aspiration into operation exposes new challenges, knowledge gaps.

As corporate sustainability programs continue to mature, EHS&S considerations are increasingly synthesized into more aspects of the value chain in tangible ways. According to the survey results, respondents' companies are either currently or planning to: reduce the environmental impact of products throughout the full lifecycle (82 percent), integrate sustainability into procurement standards (76 percent), integrate sustainability into research and development (81 percent) and educate consumers on how to mitigate environmental impacts in the use phase (54 percent).

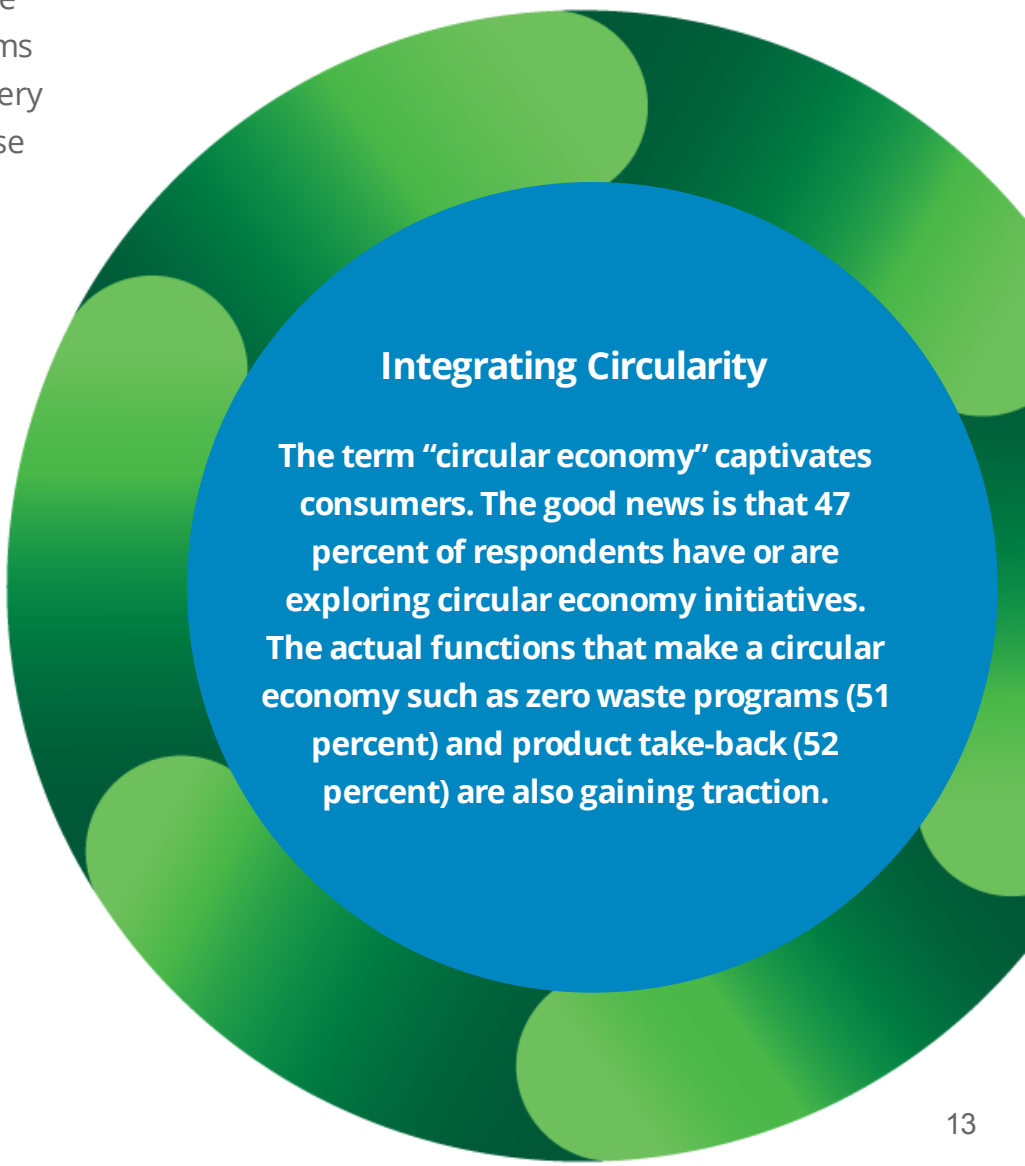
Key Trend #3

This scope creep presents a good opportunity for EHS&S professionals to bring sound data collection and management practices to the rest of the organization, but it also strains already limited resources. One respondent describes the dilemma: "Do we downsize our corporate EHS and sustainability group and transfer some of those folks into the into the innovation teams? Or do we move them out to do something else, and we then provide education, and training, and know-how, capacity for the innovation teams?"

