The Clariant Portfolio Value Program System:

How a Leading Specialty Chemical Company has Developed a Systematic Approach for Improving the Sustainability Performance of its Products

June 17, 2016
Co Sponsored with Northwest Green Chemistry

www.northwestgreenchemistry.org
What is the GC3?

• Cross-sectoral, B2B network of 99 companies and other organizations
• Formed in 2005
• Collaboratively advances green chemistry across sectors and supply chains
Today’s Speakers

Sally Edwards
Senior Research Associate, Lowell Center for Sustainable Production

Lynette Chung
Group Sustainable Development Policy & Advocacy Manager, Clariant International Ltd
Ground Rules

• Due to the number of participants in the webinar, all lines will be muted

• If you have a question or comment, please type in the Q&A box located in the drop-down control panel at the top of the screen

• Questions will be answered at the end of the presentation
The Clariant Portfolio Value Program

A SYSTEMATIC APPROACH FOR IMPROVING THE SUSTAINABILITY PERFORMANCE OF THE CLARIANT PRODUCT PORTFOLIO
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Sustainability@Clariant
COMPANY INTRODUCTION
AND SUSTAINABILITY VISION

what is precious to you?
A globally leading company in specialty chemicals

Sales 2014 (CHF m) from continuing operations: 6,116
Net result 2014 (CHF m) from continuing operations: 235
Business Areas: 4
EBITDA 2014 (CHF m) before exceptionals: 867
EBITDA margin 2014 before exceptionals: 14.2%
Companies: 110 in 60 countries
Employees 2014: 17,003
Historical milestones

Clariant has come a long way – now we are going beyond what has already been achieved

- **1995**: Clariant Spin-Off and IPO
- **1997**: Acquisition of Hoechst Specialty Chemicals
- **2000**: Acquisition of BTP
- **2009/2010**: Restructuring
- **2011**: Acquisition of Süd-Chemie
- **2013**: Divestment of 5 Businesses

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### 1995 – 2000

- 1995: Clariant Spin-Off and IPO
- 1997: Acquisition of Hoechst Specialty Chemicals
- 2000: Acquisition of BTP
- 2009/2010: Restructuring

### 2000 – 2009

- 2000: Acquisition of BTP
- 2009/2010: Restructuring

### 2009 – 2010 ff.

- 2011: Acquisition of Süd-Chemie
- 2013: Divestment of 5 Businesses
Four Business Areas

THE RIGHT PORTFOLIO FOR FUTURE GROWTH

SALES BY BUSINESS AREA

<table>
<thead>
<tr>
<th>Business Area</th>
<th>Sales in CHF m, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARE CHEMICALS</td>
<td>1 511</td>
</tr>
<tr>
<td>CATALYSIS &amp; ENERGY</td>
<td>729</td>
</tr>
<tr>
<td>NATURAL RESOURCES</td>
<td>1 297</td>
</tr>
<tr>
<td>PLASTICS &amp; COATINGS</td>
<td>2 579</td>
</tr>
</tbody>
</table>

CLARIANT'S FOCUSED PORTFOLIO

After the successfully executed portfolio optimization in the 2014 reporting year, Clariant possesses a focused portfolio that distinguishes itself by:
- an above-average growth rate
- promising future prospects
- high profitability with upside potential

SALES BY REGION

<table>
<thead>
<tr>
<th>Region</th>
<th>Sales in CHF m, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH AMERICA</td>
<td>1 006</td>
</tr>
<tr>
<td>EUROPE</td>
<td>2 232</td>
</tr>
<tr>
<td>ASIA/PACIFIC</td>
<td>1 433</td>
</tr>
<tr>
<td>LATIN AMERICA</td>
<td>984</td>
</tr>
<tr>
<td>MIDDLE EAST &amp; AFRICA</td>
<td>461</td>
</tr>
</tbody>
</table>
The Goal of a Long Journey:
CLARIANT AS THE GLOBAL LEADING COMPANY FOR SPECIALTY CHEMICALS

We aim to be the globally leading company for specialty chemicals and to stand out for above-average value creation for all of our stakeholders

We create value through appreciation of the needs

− of our customers by providing competitive and innovative solutions
− of our employees by adhering to our corporate values
− of our shareholders by achieving above-average returns
− of our environment by acting sustainably
Sustainability is anchored in Clariant’s strategy and values

Sustainability is a pillar of our corporate strategy and an important driver of the company’s profitable growth strategy. Sustainability fuels Clariant’s innovation pipeline and creates value for all stakeholders.

