



# GRI Disclosures 2017

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# Corporate responsibility at Kemira

## Corporate responsibility program

Corporate responsibility is our contribution to sustainable development and it is at the core of what we do.

In 2017, we reviewed our corporate responsibility program to reflect the most material economic, environmental and social impacts through our business model. These material impacts relate to our overall value proposition and long-term risk profile. We focus the active management of corporate responsibility on three priority areas:

- 1) Sustainable products and solutions
- 2) Responsible operations and supply chain
- 3) People and integrity.

These three priorities cover six material topics and we have a commitment to guide our management of these topics and their impacts.

The six most important material impacts are related to products improving our customers' sustainability, chemical safety management throughout its lifecycle, responsible management of our own operations, responsible performance and good governance throughout our supply chains, engagement and competence development of our employees and responsible business practices in our own operations or with our business partners. Kemira measures progress in the priority areas through the Group level targets and KPIs, which are approved by the Management Board and reviewed by the Board of Directors.



## Contribution to value creation

Our corporate responsibility work is based on the material impacts of our business model and the consequent operations, on the increasing expectations of our customers, investors and other stakeholders, and on our commitment to Kemira Code of Conduct and internationally defined principles.

Our corporate responsibility program supports the execution of our strategy and long-term value creation. The active management of corporate responsibility priorities contribute to creating value for Kemira and to stakeholders, improving our operational efficiency, and ensuring compliance and managing risks. For Kemira, corporate responsibility means being both responsible throughout our own operations, and contributing to sustainable development across our entire value chain.

### Bases of materiality

**BUSINESS MODEL**  
Vision, Values,  
Purpose, Strategic  
goals and choices

**STAKEHOLDERS  
EXPECTATIONS**

**COMMITMENTS**  
Kemira Code of  
Conduct  
UN Global Compact  
Responsible Care®

### Priorities of our corporate responsibility work



**Sustainable  
products and  
solutions**



**Responsible  
operations and  
supply chain**



**People  
and integrity**

### Execution of our strategy

Creating value  
for Kemira and  
stakeholders

Improving  
operational  
efficiency and  
reliability

Ensuring  
compliance and  
managing risks

### Value creation targets

Above-the-market  
revenue growth

Operative EBITDA  
14-16%

## Targets, performance and recognitions

### Corporate responsibility performance

Priority	Target	Performance 2017	Comments																	
 <p><b>Sustainable products and solutions</b></p>	<p><b>Innovation sales</b> Share of innovation revenue of total revenue, 10% by the end of 2017</p>	 <table border="1"> <caption>Innovation sales performance (2013-2017)</caption> <thead> <tr> <th>Year</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>7%</td> </tr> <tr> <td>2014</td> <td>8%</td> </tr> <tr> <td>2015</td> <td>8%</td> </tr> <tr> <td>2016</td> <td>9%</td> </tr> <tr> <td>2017</td> <td>10%</td> </tr> <tr> <td>Target 2017</td> <td>10%</td> </tr> </tbody> </table>	Year	Percentage	2013	7%	2014	8%	2015	8%	2016	9%	2017	10%	Target 2017	10%	<p>Innovation sales target of 10% of total revenue was reached. Commercialization of new sustainable products have succeeded in replacing the sales of old bestselling products from the previous five years.</p>	ACHIEVED		
Year	Percentage																			
2013	7%																			
2014	8%																			
2015	8%																			
2016	9%																			
2017	10%																			
Target 2017	10%																			
 <p><b>Responsible operations and supply chain</b></p>	<p><b>Climate change</b> Kemira Carbon Index ≤ 80 by end of 2020 (2012 = 100)</p>	 <table border="1"> <caption>Kemira Carbon Index performance (2012-2017)</caption> <thead> <tr> <th>Year</th> <th>Index</th> </tr> </thead> <tbody> <tr> <td>2012</td> <td>100</td> </tr> <tr> <td>2013</td> <td>88</td> </tr> <tr> <td>2014</td> <td>91</td> </tr> <tr> <td>2015</td> <td>92</td> </tr> <tr> <td>2016</td> <td>86</td> </tr> <tr> <td>2017</td> <td>85</td> </tr> <tr> <td>Target 2020</td> <td>80</td> </tr> </tbody> </table>	Year	Index	2012	100	2013	88	2014	91	2015	92	2016	86	2017	85	Target 2020	80	<p>Slight decrease in carbon index compared to 2016, due to increased use of carbon neutral energy sources and continuous implementation of energy efficiency projects.</p>	IN PROGRESS
Year	Index																			
2012	100																			
2013	88																			
2014	91																			
2015	92																			
2016	86																			
2017	85																			
Target 2020	80																			
 <p><b>Responsible operations and supply chain</b></p>	<p><b>People, health and safety</b> Achieve zero injuries on long term; TRIF* 2.0 by end of 2020</p>	 <table border="1"> <caption>TRIF performance (2014-2017)</caption> <thead> <tr> <th>Year</th> <th>TRIF</th> </tr> </thead> <tbody> <tr> <td>2014</td> <td>5.8</td> </tr> <tr> <td>2015</td> <td>7.2</td> </tr> <tr> <td>2016</td> <td>3.4</td> </tr> <tr> <td>2017</td> <td>3.9</td> </tr> <tr> <td>Target 2020</td> <td>2.0</td> </tr> </tbody> </table>	Year	TRIF	2014	5.8	2015	7.2	2016	3.4	2017	3.9	Target 2020	2.0	<p>In 2017, TRIF increased to 3.4. The increase in incidents were related to contracted work at our premises. Also the severity of incidents increased, including 3 permanent disabilities.</p>	BEHIND TARGET				
Year	TRIF																			
2014	5.8																			
2015	7.2																			
2016	3.4																			
2017	3.9																			
Target 2020	2.0																			
 <p><b>Responsible operations and supply chain</b></p>	<p><b>Supplier management</b> 5 sustainability audits for highest risk** suppliers every year during 2016–2020, average, cumulative target 25 by 2020</p>	 <table border="1"> <caption>Supplier management performance (2016-2017)</caption> <thead> <tr> <th>Year</th> <th>Audits</th> </tr> </thead> <tbody> <tr> <td>2016</td> <td>4</td> </tr> <tr> <td>2017</td> <td>8</td> </tr> <tr> <td>Target 2020</td> <td>25</td> </tr> </tbody> </table>	Year	Audits	2016	4	2017	8	Target 2020	25	<p>Four SMETA (Sedex Members Ethical Trade Audit) audits in collaboration with an external service provider was conducted with no business stopping results. Majority of the corrective actions were related to health and safety and labor practices.</p>	IN PROGRESS								
Year	Audits																			
2016	4																			
2017	8																			
Target 2020	25																			
 <p><b>People and integrity</b></p>	<p><b>Employee engagement index based on Voices@Kemira biennial survey</b> The index at or above the external industry norm</p> <p>Participation rate in Voices@Kemira 75% or above</p>	 <table border="1"> <caption>Employee engagement and participation (2013, 2015, 2017)</caption> <thead> <tr> <th>Year</th> <th>Engagement (%)</th> <th>Participation (%)</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>58%</td> <td>75%</td> </tr> <tr> <td>2015</td> <td>67%</td> <td>85%</td> </tr> <tr> <td>2017</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Year	Engagement (%)	Participation (%)	2013	58%	75%	2015	67%	85%	2017	-	-	<p>Due to the reorganization, the biennial employee engagement survey was postponed from autumn 2017 until spring 2018, to give managers at least six months with their new teams before engaging in the survey.</p>	BEHIND TARGET				
Year	Engagement (%)	Participation (%)																		
2013	58%	75%																		
2015	67%	85%																		
2017	-	-																		
 <p><b>People and integrity</b></p>	<p><b>Leadership development activities provided, average</b> Two (2) leadership development activities per people manager position during 2016–2020, cumulative target 1500 by 2020</p>	 <table border="1"> <caption>Leadership development activities (2016-2017)</caption> <thead> <tr> <th>Year</th> <th>Activities</th> </tr> </thead> <tbody> <tr> <td>2016</td> <td>494</td> </tr> <tr> <td>2017</td> <td>1036</td> </tr> <tr> <td>Target 2020</td> <td>1,500</td> </tr> </tbody> </table>	Year	Activities	2016	494	2017	1036	Target 2020	1,500	<p>Steady rate of participation in both internal and external leadership development activities continued in 2017 at 542 and actual cumulative total so far 1,036. The activities also included on-the-job learning opportunities in corporate development projects.</p>	IN PROGRESS								
Year	Activities																			
2016	494																			
2017	1036																			
Target 2020	1,500																			

\* TRIF = Number of Total Recordable Injury Frequency per million hours, Kemira + contractor, year-to-date

\*\* Suppliers with lowest sustainability assessment score

## Recognitions in 2017

### CDP

Kemira reached the Leadership A- level in CDP's Climate Change evaluation for the second consecutive year. This result reflects strong commitment to environmental stewardship, actions to reduce carbon emissions, and management of climate change related risks and opportunities. This Leadership A- level indicates that the company is implementing current best practices in its actions to combat climate change. Kemira was rated above the chemical industry average in all of the categories assessed, i.e. governance and strategy, risk and opportunity management, emissions management, and verification.



### EcoVadis

Kemira has been awarded the Gold Recognition Level for the company's sustainability management for the third consecutive year by EcoVadis, a collaborative platform providing sustainability ratings and performance improvement tools for global supply chains. With a score of 75/100 points, Kemira is in the top 1% of suppliers assessed by EcoVadis in all categories.

The EcoVadis methodology framework assesses the policies and measures put in place by companies with regard to environmental issues, labor practices, human rights, fair business practices and sustainable procurement, as well as the related reporting. The results indicate that we have a structured and proactive corporate responsibility approach, with appropriate engagements, policies and tangible actions on major issues, as well as effective corporate responsibility reporting on our actions and performance.



## Our management approach

Our corporate responsibility work is guided by materiality deducted from the impacts through our business model, stakeholder expectations, and our commitments to Code of Conduct and internationally defined principles.

### Materiality

#### Commitments

**Kemira Code of Conduct** is the foundation for our business conduct in Kemira. Our values are embedded in our corporate culture and connect each of us around the world. Our Code puts a framework around our values and reflects our commitments towards our key stakeholders. We also expect our suppliers and other business partners to maintain the same high standards in their own operations, as defined in our Code of Conduct for Suppliers, Distributors and Agents (COC-SDA).

**The United Nations Global Compact** is signed by Kemira Oyj as our commitment to respect and promote human rights, implement decent work practices, reduce our environmental impact, and combat corruption.

**The Responsible Care®** initiative is a voluntary commitment made by the global chemical industry to improve health, environmental performance and security, and to communicate with stakeholders about products and processes. The Responsible Care Global Charter expands and extends the process of continuous improvement beyond the manufacturing of chemicals to other activities, especially those associated with the safe use and handling of products along the value chain. Kemira Oyj has signed both the Responsible Care initiative and the Responsible Care Global Charter.

#### Stakeholder expectations

Our key stakeholders include our shareholders, lenders, customers, employees and suppliers. Other relevant stakeholder groups include the local communities where Kemira operates, regulatory bodies, trade associations, decision-makers and opinion leaders.

- A significant share of our investors practise Socially Responsible Investing (SRI). Among 20 largest institutional shareholders which own 60% of Kemira shares, 16 investors have signed the Principles of Responsible Investment (PRI). These PRI signatories represent 18% ownership of Kemira shares.

- Many of our customers are sustainability leaders in their respective industrial sectors. Kemira forms part of their value chains, and we are expected to demonstrate the same high commitment to sustainable business as our customers.
- Our employees see sustainable business conduct as an important factor behind their engagement with Kemira, according to our employee surveys.

Our approach to stakeholder engagement includes activities ranging from information sharing to active dialogue and collaboration on issues of mutual interest. We regularly review our stakeholders' expectations and potential concerns.

## Stakeholder engagement

GRI 102-40 List of stakeholder groups	GRI 102-42 Identifying and selecting stakeholders	GRI 102-43 Approach to stakeholder engagement	GRI 102-44 Key topics and concerns raised	GRI 102-44 Kemira's response
<b>Shareholders and lenders</b>	<ul style="list-style-type: none"> <li>Share of value creation through dividends and interest payments</li> <li>Expectations for return on investment, good corporate governance practices and sustainability performance</li> </ul>	<ul style="list-style-type: none"> <li>Regular events like Capital Markets Day, roadshows, conference calls and one-to-one meetings. In 2017, we had 23 roadshow days, and 331 institutions were met in 200 meetings</li> </ul>	<ul style="list-style-type: none"> <li>Management approach to sustainability issues</li> <li>Potential business risks and opportunities related to sustainability issues</li> </ul>	<ul style="list-style-type: none"> <li>Responses to investor questionnaires</li> <li>Transparent reporting and disclosure (e.g. participation in CDP climate change questionnaire)</li> </ul>
<b>Customers</b>	<ul style="list-style-type: none"> <li>Our customers are Kemira's main source of value creation</li> <li>Our customers' expectations and needs drive Kemira's product portfolio and offerings</li> </ul>	<ul style="list-style-type: none"> <li>Direct customer contacts</li> <li>Annual customer survey: In 2017, nearly 1,000 customers participated in Customer Voices survey. 62% of our customers globally are very or absolutely satisfied with their business relationship with Kemira.</li> <li>Exhibitions (20)</li> <li>Product testing and plant trials</li> </ul>	<ul style="list-style-type: none"> <li>Improve our ability to offer new solutions</li> <li>Improve our proactivity and overall communication with customers</li> <li>Sustainable products</li> <li>Kemira's overall sustainability performance</li> </ul>	<ul style="list-style-type: none"> <li>Increase customer communication and face-time, and further improve the understanding of customer needs</li> <li>Sustainability checks in New Product Development and Product stewardship</li> <li>Sustainability performance data submitted on request</li> </ul>
<b>Employees</b>	<ul style="list-style-type: none"> <li>Share of value creation through compensation and benefits</li> <li>Employees' engagement, well-being and capabilities influence our operational performance and value creation</li> </ul>	<ul style="list-style-type: none"> <li>Performance management and development process</li> <li>Kemira European Forum</li> <li>Professional competence development for employees facing customers</li> <li>Town hall meetings</li> <li>Ethics &amp; compliance hotline</li> </ul>	<ul style="list-style-type: none"> <li>Reorganization and new ways of working</li> <li>Ways of developing competences for the future</li> </ul>	<ul style="list-style-type: none"> <li>Performance and development discussions</li> <li>Leadership development</li> <li>Professional development</li> <li>Developing systematic competence development model during 2018</li> <li>Engagement survey to be conducted in spring 2018</li> </ul>
<b>Suppliers</b>	<ul style="list-style-type: none"> <li>Share of our value creation through payments for goods and services.</li> <li>Suppliers' sustainability performance may impact our operational efficiency and business risks</li> </ul>	<ul style="list-style-type: none"> <li>Working closely with core suppliers to help them meet our sustainability performance expectations, and take corrective actions if needed</li> </ul>	<ul style="list-style-type: none"> <li>The expectations of our customers regarding responsible business practices in our supply chain</li> <li>Business ethics and compliance</li> </ul>	<ul style="list-style-type: none"> <li>Suppliers are asked to commit to Kemira Code of Conduct for Suppliers, Distributors and Agents</li> <li>Supplier sustainability assessments and audits</li> </ul>
<b>Local communities</b>	<ul style="list-style-type: none"> <li>Our value creation in the form of tax payments and employment</li> <li>The safety and environmental performance of our operations may impact the acceptance of our local presence</li> </ul>	<ul style="list-style-type: none"> <li>Dialogue and collaboration with local communities at major sites to ensure we understand and address their concerns</li> <li>Collaboration with schools and universities</li> </ul>	<ul style="list-style-type: none"> <li>Safety and environmental risks</li> <li>Employment opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Transparency</li> <li>Regular and open dialogue with local communities, e.g. open door days</li> <li>Environmental impact and process safety risk assessments</li> </ul>
<b>Regulatory bodies, trade associations, decision-makers and opinion leaders</b>	<ul style="list-style-type: none"> <li>These stakeholders have the capability to influence or make political decisions on environmental issues and legislation relevant to Kemira's business.</li> </ul>	<ul style="list-style-type: none"> <li>Memberships in industrial trade associations</li> <li>Subject-specific dialogue with regulatory bodies on national and EU level</li> </ul>	<ul style="list-style-type: none"> <li>Resource efficiency</li> <li>Chemicals safety</li> </ul>	<ul style="list-style-type: none"> <li>Participation in the European Chemical Industry Council CEFIC and its member organizations such as INCOPA (the European Inorganic Coagulants Producers Association)</li> <li>Kemira has contributed through INCOPA to the evaluation of the Urban Waste Water Treatment Directive 91/271/EEC and to the fitness check of the Water Framework Directive 2000/60/EC and to the Floods Directive (2007/60/EC)</li> </ul>

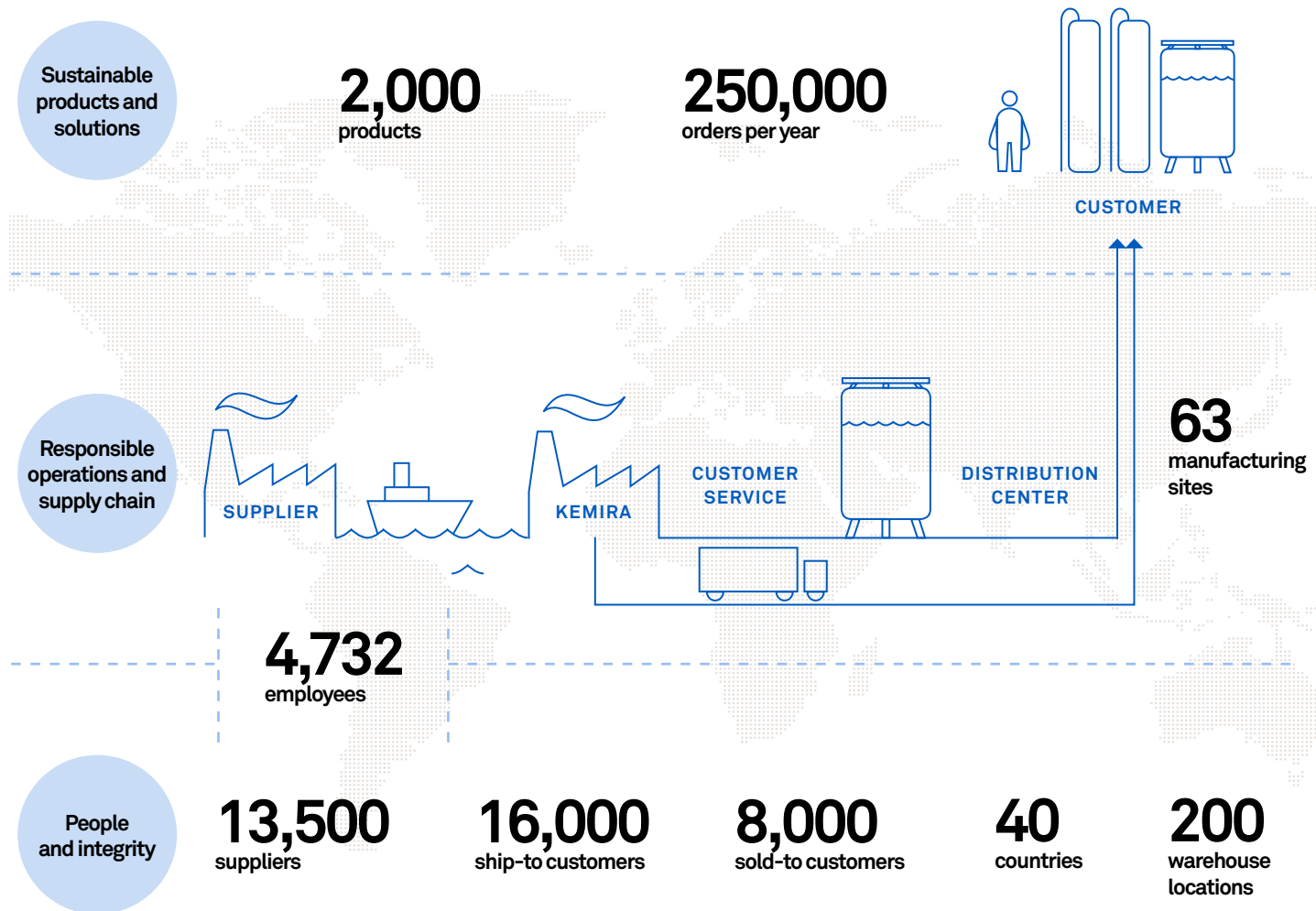
## Principal material impacts

Our corporate responsibility program addresses our principal impacts and related risks and opportunities through our business model. Our management priorities are Sustainable products and solutions, Responsible operations and supply chain, and People and integrity. The management activities are integrated into company-wide management systems.