And the skills required in R&D and innovation groups are different, too.

"We built this maturity model from ad hoc to culturally embedded. And [now we need to figure out] how do you take innovation on sustainability and embed it into the innovation teams? …. A lot of the consumer companies and some of the big brand companies are wrestling with how do you then embed sustainability and innovation teams, which are entirely different groups? The sustainability group doesn't know the action where those innovations teams are, and the innovation teams are very proprietary and confidential, because that's the core of the future of the company. It's not something that's readily available, so you got those kind of dynamics going on."

The next two years will be spent tackling this challenge: embedding sustainability professionals in R&D teams or perhaps training R&D professionals in principles of sustainability and managing all the cultural challenges that come with embedding sustainability practices.



Key Trend #4

Clean energy and greenhouse gas commitments now coming to fruition

As one of the key areas of concern for stakeholders and investors, companies are taking their energy efficiency and greenhouse gas reductions efforts to the next level.

While energy might not feel like a fresh issue, it continues to emerge as core focus because it continues to deliver bottom line results for business and the environment. 100 percent of respondents track energy use and a full 65 percent are using science-based targets to set greenhouse gas emissions goals. Several contributors described meeting—and even exceeding their corporate clean energy commitments.

One respondent from a retailer explained, "We had a 45 [percent reduction in absolute carbon emissions] by 2020 goal and we achieved that last year." That goal was then increased to a 60 percent reduction by 2020. "Once we hit the 60 percent goal, I'm sure we'll set another one. We now kind of have the trajectory mapped out [to carbon neutral by 2050] so, hopefully, it will be easier."

Key Trend #4

What's new in this latest research period is that companies started taking tangible steps to achieve their clean energy ambitions through system-level changes.

As one set of strategies to increase the portfolio of clean energy, companies are working with their local utilities to buy renewables, either through existing programs provided by the utility, or by helping the utility bring renewables generation on line through power purchase agreements. There are a wide variety of solutions available and companies in our survey are investing in all of them: 72 percent of respondents are purchasing or evaluating purchasing renewable energy from a third party.

Sometimes the local utility is not able to offer the volume of clean energy a company requires at a competitive price. With the cost of onsite wind and solar dropping dramatically, many companies are simply making their own. 63 percent of our respondents are using or evaluating owned renewables generation.

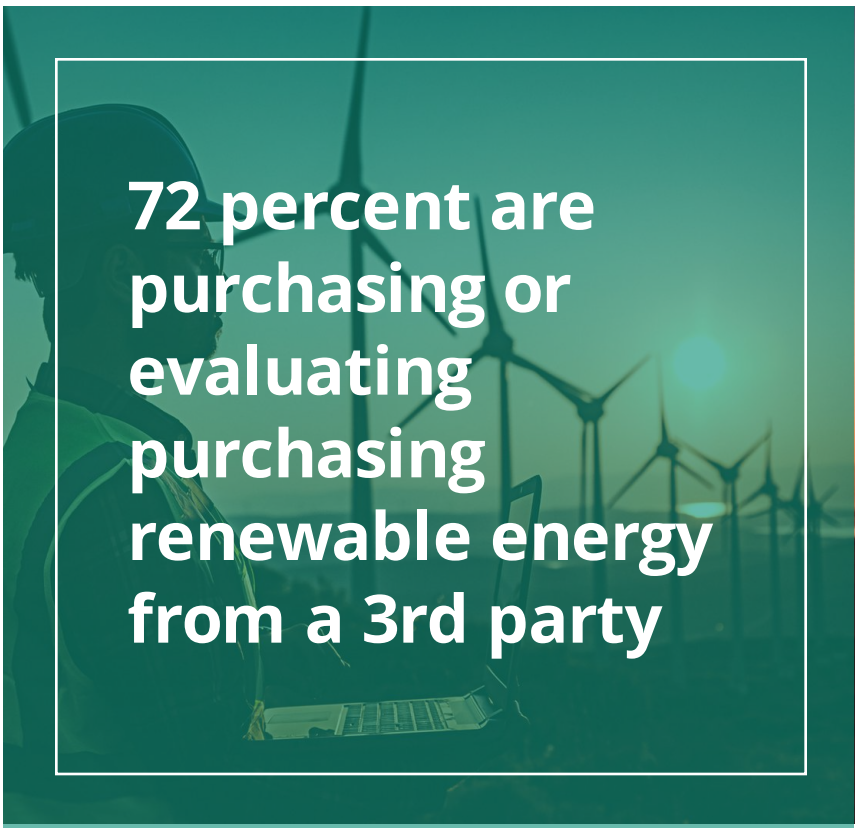
> **[The utilities] know they're going to become more like a platform, and that they can do that through putting in place smart meters in everybody's homes, and figuring out how they're going to distribute energy from all different sources, they're going to be managing peak loads very differently. So they're kind of thinking about the energy future. And I would say energy is actually a space where that is happening more. Where people are thinking about like, 'What does the future look like, and then what's my role in getting there?'**