5 PILLARS STRATEGY

1. Increase Profitability
2. Reposition Portfolio
3. Add Value with Sustainability
4. Foster Innovation and R&D
5. Intensify Growth
Sustainability is a key success factor and an integral part of Clariant’s business strategy

Why we adopt sustainability as integral part of the corporate strategy:

- Position the company in the sustainable market
- Build a competitive advantage through differentiation
- Support profitable growth
- Create added value for stakeholders
- Build brand image and reputation
- Anticipate and mitigate risk
Clariant’s sustainability performance is noteworthy and well recognized

MILESTONES OF CLARIANT’S COMMITMENT
to Sustainability

<table>
<thead>
<tr>
<th>RESPONSIBLE CARE® GLOBAL CHARTER signed</th>
<th>FIRST SUSTAINABILITY REPORT published</th>
<th>ENVIROMENTAL TARGETS 2020 established</th>
<th>SUSTAINABILITY REPORT rated at GRI A+</th>
<th>UN GLOBAL COMPACT signed</th>
<th>DJSI INDEX WORLD AND EUROPE top ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2010</td>
<td>2011</td>
<td>2012</td>
<td>2013</td>
<td>2014</td>
</tr>
</tbody>
</table>

SUSTAINABILITY anchored in Corporate Strategy
FIRST RSPO CERTIFICATION received
TOGETHER FOR SUSTAINABILITY (TFS) membership
GRI4 REPORTING STANDARD applied
Clariant is committed to corporate responsibility and supports renowned initiatives.
Sustainability@Clariant Portfolio Value Program
AN INTRODUCTION TO THE PVP

what is precious to you?

Lynette Chung
Corporate Sustainability & Regulatory Affairs
Strategic Issues
17.06.2015
Sustainability@Clariant Portfolio Value Program

The timeline of the Program

Phase 1: Dec 2012 - Jul 2013
**SCOPING SUSTAINABLE VALUE**

Phase 2: Jul 2013 – Oct 2014
**DEVELOPING SUSTAINABLE VALUE**

Phase 3: Jun 2014 – Sept 2015
**DELIVERING SUSTAINABLE VALUE**
Sustainability@Clariant Portfolio Value Program

A flagship program for steering the Clariant product portfolio towards increasing sustainability.

- The world is changing. Sustainability is a must for addressing megatrends, global challenges and opportunities.

- Customers and markets are increasingly aware and sensitive to sustainability. Policy-makers and other stakeholders promote sustainability initiatives.

- Anticipating and understanding where sustainability plays a role in our markets is key. Thereby, sustainability is built in our value proposition, and customer and stakeholder engagement.
Sustainability@Clariant Portfolio Value Program

Key streams – a tailor-made approach

The Clariant Portfolio Value Program System

Assess comprised understanding the status quo and identifying needs and innovation opportunities through benchmarking of product and portfolio sustainability tools.

Involve aimed at engaging stakeholders and harnessing their diverse input and contributions for a shared vision and deployment of sustainable value creation.

