

# Changing Value Creation

## The Chemical Industry between Product Innovations and New Business Models

Times are changing, and we are changing in them. An old saying that goes back to Ovid — but still true today. The business world has become more VUCA (volatile, uncertain, complex, ambiguous) than ever. Just look around — changes wherever you look: globalization, digitalization, circular economy, commodization of knowledge. How are we to meet all these challenges?

By adapting to new markets, developing new businesses, inventing new products — by changing, but in a way that creates value — in short by innovating. But not only by innovating on the product side — also in the area of business models. Often more value is created by new business models than through great product improvements — think of Google, Facebook, Uber...

How can chemical companies turn these challenges into business opportunities? What are the best ways to do this? What can the chemical industry learn from other industries?

These and other questions were the main theme of the recent conference on the topic 'Wertschöpfung im Wandel' (Changing Value Creation) organized by the Association for



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Chemistry and Industry (VCW) on Jan. 26, 2018 at the Campus Kronberg near Frankfurt, Germany.

VCW is a network at the interface between chemistry and business within the German Chemical Society. Together with the conference's sponsor Accenture the VCW organized a forum to share learnings and experiences. The delegates discussed issues with and answered questions of over 100 participating researchers and executives from the chemical industry on new ways of value creation.



The discussions quickly centered on a couple of key themes: Artificial intelligence (AI) and its future role in the chemical industry, digitalization, (big) data, and company culture and its impact on company performance. Some insights I took away:

- **AI is not a hype.** AI is coming to the chemical industry — may be more slowly than in other industry sectors but nevertheless. Many

chemical companies however still sit on the fence adopting a wait-and-see attitude, in particular business leaders. That's a risky position to take because the AI trains are leaving the stations everywhere. AI opens new business dimensions in particular by learning and improving business and technical processes as you run them rather than by analyzing

past performance and implementing learnings in the future. The chemical industry needs to not only play to learn the use of AI but fight the must-win battles before other players — most likely not from the chemical industry — can gain a lasting competitive advantage on them.

- **Data is the new oil.** The chemical industry is slow in comprehending that they produce two very different outputs: materials and data. They know how to sell materials but are not leading the way in marketing data. If they wait for too long to take a lead here, others will step in and do it for them and cash in.

- **Digital performance pays.** A recent study by Accenture demonstrates that companies versed in digital business aspects and commanding digital capabilities deliver significantly better business performance than digital laggards.

- **Company culture is a critical success factor.** 'Culture eats strategy for breakfast!' That's for

how strong the famous economist Peter Drucker estimated the power of culture and its potential impact on business performance to be. Because culture provides a strong frame for the mindset of an organization which enables them to focus but limits them to look sideways. But that's where most of the new business opportunities can be found.

Navigating in the new, VUCA business environment is hard work. This was succinctly summarized by one speaker quoting a Swiss poet: 'There is no elevator to success. We all have to use the stairs.' It takes long-term commitments and persistent and consistent leadership to succeed. Let's move faster!

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### Shaheen Plans \$1 Billion Petchem Complex in UAE

Shaheen Chem Investment, owned by investors from the United Arab Emirates (UAE) and Oman, is planning to invest Dh4 billion, or around \$1 billion, to build a chemical complex in Abu Dhabi.

The company has signed an agreement with the Khalifa Industrial Zone of Abu Dhabi (KIZAD) to lease land for a two-stage complex that is intended to support the UAE's expanding chemical industry.

In a first phase, Shaheen will build a plant to produce 130,000 t/y

of caustic soda and 160,000 t/y of ethylene dichloride (EDC). The facility will supply caustic soda raw material to the Al Taweelah alumina refinery operated by Emirates Global Aluminium (EGA).

The second phase will include a doubling of caustic soda capacity and extending operations to include production of vinyl chloride and PVC.

Shaheen's chairman, Rashed Al Suwaidi, said the company was excited to become the first producer of EDC in the UAE. (eb, rk)

### IGP Methanol Awards Contracts for US Complex

IGP Methanol has awarded engineering and technology contracts to CB&I and Haldor Topsoe for its proposed methanol complex on the US Gulf Coast.

US contractor CB&I will provide front-end engineering services (FEED) to produce a binding lump sum price for the complex in Myrtle Grove, Louisiana. The facility will comprise four identical methanol trains, each with a capacity of 1.8 million t/y, as well as associated facilities. The FEED contract also

includes terms for the exclusive selection of CB&I for the engineering, procurement and construction of each of the four trains.

In addition, Danish catalysis and processing engineering company Haldor Topsoe will provide its SynCor reforming technology for the project. James Lamoreaux, IGP Methanol's managing director, said Topsoe's SynCor technology offers high single-line capacity with the lowest emission per ton of methanol produced. (eb, rk)

### Daelim Joins PTTGC for US Ethylene-PE Complex

South Korea's Daelim has agreed with Thailand's PTT Global Chemical (PTTGC) to jointly develop a proposed ethane cracker and PE complex in Ohio, USA. The project has been under development by PTTGC's US subsidiary, PTTGC America, since 2015.

