



# The Road to Environmental Excellence

An interview with Sheryl Corrigan , SVP of EH&S and Compliance, Koch Industries

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In the lead-up to the 9th annual Operational Excellence in Oil & Gas Summit, we caught up with Sheryl Corrigan, SVP of EH&S and Compliance at Koch Industries. An avid environmentalist and one of this year's keynote speakers, Sheryl tells us about operational excellence at Koch Industries and how the company is leveraging new technologies to improve safety and environmental stewardship.





**Sheryl, can you tell us a little bit about your professional background leading up to and including your role at Koch Industries?**

I have been in the environmental, health and safety arena for over thirty years, though it certainly doesn't feel like it's been that long. I started my career working in the public sector at the state, regional, and local levels. Then I moved to the private sector, first as a technical consultant, and then as an environmental leader for 3M. Post-3M I led the environmental regulatory agency in Minnesota. My opportunity at Koch Industries started about 12 years ago and has been incredibly rewarding. I've been blessed to have had many career experiences and opportunities on both sides of the regulatory aisle that have given me tremendous insight.

Probably the most impactful career experience for me was the time I spent as commissioner for the Minnesota Pollution Control Agency in the early 2000s. This helped me to more fully understand that regulators have an important mission that is separate and apart from the role of business. But the two work in concert to deliver benefits to society that are mutually reinforcing.

I'm currently the director for the environmental health and safety capability at Koch Industries, where I help our companies achieve our vision of environmental health and safety excellence and to ensure that we are fulfilling our guiding principles around stewardship and compliance. I'm a helper, I'm a supporter, I'm a counsellor, and I make sure that we are doing what we say we're doing.

**You're going to be keynoting at the upcoming IQPC Operational Excellence Summit. In your opinion what does operational excellence truly mean in today's world? Is responsibly managing your company's resources and supply chain enough?**

To answer this, I think it's important to take a step back and talk about the role of business in today's world. At Koch Industries, we think about the role of business as helping people improve their lives by providing products and services they value more highly than their alternatives. We do so responsibly—meaning we act with the proper regard for others—while consuming fewer resources. If we do this well over time, we make a profit. That profit allows us to reinvest and innovate to create even more value for people, which should yield more profit and so on, creating a virtuous cycle of mutual benefit.

Operating responsibly also means we're interested in profiting by economic means – where the market decides who wins and who loses – not by political means – such as government subsidies and mandates.

There is a strong tie here to operational excellence. How do we make those products that people value? How do we improve our performance in a way that improves processes and quality? How are we advocating for a level playing field for all? Operational excellence is the mindset, the set of capabilities that we apply to get to that better product.

**In the past, you've said that Operational Excellence goes beyond just managing your resources responsibly; it's about creating long-term value for society and not about making a quick buck. Can you elaborate on that?**

The key word here is 'responsibly'. At Koch, responsibility is synonymous with stewardship, part of our guiding principles. We are focused on operating with the interests of others at the forefront, meaning we manage our resources and our businesses with our stakeholders, our neighbors, and our communities in mind.

Being responsible means being great stewards of our business. How is that embodied at our facilities and across our businesses? Number one, we put safety first. The value of human life is inestimable, so we want to make sure that we're protecting not only the folks that work for us, but also the folks outside our fence line. We put an enormous amount of resources into our process safety program to make sure that our processes are in control and our

equipment is reliable. Our communities expect this, and we want to meet their expectation.

Number two, we use resources wisely. We're constantly asking, "how can we be more efficient? "How can we be more productive? How can we make our products better, but in a way that minimizes waste?"

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Number three, we comply with the rules and regulations and don't look to profit by political advantage. It's a no-brainer—you can't really make people's lives better or stay in business over the long term if you don't play by the rules. At Koch, we are focused on making sure that we're complying with all the regulations in all the jurisdictions in which we operate. We expect every employee to understand and meet their compliance obligations. Are we perfect at this? Absolutely not. But respecting the laws and rules and abiding by them is at the core of all we do.

Lastly, we're opposed to subsidies, mandates, and other measures that might rig the system and pick winners and losers, even if these policies benefit our bottom line.

**How does Koch approach and define operational excellence?**

We believe that culture, which is part of our management approach, what we call Market-Based-Management, differentiates us and positions us to innovate, change and grow the value we create for our customers and ultimately our company.

For us, operational excellence is not a process, it is a mindset that leads to a development and integration of capability into our businesses. There are a host of disciplines that comprise operations excellence.