Our vision, mission, strategic goals and choices define which customer segments we focus on, what products we manufacture, the reach of our geographical presence, and how we get our products to the market. These decisions result in various economic, environmental and social impacts either due to our own activities or as a result of our business relationships. Direct impacts relate to the performance of our own operations, while indirect impacts are generated in our supply chain and in the use of our products by our customers. We recognize that having approximately 2,000 products, 8,000 customers, 16,000 ship-to-ship customers, 13,500 suppliers, and that operating in 40 countries with sales to over 100 countries creates an environment characterized by multiple economic, environmental and social impacts.

Our principal material impacts are related to products improving our customers' sustainability, chemical safety management throughout its lifecycle, responsible management of our own operations, responsible performance and good governance throughout our supply chains, engagement and competence development of our employees and responsible business practices in our own operations or with our business partners.

## Impacts of our operation and business activities





## Description of value chain impacts

### Economic

- We generate revenue by selling chemical products for industrial uses in the pulp and paper, oil and gas, mining, and water treatment industries.
- We have a direct economic impact on suppliers and service providers through the payments we make for raw materials and services, to employees through compensation and benefits, to capital providers through dividends and interest payments, to the public sector through taxes, and to society through local community projects, sponsorships and donations. Unethical business behavior could impact Kemira's reputation and thus financial position.

### Environmental

We have a positive environmental impact through our products and solutions which enable our customers to improve their water, energy and raw material efficiency. Our main environmental risks relate to carbon emissions from our own manufacturing and in the value chain due to our business activities, and potential incidents through accidental release of chemicals or process safety deficiencies.

- Direct impacts of our manufacturing: We convert input materials into products through processes which result in wastes and emissions. The main environmental impacts of our manufacturing relate to carbon emissions, failure of process safety, and waste generation and disposal. Some of our major product lines are very energy-intensive, leading to significant carbon emissions. Potential impacts on the environment may take place through incidents such as process safety deficiencies or accidental release of chemicals.
- Direct impacts of our products: Our manufacturing and supply operations involve the transportation, handling and processing of various kinds of chemicals, including certain harmful and hazardous substances.
- Indirect impacts of our products: Global resource scarcity is an important business driver for our customers. Our customers process, extract and refine natural resources such as oil, gas, minerals or fibers. Kemira is not directly involved in the utilization of natural resources as such, but we develop and provide solutions to enable the effective utilization of these resources with the lowest possible environmental impact.
- Indirect impacts of our supply chain: Our logistics operations involve an extensive network of suppliers and customers. Upstream and downstream transportation and production of raw materials and feedstock have environmental impacts mainly through carbon emissions.

### Social

- Our main social impacts, and related risks, concern the safe use of our products along the value chain and any possible non-compliance with responsible business practices in our own operations or those of our business partners.
- Direct impacts on product responsibility: Our product portfolio includes about 2,000 products. All products and raw materials must be registered and documented according to regional, national and global legislation and standards in order to ensure they are safely used throughout their lifecycle.
- Direct impacts on workforce education and training: Our manufacturing operations are not labor intensive, but we do require qualified and skilled employees in every country where we operate. Our R&D and sales operations also require highly qualified professionals.
- Direct impacts on compliance requirements: Our external business environment is extensively regulated by legislation and industry norms covering business conduct, product life cycle management, and occupational health, safety and environmental aspects of our products and manufacturing processes.
- Indirect impacts on compliance requirements in supply chains: Our suppliers' performance in terms of labor practices, human rights and ethical business behavior can represent a risk in terms of negative indirect impacts in our value chain.

## Value chain impacts and respective GRI disclosures

	INDIRECT IMPACT		DIRECT IMPACT	INDIRECT IMPACT	
	Production of input materials and energy >	Upstream services >	Kemira's own operations >	Downstream services >	Use of Kemira products >
<b>ECONOMIC IMPACT</b>	<ul style="list-style-type: none"> <li>• Anti-corruption</li> <li>• Anti-competitive behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-corruption</li> <li>• Anti-competitive behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Economic performance*</li> <li>• Anti-corruption</li> <li>• Anti-competitive behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-corruption</li> <li>• Anti-competitive behavior</li> </ul>	
<b>ENVIRONMENTAL IMPACT</b>	<ul style="list-style-type: none"> <li>• Emissions (Scope 3)</li> <li>• Supplier performance for their environmental impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Emissions (Scope 2 &amp; 3)</li> <li>• Supplier performance for their environmental impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Materials</li> <li>• Energy</li> <li>• Water</li> <li>• Emissions (Scope 1)</li> <li>• Effluents and waste</li> <li>• Environmental compliance</li> </ul>	<ul style="list-style-type: none"> <li>• Emissions (Scope 3)</li> <li>• Supplier performance for their environmental impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Emissions (Scope 3)</li> <li>• Performance of our products and services</li> </ul>
<b>SOCIAL IMPACT</b>	<ul style="list-style-type: none"> <li>• Supplier performance for their social impacts and ethical business behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier performance for their social impacts and ethical business behavior</li> </ul>	<ul style="list-style-type: none"> <li>• Employment*, and Labor/Management relations*</li> <li>• Occupational health and safety</li> <li>• Training and education</li> <li>• Diversity and equal opportunity</li> <li>• Non-discrimination</li> <li>• Freedom of association and collective bargaining</li> <li>• Human rights assessment</li> <li>• Public policy</li> <li>• Customer health and safety: Product stewardship</li> <li>• Marketing &amp; labeling: Product &amp; service information</li> <li>• Socioeconomic compliance: Product regulatory</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier performance for their social impacts and ethical business behavior</li> </ul>	

\* Not material but reported because considered useful based on continuity

## Governance

The Management Board approves our corporate responsibility priorities, key performance indicators (KPIs) and targets. The Board of Directors is duly informed about these targets, and our related performance, and its members also approve the Business overview and GRI disclosures of Kemira's Annual Report. Responsibilities for individual targets are shared between the members of the Management Board (MB), as outlined here.

The Director, Corporate Responsibility is responsible for management processes relating to economic, environmental, and social topics. The Corporate Responsibility Management Team, chaired by Director, Corporate Responsibility, supports and coordinates the implementation and follow-up of our corporate responsibility program.

	Areas of accountability	Responsibility by position
<b>Sustainable products and solutions</b>	<ul style="list-style-type: none"> <li>Economic impact (Tax policy)</li> </ul>	<ul style="list-style-type: none"> <li>Chief Financial Officer</li> </ul>
	<ul style="list-style-type: none"> <li>Innovation</li> <li>Product stewardship</li> </ul>	<ul style="list-style-type: none"> <li>Chief Technology Officer</li> <li>EVP, Operational Excellence</li> </ul>
<b>Responsible operations and supply chain</b>	<ul style="list-style-type: none"> <li>Energy efficiency and carbon emissions                             <ul style="list-style-type: none"> <li>Carbon Index (Emissions from our own energy production, Scope 1)</li> <li>Carbon Index (Emissions based on purchased energy, Scope 2)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Segment Presidents</li> <li>EVP, Operational Excellence</li> </ul>
	<ul style="list-style-type: none"> <li>Employee safety target</li> </ul>	<ul style="list-style-type: none"> <li>EVP, Operational Excellence</li> </ul>
	<ul style="list-style-type: none"> <li>Responsible supply chain</li> </ul>	<ul style="list-style-type: none"> <li>EVP, Operational Excellence</li> </ul>
<b>People and integrity</b>	<ul style="list-style-type: none"> <li>Leadership and employee engagement targets</li> </ul>	<ul style="list-style-type: none"> <li>EVP, Human Resources</li> </ul>
	<ul style="list-style-type: none"> <li>Responsible business practices</li> </ul>	<ul style="list-style-type: none"> <li>Group General Counsel (reports directly to the CEO and is a secretary of the MB)</li> </ul>

## Sustainable products and solutions



Kemira's purpose is to help our customers to improve their water, energy and raw material efficiency by introducing sustainable products and solutions to the market. For us, it is also important that all health, safety and environmental aspects of our products throughout their lifecycle are properly addressed in all what we do.

### Our products

#### Our commitment

Products and solutions addressing the sustainability requirements of our customers are a crucial part of Kemira's long-term strategy and core business. Our innovation capability is measured through an innovation sales target to ensure portfolio renewal with more sustainable new products. We define innovation sales as new chemistries, product upgrades and tailored chemistries sold into new applications, developed and launched within the last five years.

#### Material topics

Sustainable products, materials

#### Principal risks

Our products and solutions present an opportunity for Kemira because we focus on chemistries and technologies to improve the water, energy and raw material efficiency. Our innovation work is addressing global trends for recycling, e-commerce, growing middle class, regulation and scarcity of resources. Our potential risks relate to new disruptive technologies by competitors, slow renewal of our product portfolio and lack of differentiation, and failure to commercialize new products and service concepts.

#### Management approach

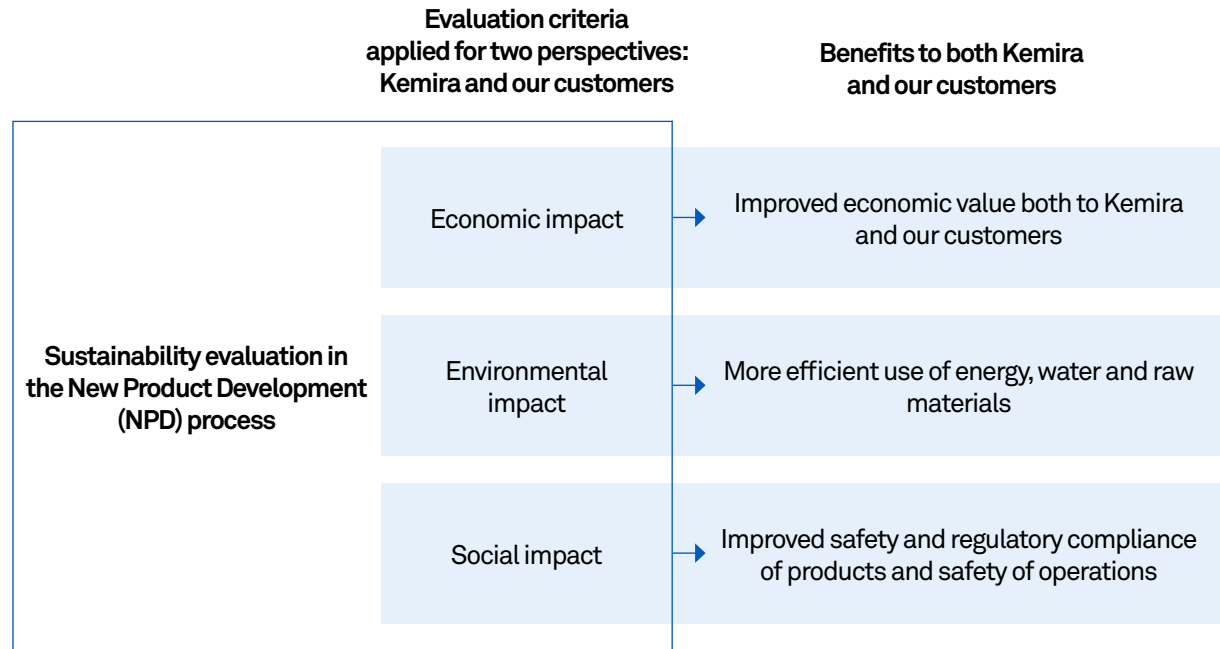
The use of our products and solutions benefits our customers by:

- Optimizing product quality and yield
- Enhancing process and energy efficiency
- Ensuring that water quality meets end-use specifications and regulatory requirements

Our business model is business-to-business, and we sell products that are used in industrial scale processes mainly as processing aids. Only in a few cases, namely in paper and packaging board and in waste water sludge, our products are a part of the end-product.



## Sustainability evaluation throughout the new product development process



All our new product development projects apply sustainability checks at each project stage. We prioritize solutions that have improved sustainability performance compared to solutions already available on the market. We are actively looking for alternative, more sustainable raw materials, and provide expertise and application know-how to improve our customers' resource efficiency and product quality.

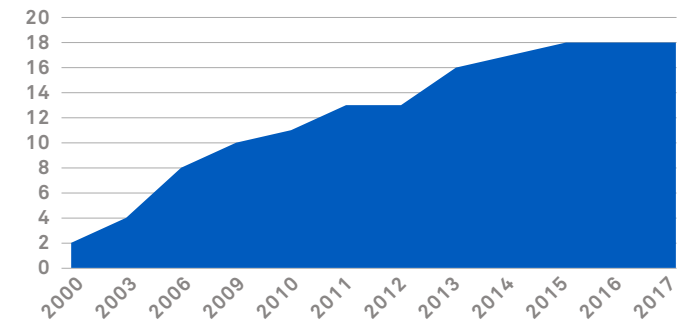
Kemira's New Product Development (NPD) process is following a stage-gate model. The process starts with idea generation, and continues with five stages and decision

gates until commercialization and closing of project. Successful projects must demonstrate both improved sustainability and business benefits at each decision gate to justify the project's continuation, and ultimately the product launch. Our sustainability evaluations examine the economic, environmental and social impacts of any new product both on Kemira's operations and on our customers' operations. The NPD process also aims to identify and evaluate more sustainable alternatives for raw materials, in terms of safety and sources.

## Key achievements in 2017

- In 2017, we reached our innovation sales target of 10% of total revenue. Our innovation revenue totaled EUR 248 million. Commercialization of new sustainable products or solutions have succeeded in replacing the sales of old bestselling products from the previous five years.
- New NPD process governance model was taken in use in Q1/2017 in order to improve new innovations time to market.
- Our products aimed for water treatment have positive environmental impacts by preventing and reducing eutrophication and pollution of water bodies. In 2017, the volume of water purified with Kemira's water treatment chemicals for public and industrial purposes was equal to the annual need of pure water to 320 million people.

Water purified with Kemira products  
1,000 million m<sup>3</sup>



The volume of water purified with Kemira products is based on the share of product sales to water purification applications and using an experience based average chemicals dosage. It is assumed that in Europe the average water consumption is about 155 liters per day per person.

## Product stewardship

### Our commitment

Proactive product stewardship throughout the products' lifecycle. Our management commitment is to ensure the safe use of our products throughout their lifecycle.

### Material topics

Customer health and safety; Marketing and labeling; Socioeconomic (product) compliance.

### Principal risks

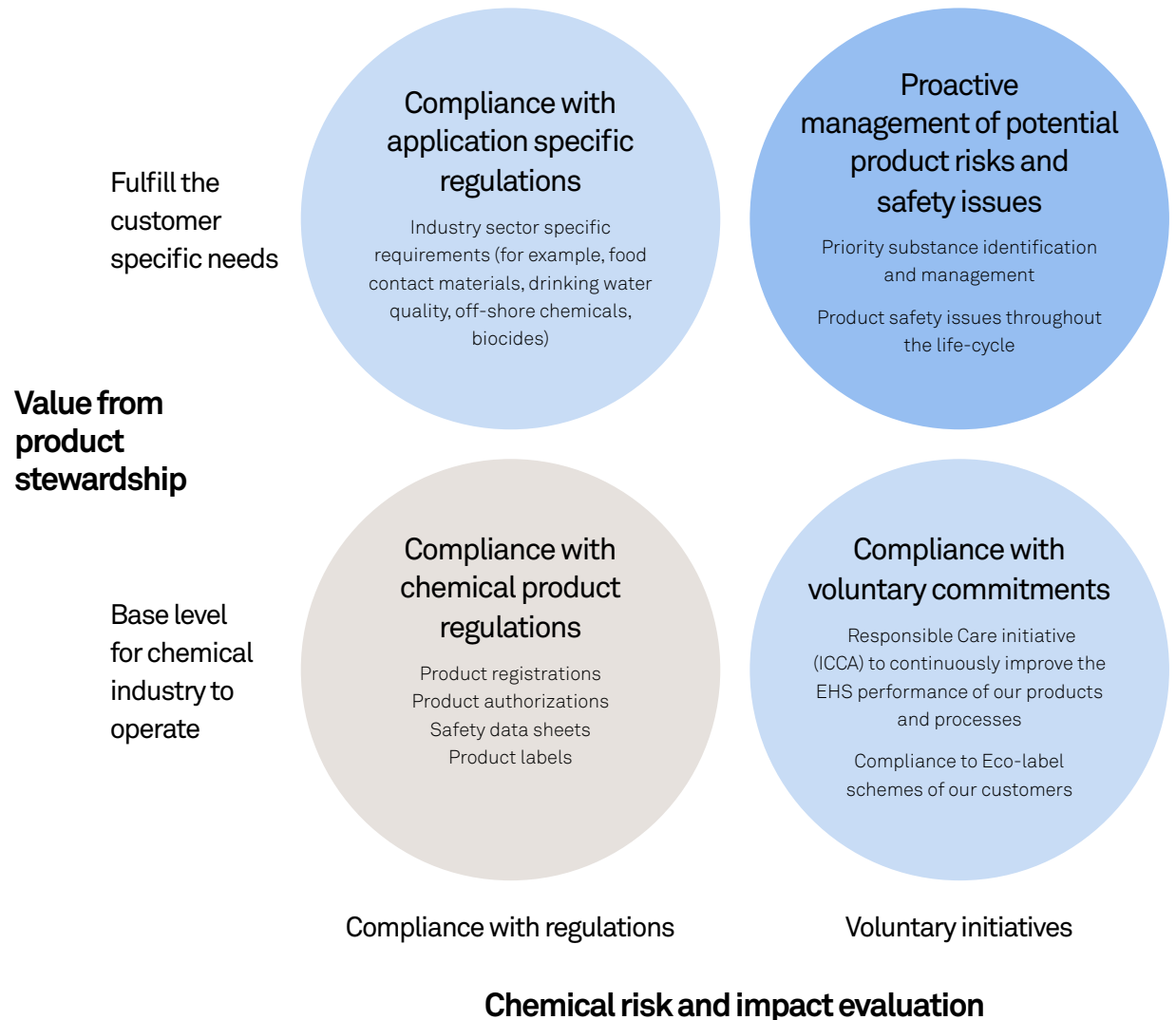
Regulatory requirements related to product safety are always evolving. These requirements can both influence and reflect our stakeholders concerns. The outcome of regulatory processes can lead to authorization or restrictions of use which can be a risk to Kemira.

### Management approach

Kemira's Product Stewardship Policy defines the minimum requirements for our operations to ensure that our products can be safely used by our stakeholders, and that chemical risks and their impacts are incorporated in decision-making relating to our business. Product stewardship is the key pillar in the Responsible Care program.

Product Stewardship involves the proactive management of the health, safety and environmental aspects of a product throughout its lifecycle. Our customers have their own health, safety and environmental requirements for their input materials, and they typically follow several voluntary

## Product stewardship management approach



certification schemes, including eco-labeling schemes, which set further expectations on our product offerings. Public discussion and concerns relating to specific chemicals and their hazards also affect our approach to product stewardship and chemical management. Product stewardship provides a platform that helps us to identify risks at an early stage and manage those risks along the value chain to fulfill the expectations of different stakeholders.