Innovate involved creatively responding to society’s current and future trends and demands, as well as further improving existing product and portfolio

The PVP is developed with the Collaborating Centre for Sustainable Consumption and Production (CSCP), founded by the UNEP and the Wuppertal Institute
Creating Sustainable Value at Clariant
Seizing full opportunities throughout product life cycles

LINKING VALUE (HANDPRINT)
WITH IMPACT (FOOTPRINT)

INCREASING THE BENEFITS

COMMUNITY
USAGE BENEFITS
SOCIAL PROGRESS
INDIVIDUAL WELL-BEING
ECOSYSTEM PROTECTION

REDUCING THE IMPACTS

HARMFUL SUBSTANCES
LAND DEPLETION
ENERGY CO2
SOCIAL IMPACTS
WATER & WASTE

How efficiently and sustainably performance is delivered to society

Source: CSCP, 2013
Combination of perspectives to assess product sustainability

A TWO SIDED ASSESSMENT USES TWO LENSES TO LOOK AT PRODUCT SUSTAINABILITY

**Sustainability Performance against the Market**
Is the sustainability performance of Clariant’s products helping to raise the market standard?

**Sustainability Risks & Benefits**
(absolute nature of issue)
Assessing direct and indirect added value and impact specific to each criterion.
The PVP System
Scope and components of the system

THE PORTFOLIO VALUE PROGRAM SYSTEM
Main Components

SCRENNING
- Product Portfolio Sustainability Screening
- CSI R&D Screening for Innovation Pipeline

CONTINUOUS IMPROVEMENT
- Product Portfolio Improvement Roadmap
- Products Meeting Clariant Sustainability Definition

PROMOTION/LABELLING
- EcoTain+ Selected Products

STAKEHOLDER AND THIRD PARTY INVOLVEMENT AND VERIFICATION

INTERNAL TRAINING AND COMMUNICATION
# The 36 criteria used for product screening

<table>
<thead>
<tr>
<th>RAW MATERIALS AND SUSTAINABLE SOURCING</th>
<th>ENVIRONMENTAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Material use efficiency in the production</td>
<td>• Water Consumption (3): raw materials/ production/ use phase</td>
</tr>
<tr>
<td>• Material efficiency in the use phase</td>
<td>• Energy consumption (3): raw materials/ production/ use phase</td>
</tr>
<tr>
<td>• Raw material scarcity</td>
<td>• GHG emissions (3) raw materials/ production/ use phase</td>
</tr>
<tr>
<td>• Use of renewable raw materials</td>
<td>• Emissions in the use phase</td>
</tr>
<tr>
<td>• Use of non-food competing renewable raw materials</td>
<td>• Hazardous waste classification in the production</td>
</tr>
<tr>
<td>• Sustainability certification of renewable raw materials</td>
<td>• Hazardous waste classification in the use phase</td>
</tr>
<tr>
<td>• Use of recycled material in the production</td>
<td>• Waste generation in the production</td>
</tr>
<tr>
<td>• Support of recycling opportunities in the value chain</td>
<td>• Waste generation in the use phase</td>
</tr>
<tr>
<td>• Impact on biodiversity</td>
<td>• Biodegradability/Compostability of product</td>
</tr>
<tr>
<td></td>
<td>• Effect on aquatic environment</td>
</tr>
<tr>
<td></td>
<td>• Waste water formation at use phase</td>
</tr>
</tbody>
</table>
The 36 criteria used for product screening

SAFE USE, TRANSPARENCY AND INFORMATION
- SVHC substance profile
- CMR substance profile
- Hazard classification level
- Level of solvents and VOCs in the use phase
- Available information on performance and impacts across the life-cycle

ADDRESSING MEGATRENDS AND SOCIETAL NEEDS
- Solutions meeting societal / environmental needs or megatrends:
  - Food and Nutrition,
  - Health and Safety of People,
  - Environmental Issues, Societal Challenges,
  - Green and Sustainable Living, and Climate Change

INTEGRATED SUSTAINABLE BUSINESS
- Value chain collaboration
- Value adding product related services and product service systems

PERFORMANCE ADVANTAGES
- Additional performance features and benefits to the customer
- Third party certification of product
Key components of the portfolio screening process

**GENERAL ASPECTS CONSIDERED**
- Life cycle / balanced assessment / collection of information

**PREPARATORY PHASE:**
- Product grouping
- Selecting assessment team
- Documentation collection

**ASSESSMENT PHASE:**
- Performance against market reference
- Absolute benefits and risks

**POST SCREENING EVALUATION PHASE:**
- Considering status of product grouping
- Evaluating complex cases
- Identifying EcoTain candidates

