

A Strong Engine
FOR VALUE CREATION



»At Clariant, we create value in the long run by paying attention to non-financial as well as financial indicators and to their interaction with each other. We are convinced that long-term investors will appreciate our forward-looking integrated reporting approach.«

RUDOLF WEHRLI

Chairman of the Board of Directors

Clariant constantly engages with its stakeholders to stay attuned to their needs and gain feedback on how to best create value for them. In 2016, these engagements included customer surveys with 2 693 responses (page 31), investor updates and presentations at analyst and investor conferences, a global employee engagement survey with 11 000 respondents (page 16), and the second Clariant Sustainability Dialog in Shanghai with over 200 participants (page 13).

The ultimate benefits Clariant's business model offers its stakeholders include delivering on-time in-full solutions to customers based on powerful R&D and innovation; providing above industry-average profitability, growth, and total return for shareholders; serving as a preferred employer that attracts and retains engaged and motivated employees; and adding value with sustainability. The company's overall objectives (page 10) firmly embed these beneficial outcomes for stakeholders within Clariant's strategy process (page 13).







Three phases turn challenges into opportunities

Within the company, the business model revolves around three key value-creation phases: Idea to Market, Market to Customer, and Customer to Cash. A well-filled innovation pipeline, customer-oriented sales and marketing processes, and efficient operations are key factors in achieving profitable growth. Externally, overarching societal trends, market drivers, and economic developments shape the environment in which the business model creates value.

The Group perspective on these external drivers is discussed further in the interview with Rudolf Wehrli, Chairman of the Board of Directors, and Hariolf Kottmann, CEO, (page 2) and in the Strategy chapter (page 11), while the business area angle is explored in the chapters on the specific business areas (pages 44, 50, 56, and 62).

Clariant helps to solve global societal and environmental challenges by taking an outside-in approach and viewing unmet stakeholder needs and global challenges as business opportunities. As discussed throughout the report, a clear strategy with ambitious objectives, a strong leadership culture focused on entrepreneurship, and leading businesses in four areas ensure that Clariant's strong foundations are consistently translated into sustainable growth.

Input (resources utilized)

Performance	 Financial capital	206 R&D spend in CHF m (3.5% of Group sales)	297 Investments in property, plant and equipment in CHF m	1435 Personnel expenditures in CHF m (incl. external staff)	2221 Raw material procurement in CHF m
	 Intellectual capital	125 Scientific collaborations	320 Active innovation projects		
People	 Human capital	1675 New employees hired	201884 Training hours	~1100 Employees in R&D	
	 Relationship capital	975 Management members received 360° degree feedback	> 60% Raw material supply base by spend covered by sustainability evaluation	> 500 Client interviews	2693 Customer survey participants
Planet	 Manufactured capital	8 R&D Centers	> 50 Technical Centers	76 Production facilities	2.82 Raw materials procured in m t
	 Natural capital	2950 Energy consumption in m kWh	48 Water consumption in m m ³		

External Environment

Stakeholder Needs
Societal Trends and Market Drivers



Clariant - Vision, Mission, Corporate Values



STAKEHOLDER FEEDBACK

Resulting outputs

5 847

Sales in CHF m

15.2 %

EBITDA margin
before exceptional items

646

Operating cash flow
in CHF m

6 500

Patents at year-end

17 442

Staff in FTE at year-end

114

Women in Global Management

3 599

Women in general staff

0.19

Lost time accident rate
(LTAR)

91 %

Customers want to
continue doing business

81 %

Customers plan to intensify the
business relationship

4.09

Production volume
in m t

13

Waste water
in m m³

0.89

Greenhouse gas emission
(scope 1 & 2) in m t

147

Waste in thousand t

Outcome achieved for:

Environment

Employees

Shareholders

Customers

Business Model

At Clariant, discovering and creating value lie at the heart of everything. By following a business model built upon three value creation phases, knowledge is constantly transformed into sustainable and innovative solutions, creating added value for all stakeholders. This comprehensive approach to value creation is embodied in the brand values Performance, People, and Planet and communicated transparently through Clariant's new integrated reporting approach.

Integrated Reporting

In today's complex markets, companies create value by considering and managing a wide range of resources, tangible as well as intangible, and financial as well as non-financial. Integrated reporting provides a more accurate and comprehensive account of how this process takes place.

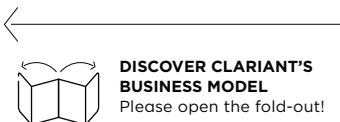
Clariant's integrated reporting takes inspiration from key elements of the International Integrated Reporting framework, developed and disseminated by the International Integrated Reporting Council (IIRC). The IIRC and others have engaged in global discussions about the importance of a more integrated approach to corporate reporting and have highlighted this framework's potential for change.

Integrated reporting helps organizations clearly articulate how their strategy, processes, performance, prospects, and governance lead to the creation of value by utilizing and transforming different forms of capital. This supports shareholders and other stakeholders in making more informed decisions about their relationship with a company.

From an internal perspective, integrated reporting is both founded on and enhances integrated thinking within a company, encouraging active consideration of the relationships between various operating and functional units and the capitals the organization uses or affects. This supports integrated decision making that creates value over the short, medium, and long term.

Strong value creation for all stakeholders

To create added value for its stakeholders Clariant employs six kinds of capital: financial, intellectual, human, relationship, manufactured, and natural. These six capitals are categorized under Performance (financial and intellectual capital), People (human and relationship capital), and Planet (manufactured and natural capital). Through Clariant's unique business model, these inputs are converted into valuable outputs for customers, employees, shareholders, and the environment.





Idea to Market

Clariant sets new standards in specialty chemicals by using leading technologies and developing innovative and sustainable solutions. Particular emphasis is put on processes and tools delivered by Innovation Excellence that systematically uncover unmet needs, enabling customers to address their challenges more effectively and conveniently.

Global trends as a driver for innovation

Global megatrends, such as the growing and aging world population, urbanization, digitization, and changing consumption patterns due to the growing middle class, drive Clariant's product and service innovations. These trends are expected to double the global demand for chemicals by 2030. To keep up with this burgeoning market, increasing production throughput and enhancing efficiency are vital.

The sources of specialty chemical products are also expected to change in the future. The Asian market's global role is increasing. Consequently, Clariant emphasizes its focus on regional innovations and solutions to meet local market needs. The regional innovation

center in India already conducts projects in close collaboration with the Business Units. A similar regional innovation center is currently under construction in China with planned opening for 2019.

In addition, a shift to bio-based solutions can already be seen in markets such as Personal Care and Home Care. Clariant estimates that 20% of chemical sales will be bio-based chemicals by 2030, a shift that is primarily driven by the sustainability considerations of consumers. Clariant believes that combining biotechnology with classical chemistry will provide the best and most competitive substitutes.

A great enabler is the ongoing digitization of the chemical industry, which allows for new business models to better serve customers. Furthermore, regulatory developments, such as the ban of Cr(VI), hexavalent chromium compounds, in Europe, the need for halogen-free flame retardants, and the requirement to reduce air pollutants are key areas where product and service developments allow Clariant to remain compliant and stay ahead of the curve.