## **Priority substance management**

We actively track our portfolio for priority substances that are subject to future regulatory restrictions or associated with particular concerns, and prepare management plans for these substances. Our priority substance management plan aims to define the specific risks associated to each substance, examine options for managing these specific risks, and formulate action plans for the preferred options. These options to mitigate risks may include e.g. substitution, phase-out or limiting exposure.

## **Product lifecycle management**

All our products need to comply with all applicable chemical regulatory requirements in the countries where we manufacture and/or sell chemicals. Assessments examining regulatory compliance, human health impacts, safety issues and environmental protection aspects all form part of our Product Lifecycle Management process from conception and development to manufacturing and sales, and finally to product elimination.

## **Commitment to animal welfare**

Kemira is committed to reducing, refining and replacing animal testing wherever possible. Kemira does not itself perform any animal experimentation in-house. All animal testing commissioned by Kemira is done to the highest of animal welfare standards following national and international legislation on the protection of animals. Some Kemira chemicals which are used by our customers as raw materials in the production of cosmetics or consumer goods may have been tested on animals where specifically required by legislation or for product safety purposes.

## **Product regulatory compliance**

The manufacturing and sale of chemicals are widely regulated around the world. Continuous follow-up of the regulatory development activities is the prerequisite for the business compliance and plays a key role in ensuring product safety for customers, the value chain and stakeholders.

## **Key achievements in 2017**

- We have continued to prepare for the remaining REACH registrations in the EU, and we are able to meet our obligations before the third and final transitional registration deadline at the end of May 2018. By end 2017, we have submitted 85% of substance dossiers being identified relevant at present for registration. Already registered substances are also regularly evaluated by the authorities. This can result in additional testing requirements, new risk management measures or

inclusion in the REACH authorization process. During 2017, one substance, used as a raw material, received authorization for specified usage for the next 12 years.

- Priority substance management model was defined.
- Product Lifecycle Management (PLM) system was upgraded to integrate product master data, documents and basic product management as a central information hub to facilitate communication and collaboration throughout the product lifecycle.

## Responsible operations and supply chain



Safety and minimized environmental impact are of utmost importance to our operations. High-performing environmental, health, safety and quality management is fundamental to Kemira. It is an integral part of our daily business management and daily work. We want to work as a responsible company within our entire value chain, from procurement of raw materials to the manufacturing and delivery of the right quality products to our customers on time and safely.

### Principal risks

Chemical operations involve harmful and hazardous substances which are converted to other substances or products in on-line or batch processes controlled with a wide range of physical and chemical parameters. Malfunction in processes can lead to incidents with possible impacts on environment, or employees health and safety, or our assets. This can take place due to human behavior, technical failures or process safety deficiencies. Some of our major product lines are very energy-intensive with environmental impact through carbon emissions.

## Responsible operations

### Commitment

Ensuring responsible operations to protect our assets, our environment, employees, contractors, customers and communities.

### Material topics

Energy; Water; Emissions; Effluents and waste; Environmental compliance; Occupational health and safety.





## Management approach

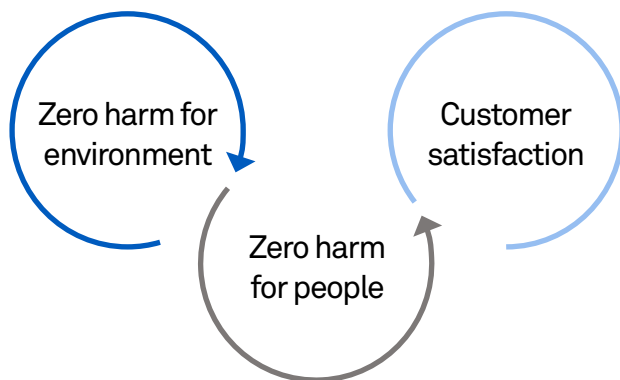
High-performing Environmental, Health, Safety and Quality (EHSQ) management is fundamental to Kemira. It is integrated to Kemira's business management and daily work. We want to work as a responsible company within our entire value chain, from sourcing of raw materials to the delivery of final products to our customers. We want to manufacture and deliver the right quality product to our customers on time and safely. The way to reach this goal is to work systematically, to do proactive risk assessment, identify improvement needs and engage our employees and business partners to implement precautionary EHSQ behaviour.

Our daily EHSQ work and practises are guided by legislation and regulations, our EHSQ Vision and Policy, and by the expectations of our stakeholders in our operating environment.

## Integrated management system



## Our EHSQ vision



## EHSQ policy

The EHSQ Policy sets out our responsibilities to shareholders, customers, employees, business partners and society. They set the overall framework for the way we conduct business, with integrity and respect for people, the environment and communities. All ventures that we operate must conduct their activities in line with our policy.

## Our EHSQ management systems

Our aim is to globally bring together all of our operations under the Kemira Integrated Management System. Our Code of Conduct and respective policies cover all areas of Kemira operations and define the framework for our Integrated Management System. The framework defines requirements and accountabilities at each level of the organization, and sets out the procedures and processes people are required to follow. Compliance with the Integrated Management

System is ensured by regularly monitoring the performance indicators and by conducting internal and external EHSQ audits and management reviews. The management reviews are performed by segment or regional management and by the Management Board. We have several internal KPIs with annual targets, for example: Loss of primary containment (LOPC), environmental incidents, transport incidents, and process incidents.

Kemira has a principle that all operations under our Integrated Management System fulfill international standards ISO 9001 for Quality, ISO 14001 for Environment and OHSAS 18001 for Occupational Health & Safety. Our EHSQ Management System is externally audited through a three-year audit scheme.

Our energy policy is part of our EHSQ policy. Our ISO 50001 Energy Management System is applied to the most energy intensive manufacturing sites located in the European Union in order to meet the requirements of the EU's Energy Efficiency Directive.

## Process safety management

Process Safety Management (PSM) is a critical element in Kemira's operations to avoid and manage consequences of process incidents or accidental releases of chemicals.

Kemira continuously improves PSM practices and processes. Our PSM standard (2014) sets out minimum requirements for all Kemira locations above any applicable legal requirements such as the USA's OSHA/PSM or EU's Seveso-III Directive. It resulted in improved reporting of

Process Incidents, and has been driving improvement plans at all of Kemira's locations.

## Key achievements in 2017

### Management system audits

In 2017, we had 60 internal and external management systems audits (58 in 2016), including manufacturing sites, major office locations and R&D centers. 85% of the manufacturing sites were certified to ISO 9001 for Quality; 84% for ISO 14001 for Environment and OHSAS 18001 for Occupational Health & Safety.

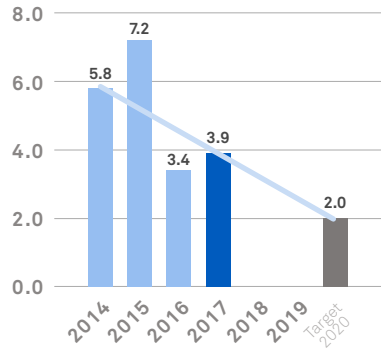
In 2017, the manufacturing sites in San Giorgio (Italy) and Fredrikstad (Norway) were certified to ISO 50001 (Energy Management Standard). Previously, Kemira Oyj's energy management system in Europe and the manufacturing sites in Helsingborg (Sweden), and Äetsä and Joutseno (Finland) have been certified against ISO 50001.

## Safety in the workplace

Our long-term vision for safety is "Zero harm for people". Our performance target is to be in the "World Class" in Safety. This means that we want to achieve TRIF  $\leq 2.0$  by 2020.

Unfortunately, we saw a rise in the number of reported injuries in 2017, compared to 2016. By the end of year, we reported 3.9 injuries per million working hours. However, a long-term improvement trend is visible. One of our challenges was to manage contractors' safety; it will be one of our special focus areas in 2018.

## Our safety performance (TRIF)



TRIF = number of total recordable injury frequency per million hours, Kemira + contractors.

During 2017, we continued our work for improving health and safety culture to prevent incidents and mitigating health and safety risks. The Behavior Based Safety program (BBS) was initiated in 2016 and continued in 2017. The overall aim of this program is to assist Kemira in improving safety performance by focusing on the action of people. Generally, behavioral human factors are involved in more than 90% of incidents. In September 2017, Phase Two was introduced and 11 additional Kemira sites joined the BBS program. We will also continue in 2018, and around 20 manufacturing locations will be added to this BBS program.

Safety was an important part of our internal audit and review systems. We further developed our internal EHS standards and focused on the implementation of safety critical standards. We also improved safety awareness through regional and global communications regarding

incidents, and their root causes, to avoid repeating similar types of incidents.

In 2017, all Kemira employees had safety as a bonus KPI, based on safety performance (TRIF) and hazardous conditions and activities reporting (leading indicator).

## Climate change – Energy and carbon emissions

In 2017, our operations in Finland accounted for 39% of our total energy consumption. The USA accounted for 36%, and other countries 25%.

Approximately 90% of our total energy consumption is used by 14 large manufacturing sites. These sites also account for 85% of our CO<sub>2</sub> emissions. A substantial portion of our energy management activities is focused on these most energy-intensive sites, which include seven sodium chlorate manufacturing plants in Finland, USA, Uruguay and Brazil. Sodium chlorate plants use approximately 90% of the electricity we purchase. Electricity prices consequently play an important role in the capacity utilization planning of our chlorate plants. The globally high demand for pulp has increased the need for sodium chlorates as pulp bleaching agents, and has contributed to the maintaining of our high level of investments in chlorate production.

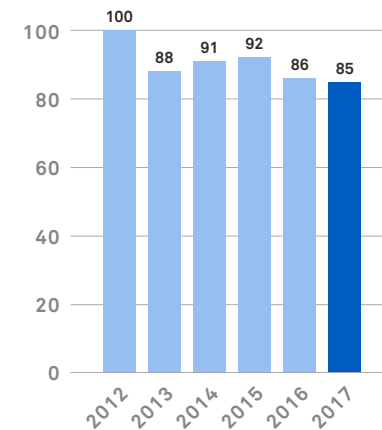
## Kemira’s carbon reduction target

Kemira introduced a climate change target in 2014 to reduce the Kemira Carbon Index by 20 percentage points by the end of 2020, compared to the baseline year 2012. The key measures to reduce our carbon dioxide (CO<sub>2</sub>) emissions include:

- Purchasing electricity and steam, which are generated using renewable, or less carbon-intensive energy sources
- Shifting our use of fuels towards less carbon-intensive energy sources
- Improving energy efficiency at our manufacturing sites

In 2017, the Kemira Carbon Index decreased to 85 (baseline year 2012: 100). We achieved a slight decrease in the carbon index compared to 2016, due to increased use of carbon neutral energy sources and continuous implementation of energy efficiency projects.

## Kemira Carbon Index Based on Scope 1 and Scope 2 emissions

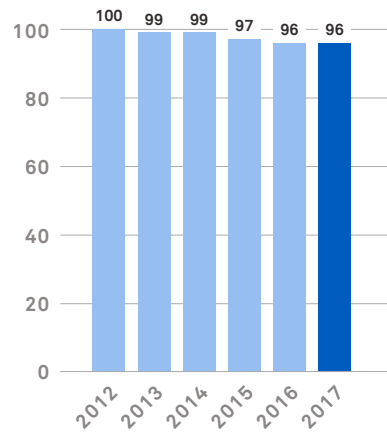


The Kemira Carbon Index measures our CO<sub>2</sub> performance both on a consolidated basis and for individual manufacturing sites. It includes 14 large manufacturing sites covering approximately 90% of energy consumption (14 in 2016). The index covers the CO<sub>2</sub> emissions of fuel consumption for direct energy production at our sites (“Scope 1” emissions), as well as emissions from purchased steam and electricity (“Scope 2”), but it excludes direct emissions from chemical processing and transportation (upstream/downstream). The index is independent of the impacts of any changes in production volumes, but may be affected by the product mix.

## Kemira energy efficiency

Our Energy Efficiency Index enables us to monitor energy efficiency both on a consolidated basis and for each major energy consuming site, reflecting the improvements we have achieved.

### Kemira Energy Efficiency Index



The Kemira Energy Efficiency Index measures the ratio of energy use and production normalized to a 2012 benchmark for our 14 large manufacturing sites covering approximately 90% of energy consumption (14 in 2016). The index is not affected by changes in production volumes, but may be affected by the product mix.

## Our energy efficiency enhancement program – E3plus

Energy costs amount to approximately 10% of our total sourcing spend. By continually improving energy efficiency at manufacturing sites, we are consistently reducing our energy usage and equivalent costs. During 2017, we continued upgrading our E3plus (Energy Efficiency Enhancement) program established in 2010. The E3plus program aims to reduce the overall specific energy consumption (measured as kWh per tonne of product) at all of our manufacturing sites.

The key focus areas of the E3plus program are:

- Continuing the global alignment of energy efficiency management across all Kemira sites
- Focused and thorough E3 Energy Reviews to identify improvement projects and support their implementation at our manufacturing sites
- Technical and economic evaluation of investment projects to improve energy efficiency
- Further development of the Kemira energy efficiency management system, facilitating ISO 50001 certification in selected major energy consuming sites

During 2016-2017, we have established and empowered a global energy management team (EMT), whose members represent manufacturing sites, as well as our global energy sourcing management. The EMT coordinates, steers and supports energy management activities across all regions. Our energy efficiency measures and activities have a special

focus on sites, which have the highest energy consumption. During 2017, site-specific energy efficiency targets were defined for the largest energy consuming sites, based on energy consumption data collected in 2015-2017, the findings of E3 Energy Reviews and the availability of resources.

In 2017, we continued to focus on large-scale manufacturing processes, with investments made in more energy efficient equipment and production lines. The continuous modernization of the process equipment used in our highly energy-intensive sodium chlorate plants, especially those in Joutseno (Finland), Äetsä (Finland) and Fray Bentos (Uruguay) has enabled us to sustain a desired energy efficiency level. In 2017, the manufacturing sites in San Giorgio (Italy) and Fredrikstad (Norway) were certified to ISO 50001 (energy management standard). Previously, Kemira Oyj's Energy Management System in Europe and the manufacturing sites in Helsingborg (Sweden), and Äetsä and Joutseno (Finland) have been certified to ISO 50001.

Energy savings were additionally achieved during 2017 through the implementation of 23 projects (20 in 2016) across Kemira's operations. The resulting energy savings totaled 16,296 MWh (11,068 MWh in 2016) with cost savings of EUR 0.6 million (EUR 0.5 million in 2016). The cumulative cost savings that were achieved through about 480 such initiatives completed globally since 2010, now total EUR 9.8 million.

## Responsible energy sourcing

The Kemira sites using the highest shares of the electricity we purchase are our energy intensive chlorate manufacturing sites in Finland and the United States. Our chlorate sites in Finland count for 42% (41% in 2016) of total purchased electricity during 2017.

The electricity price risk is mitigated through strategic investments in energy-generating companies, and by hedging a portion of our energy and electricity spend. Kemira owns shares in the Finnish energy companies Pohjolan Voima Oy (PVO) and Teollisuuden Voima Oyj (TVO). We purchase the rest of the electricity we use in Finland from Nord Pool. In other countries, energy is purchased from local suppliers, taking into account the favorability of the energy source. During 2017, Kemira received Guarantee of Origin certificates for 80,360 MWh (111,678 MWh in 2016) of electricity purchased from hydropower suppliers. All the certificates granted to Kemira were cancelled i.e. made non-tradable, with their benefits exclusively redeemed by Kemira.

## Supply chain

### Our commitments

Ensuring compliance with responsible business practices in our supply chain.

### Material topics

Supplier environmental assessment; Supplier social assessment.

### Principal risks

Our supplier management program aims to manage and develop performance and good governance throughout our supply chains, to reduce our risks related to the availability of raw materials, price volatility, and non-compliance to responsible business practices.

### Description of our supply chain

Our Sourcing function is globally responsible for strategic spend management, while our Supply chain management function provides supply chain related services on a regional level to our business segments.

- Our Sourcing activities cover the identification and selection of suppliers, the consequent negotiations and contract management, and the management of supplier

relationships. Our supplier selection criteria are based on cost competitiveness, short-term operational excellence, long-term business stability as well as sustainability performance.

- Our Supply chain management activities cover all supply chain related services to our business segments once the supplier relationship has been established by our Sourcing function. Supply chain management services include Customer service, Logistics, Supply chain planning, and Procurement. The Supply chain management function has regional units that each provide all the services needed within their respective regions.
- The total spend of the sourcing categories Direct materials and Indirect goods and services, amounted to about EUR 1.9 billion in 2017. The Direct materials cover all raw materials and energy, while Indirect goods and services include all non-raw material related spending, for example, on equipment, services, and logistics.
- We have approximately 13,500 suppliers consisting of 1,600 Direct material suppliers and 11,900 Indirect suppliers. Despite the large number of suppliers, approximately 10% of all suppliers account for around 80% of the total spend. Geographically, approximately half of our suppliers reside in Europe.

STRUCTURE OF KEMIRA'S SUPPLIER BASE	Direct materials	Indirect goods and services
<b>Number of suppliers, approximately</b>	<b>1,600</b>	<b>11,900</b>
EMEA	720 (45%)	6,400 (~54%)
Americas	580 (36%)	4,000 (~33%)
APAC	300 (19%)	1,500 (~13%)
<b>Number of suppliers that form 80% of the category spend</b>	<b>190 (~10%)</b>	<b>1,220 (~10%)</b>

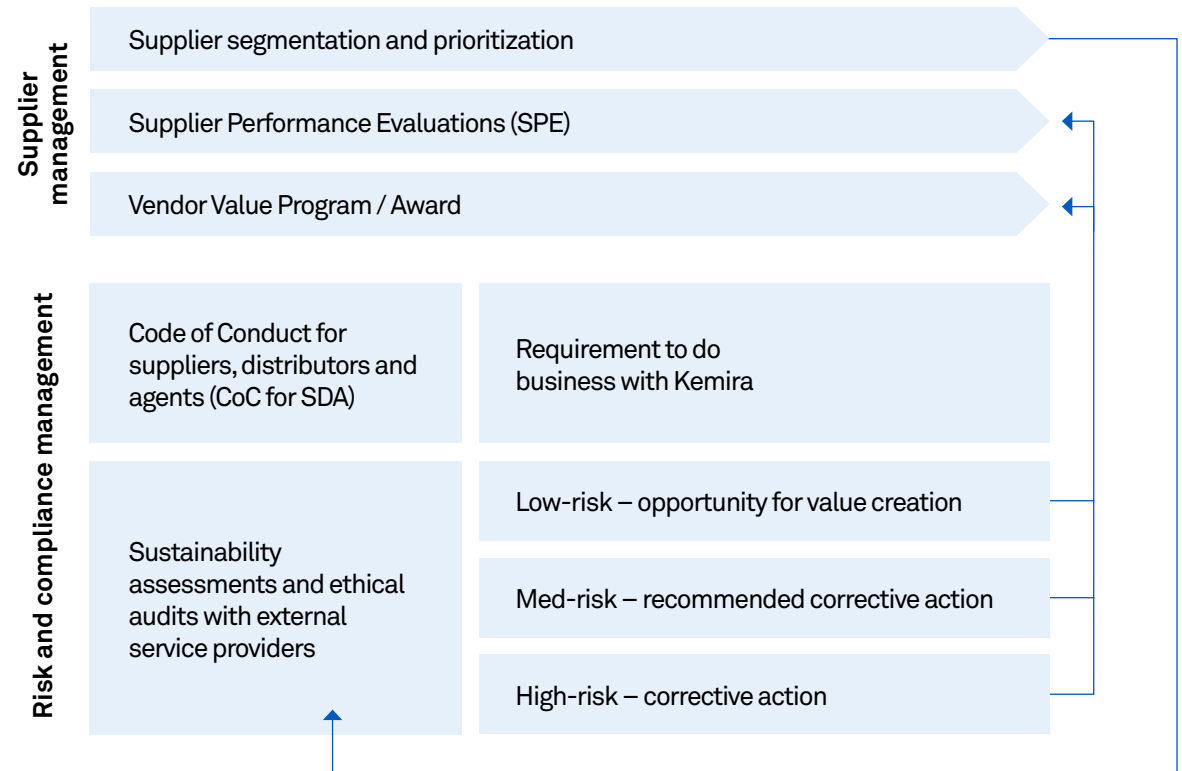
## Management approach

Supplier management and Supplier risk and compliance management are cornerstones of our sustainable sourcing roadmap that ensure responsibility in our supply chain.