Key Trend #4

Forward-thinking utilities are rushing to bring commercial wind and solar online to meet demand from corporate and individual consumers alike. But availability varies widely around the country. The state of California recently set a commitment to reach 100 percent clean energy by 2045. The east coast Regional Greenhouse Gas Initiative (RGGI) caps carbon emissions among utilities in its network. The cap lowers over time, and a trading mechanism incentivizes forward-thinking utilities to invest in clean energy so they can effectively sell their carbon credits to slower-moving competitors. Yet some regions are still heavily invested in coal and new coal plants are still scheduled to come online. The success of California, RGGI and other state programs demonstrates that governmental action is a key component of a clean energy portfolio. Without those levers directing utility behavior, forward-thinking companies are left to negotiate on their own for the clean energy they seek.

Given their level of investment in a clean energy future, it's perhaps not surprising that companies are also getting vocal about their commitment to fight climate change. About half of the companies that responded (48 percent) support public policy to address climate change and corporate leaders say that the U.S. withdrawal from the Paris Agreement notwithstanding, the momentum is towards a clean energy future, as one contributor from the energy industry explained:

"The [2018] IPCC report is yet another confirmation of the science and amplifies the need for both immediate and long-term action to address climate change. Our business continues to follow the guidance set forth at the COP21 meeting in Paris, focusing our efforts on the goal of no more than 1.5 degrees C increase in average global temperatures. We continue to pursue lower carbon emissions through a combination of energy efficiency measures as well as alternative energy solutions."



Key Trend #5

The next era of sustainability will require a paradigm shift

Given the urgency of the needs, there is a growing awareness that deeper, systemic changes will be necessary—and soon. The next phase will require EHS&S professionals to roll up their sleeves (again) and provide the expertise to make increasingly stringent goals that deliver business results, too.

For those at the leadership edge, the low hanging fruit has been picked. And yet, there is still more work to be done, especially when it comes to mitigating the biggest impacts of climate change.

"We're hanging by a thread right now," Janine Benyus recently said at the 2018 NAEM Forum. "We've got 12 years according to the latest IPCC report. There's urgency."

Key Trend #5

The looming climate challenge and all the negative impacts that come with it must be halted, but respondents expressed optimism that the business community has great potential to be a transformational force for change.

“We're on the cusp of, I think, a very optimistic era,” one research participant said. “I'm excited about this actually at this point because I'm starting to see people realize that the current path is indeed leading to problems that can't be solved by the same consciousness that caused the problems. There has to be a different way of thinking about all these.”

While those at leadership edge have ambitious net zero targets, Dr. Benyus argues that the way forward should involve a new set of ‘net positive’ goals, which measure how much companies are contributing to the ecosystems in which they belong.

Learning from nature to go from net zero to net positive

Biomimicry, as many readers will already know, is the process of looking to nature to solve commercial problems. These solutions can be low or high tech. Overhangs on a building’s exterior to reduce sun glare are crucial in hot climates to reduce interior cooling costs, and this low-tech example comes from the shade provided by trees. A high-tech example might be a material manufacturing firm that reverse engineers a spider’s silk to understand how it can be so light and so strong and uses the information gained to create new products.