OPEN INNOVATION INITIATIVE



Financing

We help start-ups and young companies overcome financial challenges.



Market access

Our global network helps to bring new innovations into the world.



Equipment/ infrastructure

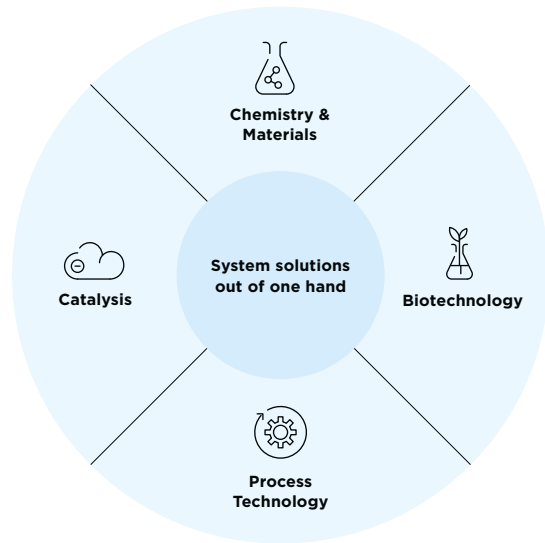
Finding suitable test and production equipment is a challenge for many innovators. We open our labs and facilities to foster innovation.



Knowledge/expertise

Our experts use their knowledge and expertise along the entire innovation chain.

TECHNOLOGY PLATFORMS



Clariant is well prepared to tap the full potential

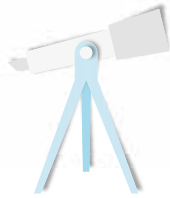
With an innovation pipeline filled with 320 active projects from all Business Units as well as Group Technology & Innovation, Clariant is well positioned for future growth. Currently, the innovation portfolio includes about 60 »Class 1 projects« that show a double-digit million sales potential or are of strategic importance. A total number of more than 6 500 patents underscores the advanced technology expertise. In the course of 2015 and 2016 Clariant revised its Intellectual Property strategy and thereby abandoned patents that are no longer of strategic relevance. Since 2012, Clariant has spent approximately CHF 1 billion in R&D, with CHF 206 million in 2016 alone.

To take advantage of synergies across the company, Research & Development is shaped along four technology platforms: Chemistry & Materials, Biotechnology, Process Technology, and Catalysis. 1100 employees in eight Research & Development Centers and 50 Technical

Centers strive daily to achieve clearly defined targets. Clariant participates in more than 125 active scientific collaborative projects with universities, research institutes, and external partners along the whole value chain. Already in 2012, Clariant entered into a partnership agreement with Emerald Technology Ventures by investing in Emerald Cleantech Fund III. Through Emerald, Clariant has access to more than 1 000 new companies per year. To profit from external knowledge and accelerate innovation, Clariant also runs an Open Innovation portal that was developed in partnership with the University of St. Gallen (Switzerland) and Stanford University (USA). The first focus field was dedicated to Smart Packaging which recently was accompanied by the second focus field Personal Care. Accordingly, submitting ideas on how to solve packaging-related problems or provide new and sustainable benefits to Personal Care products is welcomed.

IDEA TO MARKET

STEPS OF THE STEERING PROCESS



Scout - Megatrends & Ideas

Good ideas come from a deep understanding of current and future customer needs. To build the foundation for innovation, Clariant reaches out to analyze megatrends, market trends, and consumer needs. During ideation workshops with key customers, trends and needs are turned into ideas.



Scope - Cross-Functional Team Interaction & Design

Customer needs are systematically incorporated into the design of an offering. By constantly talking to customers, Clariant finds out which problems they want to solve. Their needs are the basis for the design criteria of all innovations, as laid out in the design scorecard.



Execute - Concept & Development

Clariant strives to accelerate Time to Market: Customer requirements are efficiently translated into product features; innovative concepts based on scientific principles are developed; the supply of the raw materials is secured; the supply chain and production process are set up; and the pilot plant is engineered. Customer feedback on commercially representative material is used for fine-tuning the product, its positioning on the market, as well as the product launch approach. Accordingly, the marketing materials are created and the sales force is trained.

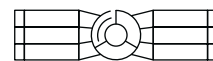


Commercialize - Monitoring & Learning

After the launch, the product performance in the market is monitored in order to collect insights for further development.

Efficient and sustainable innovation project steering

Innovation at Clariant is managed according to the Clariant Innovation Excellence approach. A key corporate initiative that utilizes blueprints and tools to build innovation capabilities, while fostering a culture that translates knowledge and ideas into new products, services, business models and processes tailored according to customer and market needs. Innovation project managers of »Class 1 projects« are trained Innovation Black Belts, while managers of »Class 2 projects« are trained Innovation Green Belts. All Innovation Black and Green Belts are supported and coached by dedicated Innovation Master Black Belts to ensure process and tool know-how. In 2016, around 50 new Green Belts and 14 new Black Belts were trained, resulting in around 250 Innovation Green Belts and 26 active Innovation Black Belts at year end. All innovation projects need to pass the Stage Gate Process where deliverables for the respective stage are reviewed by a cross-functional team in order to progress from one stage to the next. The projects are required to be assessed on their relative sustainability based on Clariant's Sustainability Index for Research and Development projects (CSIR&D). The Portfolio Committee reviews the innovation project portfolio, prioritizes projects, and allocates resources in line with strategy.