Our **Supplier Management** focus is on improving economic performance, anticipating risk and initiating approaches with suppliers that are responsible and innovative. It is described in three main processes: Supplier Segmentation, Supplier Performance Evaluations (SPE) and Vendor Value Program.

- Supplier Segmentation is a foundation not only for supplier risk and compliance management, but also for supplier relationship development. Our suppliers are segmented into four categories: strategic, critical, volume and base suppliers, and prioritized based on multi-factor risk criteria to help us better manage our suppliers and plan actions for necessary risk mitigation.
- The SPE program is our official program to collect and provide regular feedback to our suppliers both on their operational and sustainability performance. The majority of our strategic, critical and volume suppliers are part of regular supplier reviews.
- Our Vendor Value Program is to support our management of the most important supplier relationships. The program is aimed at developing capabilities that will enable us to identify, partner with, and manage those suppliers, along the various value chains associated with Kemira's product lines. In 2017, we introduced the first supplier awards based on a combination of Supplier excellence in operative performance, Contractual commitment and best value proposals provided to Kemira.

## Supplier and supplier risk and compliance management



Our **Supplier risk and compliance** management defines the requirements for the suppliers to do business with (CoC-SDA) Kemira, as well as provides tools and processes for mitigating sustainability risk with our suppliers (sustainability assessments and audits).

## **Code of Conduct for Suppliers, Distributors and Agents (COC-SDA)**

- All of our suppliers must follow our Code of Conduct for Suppliers, Distributors and Agents (CoC-SDA) in relation to all of their dealings with Kemira. This Code contains requirements on issues including responsible business conduct, respect for human rights and provision of appropriate working conditions, and environmental responsibility.
- Supplier adherence to these principles is confirmed in different stages of our Sourcing processes starting from the new supplier screening/new vendor creation process, to contracting where the commitment to our CoC-SDA is integrated in the contract templates. Finally, we have continuous monitoring in place for those contracts exceeding certain spend thresholds to make sure we are reasonably covered (GRI 308-1: Supplier Environmental assessment; GRI 414-1: Supplier social assessment).
- If we cannot otherwise confirm that the supplier adheres to acceptable ethical principles, or should a supplier refuse to give such a confirmation, an evaluation is performed by our Sourcing personnel to assess whether we need to cease all purchases from them. We follow up with suppliers who do not confirm compliance. Compliance to our CoC-SDA within our supply chain is mandatory.

## **Supplier sustainability assessments and audits**

- We use Supplier Assessments and Audits to evaluate and understand better how well our suppliers are acting in a way that is consistent with our principles and values i.e. CoC-SDA. We choose suppliers to be assessed or audited based on the supplier segmentation process and risk-based prioritization. Our aim is to have the majority of our strategic, critical and large spend suppliers evaluated via assessment or audit.
- The assessment platform is provided by an external third party company which is specialized in standardized supplier sustainability evaluation based on the principles of the UN Global Compact and the Responsible Care program.
- Supplier audits are conducted by an external auditor as an on-site audit. Audits follow the Sedex Members Ethical Trade Audit (SMETA) four-pillars method covering Labor standards, Health & Safety, Environment and Business Ethics criteria. We have targeted the conduct 25 audits during 2016-2020. The auditors summarize their findings in a detailed report which also contains a corrective action plan which is then reviewed and followed-up with the supplier as needed, and depending on the case. The assessment and audit results also feed into our SPE program and depending on the results, have different consequences. If audits or assessments indicate a high risk and room for improvement, this is also discussed with the supplier when we provide feedback on the general SPE results.

## Key achievements in 2017

- By the end of 2017, a total of 96% (89%) of Kemira's contracted repeat suppliers had signed CoC-SDAs.
- Sustainability assessments: We continued enrolling new suppliers into our Sustainability program. A total of 135 suppliers have now gone through the assessment and have recorded an average score of 55, which is higher than industry average on assessed average on the platform. Results with low scores were reviewed together with suppliers and improvement plans were made accordingly. In most cases, low scores were due to lack of supporting documentation provided by the vendor to the assessment company. Around 70% of the reassessed suppliers were able to improve their score.
- In 2017, we conducted four (4) SMETA (Sedex Members Ethical Trade Audit) audits in collaboration with an external service provider with no business stopping results. Based on the audit results, follow-up schemes and an implementation timeframe are in preparation. The majority of the corrective actions, for example, were related to health and safety and labor practices (working hours, holidays, paying minimum wage). Some of the completed corrective actions include the established child labor policy, improved safety etc. It was also noted that there are some improvement actions that Kemira has only very little influencing power over, such as working hours and overtime and those have to be reviewed on a case by case basis.
- In 2017, as part of our Vendor Value Program, the first Supplier Awards were given to best performers based on excellence in operative performance, contractual commitment, and in value propositions.
- Quality audits: Large spend suppliers also undergo quality audits, which include workplace health and safety standards, production quality and supply security. In 2017, 19 quality audits were conducted.
- For the particular case of palm oil derivatives, we are sourcing palm oil fatty acids for our AKD wax production in Yanzhou, China. The majority (~ 80%) of our fatty acid demand is covered by suppliers that are certified by the RSPO (Round Table of Sustainable Palm Oil) to comply with the RSPO Supply Chain Standard for sustainable palm oil and we are striving to further expand the portion of certified sources.



## People and integrity



Our commitment to people is our foundation for succeeding now and in the future. Integrity starts with each one of us, and this is best exemplified in our Code of Conduct.

### People

#### Our commitment

Culture and commitment to people

#### Material topics

Diversity and Equal Opportunity; Non-discrimination, Training and Education.

#### Principal risks

To implement our strategy, we must ensure that we have committed people, a strong leadership bench and the indispensable competencies in place to implement our strategy. Competence and leadership gaps could prevent Kemira from successfully executing its strategy and maintaining customer satisfaction. We need to invest in a strong culture and commitment to people to retain our talents in a highly competitive employee market.

#### Management approach

Our values and the principles of our Code of Conduct are the foundation for creating a strong company culture and commitment to people. We aim to offer employees the right mix of opportunities and challenges in a global and diverse working environment. Our result-oriented and collaborative culture empowers employees to solve the challenges of tomorrow. Together we can have a major impact on our future. Our offering to employees includes talent management, leadership development, performance management and competence development, reward and recognition, and safety and well-being.

#### Key achievements in 2017

##### Simplified way of working

During 2017, we merged the Municipal & Industrial and Oil & Mining segments into one new segment, Industry & Water. The main objectives of the change were to simplify our way of working and further improve service to our customers. We adjusted our organizational structure to support the two segment model, reduced the senior management layers and implemented other cost efficiencies. We were able to retain key leadership talent by offering them new opportunities for growth and development.



## **Employee engagement survey**

Due to the reorganization, we postponed the biennial employee engagement survey from autumn 2017 until spring 2018, to give managers at least six months with their new teams before engaging in the survey. From 2018–2020, we will begin to also look at more agile methods of getting employee feedback and employee engagement action planning.

## **Talent management and leadership development**

We have continued to build a strong leadership bench to meet our business needs in relation to executing our strategy and driving our long-term growth. Our global Talent Management process is well established. It provides a structured way to identify and develop employees with potential for leadership positions. We are working to ensure that strong development plans are in place. Our leadership development target 2016–2020 is to provide, on average, at least two leadership development activities per people manager position during the period 2016–2020. In 2017, a total of 542 such activities were realized (target = 300), representing a strong performance comparable to 2016. Leadership development activities included also on-the-job learning opportunities in corporate development projects.

## **Performance management and competence development**

Kemira's performance management process aligns our strategic targets with each employee's personal targets, performance evaluation, competencies and development plans. This process is now well-established within Kemira as part of our leadership culture, and it forms the backbone of our management system. Our employees are encouraged to take an active role in their own learning and development which includes keeping their competencies up to date in relation to their work and their career aspirations at Kemira. In 2017, we developed a continuous performance management concept using digital tools. It will be piloted in 2018. Also, as part of one corporate development project, we started the design for a sales and marketing competence development frame which will result in a more simplified and systematic approach to learning and development for customer-facing teams globally. This competence development approach will be aligned for the rest of the organization during 2018–2020.

## Integrity

### Our commitment

Ensuring compliance with Kemira Code of Conduct.

### Material topics

Anti-corruption; Anti-competitive behavior; Diversity and equal opportunity; Non-discrimination; Freedom of association and collective bargaining; Human rights assessment; Public policy.

### Principal risks

We are committed to ensuring compliance with regulatory requirements and high ethical standards. We recognize that operating in 40 countries with sales to over 100 countries creates an environment characterized by multiple ethics and compliance risks, including risk of corruption, fraud, competition compliance, trade compliance and human rights. These risks are mitigated via our global Ethics & Compliance program and related activities.

### Management approach

#### Our values and Code of Conduct

Our management approach for integrity and responsible business practices is based on our corporate values and our Code of Conduct. These principles demonstrate our commitment to conduct our business in compliance with all applicable laws and regulations, and according to ethical standards.

Our Code of Conduct sets the minimum standards of expected behavior for our employees and business partners. Our internal policies and procedures provide more detailed guidance to steer our daily work and decision-making.

Kemira's Code of Conduct was reviewed, updated and approved by the Board of Directors in 2017. The renewal of the Code was followed by an extensive global training and communication campaign. Every employee is expected to comply with Kemira's Code of Conduct. All people managers and leaders are responsible for implementing the Code within their teams. Since 2013, we have required all of our employees to regularly complete the Code of Conduct training, which is currently available in 21 languages. The new eLearning, based on our updated Code, will be launched in 2018. We also train selected employee groups on more specific compliance matters, such as anti-bribery, competition compliance and insider information.

We expect our business partners to follow our Code of Conduct for Suppliers, Distributors and Agents (CoC-SDA) in their business activities. Both of these Code of Conduct documents, as well as our corporate values can be found at [www.kemira.com](http://www.kemira.com).

### Our Ethics and Compliance Program

Our Ethics and Compliance Program aims to enhance compliance management at Kemira on a continuous basis. The program addresses all of the following measures taken to manage ethics and compliance risks:

- **Prevention:** measures that help us proactively prevent ethics and compliance risks from materializing;
- **Detection:** measures that help us detect where ethics and compliance risks have materialized or may arise;
- **Responding:** measures that help us investigate and respond to potential ethics & compliance breaches.

### Organizational structure for ethics and compliance

- Our **Ethics and Compliance** function is responsible for overseeing the effective implementation of Kemira's Ethics & Compliance program. The status of the program is also reported directly to the Audit Committee on a regular basis.
- The **Compliance Committee** oversees the management of compliance allegations to ensure fair and sufficient investigation, remediation and disciplinary action across our organization. The committee consists of Group General Counsel, EVP Human Resources, Head of Internal Audit, and Director, Ethics and Compliance.
- **Our Local Ethics and Compliance Officer Network** consists of employees across the organization who support our regional ethics and compliance activities as part of their work.

### Mechanisms for seeking ethics advice and reporting concerns

We promote a culture that encourages our employees to speak freely. We actively encourage our employees to contact their managers, local HR, Legal or Ethics & Compliance function to express their concerns and ask questions.

All of our employees have also access to an externally hosted Ethics and Compliance Hotline, which is a 24/7 service enabling them to report potential violations of our Code of Conduct or other ethical concerns. All employees can anonymously submit such reports in their own languages, by phone or through a web form, wherever such channels are not restricted by local legislation. We provide regular training and communications to our employees on all of our available channels to report concerns. The Hotline system and the process of handling the reports are managed by the Ethics & Compliance function.

The email address [responsibility\(at\)kemira.com](mailto:responsibility(at)kemira.com) can be used by third parties to report cases of potential misconduct relating to Kemira or our business partners. This information is available on our website and in the Kemira Code of Conduct for Suppliers, Distributors and Agents.

All allegations of potential violations of our Code of Conduct made in good faith will receive a fair and comprehensive investigation utilizing relevant internal and/or external assistance. Any reporting of potential Code violations is treated strictly confidentially and anonymously to the extent possible.

During 2017, 32 concerns or allegations of potential Code of Conduct violations were reported via the Ethics & Compliance Hotline, or via other channels, such as direct reporting to the Ethics & Compliance function, local HR or to the Internal Audit. 14 cases were closed with merit – these are categorized in the following tables.

CONCERNS OR ALLEGATIONS OF POTENTIAL CODE OF CONDUCT VIOLATIONS REPORTED IN 2017	Number of cases	Cases closed with merit	Cases closed without merit	Open cases as of Dec 31, 2017
Cases reported via hotline	11	3	8	0
Cases reported via other channels	21	11	9	1
<b>TOTAL NUMBER OF CASES</b>	<b>32</b>	<b>14</b>	<b>17</b>	<b>1</b>

CASES CLOSED WITH MERIT BY ISSUE CATEGORY	Number of cases
Corruption and bribery	0
Anti-competitive behaviour	0
Employee relations and fair treatment	4
Harrassment	3
Other*	7
<b>GRAND TOTAL</b>	<b>14</b>

\*Other includes following categories: conflict of interest, cyber fraud, EHSQ-issues, privacy and transactions and company records.

## Key achievements in 2017

The following initiatives have taken place as part of Kemira's Ethics & Compliance Program and related activities during 2017:

- Our revised Code of Conduct was approved by Kemira's Board of Directors in June and launched globally to all employees via comprehensive communications plan consisting of multiple learning channels such as mobile application, internal blog, videos and brochures in all local languages. All employees are required also to regularly conduct the Code of Conduct eLearning.
- We have reviewed our existing practices for effective Third party due diligence for our potential agents and distributors and introduced a new process to further

develop our third party risk management. This process includes risk assessment, evaluating and training the third parties and ensuring their commitment to our Code of Conduct.

- To strengthen our commitment to comply with export control and international sanctions, we have established new internal controls to ensure compliance and implemented a Sanctioned Party Screening process enabling to identify sanctions related restrictions followed by a proper execution of any necessary measures.
- We have initiated a privacy development program in order to ensure compliance with the EU General Data Protection Regulation (GDPR) by May 25, 2018. Actions taken during the year include designing and rolling out a data flow mapping process, designing a process and tool for conducting privacy impact assessments, and creating and revising internal documentation such as privacy statements and intra-group data transfer agreements. We have also launched an awareness-building campaign by providing targeted briefings about the upcoming law to HR, IT, Legal and Sourcing professionals, as well as general information to employees and employee representatives.

# Our performance indicators

## Economic

### ECONOMIC PERFORMANCE

#### GRI 201-1: Direct economic value generated and distributed

Kemira generates economic value from expertise, products and sustainable solutions enabling our customers to improve their water, energy and raw material efficiency. Kemira distributes the generated economic value to various stakeholders. This includes suppliers and service providers through payments for raw materials and services, employees through compensation and benefits, capital providers through dividends and interest payments, public sector through taxes, and society through local community projects, sponsorship and donations. The economic value retained is reinvested in the company for capital investments, R&D and technology development. The economic value retained decreased to EUR 118 million (184) due to the settlement for the damage claim relating to the alleged old infringement of competition law, restructuring costs and changes in net working capital.

Kemira’s financial mid- to long-term targets are above the market revenue growth (market growth estimate 2015–2020, CAGR: ~2.0%), operative EBITDA margin of 14–16% and gearing level below 60%. These group

level financial targets are translated into business goals and performance measures for each business segment and further down to individual performance targets for employees.

The management approach to economic value generated and distributed is based on the Finnish Corporate Governance Code and the Limited Liability Companies Act, which states that the purpose of a company is to generate profits for its shareholders, unless otherwise provided in the Articles of Association. The overall responsibility for

financial performance at group level belongs to the Board of Directors and CEO. Kemira has organized its global activities into two business segments, which bear full profit and loss responsibility. The segment heads are members of the Management Board. Kemira reports and discloses its financial statements in accordance with the International Financial Reporting Standards (IFRS). For detailed information, see the sections Corporate Governance Statement and the Financial Statement in the Kemira Annual Report 2017.

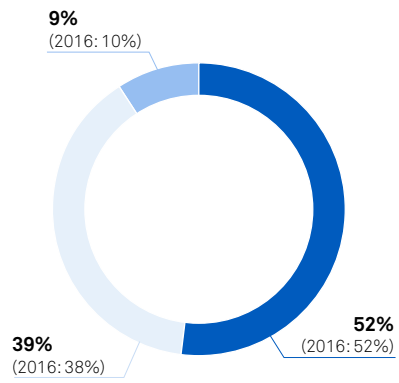
#### Economic value (cash flow based)

Stakeholder	ECONOMIC VALUE, EUR million	2017	2016	2015	2014	2013
<b>Direct economic value generated: revenues</b>						
Customers	Income from customers on the basis of products and services sold, and financial income	2,453	2,386	2,350	2,100	2,268
<b>Direct economic value distributed</b>						
Suppliers	Payments to suppliers of raw materials, goods and services	1,831	1,701	1,709	1,684	1,686
Employees	Employee wages and benefits	362	364	356	283	327
Investors & Lenders	Dividends, interests paid and financial expenses	117	114	113	112	113
Government & Public sector	Corporate income taxes	25	23	12	33	27
<b>Economic value retained</b>		<b>118</b>	<b>184</b>	<b>160</b>	<b>-12</b>	<b>115</b>

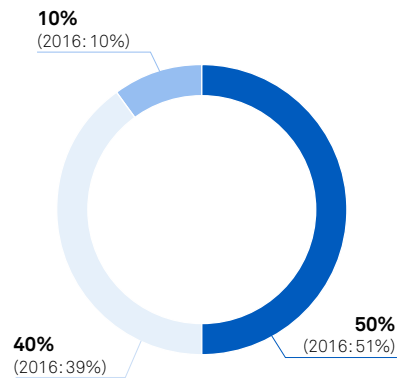
Community investments were EUR 0.23 (0.32) million through sponsorships and donations.

## Economic value distributed by region

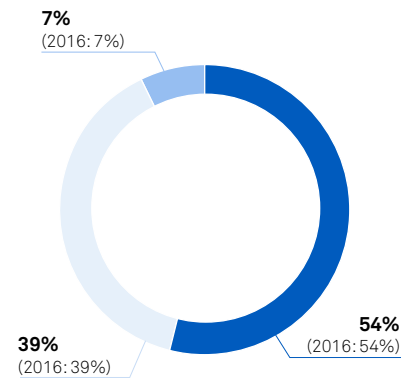
Revenue by customer location %



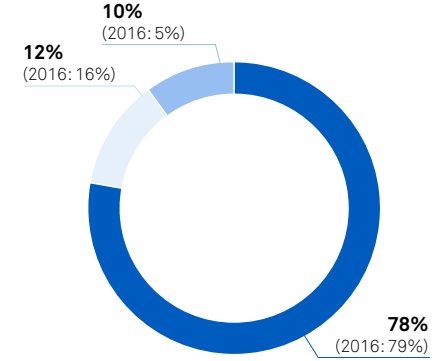
Payments to suppliers of raw materials, goods and services by region %



Employee wages and benefits by region %



Corporate income taxes by region %



- EMEA
- Americas
- APAC

## Kemira as a tax payer

Kemira's approach to tax is to support responsible business performance in a sustainable way. Taxation is one of the essential factors in our current business environment. Taxes have a significant impact on our businesses, financing and growth opportunities.

