

An expert opinion

Our 24 Principles of Green Chemistry and Green Engineering are based on parameters defined by the Yale University professors and sustainability experts Dr. Paul T. Anastas and Dr. Julie B. Zimmerman. In late 2009, their company—Sustainability A to Z—agreed to support Cognis in the process of implementing the 24 Principles. Our cooperation begins with the evaluation and fine-tuning of the tools we have developed for scoring our products according to the guidelines. Dr. Zimmerman, who is the author of numerous books on the topic, is also planning a series of sustainability workshops for Cognis staff. We asked her to share her views on the topic and her expectations regarding the work ahead with Cognis.

? *You have been analyzing the sustainability of various industries for years. Where does the chemical sector as a whole stand? What are the main sustainability issues it has to overcome?*

! The chemical sector as a whole has actually made tremendous progress. Looking at their supply chain as well as the impact of the products and processes they're using, I think the challenge is that a lot of the work has not been done systematically. So they've gone after carbon or they've gone after energy efficiency or they've gone after water. But very few chemical companies have actually said, "We're going to systematically tackle multiple objectives at the same time."

? *With around half of its portfolio made up of natural, renewable raw materials, Cognis is different from most chemical companies. Still, real and holistic sustainability has many dimensions. Where do you place Cognis in the context of its industry? As a global player?*

! I think the first thing I would say is that we only take on clients that we feel are poised to have tremendous leadership and impact on their industry sector. In chemicals, there are obviously very few companies that we feel are actually leading and can actually drive an entire value chain, and Cognis is certainly one of them. And in terms of the systematic approach, I think that by adopting the 24 Principles, Cognis is getting at this idea of not going after just carbon or just water but really systematically trying to set long-term, far-reaching goals and drive the entire system.

? *In one of the books you cowrote, *Environmental Engineering*, you quote Einstein as saying: "We can't solve our problems by using the same kind of thinking we used to create them." Agreed. But, as much damage as humankind's unquestioning embrace of growth and technological progress has caused, don't you think we need at least as much innovative drive to develop more sustainable solutions? What is the role of innovation in sustainability?*

! I would say you cannot get sustainability without innovation. We don't have the solutions we need today to achieve sustainability. I also think it's mutually reinforcing, so we can drive our sustainability goals by being innovative and also that by setting up sustainability targets and broadening out our design space, that we are creating innovation space within a company. So it's a really nice reinforcing cycle in terms of advancing innovation, which helps competitiveness and market advantage, as well as advancing our sustainability goals.

? *The public debate on sustainability is often characterized by extreme demands. Cognis feels that, while a positive environmental and/or technical impact at the end of a product's life cycle is the ultimate goal, no stone should be left unturned in the search for sustainability gains. In other words, we try to achieve a positive impact wherever we can and lessen our negative impact—for example, through reduced CO₂ emissions in the logistics chain or paperless correspondence—elsewhere. What are your views on this approach?*

! I wholeheartedly agree with you. I think that this idea of getting to sustainability—it's a journey, I don't think it's an end-point. And I think it's important to have these very lofty goals of perfection—of zero waste, of zero carbon—but absolutely every step is important to getting up there. The important thing about doing incremental work is to make sure each step is aligned with those goals. So this is the idea of why it has to be systematic. If you're just going after carbon and you've set only that as your



target, you may be willing in your process to use something that's more toxic in order to reach your carbon goal. And so it's important that, while we have these goals of perfection, that they are systematically laid out. And then any incremental step you take is important in advancing those goals, because you've made sure they're aligned with the direction you want to be heading in.

? *One of your areas of research is the relationship between green behavior, green marketing and shareholder value. Can you share some insights with us? Is sustainable business good business?*

! Well, the big story is that if you look at big industries such as those in the Dow Jones Sustainability Index and plot them versus the regular Dow Jones Index, that those companies in the Sustainability Index have outperformed their counterparts, even during this economic downturn. And the story there becomes that companies that manage risk really well perform financially better, and so this idea of risk in terms of environmental risk or sustainability risk is just one more risk they're managing, along with quality and safety and cost. And so, companies that are managed well perform well and treat the environment as just one more thing they need to manage within their corporate structure.

? *You will be working with us on putting the 24 Principles of Green Chemistry and Green Engineering into action, assessing the tools we have developed to measure compliance and holding workshops to support us in implementing them. At Cognis, we're really looking forward to the projects. But what are your expectations? What priorities have you set?*

! My expectation for this is that Cognis is a leader in this field and by driving the value chain it's having this huge impact. And it's clear that by Cognis taking these steps it's changing the behavior of its customers downstream. We work with some of the companies Cognis supplies, and it's clear that there's a cascading effect. And that's really exciting and empowering for us, because I feel that there's a factor that gets multiplied every time we make a change with Cognis that we see down the value chain. And I think also that Cognis is one of the few companies I've seen that have set out this idea of using the 24 Principles as a framework to really systematically go after designing what they're doing, rather than trying to fix what's already in place, but to really start at the beginning and design sustainable solutions from the ground up. So a priority for us is to really look at the beginning of that process and ensure that every person in the company who is touching a product or a process at the design stage is aware of these ideas and feels empowered to actually make a change in what they're doing to ensure that they're aligned with the 24 Principles as a framework.