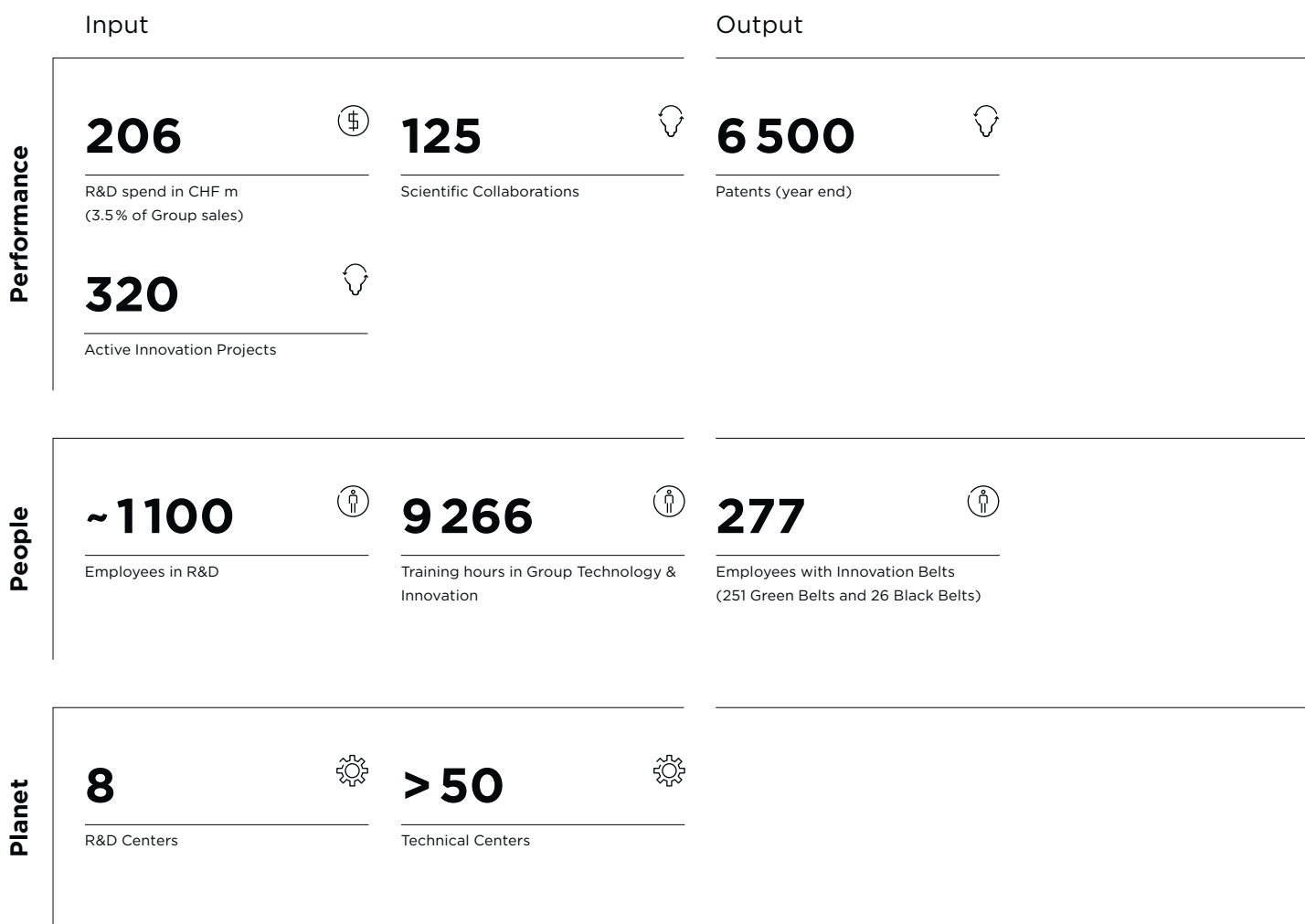








Business model
In the Idea to Market phase, ideas are transformed into market-ready solutions.

»Partnering with South Korean BioSpectrum helps us provide natural, sustainable and effective formulations to the Personal Care industry.«

CHRISTIAN VANG

Head of Business Unit Industrial & Consumer Specialties



-  Financial capital
-  Human capital
-  Manufactured capital
-  Intellectual capital
-  Relationship capital
-  Natural capital

DIGITIZATION ENABLES INNOVATIVE BUSINESS MODELS



reports.clariant.com/v01
Watch the VERITRAX™
movie



Digitization case **VERITRAX™**

The volatility of oil prices requires oil producers to update production processes and leverage automation to reduce costs. With the intelligent chemical management system VERITRAX™, Clariant now delivers the efficiency benefits of the digitized world to oil and gas chemical operations.

VERITRAX™ helps oil and gas operators obtain more frequent and accurate information about their chemical usage, product spend, and tank levels. The support platform takes advantage of industry-leading automation and cloud-based technologies to optimize the chemical supply chain, ensure maximum production uptime, and provide producers with an unprecedented understanding and control of their chemical spend. Behind the scenes, VERITRAX™ analytics collate and integrate key process parameters and data obtained from the field and laboratory, providing near real-time information directly to computers and smart phones. The system provides precise chemical pump control and data analy-

sis to help ensure that the correct chemical is delivered at the wellsite, at optimized ppm level dosages, to achieve the desired results at the expected costs.

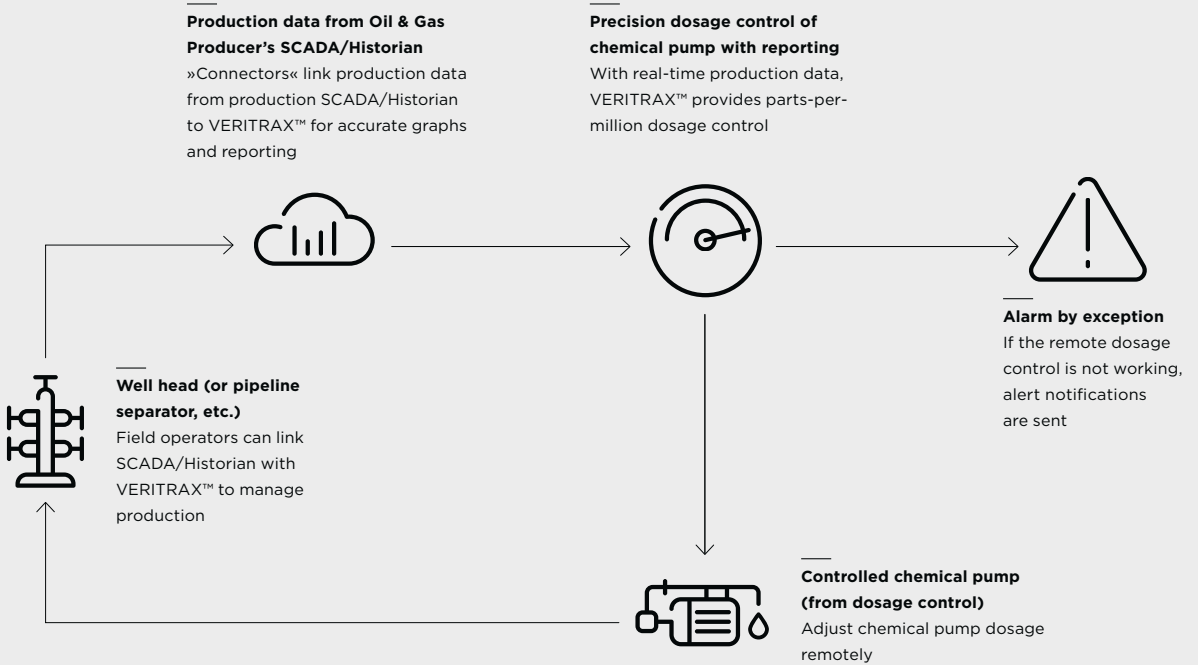
VERITRAX™ allows for significant reductions of total operating costs by

- lowering the risk of production interruptions
- increasing production efficiency
- optimizing inventory management
- improving the budgeting procedures



PRECISE CHEMICAL PUMP CONTROL

Significantly reduce probability of pipe blockage or well contamination through precision remote pump control and get high precision reporting in real time.



»In today's business environment, increasing digitization is key to efficient and clean production. VERITRAX™, the intelligent chemical management system for oil and gas producers, reduces risks and optimizes operations with real-time management of all the chemical related activities such as scheduling chemical deliveries from field based sensors, management of analytical data, and automating ordering and billing. This is truly ›chemistry management as a service‹.«

BRITTA FUENFSTUECK
Member of the Executive Committee



Interview

Digitization at Clariant

Ms. Fuenfstueck, are there unique aspects of digitization in the chemical industry compared to other sectors? And how do you see the digitization landscape in the chemical industry changing right now?