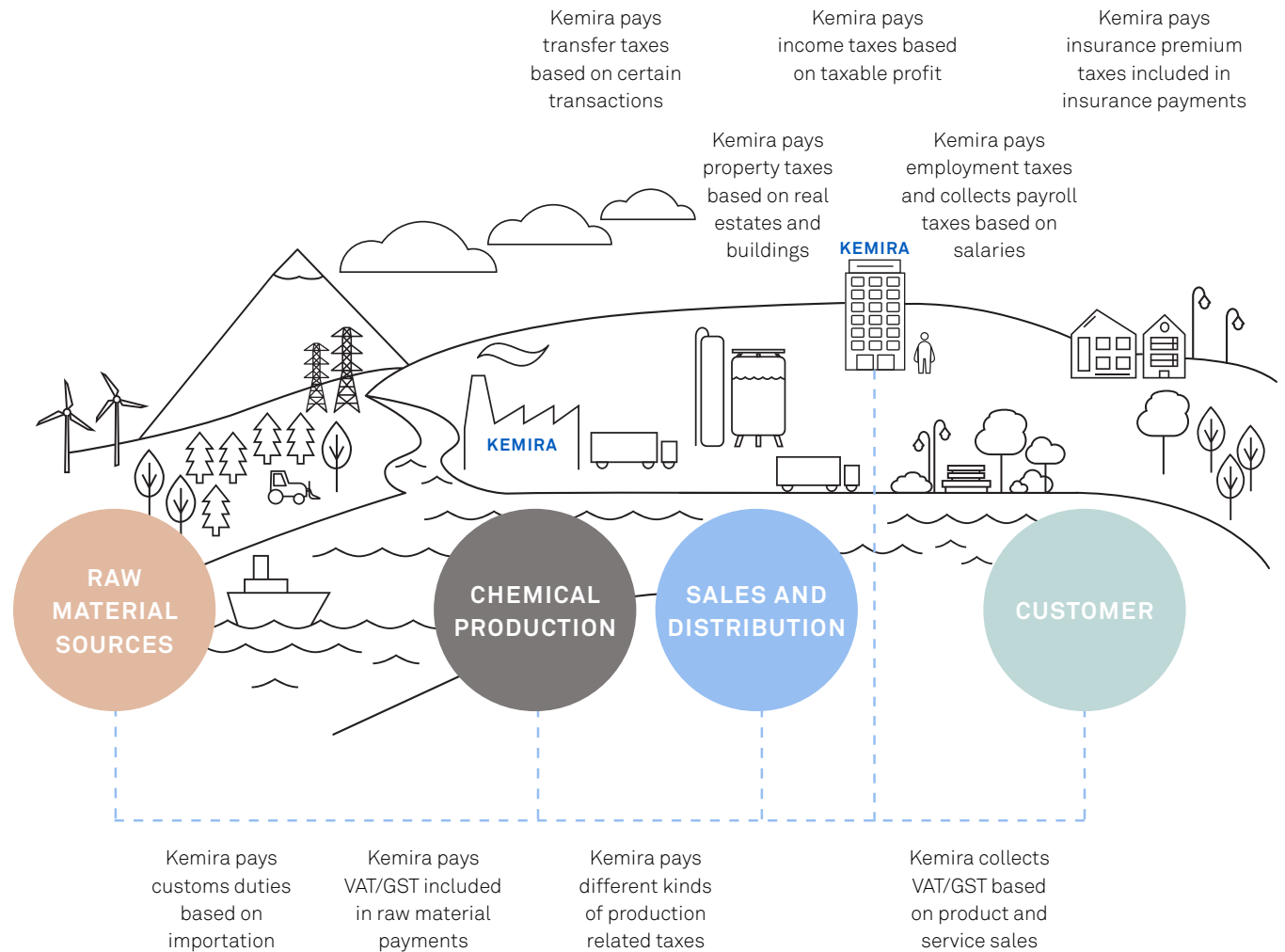
Kemira manages taxes according to the principles set in Kemira's Global Tax Policy ("Tax Policy"). The purpose of the Tax Policy is to set standards in how tax matters are managed and executed across the Kemira Group companies. The Tax Policy is aligned with our corporate strategy, values and the Kemira Code of Conduct.

The chemical industry is a capital-intensive sector, which is why it is essential to ensure that our operations and financing are arranged in an efficient and prudent manner from all tax perspectives. Kemira operates in over 100 countries and has globally subsidiaries. Our business is built upon a combination of centralized business processes and local performance. Consequently, our profits are generated both in Finland, our headquarter jurisdiction, and locally to arm's length transfer pricing principles.

## Demanding and uncertain tax environment in 2017

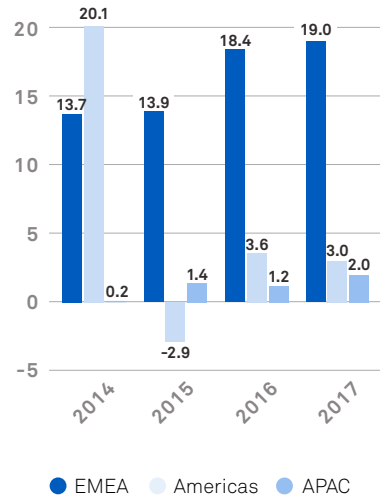
The constantly changing tax landscape causes increased complexity for corporations operating globally. Many changes around tax laws relate to the OECD's Base Erosion and Profit Shifting (BEPS) actions, the EU Commission's anti-tax avoidance directive (ATAD), as well as political reasons with regard to climate change and resource efficiency.

## Kemira tax footprint



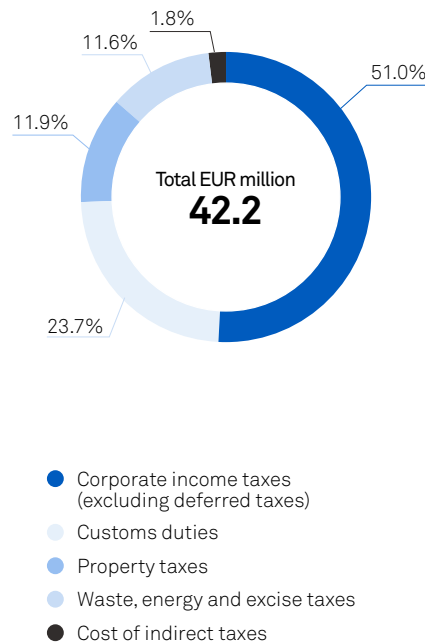
Taxes through the full value chain from raw material supply to finished goods deliveries to customers.

**Corporate income taxes**  
EUR million



In 2015, Americas was refunded the overpaid taxes of 2014.

**Estimated taxes borne 2017**  
EUR million and %



One of the most important developments in 2017 was the June signing of the OECD's Multilateral Instrument (MLI), a part of the OECD BEPS actions. Not all countries where Kemira operates signed the MLI, and the signatory countries, including Finland, also expressed reservations to the MLI.

Overall, the form of the future tax landscape is clearing up, now that both EU actions and the OECD's BEPS project are proceeding to the implementation phase. Kemira has analyzed and re-designed its tax structures to be aligned with the new requirements.

In addition, the new US tax reform legislation, signed into law in December 2017. Overall impacts of the US tax reform on Kemira's tax position shall be depend on Kemira's future growth and profitability in the US. Transition tax and base erosion and anti-abuse tax have immediate negative impacts. The US federal tax rate reduction shall have positive impact in the future.

Kemira has recognized the following general tax trends which may have an impact on our future tax position:

- Further decrease of corporate income tax rates;
- Increasing tax burden due to BEPS related international tax measures; and
- High VAT burden and spreading of implementation of VAT regimes worldwide continues.

Kemira is well prepared to be compliant with new requirements when they are enforced.

### Information about companies registered in countries considered to be tax havens

Criteria for tax haven jurisdictions have been defined by the OECD, the EU and Global Forum, although currently only the EU has published a list of jurisdictions considered as tax havens.

Kemira does not operate in tax haven countries or countries with preferential tax regimes for tax reasons. With respect to countries listed by the EU, Kemira has a subsidiary, Kemira Chemicals Korea Corporation in South Korea, where we have production and sales operations for chemicals products. We pay taxes in South Korea based on the local rules and tax laws (South Korea corporate tax rate 22%). Additionally, Kemira has a branch in Dubai, United Arab Emirates, Turkey and Columbia for sales operations.

Kemira has had some treasury activities in the Netherlands since the 1980s. We pay taxes in the Netherlands based on the local rules and tax laws (at 25% corporate tax rate). Kemira's subsidiaries are listed in the Note 6.2 of the consolidated financial statement.



In addition to registered companies, Kemira's global sourcing and sales operations continues to take place in a number of countries which are listed, like tax havens by OECD, EU and Global Forum. Because Kemira is a multinational company with operations in over 100 countries, in order to run our business efficiently, we cannot avoid business operations in these countries.

More information on our tax management is published in Kemira's Tax Footprint Report 2017 which is available at [www.kemira.com](http://www.kemira.com) > Investors.

### GRI 201-3: Defined benefit plan obligations and other retirement plans

The coverage of Kemira's defined benefit plans are reported in the Notes to the Consolidated Financial Statements: Note 4.5 Defined benefit plans. Kemira has various pension plans in accordance with local conditions and practices. The percentage of salary contributed by employee or employer to the benefit plan, and the level of participation in retirement plans are defined according to local legislation and practices.

### GRI 201-4: Financial assistance received from government

Financial assistance received from governments is reported in the Notes to the Consolidated Financial Statements: Note 2.2 Other operating income and expenses. Kemira received in 2017 EUR 0.7 million (EUR 0.8 million) in government grants mainly for R&D in Finland.

## ANTI-CORRUPTION

### GRI 205-1: Operations assessed for risks related to corruption

Kemira conducted a global ethics & compliance risk assessment in 2016, covering key business operations and functions in all regions. Anti-corruption was one of the key focus areas in the assessment and the results of the assessments were utilized in Kemira's ethics & compliance and internal audit plans for 2017. No significant risks related to corruption were identified through ethics & compliance risk assessment or internal audits in 2017.

### GRI 205-2: Communication and training about anti-corruption policies and procedures

Kemira's principles for anti-corruption are included in the Kemira Code of Conduct and in the Kemira Group Gifts, Entertainment and Anti-Bribery Policy. Both documents are available to all employees on Kemira's intranet, and the Code of Conduct is also publicly available at [www.kemira.com](http://www.kemira.com). Kemira's Code of Conduct has been approved by the Board of Directors, and as part of our mandatory and regular Code of Conduct training our anti-corruption principles are communicated to all of our employee groups and regions on a regular basis.

100% of the members of Kemira's Board of Directors have received training on our Anti-Corruption Principles during 2017.

Kemira provides mandatory Anti-Bribery training to its white collar employees, who need to have comprehensive understanding of Kemira's Anti-Corruption Principles. The table below demonstrates the scope of the training, with a breakdown by employee category and regions.

		NUMBER OF PERMANENT EMPLOYEES, NOT ABSENT	Number of employees received training on anti-corruption	% of employees received training on anti-corruption
Americas	White collars	849	824	97
	Blue collars	649	0	0
APAC	White collars	412	401	97
	Blue collars	232	0	0
EMEA	White collars	1,573	1,495	95
	Blue collars	911	0	0
<b>TOTAL</b>		<b>4,626</b>	<b>2,270</b>	

We expect our suppliers and other business partners to conduct their business with integrity and commit to Kemira's Code of Conduct for Suppliers, Agents and Distributors (CoC-SDA) in their business activities with Kemira. The CoC-SDA states that Kemira expects its business partners to adhere to local legislation and avoid corruption in all its forms. We aim to communicate the CoC-SDA to all of our suppliers, agents and distributors. All of our suppliers (engaged with a SAP Purchased Order) receive a written reference to Kemira's Code of Conduct

for Suppliers (Code) as part of the Kemira general terms of purchase on the back the Purchase Order. Our anti-corruption policy has been communicated to all of them through the Code.

**GRI 205-2: Total number and percentage of suppliers that the organizations anti-corruption policy has been communicated to**

REGION	TOTAL NUMBER OF SUPPLIERS*	Total number suppliers* that our anti-corruption principles have been communicated to	Percentage of suppliers* that our anti-corruption principles have been communicated to
EMEA	7,343	7,343	100%
Americas	4,776	4,776	100%
APAC	1,837	1,837	100%
<b>TOTAL</b>	<b>13,956</b>	<b>13,956</b>	<b>100%</b>

\*The numbers include suppliers engaged with a SAP Purchase Order. In addition to SAP transactions, some small purchases are processed via the travel claim process.

**GRI 205-3: Confirmed incidents of corruption and actions taken**

There were no confirmed incidents of corruption or public legal cases regarding corruption in 2017.

**ANTI-COMPETITIVE BEHAVIOR**

**GRI 206-1: Legal actions for anti-competitive behavior, anti-trust, and monopoly practices**

In 2017, Kemira had the following pending or completed legal actions initiated under national or international laws

designed for regulating anti-competitive behavior, antitrust, or monopoly practices:

Kemira was a defendant in a damage claim litigation in Dortmund, Germany, where CDC Cartel Damage Claims Hydrogen Peroxide SA and CDC Holding SA (jointly referred to as “CDC”) claimed compensation for alleged damages relating to alleged historical infringements of competition law in the hydrogen peroxide business between 1994 and 2000. In October 2017, the parties to the litigation reached a settlement whereby Kemira agreed to pay to CDC as compensation and costs the total of EUR 12.7 million.

Kemira continues to defend itself against a legal action filed by CDC against Kemira Chemicals Oy (former Finnish Chemicals Oy) in Amsterdam, Netherlands, related to an alleged historical infringement of competition law in the sodium chlorate business by Finnish Chemicals Oy between 1994 and 2000. Kemira acquired Finnish Chemicals in 2005.

Two class action suits and four individual suits have been filed in the United States during 2015–2017 based on alleged violations of antitrust laws relating to the sale of certain water treatment chemicals. In some of those suits, Kemira has been named as a defendant among other defendants. The four individual legal suits are opt-out suits, whereby the plaintiffs opted out of one of the class actions. According to Kemira’s assessment, all of these class action suits and individual suits against Kemira in the US lack merit.

## Environmental

### MATERIALS

#### GRI 301-1: Materials used by weight or volume

#### GRI 301-2: Recycled input materials used

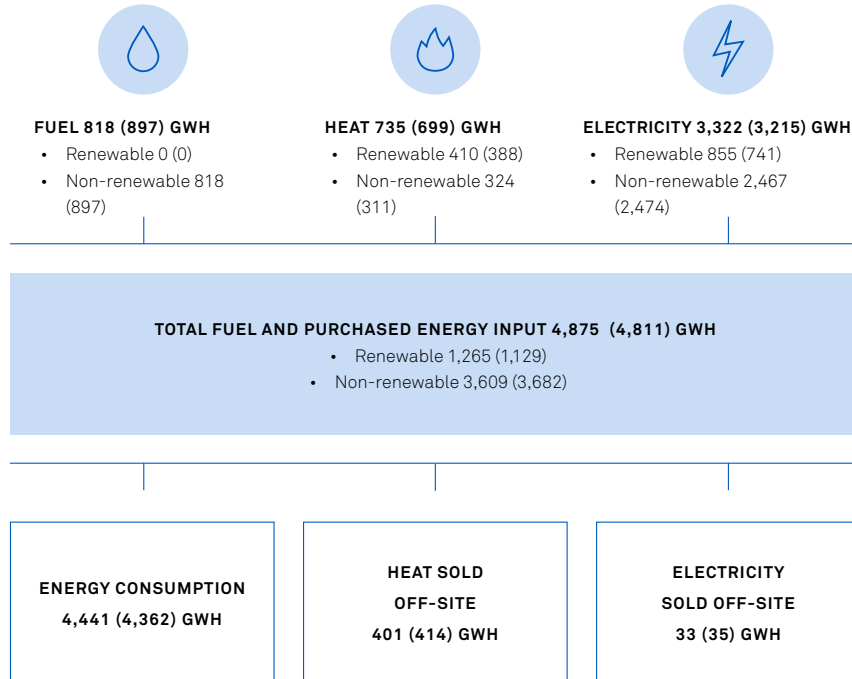
The majority of Kemira's raw materials are non-renewable materials. The renewable materials used include mainly starches, tall oil, and fatty acid derivatives.

The recycled input materials used by Kemira are industrial by-products and recycled materials from external partners. These materials include inorganic materials such as scrap iron, ferrous sulphate and spent pickling liquor bath, and organic materials such as tall oil and by-product fatty alcohols. Industrial by-products are mainly from smelters, as well as steel and metal manufacturing. Inorganic by-products and recycled materials are mainly used in the production of inorganic coagulants, the product group used in water treatment. In this product group, recycled input material may account for up to 70 – 80% of all raw materials used. In 2017, approximately 23% (27% in 2016) of raw materials across all Kemira business segments were recycled input materials. Volume of recycled materials dropped because we were not able to buy ferrous sulphate due to the cease of the operations of one of our main suppliers.

MATERIALS, million tonnes	GRI	2017	2016	2015	2014	2013
<b>TOTAL MATERIALS USED</b>	301-1	<b>3.510</b>	<b>3.536</b>	<b>3.293</b>	<b>3.276</b>	<b>3.521</b>
Non-renewable materials	301-1	<b>3.438</b>	3.458	3.222	3.217	3.461
Renewable materials	301-1	<b>0.072</b>	0.078	0.071	0.059	0.060
Share of renewable materials, %	301-1	<b>2.1</b>	2.2%	2.2%	1.8%	1.7%
<b>RECYCLED INPUT MATERIALS USED</b>	301-2	<b>0.799</b>	<b>0.945</b>	<b>0.904</b>	<b>0.897</b>	<b>0.911</b>
<b>Industrial by-products and recycled material from external partners</b>						
Share of recycled materials, %	301-2	<b>22.8%</b>	26.7%	27.5%	27.4%	25.9%

## CLIMATE CHANGE: ENERGY AND CARBON EMISSIONS

### Energy balance



### Energy consumption by geography in 2017



### GRI 302-1: Energy consumption within the organization

### GRI 302-3: Energy intensity

### GRI 302-4: Reduction of energy consumption

ENERGY BALANCE, GWh	GRI	2017	2016*	2015	2014	2013
<b>TOTAL FUEL AND PURCHASED ENERGY INPUT</b>		<b>4,875</b>	<b>4,811</b>	<b>4,141</b>	<b>4,107</b>	<b>4,555</b>
Consumed fuel as energy source		<b>818</b>	<b>897</b>	<b>579</b>	<b>542</b>	<b>491</b>
Non-renewable	302-1a	<b>818</b>	897	570	542	491
Renewable	302-1b	<b>0</b>	0	8	0	0
Purchased electricity	302-1c	<b>3,322</b>	<b>3,215</b>	<b>2,935</b>	<b>2,820</b>	<b>2,799</b>
Non-renewable		<b>2,467</b>	2,474	2,301	2,282	2,249
Renewable		<b>855</b>	741	634	539	550
Purchased heat and steam	302-1c	<b>735</b>	<b>699</b>	<b>627</b>	<b>745</b>	<b>1,265</b>
Non-renewable		<b>324</b>	311	262	148	1,048
Renewable		<b>410</b>	388	365	596	217
<b>TOTAL FUEL AND PURCHASED ENERGY INPUT BY SOURCE</b>	302-1a, b	<b>4,875</b>	<b>4,811</b>	<b>4,141</b>	<b>4,107</b>	<b>4,555</b>
Non-renewable		<b>3,609</b>	3,682	3,133	2,972	3,789
Renewable		<b>1,265</b>	1,129	1,008	1,135	767
<b>TOTAL ENERGY SOLD</b>		<b>434</b>	<b>449</b>	<b>424</b>	<b>396</b>	<b>429</b>
Heat <sup>1</sup> sold off-site	302-1d	<b>401</b>	414	390	366	384
Electricity sold off-site	302-1d	<b>33</b>	35	35	31	44
<b>TOTAL ENERGY CONSUMPTION<sup>2</sup></b>	302-1e	<b>4,441</b>	<b>4,362</b>	<b>3,717</b>	<b>3,711</b>	<b>4,127</b>
<b>CHANGE IN TOTAL ENERGY CONSUMPTION<sup>3</sup></b>	302-4	<b>79</b>	<b>645</b>	<b>6</b>	<b>-416</b>	<b>128</b>
Production volume, 1,000 tonnes		<b>5,380</b>	5,028	4,840	4,587	4,809
<b>ENERGY INTENSITY, GWh per 1,000 tonnes of production<sup>4</sup></b>	302-3	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.9</b>

\* Updates to 2016 data were provided by sites during 2017 data collection. At the beginning of 2016, Kemira has included the use of hydrogen as a fuel in boilers as non-renewable consumed fuel energy source.

