German Council for SUSTAINABLE Development

Innovation for sustainable development – Chemistry³ in dialogue with the German Council for Sustainable Development (RNE)

Günther Bachmann, Secretary General of the
German Council for Sustainable Development (RNE)

Keynote

Berlin, 18 November 2016

I would like to thank the BAVC, IG BCE and the VCI for the opportunity to speak today. I intend to address three aspects:

- Dialogue
- Trust
- Innovation

That may not sound particularly enticing. But, in fact, these are potentially provocative topics. Without these, there would be no "Dialogue with the German Council for Sustainable Development". We welcome the initiative put forward by the chemical industry, employers and employees. We want to continue supporting their efforts in order to advance this promising attempt at new forms of cooperation.

I Dialogue

RNE, in dialogue with business representatives in general, and the chemical industry in particular: there are many suspicions about this. For example, for what possible reason would RNE give major chemical corporations a political stage? What kind of deal might be behind this? Who might we be looking to supplant through this activity?

For us, in the first place dialogue is perfectly normal. Actively listening when the interests and perspectives do not automatically match is just as much part of a dialogue as is participation and encouragement. A dialogue worthy of the name includes the willingness to surprise oneself and be able to expect the same from the dialogue partner.

Dialogue is politics. In order to understand how political dialogues are shaped, one may take a look at the green economy, the German Sustainability Award, along with its methodology, and also the public discussion as to what makes up the best of the best. The Sustainability Code arose in dialogue with representatives from business and society. What we are hoping to achieve through the Future City is the subject of an ongoing dialogue with lord mayors who are dedicated to actively pursuing their own agenda of a sustainable city.

We talk with lots of people. And we will continue to do so. However, a few out there don't talk with us. That is the difference.

The strategic and practical dialogue interface involving politicians, scientists and business representatives is underdeveloped, with a low profile. We – society – should be able to improve on that.

To do so, it is of importance how we express our cause and how we depart from the encoded language silos. Here is one example of how not to do it: in connection with the topic of climate protection, the German cabinet very recently stated: "Considering all sectors and their interdependencies, so-called sector coupling is becoming increasingly indispensable" (2050 Climate Protection Plan, p. 8). As everyone knows, superlatives are something that should generally be avoided. When coupled with a lack of alternatives ('indispensible'), they raise deep levels of suspicion. Politics then becomes uncool, grey and useless. The problem is greater than an inapt sentence here or there.

It is precisely this barrier of speechlessness that divides our society and lays the ground for populism to grow. Language counts when it comes to dialogue.

II Trust

Dieselgate, litigation surrounding Deutsche Bank, as well as the wheeling and dealing with financial investments in tropical forests are a part of the major crisis of trust in politicians and the ruling class. All these examples are more or less clear breaches of legal regulations. They undermine trust and confidence in policy makers. With legally binding regulations being undermined, many people are asking themselves: what on earth must the situation be like when it comes to adhering to voluntary agreements?

In the chemical and pharmaceutical industries in particular, we need voluntary sustainability arrangements. Clearly, both the government and legislation are needed. But it is just as necessary for pioneers to swiftly reach cooperation agreements on sustainability standards.

For sustainable development, trust in voluntary agreements is a fundamental prerequisite when it comes to the capacity to policy-making. Sustainability cannot simply be imposed in a top down manner. Successful dialogues – to my mind – will, in future, take on far greater significance than they frequently do today. Moreover, the qualitative and procedural demands placed on the ability to manoeuvre in networks and on dialogue platforms will rise, with digitization accelerating this process even more.

In order for the chemical industry to stand the test, it must become more sustainable itself. Sustainable chemistry includes what is often referred to as green chemistry, but it is much more than this[1]. Modern chemical policy began with "Seveso is everywhere". Chemical policy today must go even further.

A green economy means: circular, connected, collaborative economies.

- *Circular* calls for a circular economy, which begins with product design and ends with recycling and the follow-up use.
- *Connected* calls for information technology, which always perceives individual items (products, production steps, planning, sales) in the context of ever-faster communication, and increasingly turns the added value in linear chains into added value in networks and on platforms.
- *Collaborative* calls for new forms of cooperation and the willingness to share benefits as well as consumption sufficiency.

This is no longer being discussed in seminars but a) in practice and b) in conceptual spaces. The post-growth economy, the notion of green growth and a gradual stagnation in production and consumption come into play. Chemical policy also needs to position itself here. Does it already do this to a sufficient degree and intelligibly/self-evidently?

At the very latest, sustainable chemistry became a global issue with the adoption of the 17 Sustainable Development Goals as part of the 2030 Agenda for Sustainable Development. In this regard Germany is a developing country, too. The 2030 Agenda vests us with the task of implementing the SDGs **in** Germany, **with** Germany's help in partner countries, and, above all, also **through** Germany (i.e., in this instance, through services which unfurl their impact in other places across the globe).