BRITTA FUENFSTUECK Compared with industries such as media, retail and telecommunications, the chemical industry is lagging behind. While some digital processes, such as control systems for plant operations, have been ingrained in the chemical industry for a while, the industry has only embraced the new digital wave more broadly over the last few years. The key focus lies in operations, from advanced operations management to predictive maintenance.

Are cost savings or increased service quality – or both – the main benefits of digitization?

In the chemical industry, the primary focus has been cost savings, although some companies are also looking into digital marketplaces. The service aspect of digital is less developed. However, at Clariant our focus will be in the opposite direction: We want to emphasize identifying new, differentiating offerings for customers. Of course, adding digital tools to our operational excellence approach is important as well.

Does successful digitization mean automating existing processes, or reinventing the entire business model?

Ideally, digital approaches make it possible to do things differently. Imagine the classic example of preventive maintenance. Instead of waiting for a part to deteriorate or conducting checks at standard intervals, digital tools can monitor processes constantly and trigger a maintenance activity at the right time to keep operations intact. On the customer-facing side of business models, the breadth of opportunities that digitization creates is even bigger, but realizing them is also harder.

Are radical digitization overhauls driven more by increasing customer expectations or by solution providers such as Clariant?

At the moment, only our customers in the area of oil production are starting to demand digital offerings, sometimes even in tenders. But innovation is not only about following a well-articulated need; it is about understanding the customer need more deeply, and addressing it proactively. The goal is to build a sustainable digital solution that meets real market issues instead of building offerings with hopes there is customer interest.

How do you expect the area of digitization to develop in the future?

Fastforwarding to 2030, we expect much broader adoption of digitization in personal and business processes. This will likely affect all areas of business, with the focus on turning the current digitization trend into tangible returns.

> 80 %

Portfolio Value Program (PVP)

>80 % of the product portfolio analyzed for sustainability performance

> 140

EcoTain*

>140 products awarded with the EcoTain* label for their excellent sustainability profile at the end of 2016.



Market to Customer

Offering products and services that customers value most is crucial for business success. Therefore, Clariant strives to understand customer needs along the entire value chain, develop solutions that address those needs, and capture the value created for profitable growth.

Market trends show heightened competition and opportunities for growth

Due to overcapacity, increasing commoditization in petrochemical and chemical markets, and current macro-economic trends, pricing pressure in the chemicals sector is high, especially in Asia. As a result, businesses that focus on specialty chemicals are diverging further from commodity chemicals providers. In order to capture the most benefit from the attractiveness of the specialty chemicals business, Clariant must pay as much attention to cost and supply chain competitiveness as it does to profitable growth. In addition, as sustainability is becoming an increasingly important buying criteria, it is integral to Clariant's business strategy. The Portfolio

Value Program (PVP) screens the product portfolio for sustainability performance on 36 criteria considering the entire full lifecycle. Clariant awards products that show an excellent sustainability profile based on the PVP criteria with its EcoTain® label.

Digitization will also continue to impact the commercial process for the foreseeable future. For example, multi-channel sales possibilities, advanced sales analytics, and new service models all provide opportunities to increase revenues. In November 2016, Clariant established the corporate initiative Digital4Clariant to explore these new avenues of growth. In a first step, a cross-functional team with people from all Business Units has been formed that now develops a digital roadmap and sets up a project pipeline.

Understanding true needs through continuous dialog

In recent years, Clariant has transformed itself from a mainly product-driven towards a customer-centric company. To deepen customer centricity Clariant launched the Clariant Commercial Excellence initiative in 2011. The initiative focuses on people, skills, and culture while supporting the Business Units in developing actionable commercial growth plans. The initiative also emphasizes continuous improvement of commercial



»Stringently and sustainably cultivating commercial skills is indispensable for customer centricity and further building our commercial DNA. Close collaboration across business functions is crucial for this.«

HARALD DIALER
Head of Clariant Excellence

strategies, customer engagement, and sales operations through ongoing dialog with existing customers, new prospects, and additional partners along the value chain. In this regard, Clariant conducted approximately 500 face-to-face interviews with customers in 2016.

An in-depth understanding of true customer needs is a prerequisite for developing compelling value propositions. By appreciating the customer's »job to be done«, Clariant can offer solutions that improve processes, save time, and optimize overall costs. For example, flame retardant customers asked for features such as low viscosity and consistent quality. Clariant not only met these direct requests, but was also able to capture the actual need beneath the surface: a desire for synchronized supply chains and reduced application costs. Constant and consistent customer dialog was key to this success.

Leveraging customer satisfaction for continuous improvement

As part of the Commercial Excellence Initiative, Clariant runs biannual customer satisfaction surveys. The surveys show that Clariant's reputation as an »innovative solution provider« has increased steadily

over the last few years. In 2016, Clariant received feedback from 2 693 customer contacts (compared to 1 430 in the previous survey) showing strong innovation performance improvements regarding both satisfaction and competitive performance. Of all survey participants, 65 % consider Clariant an innovative solution provider, 91 % intend to continue business with Clariant (prior survey: 79 %), and 81 % plan to intensify the business relationship. The net promoter score increased from 29 % to 37 % in 2016. All of these indicators represent performance above industry benchmark.

The feedback received through the surveys provides valuable »outside-in« information that is used to increase operational, commercial, and innovation performance. For example, based on survey feedback, the Executive Committee incorporated on-time, in-full (OTIF) customer delivery targets into Clariant's performance review meetings for all relevant staff, including Business Unit heads.

Developing compelling value propositions

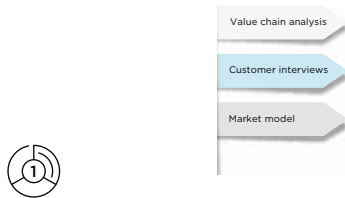
Once customers' needs are well understood, insights are either fed back into the Idea to Market phase if Clariant does not have a suitable current offering, or are forwarded to Marketing Excellence professionals who articulate to existing and potential customers the value created

37 %

Net Promoter Score (NPS)

37 % in 2016, compared to 29 % in 2015. The NPS gauges the loyalty of a company's customers on a scale from -100 (no loyalty) to +100 (high loyalty). An NPS of >50 % is felt to be excellent.

**MARKET TO CUSTOMER
STEPS OF THE STEERING PROCESS**



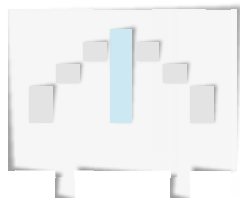
Find - Identifying & Focusing

Value Chain Analysis, Customer Interviews, and Market Modeling are employed to gain clear market insights. The market attractiveness is then assessed in order to identify the growth pockets needed to successfully place offerings on the market.



WIN - Value Proposition & Strategy

Identified customer needs, characteristics of products and services, and competitors' offerings are all considered in order to develop a value proposition. Growth plans then create a shared context and the accountability to deliver profitable growth.