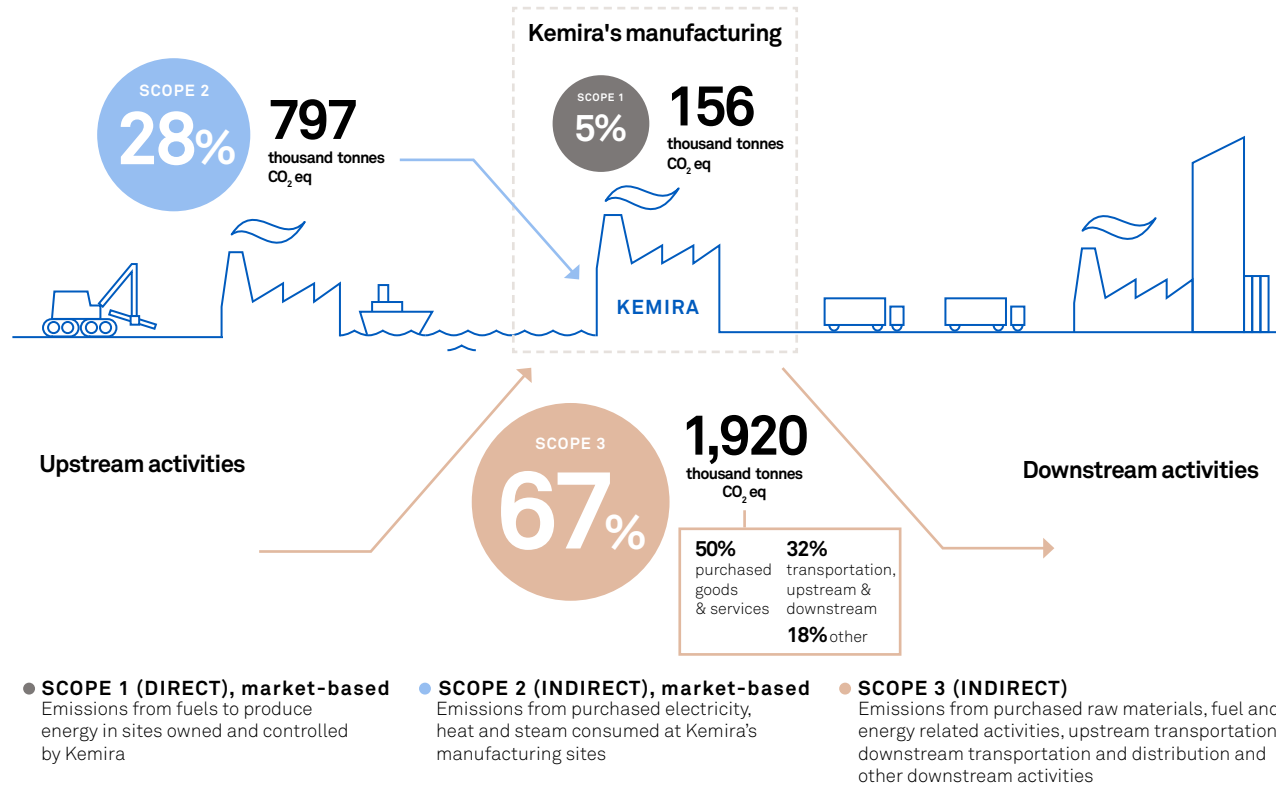
1 Sum of steam, district heat, condensate, and other heat delivered off-site.

2 The amount of fuel consumed plus purchased electricity and heat minus heat and electricity sold. Self-generated electricity generated at 2 sites is consumed on site. Therefore, it is not included in the calculation. The primary reason for the increase in total energy consumption is increased production volume.

3 Comparison of total energy consumption to the previous year.

4 Kemira has calculated the energy intensity by dividing total energy consumption with the annual production volume. Energy intensity is strongly dependent on the types of production mix.

## Greenhouse gas (GHG) emissions in Kemira's value chain



Kemira's GHG emissions are primarily carbon dioxide (CO<sub>2</sub>), and negligible emissions of methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). Kemira estimates GHG emissions using factors in terms of CO<sub>2</sub> equivalent (CO<sub>2</sub>eq.) and does not specifically estimate and report mass emissions of CH<sub>4</sub> and N<sub>2</sub>O.

Direct (Scope 1) GHG emissions from Kemira's manufacturing sites are from the following sources:

- Generation of electricity, heating, cooling and steam: these emissions result from the combustion of fuels in stationary sources, such as boilers and internal combustion engines, and
- Emissions from physical or chemical processing of raw materials and chemicals

Kemira's manufacturing sites generally use low-carbon intensive fuels such as natural gas, propane, and diesel fuel. On-site production of electricity, heating, cooling, and steam at most Kemira manufacturing sites is minimal.

Indirect (Scope 2) GHG emissions include, but are not limited to, the CO<sub>2</sub> emissions from the generation of purchased or acquired electricity, heating, cooling, and steam consumed by an organization. Furthermore, many sites purchase or acquire electricity, heating, cooling, and steam resources from either the local municipal authority or from a separate manufacturing facility located within the same industrial complex.

Other indirect (Scope 3) GHG emissions are a consequence of Kemira's activities, but occur from sources not owned or controlled by our company.

## Emissions by geography in 2017, Scope 1 and Scope 2, market-based



## **Carbon emission trends**

Scope 1 emissions in 2017 were consistent with 2016 emissions despite an increase in production compared to 2016. Kemira maintained emissions at the 2016 levels through the use of less carbon-intensive fuels where possible. Scope 2 emissions also remained consistent with 2016 levels due to continued improvements in energy efficiency and a higher share of purchased energy with lower GHG emissions levels (renewable sources) compared to 2016. The overall GHG emissions intensity is consistent with historical levels despite continued increases in production (7% increase in production compared to 2016, and a 12% increase in production compared to 2013).

Scope 3 emissions in 2017 are consistent with previous emissions within the level of accuracy associated with the calculation methodology. Purchased goods and services (including capital goods) cover 50% (49%), and transportation and distribution emissions (upstream and downstream) 32% (34%) of our Scope 3 emissions. Waste generated and transported by our plants increased to 4% (2%) of overall Scope 3 emissions.

**GRI 305-1: Direct (Scope 1) GHG emissions**

**GRI 305-2: Energy indirect (Scope 2) GHG emissions**

**GRI 305-3: Other indirect (Scope 3) GHG emissions**

**GRI 305-4: GHG emissions intensity**

**GRI 305-5: Reduction of GHG emissions**

<b>GREENHOUSE GAS (GHG) EMISSIONS, CO<sub>2</sub>eq 1,000 tonnes</b>	<b>GRI</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
<b>TOTAL GHG EMISSIONS<sup>1</sup></b>		<b>2,873</b>	<b>2,685*</b>	<b>2,646</b>	<b>2,496</b>	<b>2,651</b>
Direct (Scope 1) GHG emissions <sup>2a</sup>	305-1	156	165*	169	144	137
Change		-9	-4*	25	7	-10
Biogenic Direct (Scope 1) GHG emissions <sup>2b</sup>	305-1c	0				
Change						
Energy indirect (Scope 2) emissions: market-based <sup>3a</sup>	305-2	797	790**	767	771	904
Change		7	23	4	-133	-46
Energy indirect (Scope 2) emissions: location-based <sup>3b</sup>		1,049	999*	988		
Change		50	11*			
Other indirect emissions: Scope 3 <sup>4a</sup>	305-3a	1,920	1,730*	1,710	1,581	1,609
Change		190	20*	129	-28	15
Other indirect emissions: Scope 3 Biogenic emissions <sup>4b</sup>	305-3c	0				
Change						
<b>CHANGE IN TOTAL GHG EMISSIONS</b>	<b>305-5</b>	<b>188</b>	<b>39*</b>	<b>150</b>	<b>-155</b>	<b>-41</b>
Production volume, 1,000 tonnes		5,380	5,028	4,840	4,587	4,809
<b>GHG EMISSIONS INTENSITY, tCO<sub>2</sub> per tonnes of production<sup>5</sup></b>	<b>305-4</b>	<b>0.5</b>	<b>0.5</b>	<b>0.6</b>	<b>0.5</b>	<b>0.6</b>

\* Minor updates to 2016 data were provided by sites during 2017 data collection.

\*\* Adjusted due to an error associated with emissions from purchased electricity produced by burning waste.

Since 2013, GHGs are reported as CO<sub>2</sub> equivalent (eq). In previous years, only CO<sub>2</sub> emissions were reported.

1 Scope 1 + Scope 2 market-based + Scope 3.

2a GHG emissions from sources that are owned or controlled by Kemira (Scope 1 of the WRI/WBCSD GHG Protocol). GHG emissions are calculated as CO<sub>2</sub>eq which includes CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>, NF<sub>3</sub>.

2b GRI Standard specifies reporting of biogenic emissions reported starting in 2017.

3a GHG emissions from the generation of purchased electricity, steam and heat that is consumed by Kemira (revised Scope 2 of the WRI/WBCSD GHG Protocol). Market-based emissions are used for target setting and following progress. Location-based emissions are also shown, but these are not used for other indicators. GHG emissions are calculated as

CO<sub>2</sub>eq which includes CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>, NF<sub>3</sub>. The sources for the emission factors used are the IEA, the UK government's Department for Environment, Food and Rural Affairs (DEFRA), Motiva Ltd. and energy utility companies.

3b Location based Scope 2 emissions were calculated first time in 2015.

4a GHG emissions from Kemira's value chain (Scope 3 of WRI/ WBCSD GHG Protocol). Minor changes have occurred for previous years as more updated data was available for this report.

4b GRI Standard has introduced requirement of disclosure of biogenic emissions, which Kemira started to report in 2017.

5 Kemira has calculated the GHG emissions intensity as the ratio of total GHG emissions per production volume. Direct GHG emissions (Scope 1), indirect GHG emissions from energy consumption (Scope 2 market-based) and other indirect GHG emissions (Scope 3) are included.

<b>OTHER INDIRECT (SCOPE 3) GHG EMISSIONS BY CATEGORIES, CO<sub>2</sub>eq 1,000 tonnes</b>	<b>GRI</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
<b>TOTAL SCOPE 3 EMISSIONS</b>	305-3d	<b>1,920</b>	<b>1,730*</b>	<b>1,710</b>	<b>1,580</b>	<b>1,610</b>
1. Purchased goods and services		<b>960</b>	840	870	760	770
2. Capital goods*		<b>*</b>	*	*	*	*
3. Fuel and energy related activities		<b>240</b>	230	230	240	220
4. Upstream transportation and distribution		<b>240</b>	220	200	200	220
5. Waste generated in operations		<b>80</b>	40	20	20	20
6. Business travel		<b>5</b>	10	10	10	10
7. Employee commuting		<b>10</b>	10	10	10	10
8. Upstream leased assets (leased offices)		<b>10</b>	10	10	10	10
9. Downstream transportation and distribution		<b>370</b>	370*	350	330	340
11. Use of sold products		<b>0</b>	0	0	0	0
12. End-of-life treatment of sold products		<b>2</b>	2*	0	0	0

\* Minor updates to 2016 data were provided during 2017 data collection.

Some Scope 3 history data was updated during 2017 calculation processes since more updated information was available. The updates were made in categories 3, 5 and 9. The impact of the updates on 2016 Scope 3 results was +3%, mainly due to updated data for category 9.

The calculation is based on the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard and a supporting guidance document Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain. GHG emissions are calculated as CO<sub>2</sub>eq. The sources for the emission factors used include the guidance document for the Chemical Sector, the DEFRA, the IEA, Ecoinvent, CEFIC and ECTA. Data covers all of Kemira's production sites according to Kemira consolidation rules. The margin of error for Scope 3 calculations is +/- 15%. CEFIC = The European Chemical Industry Council; ECTA=The European Chemical Transport Association.

NOTE: Category 10 Processing of sold products is not calculated because it cannot be reasonably tracked; Category 13 Downstream leased assets is not relevant to chemical sector; Category 14 Franchises is not relevant to chemical sector; Category 15 Investments: No information available.



## WATER

**GRI 303-1: Water withdrawal by source**

**GRI 303-3: Water recycled and reused**

**GRI 306-1: Water discharge by quality and destination**

### Water management approach

Through our EHSQ Policy, Kemira strives to minimize water consumption and minimize negative impacts of water discharge activities on the quality of receiving water bodies. Kemira's manufacturing processes require water primarily for use as cooling water and process water. Cooling water is approximately 92% of the total water withdrawal. Five sites which take cooling water from surface waters with return back to the original source account for 85% of total cooling water intake.

Where possible, water is recycled and/or reused at Kemira's sites to reduce water consumption. Kemira is continuously evaluating opportunities to decrease water consumption through process optimization projects, for example, in all our upgrade and new production line projects.

Wastewater and cooling water discharges at the manufacturing sites are subject to regulatory and permitting requirements. Wastewater is treated in accordance with local legislation and regulations. Wastewater generated from Kemira's manufacturing processes is primarily treated in external wastewater treatment plants prior to

discharge to a waterbody. Cooling water does not usually require treatment. In 2017, there were no significant fines or non-conformities with environmental laws or regulations or claims from external wastewater treatment plant authorities against Kemira.

### Water risk assessment

Kemira conducted a water risk assessment for the first time in 2014 to define the potential impact both to our operations due to water scarcity, and to local water resources due to our operations. The assessment was carried out at 54 sites globally by using the Global Water Tool developed by the World Business Council for Sustainable Development (WBCSD) to identify a site's location in extremely water-scarce areas, and the GEMI Local Water Tool to identify site-specific water risks. The 2014 results indicated that Kemira operations pose a low risk to local water resources while water scarcity may pose a potential business discontinuity risk to Kemira operations at one manufacturing site.

In 2017, Kemira conducted a second assessment by using the World Resources Institute's Aqueduct global water risk mapping tool to identify water risks. The mapping covered our 63 manufacturing sites. The results indicated that our withdrawals will not cause significant affect in any water sources for the following reasons:

- About 92% of total water withdrawal is used as cooling water and none of Kemira's discharges are known to

have, or are likely to have, significant impacts on the water body and associated habitats and users;

- Based on location of the manufacturing sites, the overall water risk was rated "Low" for 2%, "Low to medium" for 70%, "Medium to high" for 24% and "High" for <5% of the 63 manufacturing sites; and
- The manufacturing sites covering 99% of total water withdrawal are located in areas with "Low" or "Low to medium" overall water risk.

### Water withdrawal and discharges trends

The total water withdrawal decreased by approximately 4% from 2016 and by approximately 38% since 2013. The water withdrawal intensity (m<sup>3</sup> per tonnes of production) decreased by approximately 10% from 2016 and by approximately 45% since 2013. Water intensity reduction between 2013 and 2014 is due to divestment of formic acid production in Oulu.

The chemical oxygen demand (COD) discharge increased by approximately 12% from 2016. The biological oxygen demand (BOD), Nitrogen (N) and Phosphorus (P) discharges remained at the same same level as in 2016. The discharge of suspended solids increased to 4 tonnes from 1 tonne in 2016. The discharge of other (eg. heavy metals, chlorides) pollutants decreased approximately 6% from 2016.

WATER BALANCE, million m <sup>3</sup>	GRI	2017	2016	2015	2014	2013
<b>WATER WITHDRAWAL BY SOURCES, TOTAL</b>	303-1	<b>97.7</b>	<b>102</b>	<b>98</b>	<b>104</b>	<b>158</b>
<b>Sources of process water</b>		<b>8.1</b>	<b>8.5*</b>	<b>8.4</b>	<b>7.5</b>	<b>6.3</b>
Surface water		3.9	4.2*	4.2	3.7	1.5
Ground water		1.0	1.1	1.3	1.1	0.4
Rainwater		0.0	0.1	0.0	0.0	0.1
Waste water from another organization		0.0	0.0	0.0	0.0	0.1
Municipal water suppliers		2.4	2.4	2.4	2.2	2.2
Other		0.7	0.8	0.5	0.5	2
<b>Sources of cooling water</b>		<b>89.6</b>	<b>93.5</b>	<b>89.4</b>	<b>96.7</b>	<b>152.0</b>
Surface water		83.7	88.0	83.6	93.3	146
Ground water		2.0	1.6	2.3	0.3	2
Rainwater		0.0	0.0	0.0	0.0	0
Waste water from another organization		0.0	0.0	0.0	0.0	0
Municipal water suppliers		0.2	0.1	0.2	0.2	1
Other		3.7	3.7	3.3	2.9	3
<b>WATER RECYCLED AND REUSED, TOTAL</b>	303-3a; 306-1a	<b>16.7</b>	<b>20.4</b>	<b>16.9</b>	<b>25.9</b>	<b>74.6</b>
Water recycled back in the same process		13.5	17.2	13.8	23.0	74.5
Water recycled in a different process, but within the same facility		2.8	2.8	3.1	2.9	0.1
Water reused in another facility	306-1a.iii	0.4	0.4	0.1	0.0	0.0
Share of total water recycled and reused, % <sup>1</sup>	303-3b	17%	20%	17%	25%	47%
<b>WATER DISCHARGES BY DESTINATION, TOTAL</b>	306-1a.i	<b>75.0</b>	<b>75.2</b>	<b>72.8</b>	<b>73.0</b>	<b>2.1</b>
External treatment of wastewater <sup>3</sup>		1.6	1.5	1.5	1.6	1.7
Own treatment of wastewater <sup>3</sup>		0.6	0.6	0.5	0.5	0.4
Discharged with no treatment required (e.g., cooling water)		72.8	73.2	70.8	70.9	NA**
<b>Unspecified water losses<sup>2</sup></b>		<b>6.0</b>	<b>6.5</b>	<b>8.1</b>	<b>5.3</b>	<b>NA**</b>
Production volume, 1,000 tonnes		5,380	5,028	4,840	4,587	4,809
<b>WATER WITHDRAWAL INTENSITY, m<sup>3</sup> per tonnes of production</b>		<b>18.2</b>	<b>20.3</b>	<b>20.2</b>	<b>22.7</b>	<b>32.9</b>

\* Minor updates to 2016 data were provided by sites during 2017 data collection. The figures presented are based on data collected directly from Kemira's sites.

The calculations have been made according to GRI Standards. The figures presented are based on data collected from Kemira's sites.

Source of water used for purposes besides process and cooling are not included in the water balance since they comprise less than 1% of total water withdrawal.

\*\* Cooling water discharges not included in the data collection before 2014.

<sup>1</sup> Water recycled and reused is calculated as a percentage of the total water withdrawal as specified in Disclosure 303-1.

<sup>2</sup> Balance = Unspecified water losses such as water evaporated. Calculated as Water withdrawal minus Water reused and recycled minus Water discharged. Kemira aims to have a minimum 90% accuracy on the water balance. First reported in 2014 when data for discharge of cooling water became available.

<sup>3</sup> Further description of volume by destination (e.g., river, sea) is not provided since the values are typically less than 5% of total.