**SUPPORTING TOOLS**
- Screening Tool/ Guidelines/ Criteria Glossary
The standard PVP system screening scale

<table>
<thead>
<tr>
<th>PERFORMANCE OF PRODUCT GROUPING (relative to market standards)</th>
<th>SUSTAINABILITY BENEFITS AND RISKS OF PRODUCT GROUPING (in relation to the absolute nature of issue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best-in-class performer</td>
<td>Sustainability Benefit</td>
</tr>
<tr>
<td>Higher than market standard/average</td>
<td>Neutral</td>
</tr>
<tr>
<td>Average</td>
<td>Medium/potential risk</td>
</tr>
<tr>
<td>Lower than market standard/average</td>
<td>High risk</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Data insufficient for assessment</td>
<td>Data insufficient for assessment</td>
</tr>
</tbody>
</table>


Example of a screening case – Nipaguard SCE

NIPAGUARD SCE

Product description
This is an antimicrobial agent designed for the preservation of cosmetic products and toiletries. It exhibits microbial activity against a wide range of bacteria, yeast and molds.

Distinctive feature
Nipaguard SCE is a paraben-free solution for personal care products, based on renewable raw materials. Parabens have been under public scrutiny due to potential negative impacts on health associated to their oestrogen-like properties, besides concerns around the negative impacts of certain parabens to the aquatic environment.

Benchmark for market performance assessment
Paraben-based preservatives, as the mainstream market solution, are the benchmark against which Nipaguard SCE is consistently assessed across all criteria in terms of market performance. Although consisting of two different technologies, Nipaguard SCE and parabens have the same market application.
### Example of a screening case – key results

**Nipaguard SCE**

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>PERFORMANCE AGAINST THE MARKET BENCHMARK</th>
<th>SUSTAINABILITY RISKS AND BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of renewable raw materials</td>
<td>Zero renewable content in benchmark</td>
<td>85% renewable based</td>
</tr>
<tr>
<td>Use of non-food competing renewable raw materials</td>
<td>Not applicable as no renewable content in reference group</td>
<td>Palm kernel oil content</td>
</tr>
<tr>
<td>Sustainability certification of renewable raw materials</td>
<td>Not applicable as no renewable content in reference group</td>
<td>Palm kernel oil mass balance RSPO certified</td>
</tr>
<tr>
<td>Effect on aquatic environment</td>
<td>Benchmark present chronic aquatic toxicity</td>
<td>Paraben-free</td>
</tr>
<tr>
<td>Third party certification of product</td>
<td>Benchmark presents no certification</td>
<td>Ecocert certified</td>
</tr>
<tr>
<td>Hazard classification level</td>
<td>Some benchmark variations under regulation</td>
<td>Precautionary flag of a classified ingredient</td>
</tr>
<tr>
<td>Solutions meeting societal / environmental needs or megatrends:</td>
<td>Not applicable as this criterion is not assessed against the market</td>
<td>Health protection and green living</td>
</tr>
</tbody>
</table>
Experience gained from pilot screenings

Key findings:

- **Tangible**: Creates a common understanding of what sustainability means (across market segments, functional departments, across regions). Increases awareness for sustainability in the whole organization (top down & bottom up).

- **Transparent**: Increases transparency by providing a comprehensive overview on product profile in one single document. Good basis for discussion.

- **Improve & Innovate**: Eases the identification of gaps and/or areas for improvement. This helps to define the action plan (e.g. for missing data) and/or to define the profile for next generation products.
Portfolio management and screening evaluation

ACTING ON SCREENING RESULTS
Portfolio Sustainability Screening
Screening outcomes and how they are dealt with

THE PORTFOLIO VALUE PROGRAM SYSTEM
Main Components

SCREENING
- Product Portfolio Sustainability Screening
- CSI R&D Screening for Innovation Pipeline

CONTINUOUS IMPROVEMENT
- Product Portfolio Improvement Roadmap
- Products Meeting Clariant Sustainability Definition