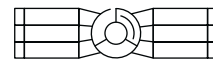


Keep/Grow - Relationship & Selling

Sales professionals capture the value delivered to customers into profitable growth for Clariant. Continued focus on customer needs creates additional value throughout the sales process. Clariant engages in each sale based on value and optimizes pricing constantly.

with existing offerings. In this regard the Clariant value calculator is a helpful tool to demonstrate and visualize the monetary benefits of using Clariant solutions compared to the next best alternative. Evaluating sustainability aspects and the resulting benefits for customers is also an essential part of Clariant's value-based pricing approach. Since 2012, approximately 2 000 customer-facing employees were trained in value-based pricing. By carving out the savings or revenue upside in terms of total costs of ownership at a mutually beneficial price point, Clariant can transform value created for customers into profitable growth.

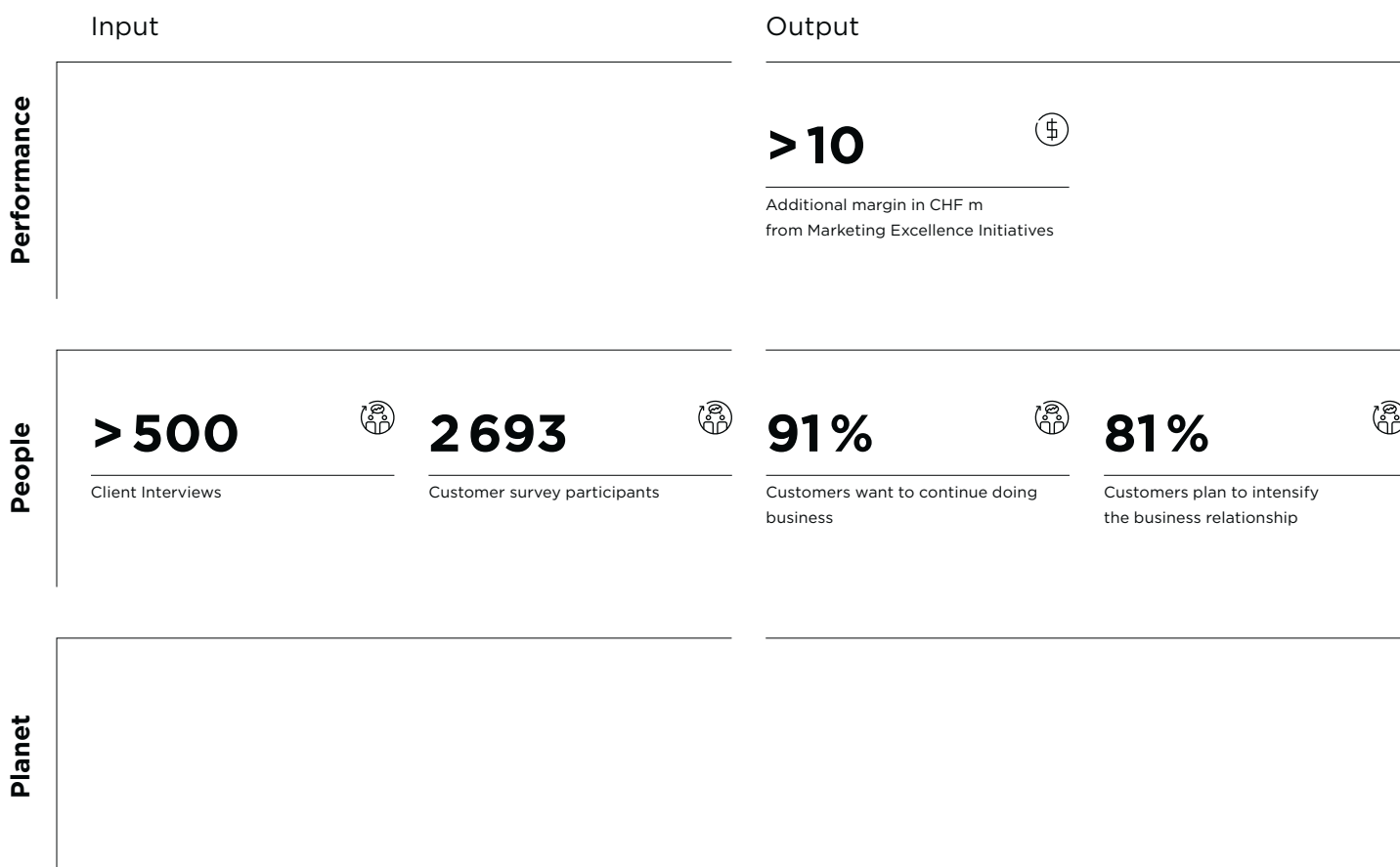
In 2016, Clariant conducted 22 Marketing Excellence projects across all Business Units. All projects targeted capability enhancements that could drive execution throughout the commercial organization in order to deliver on the Business Unit strategies. In the Business Unit Masterbatches in Belgium and the Netherlands, for example, identifying growth pockets and building an action plan in attractive market segments of the food and beverage packaging industry resulted in a sales growth of 31% compared to the previous year. Overall, growth benefits from Marketing Excellence initiatives in terms of additional margin accounted for more than CHF 10 million in 2016. In 2017, Clariant plans to conduct more than 30 dedicated Marketing Excellence projects across all Business Units to further develop organizational capabilities and enhance drivers for growth.









Business model
In the Market to Customer phase customer needs are transformed into additional sales potential.

»Once we made the customer need the start of our action rather than the output of our process, we could create real value and true customer loyalty.«

STEPHAN LYNEN
Head of Business Unit Additives



-  Financial capital
-  Human capital
-  Manufactured capital
-  Intellectual capital
-  Relationship capital
-  Natural capital

CALCULATING VALUE FOR THE CUSTOMER



reports.clariant.com/v02

Watch the AmoMax® movie



Value calculation case

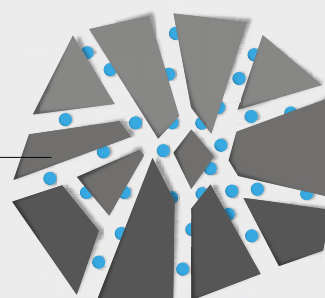
Energy and cost savings through AmoMax®

Clariant solutions are designed to create additional value – for the customers and for Clariant. Take the example of AmoMax® 10, a highly efficient catalyst to produce fertilizers with less energy compared to conventional solutions.

Reducing energy consumption is not only good for the environment, it also saves costs. Clariant is able to quantify this and other benefits to the customers, supporting mutually beneficial agreements at a price point that allows both the customer and Clariant to capture significant value from the collaboration.

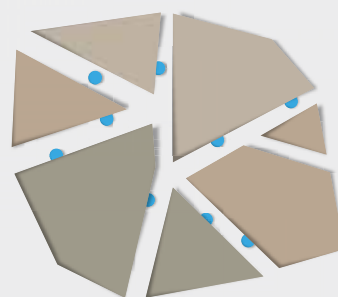
With catalysts, reactions occur faster and require less activation energy than without them. Catalyst improvements are paramount for the energy intensive ammonia industry. Clariant offers the superior catalyst AmoMax® 10 for ammonia synthesis:

- AmoMax® 10 is based on the iron oxide wustite in combination with the special set of promoters that increase the catalytic activity.
- AmoMax® 10 shows a significantly higher activity compared to the standard magnetite catalysts.
- AmoMax® 10 has been installed in more than 100 reference ammonia plants globally.