In a stock exchange filing on Jan. 30, PTTGC said the board of its US subsidiary had approved the execution of a heads of agreement with Daelim for the study, which includes the project's front end

engineering design (FEED). As part of the agreement, the companies will also try and secure sources for the project's funding.

The complex in Mead Township, Belmont County, is set to cost around \$4.5 billion and will produce 1.5 million t/y of ethylene and PE.

Daelim said it plans to invest up to \$131 million in the venture. Final decisions on the size of the investment and stakes in the joint venture are to be made by the end of 2018. (eb, rk)

### Croda to Buy Plant Impact for £10 Million

UK specialty chemicals company Croda has made a cash offer to buy crop-enhance specialist Plant Impact for about £10 million.

Plant Impact's board has unanimously recommended the offer of 10.57 pence for each ordinary share, representing a premium of 79.9% to the closing price on Feb. 15. The deal is expected to complete on Mar. 28, subject to shareholder agreement.

Croda said the acquisition will extend its life sciences capabilities

and expand its range of intellectual property and products. Headquartered in Rothamsted, Hertfordshire in the UK, Plant Impact also has operations in the US, Brazil, Argentina and West Africa.

Plant Impact had started a formal sales process in December 2017 when it ran into financial difficulties. This occurred after Bayer CropScience said it could not comply with offtake commitments of the company's flagship product Veritas (eb, rk)

### Yara and Arab Potash Collaborate on Fertiligation

Norway's Yara has signed a Memorandum of Understanding (MoU) with Jordan's Arab Potash to cooperate in producing and selling potassium nitrate, also known as potash.

As part of the deal, the companies will evaluate the possibility of doubling capacity at Kemapco, a subsidiary of Arab Potash. Kemapco operates a plant in Aqaba, Jordan, with a capacity of 150,000 t/y potash and up to 60,000 t/y in batches of dicalcium phosphate (DCP), a feed additive. Yara said the plant's output reached 130,000 t in 2017, with sales amounting to about \$105 million.

Yara is targeting a minority 30% position in Kemapco with a 100% distribution and marketing agree-

ment. Potassium nitrate is a key ingredient in solutions for fertigation, the combined application of water and nutrients to crops. The Oslo-headquartered group said fertigation is a fast-growing segment that both companies aim to develop further. (eb, rk)

"The collaboration with Kemapco will facilitate exchange of technology and know-how and secure access to potassium nitrate that will strengthen our fertigation offering," said Terje Knutsen, Yara's European vice president for crop nutrition. Jamal Al-Sarayrah, chairman of the board of directors at Arab Potash, added that the deal was an important step in its plan to grow the business. ■

### Solvay and Vietnam's PVCFC in Fertilizer Deal

Solvay is giving PetroVietnam Camau Fertilizer Company (PVCFC) exclusive access to its proprietary AgRho N-Dual Protect nitrogen stabilizer under a four-year supply deal. Financial terms of the contract were not disclosed.

The agreement follows a series of successful field trials by PVCFC of Solvay's eco-friendly stabilizers in Vietnam.

Solvay said its AgRho N-Dual Protect is the first liquid formulation combining N-(n-butyl) thiophosphoric triamide (NBPT) urease inhibitor and dicyandiamide (DCD) nitrification inhibitor to give an enhanced performance and sustainability compared to other nitrogen stabilizers.

According to the Belgian group, AgRho N-Dual Protect increases

crop yield up to 20%, while also giving improved air and water quality and reduced greenhouse gas emissions.

Valdirene Licht, vice president and general manager of Solvay Novocare Asia Pacific, said the contract is an opportunity for Solvay to improve agricultural productivity in Vietnam.

PVCFC is currently planning a 300,000 t/y complex NPK fertilizer plant in Ca Mau, Vietnam. Construction was scheduled to start in the fourth quarter of 2017 with the plant due to commence operations in late 2018. PVCFC said the plant will serve Vietnam's high demand for complex NPK fertilizer products as current domestic production is only able to meet 25% of the country's needs. (eb, rk)

### Consortium Plans Dutch Waste-to-Methanol Plant

A consortium that comprises AkzoNobel Specialty Chemicals, industrial gases group Air Liquide, Canadian cleantech company Enerkem and the Port of Rotterdam has signed an agreement to build an advanced waste-to-chemical facility in Rotterdam, the Netherlands.

The facility will be the first of its kind in Europe to convert plastic and other mixed wastes into new raw materials, according to Enerkem, which will provide its proprietary technology to the €200 million project, as well as being lead contractor and an equity partner.

To be built in the Botlek industrial area, the plant will have two lines producing a total of 220,000 t/y of "green" methanol by converting up to 360,000 t of waste, which is equivalent to the total annual waste of more than 700,000 households and represents a CO<sub>2</sub> emission saving of about 300,000 t.

Enerkem said the project will benefit from the port's infrastructure as well as synergies with Air Liquide for supplying the necessary oxygen and, together with AkzoNobel, the raw material hydrogen. (eb, rk)

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