PROMOTION/ LABELLING
- EcoTain+ Selected Products

STAKEHOLDER AND THIRD PARTY INVOLVEMENT AND VERIFICATION

INTERNAL TRAINING AND COMMUNICATION
A basis for categorization to support decision-making and enabling different handling

ALLOWING FOR CONSIDERING ACTIONS NORMALLY BASED ON THREE BROAD CATEGORIES:

<table>
<thead>
<tr>
<th>Products standing out for their sustainability</th>
<th>Products meeting a set benchmark by the organisation or externally</th>
<th>Products falling below the acceptable sustainability standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Products representing excellence, or best-in-class-solutions, with a positive contribution to the sustainability of the industry.</td>
<td>• Products representing a standard considered an acceptable level of sustainability.</td>
<td>• Products requiring most focus for action, either through improvement, replacement or discontinuation.</td>
</tr>
<tr>
<td>• Differentiated through the ‘EcoTain’ Label.</td>
<td>• Comparison against a set of requirements based on at least reaching market standards, providing some benefits and justifications, where relevant, for any risks.</td>
<td>• Dealt with by the portfolio improvement road mapping process.</td>
</tr>
</tbody>
</table>
Promoting sustainable choice: The EcoTain label
Clariant’s sustainability excellence solutions

THE PROCESS OF BECOMING AN ECOTAIN PRODUCT

**PRODUCT GROUP SUSTAINABILITY SCREENING**
- Performance of product group screened
- Potential EcoTain product candidates identified

**ECOTAIN REVIEW PANEL**
- Data prepared for nominated candidates reviewed
- Clariant Sustainability Council informed on outcomes

**BRANDING AND COMMUNICATION**
- Excellence solutions awarded EcoTain label
- Communicated to customers by business units under guidelines
Driving Portfolio Improvement and Sustainable Innovation

what is precious to you?
The Product Portfolio Improvement Roadmap

PRODUCT SUSTAINABILITY IS A MOVING BENCHMARK

- Proactivity and progress viewed as important as actual performance
- A structured process or roadmap is being developed based on the key outcomes
- Outcomes are consolidated at the business unit and corporate levels for review, ensuring that identified risks and opportunities are screened for possible improvement
- Short, mid and long-term perspectives to be considered

EU Energy rating introduced for appliances: 90% reach energy efficiency class A by 2010
Corporate Sustainability Index for R&D Projects

CSI<sub>R&D</sub>

SCREENING THE INNOVATION PIPELINE
Corporate Sustainability Index (CSI) for R&D projects

**VALUE CREATION THROUGH SUSTAINABILITY**

Proprietary index (CSIR&D) → Linking innovation to sustainability

Holistic and life-cycle thinking
Established on the »Triple Bottom Line«
*Performance, People, Planet*

Indicates relative sustainability of products
Innovation Pipeline – Product optimization with CSIR&D

SUPPORTING THE INNOVATION PIPELINE

CSIR&D project assessment is mandatory at stage gate from scope to execute phase for all major R&D projects

- Indicates relative sustainability of the products to be developed
- Helping to optimize innovation project portfolio in the long-run
- Raise awareness of sustainability aspects already in early stages
Thank you!

For further information, see: [http://www.clariant.com/ecotain](http://www.clariant.com/ecotain)

For information on our EcoTain product uncovered so far, see: [http://www.clariant.com/en/Solutions/EcoTain-Products](http://www.clariant.com/en/Solutions/EcoTain-Products)

Upcoming Events

GC3 Green Chemistry Education Webinar Series: Introduction to Life Cycle & Alternatives Assessment
Thursday, June 18, 2015  |  2:00 PM EDT

Advancing Green Chemistry: Barriers to Adoption & Ways to Accelerate Green Chemistry in Supply Chains
Thursday, July 23, 2015  |  12:00 PM EDT

11th Annual GC3 Innovators Roundtable
May 24-26, 2016  |  Burlington, VT
Thanks for joining us!

For more information about the GC3: www.greenchemistryandcommerce.org