AMOMAX® 10

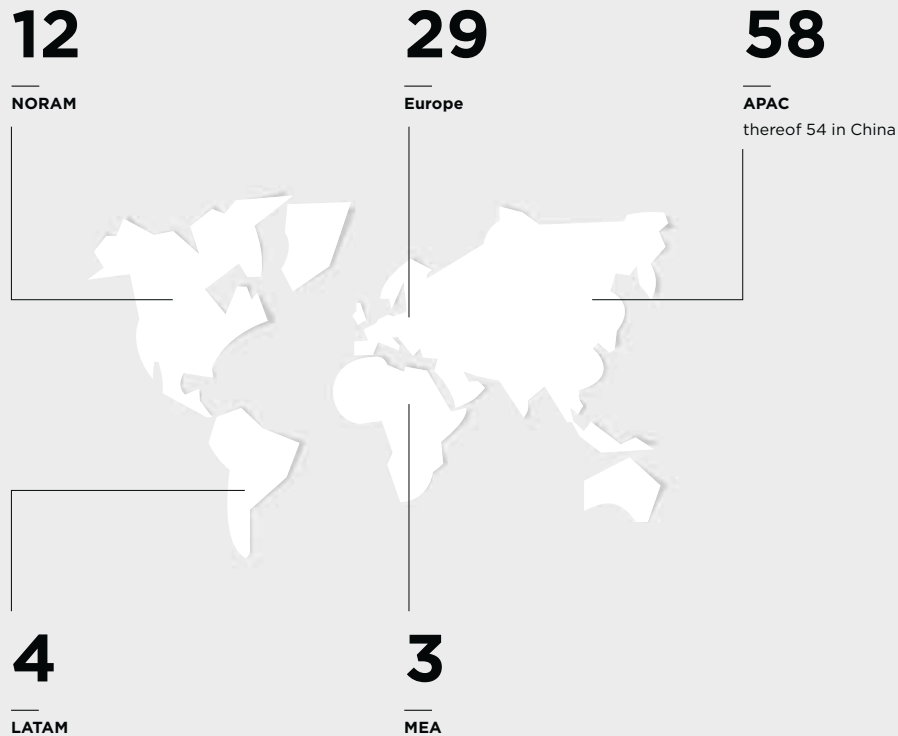
Using Wustite, a mineral form of iron oxide, AmoMax® shows significantly increased surface area compared to traditional solutions and incorporates proprietary promoters in inter-granulate spaces and within the crystals. This brings significant change to the field of ammonia synthesis.



Conventional catalyst

Since their first commercial production in the early 1910s conventional ammonia synthesis catalysts are made of magnetite (Fe_3O_4).

MORE THAN 100 REFERENCES SINCE MARKET INTRODUCTION IN 2003 PROVEN AMOMAX® 10



Quantifying benefits
Clariant Value Calculator

The Clariant Value Calculator is an analytical tool based on Clariant Commercial Excellence methodologies. Tailored to the specific circumstances of the intended application, the calculator quantifies the monetary benefits the customer experiences when using Clariant solutions such as Amomax® 10.

BENEFIT CALCULATIONS AND VALUE CREATION FOR A TYPICAL AMMONIA PLANT (1 600 MTPD) in TUSD

2 499	Total value creation
1 292	Lower energy consumption (lower loop pressure/lower recycle rate)
619	Quicker reduction time
588	Lower light-off temperature leading to faster restart time

Benefit calculations and value creation for a typical ammonia plant (1600 metric tons per day)

- Typical energy savings with Amomax® 10 of approx. 20 000 kcal/ton
- Financial savings from lower energy consumption:
 - Approx. USD 170 000 annual savings (based on energy prices of ca. USD 0.015 per thousand kcal, and 350 days of production per year)
 - Approx. USD 1.29 million net present value of savings over the lifetime of the catalyst (estimated as cumulated savings over 15 years, with discount factor of 10 %)
- Additional financial savings are a result of quicker catalyst reduction times and faster restart times after shut-downs

The overall total value creation adds up to approx. USD 2.49 million over the life time of the catalyst.



Mutual benefits for the customer and Clariant
The total value creation over the catalyst lifetime exceeds the purchase price for Amomax® 10.



Customer to Cash

To meet the increasing challenges in the chemicals industry, Clariant employs a deliberate, holistic approach to Operational Excellence that optimizes planning, procurement, production, and delivery. This creates not only benefits for the customer, such as on-time, in-full delivery, but also generates cost and revenue upsides for Clariant.

Increasing challenges across the industry

Clariant faces increasing volatility, uncertainty, and complexity in its business environment. Changes in demand are more sudden and dramatic than in the past, and competitive pressures are increasing customer service requirements. For example, long lead times for customer orders in the chemical industry were typical, but now customers often request products with only a few days turnaround.

While these demands exist around the globe, each region has specific experiences. For example, in China where competition is particularly fierce, short lead times for the customer are key to securing orders. In regions whose economies have a strong oil focus, such as the US, Brazil, or the Middle East, cost competitiveness is the major factor. Each scenario requires customized changes to the supply chain to be successful in the marketplace.

Meeting challenges with a holistic approach

Clariant builds on its earlier Operational Excellence initiatives to tackle Customer to Cash in a holistic way. Rather than optimizing planning, sourcing, production, and logistics separately, cross-functional teams connect the dots by optimizing the whole value chain. This process includes lean implementation plans to make sure a facility's door-to-door material and information flow operates efficiently. Improvements encompassing the overall process flow are visualized and translated into targeted kaizen activities for continuous improvement.

In 2016, an integrated planning landscape was rolled out in three of the seven Business Units. This consisted of organizational enhancements, best practice planning processes, and an advanced supply chain planning and optimization tool. Combined with the order management and manufacturing execution systems and continuous improvements, cost savings of more than CHF 1 million, additional sales of CHF 25 million and reduction in net working capital of more than CHF 15 million across the Group were achieved in 2016, while service levels also increased.

Working together to optimize a large supply chain

Clariant sources raw materials, capital goods, and other services and inputs from suppliers around the world. In 2016, Clariant purchased roughly CHF 2.2 billion worth of raw materials from around 5 250 suppliers and

18.6 %

Net working capital

With 18.6% the ratio of net working capital to sales is substantially below the Group's target of 20%.

»An optimized value chain is essential for business success. Clariant's new production plant for pigment preparations in Santa Clara, Mexico, produces closer to our customers in North and Latin America and supports on-time, in-full delivery.«

MICHAEL GROSSKOPF

Head of Business Unit Pigments

CHF 1.3 billion of other products and services, such as technical equipment or energy, from roughly another 26 250 suppliers. To reduce purchasing spend in such a large supply chain, Clariant Procurement Excellence (CPX) analyses the purchasing categories. Raw materials were harmonized wherever possible and de-specification was tested. Workshops conducted with suppliers explored win-win situations by looking into new business development and innovations.