That chemistry can and must render solutions for numerous sectors within these Sustainable Development Goals is beyond question. Goal number 12.4 is key, however. It addresses the core responsibility facing the chemical industry: "By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment"[2]. The target deadline of 2020 is striking. Unlike a plethora of quantified SDGs, 12.4 does not relate to 2030. Instead, it has wisely been set for a far closer target. This is due to the lack of longer-term legal frameworks and agreements.

[1] Kümmerer, K., & Clark, J. (2016). *Green and Sustainable Chemistry.* In H. Heinrichs, P. Martens, G. Michelsen, & A. Wiek (Eds.), *Sustainability Science: An Introduction.* (pp. 43-59). Dordrecht: Springer Netherlands.

[2] UN (2015) *Transforming our World: The 2030 Agenda for Sustainable Development.* Outcome Document for the United Nations Summit to Adopt the Post-2015 Development Agenda. Accessed on 09 November 2015 from http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E ().

At this juncture, I can only recommend that Chemistry[3], the BMUB/UBA Sustainable Chemistry Platform[3] and the practice of Together for Sustainability[4] relate more closely to one another and come up with common strategies.

Policy-makers are sceptical when it comes to strategies, and paper doesn't blush as it is. But this is a wrong assumption. Modern society must, once and for all, begin to assess strategies and plans on the merits of their processes. In the words of Dwight D Eisenhower: Plans are useless but planning is indispensable.

Sustainability strategies are necessary in order to successfully fashion de-materialization and (climate change policy) decarbonization. They will aid the re-industrialization process if this is achieved. At all events, the United Nations Industrial Development Organization (UNIDO) is propagating a fundamental shift towards closing material and resource loops[5]. To achieve this, we need measureable quantities. Whilst it may meanwhile appear to be trivial, the tenet ultimately still holds true: what gets measured gets done.

Indicators can only be meaningfully defined if goals have been formulated and set in advance. Those taking measurements for measurements sake will merely soon end up in a bureaucratic no-man's land.

III Innovation

What is a BHAG, a "big hairy audacious goal"? It is an imposition, impudence, an excessive demand, unachievable, airy-fairy and spooky. But often it is exactly the BHAGs that set large-scale undertakings in motion – no matter whether private or state-run – and not the minute tallying of individual indicators. The dedication, commitment and inventiveness of people are what intricate problems need. Pledging, prohibitions and promises are more for linear workflows. The latter we know from value creation chains; the former become increasingly interesting when the chains become networks. This is increasingly the case when it comes to the digitization of information and manufacturing processes.

Does the same also hold true in chemistry? What does the digital acceleration lane look like in chemistry? Does such a thing already exist?

A question I ask myself is why is chemistry not seen and perceived as a complement to digitization, as a cross-sectoral function, with new cooperation patterns. After all: both new substances and new data are ultimately created from old substances and old data. What is the catalysis in one area is an algorithm in another: the synthesis is constantly going down new paths. Everything changes. In

[3] http://www.umweltbundesamt.de/themen/chemikalien/chemikalien-management/nachhaltige-chemie#textpart-1 (17.11.2016)
[4] http://tfs-initiative.com/ (17.11.2016)
[5] Schwager Petra, Nils Decker, Ingrid Kaltenegger (2016) *Exploring Green Chemistry, Sustainable Chemistry and innovative business models such as Chemical Leasing in the context of international policy discussions*, in: Current Opinion in Green and Sustainable Chemistry 1 (2016) 18-21, Elsevier, http://www.sciencedirect.com/science?_ob=DownloadURL&_method=finish&_eidkey=1-s2.0-S2452223616300062&count=1&_docType=FLA&md5=f5ee9feb2436db5e638c354edc676df9 (accessed Nov 13, 2016)

production, the orderly arranged supply chains are transforming into multi-polar and fast-moving networks of actors.

All the talk is of digitization and industrial data rooms, of digital networks and data processes. Shouldn't Chemistry[3] incorporate the bio-based data room into industrial and agricultural processes? How far along are we here?

- How do things stand in terms of biopolymer chemistry and the re-design of everyday products? What does the trend towards making shoes from fishing nets tell us?
- How do things stand in terms of synthetic energy for energy storage and the use of the sun and wind?
- How do things stand in terms of biogenic raw materials, especially those derived from wood, but also from fish leather? How do things stand in terms of the chemical functionalization of bio-based materials?
- How do things stand in terms of avoiding environmental damage that does not come from their usage, and less so from improper production[6]?

The dichotomy of the government being responsible for precautionary environmental protection and companies for profit no longer suffices. Much like with digitization, we need new formats and interfaces.

The future of the dialogue lies where trust is mobilised – through presumptions of competence and through BHAGs. This is also where the chemistry policy of the future lies.

Thank you for your attention.

[6] Kümmerer, K. (2016). Chapter 6: *Presence, Fate and Risks of Pharmaceuticals in the Environment*. In L. Summerton, H. F. Sneddon, L. C. Jones, & J. H. Clark (Eds.), *Green and Sustainable Medicinal Chemistry: Methods, Tools and Strategies for the 21st Century Pharmaceutical Industry.* (pp. 63-72). Cambridge: Royal Society of Chemistry. **DOI:**10.1039/9781782625940-00063 (accessed Nov 13, 2016)