In the world of EHS&S, biomimicry is an especially useful tool for evaluating chemistry solutions. Simply adding toxicity and environmental impact as desirable product attributes during the design or selection phase for new chemicals, alongside solubility, melting point, mechanical properties and surface tension, can save a company time and money on the back end. After all, nature doesn’t make many toxics: waste almost always equals food for something else. Toxicity is a commercial concept born of not understanding or investing in end of life. Lower toxicity and environmental impact can reduce costs associated with storage, transportation, treatment, disposal, regulatory costs, and liability related to worker health and safety.

Key Trend #5

A water-intensive manufacturing process, for example, usually depletes natural resources. What if it also filtered and provided clean water to the local watershed as a function of the manufacturing process? New technologies for sequestering atmospheric carbon into building materials will soon allow companies to store carbon pollution. Other technologies will allow the built environment to clean the air, too.

"What if kiosks and buildings and sidewalks were photocatalytic and they cleaned air pollution and you counted it! And told your customers what you were doing with it," Dr. Benyus wondered.

Forward-thinking companies like Interface are already putting these ideas into action, looking beyond "carbon-neutrality" to "net positive" initiatives such as a carpet tile that draws down more carbon during the manufacturing process than it uses, and factories designed to serve surrounding ecosystems the way a forest does.

Tremendous opportunity exists, and EHS&S professionals are uniquely positioned to capture it. Sitting at the intersection of business leadership and technical expertise, EHS&S professionals are the 'pollinators' who interact with many departments in their organizations. As such they have unique knowledge and diverse relationships to leverage the opportunities we can't yet anticipate. As Dr. Benyus puts it, the natural world also has a lot to teach the business community about how organizational change takes place.

She points to the honey bee as an example of a species that leverages relationships to lead change from within. When bees decide to move their hives, she explains, they send out scouts to find a new location and report back to the group. Members of the hive then visit the spot to check it out before they all decide to make the move. "It's not one leader going out and telling the rest to do it. The queen bee is an egg layer, essentially. Constant interaction and feedback. That's how this coherence happens. And great feats are accomplished. Not from one leader," she said.

Recognizing the importance of thinking beyond the individual also means understanding the impact that those changes could have on the broader group and broader society. It also means making investments now that won't produce a return on investment for decades to come.

"We're several decades out from seeing some of the fruits of our labors. I'm 57, I have eight children, so my children are ages 30 to 16 right now. They have a challenging couple of decades ahead of them…But I think we'll start to see that turning point certainly in their lifetimes, and their grandchildren will live in a far better world based on our efforts."

Key Trend #5

To make the work happen requires partners that give back. Those can be individuals or complementary organizations. With a radical approach to collaboration that aims to create shared value instead of just competitive advantage, organizations can thrive. And they can lead society in a new direction where we can address the global challenges that seem insurmountable today.