Water intensity reduction between 2013 and 2014 is due to divestment of formic acid production in Oulu.

TOTAL WATER DISCHARGES BY QUALITY, tonnes	GRI	2017	2016	2015	2014	2013
Chemical Oxygen Demand (COD)	306-1a.ii	38	34	16	15	16
Biological Oxygen Demand (BOD)	306-1a.ii	0	0	1	2	1
Nitrogen (N)	306-1a.ii	3	3	2	2	2
Phosphorus (P)	306-1a.ii	1	1	1	1	1
Suspended solids	306-1a.ii	4	1	2	5	2
Other (e.g., heavy metals, chlorides) <sup>1</sup>	306-1a.ii	291	308	9	1	1
Total Organic Carbon (TOC) <sup>2</sup>	306-1a.ii	1				

The calculations have been made according to GRI Standards. Data limited to wastewater discharges from own treatment. Kemira reports discharge quality data only from sites required by environmental laws and regulations or other requirements to monitor these parameters.

<sup>1</sup> In 2016, these releases consisted of chlorides at some sites. The increase in tonnes in the "Other" category is related to primarily to one site experiencing a significant increase in discharge volume compared to 2015 and to the availability of more accurate analytical data.

<sup>2</sup> First reported in 2017.

## OTHER AIR EMISSIONS AND WASTE

### GRI 305-6: Emissions of ozone-depleting substances (ods)

### GRI 305-7: Nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), and other significant air emissions

Nitrogen oxides (NO<sub>x</sub>) emission has remained practically at the same level as in 2016 and decreased by approximately 13% since 2013. Sulfur oxides (SO<sub>x</sub>) emission has decreased by approximately 8% from 2016 and approximately 37% since 2013.

RELEASES INTO AIR, tonnes	GRI	2017	2016	2015	2014	2013
Nitrogen oxides (NO <sub>x</sub> ) <sup>1</sup>	305-7a.i	161	160*	194	206	185
Sulfur oxides (SO <sub>x</sub> ) <sup>2</sup>	305-7a.ii	77	84	83	86	122
Volatile organic compounds (VOC) <sup>3</sup>	305-7a.iv	549	783*	430	661	682
Other air emissions <sup>4,5</sup>	305-7a.vii	99	173*	36	59	65
Particulates (PM)	305-7a.vi	18	11	14	16	16
Persistent organic pollutants (POP) <sup>5</sup>	305-7a.iii	0				
Hazardous air pollutants (HAP) <sup>5</sup>	305-7a.v	13				
Ozone-depleting substances <sup>6</sup>	305-6	0	0	0	0	0

\* Minor updates to 2016 data were provided by sites during 2017 data collection. The figures presented are based on data collected directly from Kemira's sites.

1 NO<sub>x</sub> consists of nitric oxide and nitrogen dioxide.

2 SO<sub>x</sub> consists of sulfur dioxide and sulfur trioxide.

3 VOC is a sum of volatile organic compounds as defined in EU Directive 1999/13/EC. VOC increases are primarily associated with the site that is the largest emitter of VOC in Kemira. The site's production rate increased in 2016, and the site improved the accuracy of the emissions calculation methodology for VOC.

4 Other standard categories of air emissions identified in relevant regulations. New reporting requirement starting in 2017. Includes former reporting requirement of Volatile Inorganic Compounds (VIC), which was reported as the sum of ammonia, hydrogen chloride and six other simple inorganic compounds through 2016. GRI Standard no longer requires reporting of VIC. VIC increases are primarily associated with the site that is the largest emitter of VIC in Kemira. The site's production rate increased in 2016, and the site improved the accuracy of the emissions calculation methodology for VIC.

5 New reporting requirement starting in 2017. Changes in emissions between Other air emissions, POP, and HAP may be attributable to how emissions are regulated in a specific location. For example, acrylonitrile is specifically regulated under the term "HAP" in the United States and would be reported as such. However, acrylonitrile may not be regulated using the term HAP in another country and may be reported under Other air emissions.

6 A value of zero represents emissions equal to or greater than 0 and less than 0.5 tonnes. Emissions prior to 2017 were associated with one manufacturing site. In 2017, that site replaced the ODS material with a non-ODS material.

## GRI 306-2: Waste by type and disposal method

Through our EHSQ Policy, Kemira strives to minimize the amount of industrial and municipal waste generated through consistent material flow management processes and improvements to the efficiency of manufacturing processes. Waste in Kemira is disposed of, recycled and reused in compliance with statutory requirements.

### Hazardous waste

Ten manufacturing sites generate approximately 89% of the hazardous waste. In 2017, one site alone accounts for 55% of hazardous waste generated. The significant share of certain sites to generate hazardous waste has been recognized and analysis for different solutions to decrease generation of hazardous waste is under process. The total amount of hazardous waste decreased by approximately 3% from 2016.

### Non-hazardous waste

In 2017 non-hazardous waste volume increased compared to 2016 due in part to, sites that disposed of accumulated material that was generated during and prior to 2017. These events are not normally part of typical wastes generated at a site. Total amount of non-hazardous waste increased by approximately 102% from 2016.

WASTE, 1,000 tonnes	GRI	2017	2016	2015	2014	2013
<b>HAZARDOUS WASTES, TOTAL</b>	306-2a	<b>47.8</b>	<b>49.1*</b>	<b>75.2</b>	<b>41.7</b>	<b>41.3</b>
Off-site landfill		1.9	1.1*	1.3	1.2	1.4
Off-site incineration		6.2	5.0	2.6	1.7	3.9
Off-site recycling		6.3	7.3	9.6	6.6	3.0
Off-site deep well injection <sup>1,2</sup>		26.3	28.2*	54.8	28.1	31.1
Off-site recovery, including energy recovery		0.0	0.0	0.0	0.0	0.0
Other off-site treatment <sup>2</sup>		6.9	7.4*	6.9	3.6	1.9
On-site incineration		0.2	0.1	0.0	0.5	0.0
On-site landfill		0.0	0.0	0.0	0.0	0.0
<b>NON-HAZARDOUS WASTES, TOTAL<sup>3</sup></b>	306-2b	<b>62.2</b>	<b>30.8*</b>	<b>35.4</b>	<b>27.7</b>	<b>26.6</b>
Off-site landfill		19.2	12.3*	10.6	11.6	13.7
Off-site incineration		1.3	1.6*	1.3	0.8	5.7
Off-site recycling		4.5	7.1*	14.9	11.8	4.6
Off-site recovery, including energy recovery		0.0	0.0	0.0	0.0	0.0
Other off-site treatment		36.6	9.7	8.2	3.1	2.5
Off-site composting <sup>1</sup>		0.5				
On-site incineration		0.0	0.0	0.0	0.4	0.0
On-site landfill		0.0	0.1*	0.3	0.0	0.1
<b>TOTAL WASTE DISPOSAL</b>		<b>110.0</b>	<b>79.9*</b>	<b>110.6</b>	<b>69.4</b>	<b>67.9</b>

\*Minor updates to 2016 data were provided by sites during 2017 data collection.

<sup>1</sup> New disposal method reported starting in 2017.

<sup>2</sup> Kemira has updated these values to account for the impact of the new disposal methods introduced in 2017. For example, "Other off-site treatment" included deep well injection during 2013-2016. The values in this table will differ from previous reports.

<sup>3</sup> In 2017 waste amounts increased compared to 2016 due, in part to, sites that disposed of accumulated material that was generated during and prior to 2017. These events are not normally part of typical wastes generated at a site. The waste disposal tonnes in 2016 were less than 2015. In 2015, one site generated a waste that was not part of their normal production wastes. This one-time event caused the 2015 waste disposal tonnes to be abnormally high. In addition, the amount of waste generated due to site closures in 2016 was less than in 2015. The total 2016 waste disposal tonnes are consistent with years other than 2015.

## GRI 306-3: Significant spills

A global Spill Prevention Standard was approved in March 2017. Kemira had internal KPIs with annual targets for Loss of Primary Containments (LOPC) and Environmental Incidents in 2017. Kemira follows an Incident Reporting Standard that defines incident types and establishes the minimum requirements for incident reporting and classification of all EHSQ incidents. This standard applies to all Kemira employees, contractors, temporary and supplemental staff at all Kemira and/or customer locations.

Kemira's definition of a Major Incident includes an environmental incident resulting in one or more of the following;

- A spill or leak of more than 1,000 kg of a hazardous chemical (those chemicals identified as hazardous or dangerous by federal, provincial, state or local regulations, or by internationally recognized protocols such as, UN dangerous goods classification or assigned a reportable quantity if spilled) outside of secondary containment or to the atmosphere.
- Requirement for immediate reporting of an environmental release/spill to a regulatory agency.
- Substantial negative publicity that would be a Kemira Crisis Category of Local Level or Group Regional and Global Level.

In 2017 there were 12 significant spills according to Kemira's Incident Reporting Standard that involved environmental releases, compared to 10 in 2016.

- Transportation incidents (including related loading and unloading activities) accounted for three significant spills. The total volume of the transportation incidents was approximately 147 tonnes.
- Manufacturing incidents accounted for nine significant spills. The total volume of the significant spills at manufacturing plants was approximately 190 tonnes.

The significant spills did not have permanent or significant impact on the environment beyond the remediated material. These spills were not reported in Kemira's Financial Statements.

## GRI 306-4: Transport of hazardous waste

In 2017, approximately 48,000 tonnes of hazardous waste were transported by, or on behalf of Kemira, to external suppliers not owned by Kemira. Hazardous waste was not imported or treated by Kemira in 2017.

Our Fray Bentos, Uruguay site does not have a treatment or disposal option within the country for some of its hazardous wastes. Therefore, it must be shipped to the EU for disposal. In 2017, there was 25.6 tonnes of hazardous waste exported

from the Fray Bentos facility. In addition, 1.5 tonnes of hazardous waste from the Oulu site, 1.6 tonnes from the Europoort site and 0.75 tonnes from the Helsingborg site was exported to UK to be disposed of. In total, less than 1% of the hazardous waste generated in 2017 (none in 2016) by Kemira was shipped internationally.

## ENVIRONMENTAL COMPLIANCE

### GRI 307-1: Non-compliance with environmental laws and regulations

Kemira's integrated EHSQ management system includes an Auditing Standard to verify conformance with Kemira policies and standards, ISO/OHSAS standards, and EHSQ legal compliance. Kemira regularly conducts EHS compliance audits at manufacturing sites. Audits are carried out by internal Kemira resources and external consultants. Kemira's robust integrated EHSQ management system requires all sites to report non-compliances to the group's Global EHSQ Team.

The following summarizes the significant fines or non-compliance with environmental laws or regulations at Kemira manufacturing sites in 2017:

- Three facilities in our pulp and paper manufacturing segment in the United States were cited for non-compliance with a U.S. Environmental Protection Agency regulation that applies to certain processes that use chromium-containing raw materials. Each facility submitted applications to revise their operating permits as required by the regulatory agencies. One of the facilities received a fine of approximately EUR 11,300. The other two facilities did not receive a fine.

- One polymer manufacturing facility in the United States entered into a consent order with the local regulatory agency to resolve a compliance issue related to its air pollution control device. The consent order included a settlement of approximately EUR 58,000. The local regulatory agency considers the facility to be in compliance after a review of its proposed corrective actions.
- One coagulant manufacturing facility in the United States received a fine of approximately EUR 18,300 for hazardous waste compliance management violations. The violations have been corrected and the matter is considered closed by the local regulatory agency.

The procedures to monitor legal requirements vary in Kemira depending on the countries of operation and site operations. In 2018, Kemira will harmonize the procedures and starts implementation of new, more effective online tools, to improve Global EHSQ Team's ability to monitor the compliance status at the sites.

Kemira maintained environmental protection costs at approximately 0.9% of revenue (1.2% 2016) despite an approximately 7% increase in production volume compared to 2016.

## Social

### INFORMATION ON EMPLOYEES

#### GRI 102-8: Information on employees and other workers

At the end of 2017, Kemira employed 4,732 people (4,818). The employee distribution by region shows that 54% (55%) of Kemira's total workforce were employed in EMEA, and 32% (32%) in the Americas. The number of employees decreased by 86 (compared to an increase of 133 during 2016). The decrease was mainly due to the restructuring to a two segment structure, and aligning the organization accordingly. Workers who are legally recognized as self-employed, or individuals other than the ones in Kemira's payroll are not counted on these numbers.

#### GRI 102-08: Total number of employees

	2017	2016	2015	2014	2013
<b>TOTAL NUMBER OF EMPLOYEES*</b>	<b>4,732</b>	<b>4,818</b>	<b>4,685</b>	<b>4,248</b>	<b>4,453</b>
Females, %	26%	26%	26%	26%	26%
Males, %	74%	74%	74%	74%	74%
White collar, %	62%	61%	62%	58%	58%
Blue collar; %	38%	39%	38%	42%	42%

\* at year end

Some re-classification from blue to white collar employees were done in the beginning of 2017.

#### GRI 102-8a: Total number of employees by employment contract (permanent and temporary), by gender

	2017	2016	2015	2014	2013	% 2017	% 2016	% 2015	% 2014	% 2013
<b>TOTAL NUMBER OF EMPLOYEES</b>	<b>4,732</b>	<b>4,818</b>	<b>4,685</b>	<b>4,248</b>	<b>4,453</b>					
Total permanent	4,615	4,715	4,559	4,133	4,350	97.5%	97.9%	97.3%	97.3%	97.7%
Total fixed-term	117	103	126	115	103	2.5%	2.1%	2.7%	2.7%	2.3%
<b>Females total</b>	<b>1,223</b>	<b>1,259</b>	<b>1,220</b>	<b>1,110</b>	<b>1,164</b>					
Permanent	1,175	1,227	1,171	1,064	1,127	96.1%	97.5%	96.0%	95.9%	96.8%
Fixed-term	48	32	49	46	37	3.9%	2.5%	4.0%	4.1%	3.2%
<b>Males total</b>	<b>3,509</b>	<b>3,559</b>	<b>3,465</b>	<b>3,138</b>	<b>3,289</b>					
Permanent	3,440	3,488	3,388	3,069	3,223	98.0%	98.0%	97.8%	97.8%	98.0%
Fixed-term	69	71	77	69	66	2.0%	2.0%	2.2%	2.2%	2.0%

## GRI 102-8b. Total number of employees by employment contract (permanent and temporary), by region

	2017	%,2017
<b>TOTAL NUMBER OF EMPLOYEES</b>	<b>4,732</b>	
Americas	1,514	32.0%
APAC	647	13.7%
EMEA	2,571	54.3%
<b>Permanent total</b>	<b>4,615</b>	
Americas	1,514	32.8%
APAC	647	14.0%
EMEA	2,454	53.2%
<b>Temporary total</b>	<b>117</b>	
Americas		0.0%
APAC		0.0%
EMEA	117	100.0%

## GRI 102-8c. Total number of employees by employment type (full-time and part-time), by gender

	2017	2016	2015	2014	%,2016	%,2015	%,2014
<b>TOTAL EMPLOYEES</b>	<b>4,732</b>	<b>4,818</b>	<b>4,559</b>	<b>4,133</b>			
Total full-time	4,660	4,747	4,481	4,099	98.5%	98.3%	99.2%
Total part-time	72	71	78	34	1.5%	1.7%	0.8%
<b>Females total</b>	<b>1,223</b>	<b>1,259</b>	<b>1,171</b>	<b>1,064</b>			
Full-time	1,168	1,208	1,106	1,037	95.9%	94.4%	97.5%
Part-time	55	51	65	27	4.1%	5.6%	2.5%
<b>Males total</b>	<b>3,509</b>	<b>3,559</b>	<b>3,388</b>	<b>3,069</b>			
Full-time	3,492	3,539	3,375	3,062	99.4%	99.6%	99.8%
Part-time	17	20	13	7	0.6%	0.4%	0.2%

\*2013-2015 numbers for permanent employees

## GRI 102-41: Collective bargaining agreements

The percentage of employees covered by collective bargaining agreements by 'significant locations of operation' varies widely between regions, being the lowest in North America (USA 5%, Canada 13%), which is characteristic of the region.

In the APAC region, collective bargaining agreements are a practice in the chemical industry only in few countries, in Indonesia and Korea, where almost all employees covered by collective bargaining agreements. In many European countries, all employees are covered by collective bargaining agreements, especially in Northern Europe (Finland, Sweden) and Southern Europe (Spain, France, Italy). In Central and Eastern Europe, the percentage varies (e.g. UK 30%, Germany 39%, Netherlands 64%), and in some countries there are no collective bargaining agreements. In Brazil and Uruguay, all employees are covered by a collective agreement.

The definition used for 'significant locations of operation' refers to countries where we have 10 or more employees, and which counted together 98% of all employees. In Kemira's case there are 25 countries with 10 or more employees.



## GRI 401-1: New employee hires and employee turnover

The total number of new hires in 2017 was 597 (695), out of which 31% (31%) were female and 69% (69%) male. The new hires include summer trainee and other temporary positions. Kemira's new hiring reflects the similar degree of diversity as in previous years.

The total turnover rate was 12.0% in 2017 compared to 9.2% in 2016. The increase in turnover was mainly due to the restructuring organization. The total turnover is based on permanent workforce.

The turnover rates in EMEA was 11.0% (8.2%) which was the lowest of the regions. The highest turnover rate was in the Americas at 13.5% (11.2%), and the APAC region had a turnover of 12.8% (8.1%). The turnover rate was highest at the age group <30 years 19.3% (12.4%) and females 15.8% (10.8%).

## GRI 401-1a. Total number and rate of new employee hires during the reporting period, by age group, gender and region

	Number of new hires				% of total new hires			
	2017	2016	2015	2014	2017	2016	2015	2014
<b>TOTAL NEW HIRES</b>	<b>597</b>	<b>695</b>	<b>673</b>	<b>710</b>			<b>100.0%</b>	<b>100.0%</b>
New hires by age group								
<30	<b>286</b>	284	293	291	<b>48%</b>	41%	43.5%	41.0%
30-50	<b>267</b>	358	312	348	<b>45%</b>	52%	46.4%	49.0%
>50	<b>44</b>	53	68	71	<b>7%</b>	8%	10.1%	10.0%
New hires by gender								
Females	<b>188</b>	218	208	236	<b>31%</b>	31%	30.9%	33.2%
Males	<b>409</b>	477	465	474	<b>69%</b>	69%	69.1%	66.8%
New hires by region								
APAC	<b>79</b>	173	60	60	<b>13%</b>	25%	8.9%	8.5%
EMEA	<b>352</b>	364	373	418	<b>59%</b>	52%	55.4%	58.9%
Americas	<b>166</b>	158	240	232	<b>28%</b>	23%	35.7%	32.7%

## GRI 401-1b. Total number and rate of employee turnover during the reporting period, by age group, gender and region

	Turnover				Turnover, %			
	2017	2016	2015	2014	2017	2016	2015	2014
<b>TOTAL TURNOVER</b>	<b>570</b>	<b>441</b>	<b>490</b>	<b>736</b>	<b>12.0%</b>	<b>9.2%</b>	<b>10.5%</b>	<b>17.3%</b>
Turnover by age group								
<30	<b>109</b>	72	78	96	<b>19.3%</b>	12.4%	13.6%	18.6%
30-50	<b>258</b>	228	263	428	<b>9.9%</b>	8.2%	9.8%	17.6%
>50	<b>203</b>	141	149	212	<b>13.0%</b>	9.6%	10.4%	16.3%
Turnover by gender								
Females	<b>193</b>	136	144	242	<b>15.8%</b>	10.8%	11.8%	21.8%
Males	<b>377</b>	305	346	494	<b>10.7%</b>	8.6%	10.0%	15.7%
Turnover by region								
APAC	<b>83</b>	53	56	44	<b>12.8%</b>	8.1%	10.4%	12.5%
EMEA	<b>282</b>	214	225	464	<b>11.0%</b>	8.2%	8.8%	19.2%
Americas	<b>205</b>	174	209	228	<b>13.5%</b>	11.2%	13.2%	15.4%

## GRI 401-2: Benefits provided to full-time employees that are not provided to temporary or part-time employees

Benefit programs at Kemira differ depending on regional and country specific practices, and there have been no major changes to the practices in recent years. In most countries, the same benefits are offered to full-time and part-time employees, and for temporary employees hired directly by Kemira, if the temporary contract exceeds a certain length.