Clariant selects its suppliers, outsourcing partners, and service providers based on extensive criteria that include not only economic and product-specific performance, but also sustainability factors. In 2014, Clariant joined the chemical industry's Together for Sustainability initiative for sustainable supplier management. Independent experts perform supplier evaluations and audits, and the participating companies have access to the results. This helped Clariant cover more than 60 % of its raw material supply base by spend with sustainability evaluations in 2016.

Ensuring safe and efficient production and delivery

Clariant integrates lean methodologies throughout the Customer to Cash process to achieve safe, sustainable, and profitable operations. By combining multiple initiatives, the company can create powerful synergies that benefit the Business Units. For example, in 2016 a value chain diagnostic for the Business Unit Functional Minerals was established. It integrates Clariant Supply

Chain System (CSS) and Clariant Production System (CPS) methods to uncover key levers for increased productivity, reduced conversion costs, and stronger demand planning and inventory management in Southeast Asia/Pacific. Investments such as the new pigment preparation plant in Santa Clara, Mexico, increase proximity between production and customers and thus support on-time, in-full delivery.

While the lean process is considered the engine of continuous improvement, the management of safety, health, and environmental aspects is the essential lubricant that enables the engine to function properly. By avoiding accidents, Clariant protects its employees while also ensuring that production disruptions are minimized. Training and investments in plant safety substantially improved the Lost Time Accident Rate (LTAR), which measures the number of occupational accidents with at least one day of work lost relative to 200 000 hours of work. The LTAR fell from 0.92 in 2007 to 0.19 in 2016 (2015: 0.17).

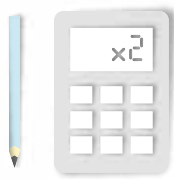
Optimizing inventory levels while ensuring high service levels

Clariant's Inventory Health Check program is a key initiative to optimize cash flow in the Customer to Cash phase. The Inventory Health Check starts with an analysis of inventory performance indicators to determine the health status of a Business Unit's inventories. With

TfS

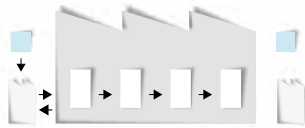
Clariant participates in the chemical industry's Together for Sustainability (TfS) initiative that provides access to supplier sustainability evaluations and audits conducted by independent experts.

CUSTOMER TO CASH
STEPS OF THE STEERING PROCESS



Plan – balance supply & demand

Accurate demand planning is undertaken to create a well-connected sales and production process. By focusing on balancing service, costs, and net working capital, integrated supply chains are established.



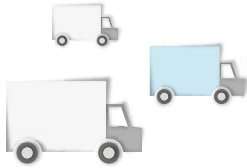
Source – optimizing spend effectiveness

Procurement Excellence seeks to increase spend effectiveness by optimizing commercial, technical, demand, and process levers.



Make – constant monitoring for high efficiency

To ensure continuous operational improvements, Clariant uses Value Stream Mapping and other diagnostic insights to monitor constantly the current situation, compare it to best practices, and run its assets at the highest possible level of efficiency.



Deliver – alignment of commercial and operations to ensure OTIF

The best possible cooperation between Commercial and Operations ultimately allows Clariant to deliver its finished goods on-time and in-full (OTIF) as required by the customer.

the assistance of experts from the Business Unit, it then pinpoints inefficiencies, identifies appropriate measures to improve inventory performance while ensuring high customer service levels, and determines the roadmap to improve the conversion of EBITDA to cash.

Inventory Health Check pilot projects carried out jointly between Clariant Operational Excellence and the Business Unit Oil & Mining Services have successfully optimized inventory levels. For example, after an Inventory Health Check at Oil & Mining Services in Latin America, stock levels dropped significantly without affecting on-time, in-full delivery. In fact, the IFR (inventory fill rate) – the fraction of customer demand that is met through immediately available stock – has increased steadily since the Inventory Health Check measures were implemented.

Based on the impact of the pilot projects, a number of additional projects across multiple Business Units have been conducted in Europe, the Americas and Asia where further success stories have been written. This includes a 50 % inventory reduction within a 12 months' period for a project in North America.

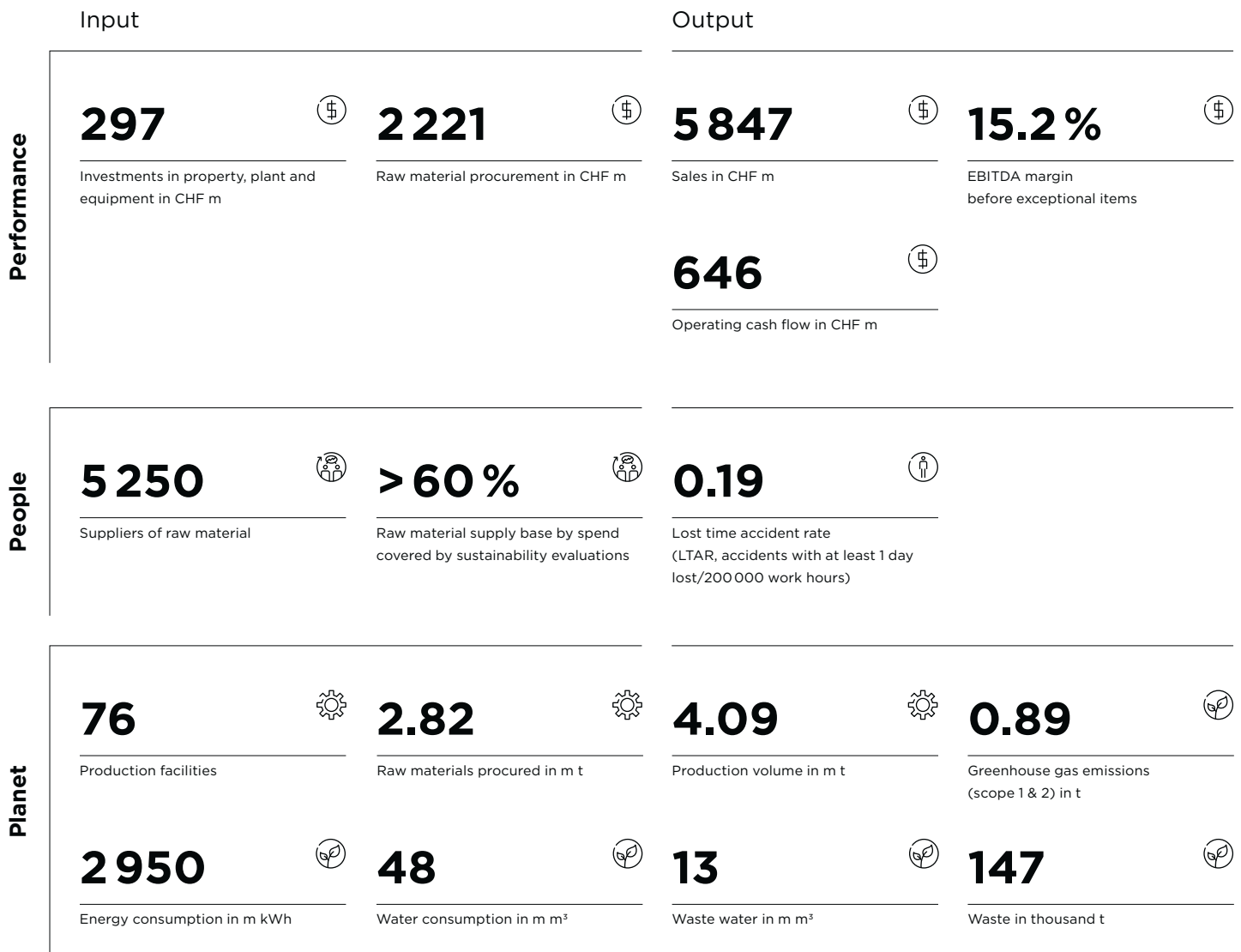








Business model
In the Customer to Cash phase process optimization creates added value.