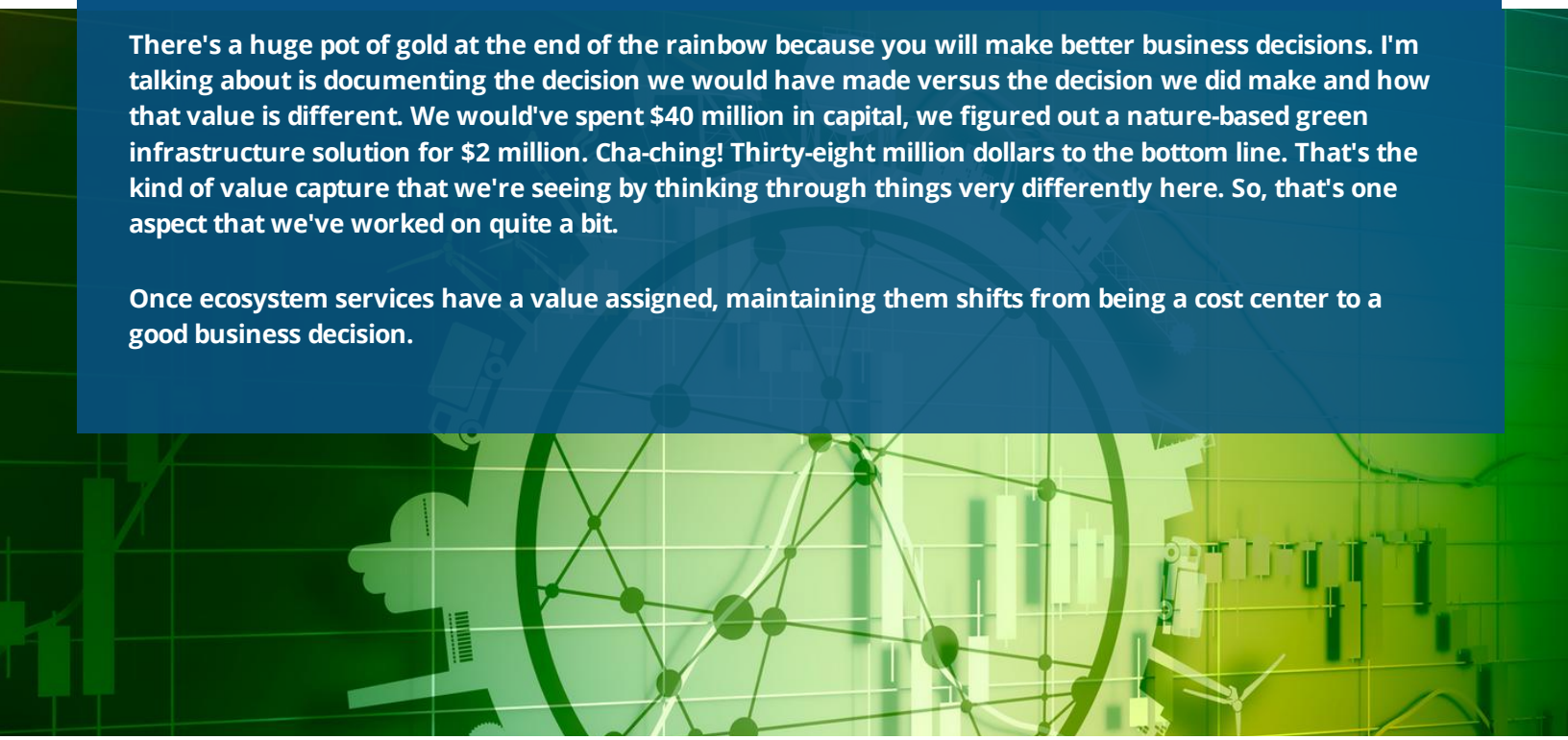
Assigning value to the valuable

One clear opportunity remains in ecosystem valuation: assigning a financial dollar amount to ecosystem services an organization currently receives cheaply or for free. Many survey respondents have started this process, with 26 percent using or evaluating ecosystem services valuation or other formal programs to recognize the value we gain from nature.

Water is a natural first step, since water as an input is relatively affordable. However, many parts of the globe are experiencing drought and water conservation efforts are active. It should probably be more expensive. If business as usual continues, cheap, clean water will no longer be readily available in 20 or 50 years. Many companies already recognize this fact. Fifty-nine percent of our respondents are working to evaluate the organization's impact on local watersheds related to use and wastewater. Some are going a bit further. PepsiCo, for example, has a team of water experts who regularly engage with communities and local governments to support watershed health in communities where it has bottling facilities. Dow's Watershed blueprint provides a similar scope. Good stewardship of natural resources comes above and beyond all the clean water returns and recovery that are now expected from companies that call themselves good corporate citizens. But it can also save companies a lot of money as one expert described:

There's a huge pot of gold at the end of the rainbow because you will make better business decisions. I'm talking about is documenting the decision we would have made versus the decision we did make and how that value is different. We would've spent $40 million in capital, we figured out a nature-based green infrastructure solution for $2 million. Cha-ching! Thirty-eight million dollars to the bottom line. That's the kind of value capture that we're seeing by thinking through things very differently here. So, that's one aspect that we've worked on quite a bit.

Once ecosystem services have a value assigned, maintaining them shifts from being a cost center to a good business decision.



Acknowledgments

Contributors

NAEM extends its deepest appreciation to the following experts who contributed their knowledge and perspectives to this report.

Janine Benyus
Co-Founder
Biomimicry Institute

Pamala Bobbitt
Director of Product Marketing and Channels
Cority

Rob Currie
Director, Corporate EHS
Baxter Healthcare Inc.