The first area involves making sure our equipment is running reliably. We employ several subject matter experts and consultants to make that happen. Koch is a large organization with a lot of equipment, both simple and complex. Having the horsepower and the focus on getting it right so that we are reliable is very important to us.

The second area of capability is innovation and technology. Manufacturing is undergoing a new revolution powered by our ability to monitor multiple streams of data via connected machines. With this data and the advanced analytics and machine learning applied to it, we can give operators enough time to make the right moves to prevent an event—or at least to contain it so it is a small upset versus a larger one. Today, we're applying technologies to connect our machines, our facilities and our workers—as are others. This is transformational to operational excellence—now we can have the benefit of subject matter experts anywhere at any time helping us solve our problems.





The third focus area is human organizational concepts. Until the world achieves fully automated manufacturing, there is always going to be human intervention. We've got to make sure that our operations excellence mindset is not just about the equipment, technology, and data analysis. It's also about humans, and how our operators, frontline workers, and everyone involved in our supply chain are working together deliver the best product. Operations excellence is one of our key capabilities, and we have thousands of people dedicated to it.

**In your opinion what is one critical thing that companies can do to help them achieve that critical balance between meeting their production targets and improving environmental stewardship?**

The most critical—and hardest—thing is to integrate all aspects of the supply chain in a way that makes the final output better for customers.

There are so many functions involved in the delivery of a quality product. It's really an ecosystem or web of different teams that are ultimately working to make the project through applying their own capability and function. The key to getting folks aligned is to provide the right vision and incentives all along the way. People like to focus on what they are good at and what they're incentivized to do. Recognizing this and reaching across silos, applying the right incentives, and building connections can take enormous amounts of energy.

We strive to have all those different capabilities integrate perfectly. When they do, we get a product that is advantaged, while achieving EHS stewardship, and creating value for society.

The outcome for the team is the satisfaction and fulfillment that comes from an entire group of people communicating openly and working towards the same goals; making that product better, in the right place, at the right time.

At Koch, we're experimenting in several different areas with some concepts that we've seen in the tech industry. We're creating agile teams by bringing together employees from various disciplines across the supply chain to solve short-term problems with the mindset of a minimum viable product. We're then going back to any affected parties for feedback, thus getting people used to working across silos and building those important connections.

We've also created collaboration spaces and tools that leverage our position as a global company. We can connect in ways beyond just sitting next to one another. For example, we opened our Global Center for Supply Chain Excellence in Atlanta about five months ago as a large, corporate effort to recognize and understand the importance of supply chain integration.

**Sheryl, you are well-known to be an avid environmentalist, yet you work for a major manufacturing and refining company. These two things seem to be diametrically opposed, how do you feel about this?**

On the surface, the two can seem like opposites, but they really aren't. If the role of business in society is to make people's lives better, who doesn't want to be a part of that?

I certainly do, and I think being in a manufacturing organization is particularly exciting because that's where the resources are to do the good stuff that people want to get done.

In manufacturing, I get to work on projects every day that minimize our environmental footprint. I get to work on projects that are designed to reduce our process safety risk; to reconfigure our equipment and make it better and safer; and to make a difference inside our fence line.

I also get to work on projects that help externally. In several of our facilities we have citizen advisory groups that allow me to find out what's important to them and their community. As an environmentalist, working in manufacturing has been incredibly rewarding.

**Koch is taking steps to embrace emerging technology and foster new ideas and innovation. How are new innovations and technologies improving the company's environmental performance?**

We want to use technology and advanced analytics to reduce pain points and solve problems in our manufacturing facilities. A relatively new technology that we've adopted involves advanced analytics and equipment monitoring. We are using sensors on key pieces of equipment within our facilities to help us detect vibration and heat, and all that data comes back to us and helps us maintain that equipment and predict failure.

With the advent of machine learning and AI, we're able to process an enormous amount of data in a short period of time. Our Molex company is creating new and connected sensors in our manufacturing facilities, leading us to data and analytics-based problem solving.

We have also incorporated robots and co-bots into our manufacturing facilities. While robots have been around for a long time, co-bots are newer. Unlike the more conventional robot that is fixed to a platform, a co-bot is designed to aid a human in their work. The co-bot can move around, and we are experimenting with putting them to work in higher-risk environments. In a manufacturing setting or a warehouse, for example, the co-bot removes the need for a forklift or other human-operated vehicle, therefore reducing human safety risk.

We've also begun applying drone technology in several different cases. We are using drones for visual sensing in everything from tank inspections, and evaluations of railcars, to the monitoring of our cattle ranches. We've also begun using them in emergency response situations by first sending in a drone to assess the area and help us determine if it is safe for people to enter.



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