»The Inventory Health Check improved our inventory levels and cooperation with the Clariant Supply Chain System team is excellent.«

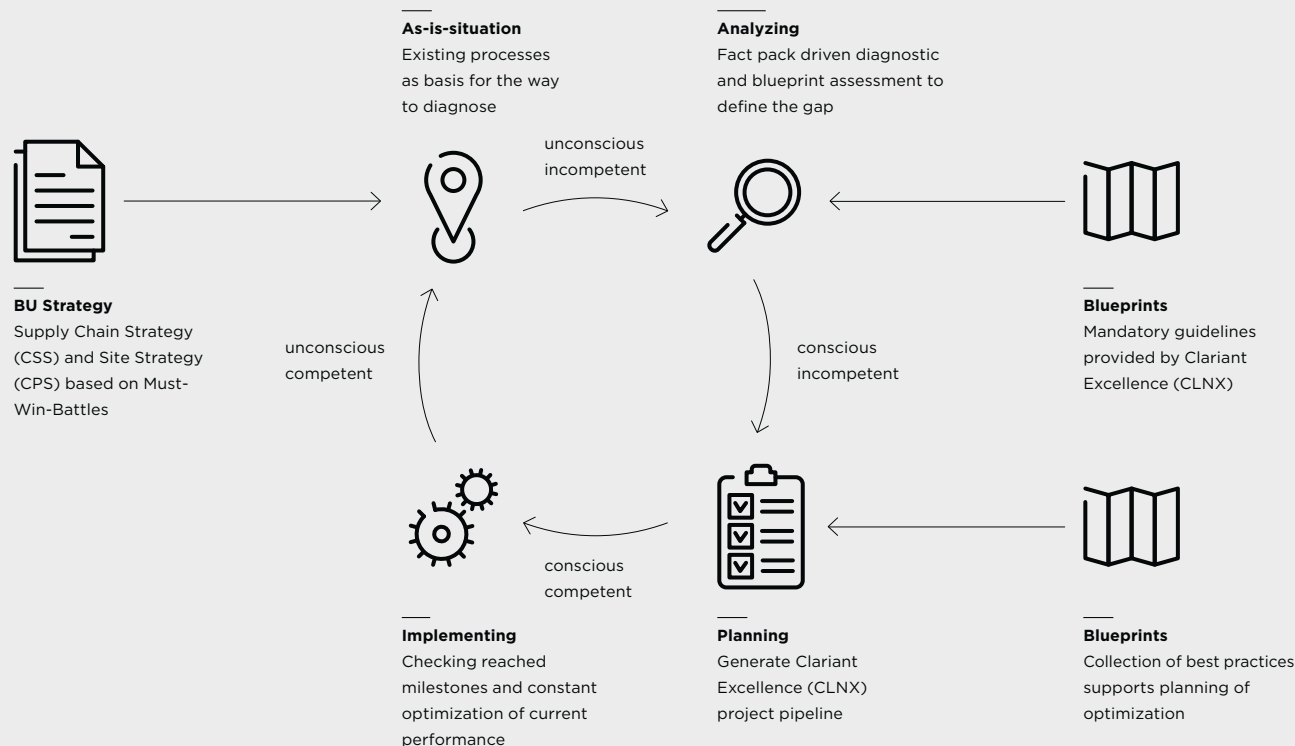
JOHN DUNNE

Head of Business Unit Oil & Mining Services



-  Financial capital
-  Human capital
-  Manufactured capital
-  Intellectual capital
-  Relationship capital
-  Natural capital

REDUCING COST AND ENVIRONMENTAL IMPACTS



Production efficiency case Addressing improvement potentials through YEE

One of Clariant’s strategic goals is to incrementally increase chemical yield while lowering energy and water consumption, and other environmental impacts (YEE). For this reason, Clariant established a dedicated YEE team in 2012 to analyze production plants with this goal in mind. The analysis follows a two-step approach, whereby the YEE specialists, chemical engineering expert, and the operations team perform intensive diag-

nostics of potential improvement areas. During the last four years, the program uncovered high benefit potential in about 25 plants in 15 different production sites, resulting in more than 600 improvement measures, most of which have already been implemented. As about 80 % of expenditures in Clariant’s Business Units are allocated to raw materials, energy, and environmental technology, there is a huge savings potential in this area.

Since the inception of YEE in 2012, the program led to savings of more than CHF 50 million.

POTENTIAL SAVINGS WITH CLARIANT’S YEE PROGRAM (BASED ON COSTS IN 2012)

	Costs in CHF m		Potential benefit		Total estimated benefits in CHF m
Raw material	2161	×	2.0 %¹	=	43
Energy	157	×	8.5 %²	=	13.3
Environment	32	×	8.5 %²	=	2.7

¹ Raw material cost savings through yield and cost improvement

² Based on previous experience in energy efficiency programs



»Clariant has set six ambitious environmental targets for 2025. While we have achieved progress toward all of them, this has also set the bar for further improvements even higher. In order to continue to advance and optimally align investments, our cross-company 2025 Target Team closely works together.«

JOACHIM KRÜGER

Head of Corporate Sustainability & Regulatory Affairs

Achieving progress

Environmental targets 2025

Initiatives such as Clariant's eWatch program on production facility optimization and employee training with regard to energy efficiency, and the Inspire Water program on waste water reduction currently being pilot tested in Spain, have contributed to Clariant's ambitious environmental targets. Using less raw material, consuming less energy, and reducing emissions and waste are essential for Clariant to reach its environmental targets. By 2025, Clariant wants to achieve significant improvements in six major parameters compared to the base year 2013. Relative to product volume and in comparison to the base year 2013, energy consumption and CO₂ emissions should be reduced by 30%. The emission of greenhouse gases should be reduced by 35%, to the same extent as the amount of water used and the volume of waste. The waste water volume should even be reduced by 40% within 12 years.

ENVIRONMENTAL TARGETS (per t produced goods)

- 30 % - 30 %

Reduction of Energy Consumption

Reduction of Direct CO₂ Emissions

- 35 % - 35 %

Reduction of Emissions from Greenhouse Gases

Reduction of Water Consumption

- 40 % - 35 %

Reduction of Volume of Waste Water

Reduction of Volume of Waste