Dave Eherts
Vice President Global EHS
Allergan

Dan Esty
Professor
Yale University

Suzanne Fallender
Director, CSR Strategy & Communications
Intel

Jim Fava
Chief Strategist
Anthesis Group

John Friedman
Sustainability Manager
WGL

Vijay Gudivaka
Chairman and CEO
E2ManageTech

Rick Love
Associate Director, Environmental Stewardship
United Technologies Corp.

Alexis Ludwig-Vogen
Director, Corporate Responsibility & Sustainability
Best Buy Co. Inc.

Nick Martin
Associate
Antea Group

Kris Morico
EHS Strategic Management Executive Director
AECOM

Sandy Nessing
Managing Director, Corporate Sustainability
American Electric Power Co. Inc.

Annette Russo
Senior Manager Capability Building EHS&S
Johnson & Johnson

Bruno Sarda
Vice President of Sustainability
NRG Energy

Allen Stegman
General Director, Environmental
BNSF Railway

Tensie Whelan
Director, Professor for Business and Society
NYU Center for Sustainable Business

Andrew Winston
Winston Eco-Strategies

Mark Weick
Director of Sustainability Programs &
Enterprise Risk Management
DOW

Acknowledgments

Publisher

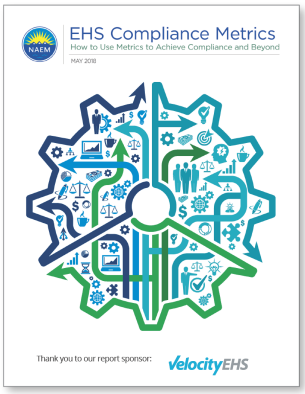
The National Association for Environmental Management (NAEM)
1612 K St., NW, Suite 1002
Washington, DC 20006
(202) 986-6616
www.naem.org

Sponsor

Thank you to our sponsor:

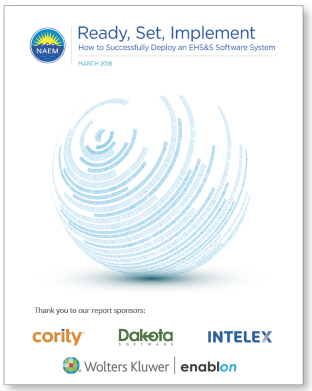
Research Resources

Download NAEM's other research reports below at NAEM.org



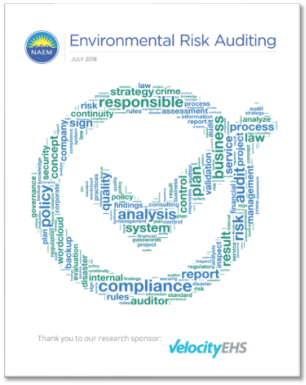
EHS Metrics: How to Use Metrics to Achieve Compliance and Beyond

What are the metrics your peer companies use to drive EHS performance? This report provides benchmarking data from companies who are leveraging metrics improve their compliance program. You'll get quantitative data as well as verbatim perspectives from peers so you can use to optimize your own EHS compliance metrics.



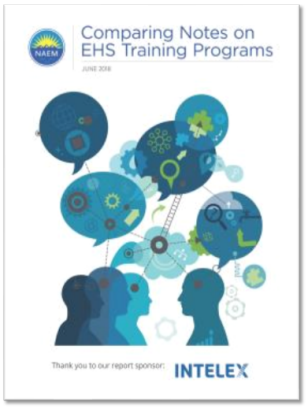
Ready, Set, Implement: How to Successfully Deploy an EHS&S Software System

NAEM's Ready, Set, Implement - How to Successfully Deploy an EHS&S Software System report is based on in-depth interviews with corporate EHS&S professionals and implementation partners, who have decades of experience deploying software systems on a global scale.



Environmental Risk Auditing

Companies today are seeking new, proactive approaches to managing environmental risk. The following report reveals the strategies companies are using to evaluate understand the company's preparedness for extreme, if unusual events.



Comparing Notes on EHS Training Programs

What are the strategies your peers are using to engage employees and build EHS culture? What training methods are the most effective? And how do you measure whether your training is working? Download the report today and join this FREE webinar to hear results from NAEM's benchmark on EHS training and to hear how your programs stack up.