Benefit practices are country specific and typically do not vary between locations and operations. Some exceptions apply, e.g. some countries offer additional insurance and/or retirement benefits for permanent full-time employees. In North America, the eligibility for benefits is dependent on hours worked, in the USA employees are eligible if they work a minimum of 20 hours per week.

## GRI 402-1: Minimum notice periods regarding operational changes

As stated in the Code of Conduct, all our sites are obliged to follow local laws and regulations and other agreements regarding labor practices, including notice periods. Minimum notice periods are defined in laws or in collective agreements, and are followed in each country accordingly. The time period for the consultation process relating to operational changes varies by country and region, starting from 14 days for smaller changes to up to six months in some countries and for major changes, varying between one to two months in most countries.

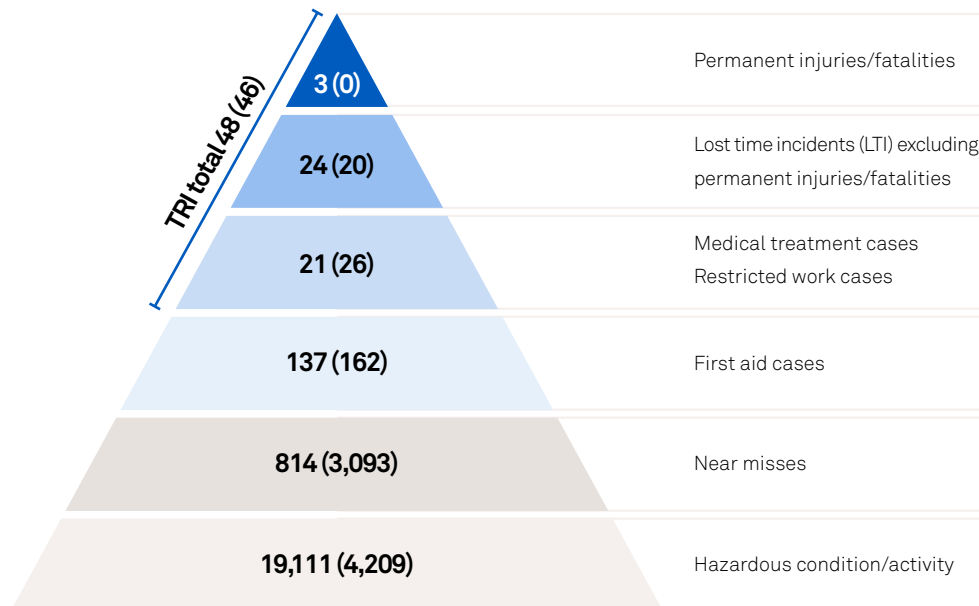
## OCCUPATIONAL HEALTH AND SAFETY

### GRI 403-2: Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities

Kemira reports occupational safety performance indicators as Total Recordable Injuries (TRI) which includes fatalities/permanent injuries, lost time incidents, restricted work cases and medical treatment cases covering Kemira employees and contractors working at Kemira sites. TRI Frequency (TRIF) is measured as Total Recordable Injuries per million working hours.

In 2017, our health & safety performance took a small step backwards compared to 2016. Total number TRI was 48 (46) and TRIF increased to 3.9 (3.4). The increase in incidents were mainly related to contracted work at our premises. However, we can still see a positive long-term downward trend.

Personal injuries pyramid 2017 (2016)



## Total Recordable Injuries (TRI)

TRI	2017	2016	2015	2014
<b>TOTAL TRI</b>	<b>48</b>	<b>46*</b>	<b>77</b>	<b>61</b>
Kemira employees	31	32*	56	44
Contractors working at Kemira site	17	14	21	17
<b>Regional TRI</b>				
APAC	1	2	1	0
EMEA	31	22	53	35
Americas	16	22	23	26
<b>TRI FREQUENCY</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
<b>GLOBAL TRIF</b>	<b>3.9</b>	<b>3.4</b>	<b>7.2</b>	<b>5.8</b>
Kemira employees	3.2	3.5	6.5	4.7
Contractors working at Kemira site	6.3	3.1	8.8	7.1
<b>Regional TRIF</b>				
APAC	0.6	0.9	0.6	0
EMEA	6.0	3.4	10.6	6.1
Americas	5.1	4.8	5.7	6.4

TRIF: Total Recordable Injury Frequency includes Fatalities/Permanent Injuries + Lost Time Incidents + Restricted work cases + Medical treatment cases. TRIF includes Kemira employees and Contractors working at Kemira site per million work hours. Contractor work hours have been included since 2014.

\* Data corrected due to one late incident re-classification in 2016.

## Lost Time Incidents\* (LTI)

LTI	2017	2016	2015	2014
<b>TOTAL LTI</b>	<b>27</b>	<b>20</b>	<b>30</b>	<b>24</b>
<b>Regional LTI</b>				
APAC	1	2	1	0
EMEA	23	12	22	19
Americas	3	6	7	5
<b>LTI FREQUENCY</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>
<b>GLOBAL LTIF</b>	<b>2.2</b>	<b>1.5</b>	<b>2.7</b>	<b>2.7</b>
<b>Regional LTIF</b>				
APAC	0.6	1	0.6	0
EMEA	4.6	2.1	5.4	4.4
Americas	1.0	0.8	2	1.8

LTIF: Lost Time Incident Frequency. LTIF includes Kemira employees and Contractors working at Kemira site per million work hours. Contractor work hours have been included since 2014.

\* Including permanent injuries and fatalities

In 2017, the severity of incidents increased due to permanent finger injuries by three persons and increased number of LTIs in comparison to 2016. No fatalities have been associated with Kemira employees since 2005. Sadly, there was one fatal off-site haulier road transport accident in Poland when transporting Kemira products. This is not included in our TRI numbers because contractors' off-site incidents are excluded from our TRI definition.

The Behavior Based Safety Program (BBS) has been one of our top priorities since 2016 to develop our health and

safety culture. The program has a focus on interaction between the Managers and the Employees to increase communication and to make observations on work conditions and practices. As a part of the program, numerous field observations have been reported in terms of how behavior can prevent hazardous conditions. In 2017, we started to implement the program with four pilot sites and then continued to cover 15 sites in total by year end.

We have also improved internal communication for achieving better visibility of health and safety related matters. For example, we conducted a Safety Starts With Me Campaign, issued weekly EHSQ bulletins and initiated monthly Regional EHSQ communication calls.

In order to further increase safety awareness and to improve recognition and elimination of hazards in the work environment, a key performance indicator Hazardous Conditions/Activities was introduced in 2017 replacing Near miss reporting as KPI. This is a leading safety indicator reflecting environmental or people behavior related hazards at the workplace. The number of reported Hazardous Conditions/Activities was 19,111 in 2017. Identification of Hazardous Conditions/Activities helps our organization to avoid incidents and improve our operations and work methods.

In 2017, safety performance indicators TRIF and Hazardous Conditions/Activities were included as corporate bonus targets for every employee.

## TRAINING AND EDUCATION

### GRI 404-1: Average hours of training per year per employee

Kemira aims to capture all training, education and employee development related hours in the learning management system (LMS) that is feasible, and have continued to advance in achieving this goal. So far, leadership development activities, regional and global competence development and vocational training programs and many local programs are recorded in the LMS. However, some remaining training and development activities are still recorded locally.

Training hours for the biggest countries registered in the system for 2017 are Finland 7,847 (6,600) hrs, UK 4,482 (5,300) hrs, Sweden 5,719 (5,700) hrs, USA 4,973 (8,100) hrs, Netherlands 4,075 (3,300) hrs, China 6,770 (3,700) hrs and Poland 4,185 (5,500) hrs. The average hours of training for white collar employees do not differ significantly by gender. Globally registered average hours per employee for blue collar employees are lower than for white collar employees, indicating some difference in recording hours in the global system.

### GRI 404-2: Programs for upgrading employee skills and transition assistance programs

Kemira provides each employee with access to the relevant competence development programs and structured

learning opportunities to support upgrading of employee skills through on-the-job learning programs (including generic and job-specific competence development), buddy/coaching/mentoring programs, and traditional methods like classroom and eLearning.

The scope includes:

- Leadership development (internal and external) programs
- Professional competence development programs
- Statutory or compliance related programs

These programs are available based on the position, skills/competence level and career aspirations. With the exception of leadership development programs and other external cost based programs (pre-approval required), employees can typically enrol and complete the self-paced learning programs available through our LMS (Learning Management System).

We had a strong leadership development portfolio offering and steady rate of participation in 2017. Examples of other global and regional programs offered during 2017 are listed below:

- Code of Conduct, ethics, anti-corruption and compliance programs delivered mainly through eLearning
- Numerous EHSQ related programs including EHSQ Hazardous Condition/Activity Training
- Chemical handling, communicating on global hazards, Crisis management, Emergency evaluation, Manual

handling, and Energy Management system and Environment, Health, Safety and Quality Policy training

- IT programs and Information security awareness programs
- Innovation training
- Manufacturing and product lifecycle management programs
- Commercial and sales programs

Kemira also provides transition assistance programs where relevant, with bigger changes to facilitate the continued employability and management of career endings resulting from retirements or termination of employment. These have included:

- Up-skills training for those intending to continue working with Kemira
- Severance pay
- Career planning and outplacement/job placement services

## GRI 404-3: Percentage of employees receiving regular performance and career development reviews

All permanent employees, who are not absent for an extended time period because of leave, for example, are covered by our global performance and development discussion (PDD) process. The global PDD process covers both white collar and blue collar employees. Temporary employees' inclusion in the PDD process is evaluated case-by-case, depending on the length of the contract.

## GRI 404-3a. Percentage of total employees by gender and by employee category who received a regular performance and career development review during the reporting period

PERFORMANCE AND DEVELOPMENT DISCUSSION (PDD)	Employees, #					PDD Coverage,%				
	2017	2016	2015	2014	2013	%, 2017	%, 2016	%, 2015	%, 2014	%, 2013
Total permanent employees not absent *	4,626	4,590	4,440	4,019	4,281					
<b>PDD's by gender</b>										
Employees covered in Global PDD process	4,139	4,009	4,147	3,803	2,382	89%	87%	93%	95%	56%
Females covered in Global PDD process	1,119	1,116	1,030	977	816	97%	93%	96%	95%	77%
Males covered in Global PDD process	3,020	2,893	3,117	2,826	1,566	87%	85%	93%	94%	49%
<b>PDD's by employee category</b>										
White collars covered in Global PDD process	2,778	2,702	2,730	2,317		98%	98%	97%	98%	
Blue collars covered in Global PDD process	1,275	1,307	1,417	1,486		71%	72%	88%	89%	

\*All permanent employees, who are not absent for an extended time period, because of leave, for example, are covered by global performance and development discussion process

## DIVERSITY AND EQUAL OPPORTUNITY

### GRI 405-1: Diversity of governance bodies and employees

In 2017, the number of females in the Board of Directors remained the same, but the share increased to 50%. The percentage share of females (26%) in the total number of employees remained the same in 2017 as in 2016. The number of females in executive positions (Directors and above) has increased to 27% vs. 22% in 2016.

GRI 405-1a. Percentage of individuals within the organization's governance bodies in each of the following diversity categories: Gender, age group, other indicators of diversity where relevant

	Total					%				
	2017	2016	2015	2014	2013	%, 2017	%, 2016	%, 2015	%, 2014	%, 2013
<b>MANAGEMENT BOARD</b>										
<b>Total employees</b>	<b>8</b>	<b>10</b>	<b>9</b>	<b>9</b>	<b>11</b>					
Females	1	2	2	2	2	13%	20%	22%	22%	18%
Males	7	8	7	7	9	88%	80%	78%	78%	82%
<b>By age group</b>										
<30	0	0	0	0	0	0%	0%	0%	0%	0%
30-50	1	2	5	6	5	13%	20%	56%	67%	45%
>50	7	8	4	3	6	88%	80%	44%	33%	55%
<b>BOARD OF DIRECTORS</b>										
<b>Total employees</b>	<b>6</b>	<b>7</b>	<b>6</b>	<b>6</b>	<b>5</b>					
Females	3	3	2	2	2	50%	43%	33%	33%	40%
Males	3	4	4	4	3	50%	57%	67%	67%	60%
<b>By age group</b>										
<30	0	0	0	0	0	0%	0%	0%	0%	0%
30-50	1	1	0	0	0	17%	14%	0%	0%	0%
>50	5	6	6	6	5	83%	86%	100%	100%	100%

**405-1b. Percentage of employees per employee category in each of the following diversity categories:  
Gender, age group, other indicators of diversity where relevant**

	Total					%				
	2017	2016	2015	2014	2013	%,2017	%,2016	%,2015	%,2014	%,2013
<b>TOTAL EMPLOYEES</b>	<b>4,732</b>	<b>4,818</b>	<b>4,685</b>	<b>4,248</b>	<b>4,453</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<30	566	579	575	515	646	12%	12%	12%	12%	15%
30-50	2,607	2,772	2,672	2,435	2,453	55%	58%	57%	57%	55%
>50	1,559	1,467	1,438	1,298	1,354	33%	30%	31%	31%	30%
<b>Females in total</b>	<b>1,223</b>	<b>1,259</b>	<b>1,220</b>	<b>1,110</b>	<b>1,164</b>	<b>26%</b>	<b>26%</b>	<b>26%</b>	<b>26%</b>	<b>26%</b>
<30	190	179	188	172	205	16%	14%	15%	15%	18%
30-50	764	823	773	705	710	62%	65%	63%	64%	61%
>50	269	257	259	233	249	22%	20%	21%	21%	21%
<b>Males in total</b>	<b>3,509</b>	<b>3,559</b>	<b>3,465</b>	<b>3,138</b>	<b>3,289</b>	<b>74%</b>	<b>74%</b>	<b>74%</b>	<b>74%</b>	<b>74%</b>
<30	376	400	387	343	441	11%	11%	11%	11%	13%
30-50	1,843	1,949	1,899	1,730	1,743	53%	55%	55%	55%	53%
>50	1,290	1,210	1,179	1,065	1,105	37%	34%	34%	34%	34%

As stated in our Code of Conduct, we respect the diversity, talent and abilities of others. We at Kemira define "diversity" as all the unique characteristics that make up each of us: personality, lifestyle, work experience, ethnicity, religion, gender, sexual orientation, age, national origin, ability and other characteristics. We focus our efforts to attract, develop and retain a workforce that is diverse, and to ensure an inclusive work environment that embraces the strength of our differences. We do not discriminate or treat employees or job applicants unfairly in matters that involve recruiting, hiring, training, promoting, compensation or any other term or condition of employment.

## GRI 405-2: Ratio of basic salary and remuneration of women to men

Kemira operates a global job structure that is applied to all white collar employees. The job structure describes job families and the respective job roles with required qualifications and main responsibilities. The job structure links to job grades, which define the salary range and the incentive opportunity for a specific job role. The job grades

and salary data information allows Kemira to evaluate, analyze and implement equal remuneration. Factors impacting salary increases includes employee performance and the position of an employee's salary within the salary range, as well as country-specific statutory increases and merit increase opportunities. Incentive payouts are based on measured achievement for pre-defined targets on the company, unit and individual levels.

### 405-2a. Ratio of the basic salary and remuneration of women to men for each employee category, by significant locations of operation

COUNTRY	Women to men ratio 2017	Women to men ratio 2016	Women to men ratio 2015	White Collar Headcount 2017
Austria	95%	n/a	n/a	49
Brazil	79%	n/a	n/a	123
Canada	88%	88%	86%	109
China	93%	94%	94%	245
Finland	91%	91%	93%	566
Germany	97%	98%	n/a	90
Italy	90%	n/a	n/a	65
Netherlands	93%	96%	97%	54
Poland	92%	92%	91%	296
Spain	83%	n/a	n/a	50
Sweden	96%	99%	96%	128
United Kingdom	93%	96%	96%	84
United States	89%	88%	91%	486
<b>TOTAL FOR LARGEST COUNTRIES</b>	<b>90%</b>	<b>n/a</b>	<b>n/a</b>	<b>2,345</b>

White collar headcount in significant locations of operations account for 80% of total white collar headcount.

## NON-DISCRIMINATION

### GRI 406-1: Incidents of discrimination and corrective actions taken

As stated in our Code of Conduct, we do not discriminate or treat employees or job applicants unfairly in matters that involve recruiting, hiring, training, promoting, compensation or any other term or condition of employment.

During 2017, seven incidents were reported to the Ethics & Compliance function alleging potential discrimination or harassment. Three of the cases were closed without merit and three cases were remediated during 2017 (see also table on page 57). One case was under investigation as of end of year 2017.

In addition to the above, four legal actions have been raised against Kemira in which discrimination is mentioned as one of the grounds for the claim. All four actions are currently pending and processed in the relevant court in accordance with the applicable laws.



## FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING

### **GRI 407-1: Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk**

Kemira respects the freedom of association and collective bargaining as stated in our Code of Conduct, and through our signatory of the United Nations Global Compact. We expect our suppliers to respect these same principles and commit to the Kemira Code of Conduct for Suppliers, Distributors and Agents (CoC-SDA). All of our Suppliers (engaged with a SAP Purchased Order) receive a written reference to CoC-SDA as part of the Kemira general terms of purchase on the back the Purchase Order.

To increase Kemira employees' awareness of their rights regarding freedom of association and collective bargaining, we provide regular training on our Code of Conduct. In 2017, Kemira did not identify any violations of freedom of association or collective bargaining in our own operations, and no evidence has been found to indicate that suppliers would be restricting their employees' opportunities to exercise freedom of association and collective bargaining based on sustainability assessments of our key suppliers, representing approximately 25% of our total spend since 2014.

For additional information, see the Responsible business practices section for details of our Code of Conduct

training and Kemira's Ethics and Compliance Hotline, which provides an internal channel for reporting any violations of employees' rights. Details of the numbers of employees covered by collective bargaining agreements are given under GRI 102-41.

## HUMAN RIGHTS ASSESSMENT

### **GRI 412-1: Operations that have been subject to human rights reviews or impact assessments**

Kemira conducted a Human Rights Impact Assessment in 2014 to identify any risks of human rights impacts in our operations and in our value chain, and any potential gaps in our management approach to human rights. Our management approach was assessed against the Operational Principles of the UN Guiding Principles of Business and Human Rights. The results indicated there were a few potential high-risk areas of human rights impacts where we should further develop our management approach, which are:

- Unsafe handling of hazardous substances may have a potential impact on health and workplace safety
- Upstream and downstream business relationships
- Business expansion in emerging markets.

To address the health and workplace safety issues, we have further developed our product stewardship management to ensure the safe use of our products in our value chain, and continuously developed our workplace safety culture. During 2017, we have taken measures to integrate priority

substance management as part of the product lifecycle management processes, and further developed our safety culture through the Behavior Based Safety Culture program, target setting, training and communications measures. For more information, see indicators GRI 416-1 for product stewardship and GRI 403-2 for workplace safety.

To address the area of business relationships, in 2017, we conducted a third-party due diligence project to define a harmonized process for selecting and managing relationships with distributors and agents. We already have an extensive program covering our supplier relationship management.

Kemira's Code of Conduct was reviewed, updated and approved by the Board of Directors in 2017. The renewal of the Code was followed by an extensive global training and communication campaign. We have also organized separate training on human rights for all employees who are responsible for ensuring that human rights are respected in our business relationships and in our own operations. The target group covered a total of 2,850 employees in 2015. By the end of 2016, 75% of the targeted employees had completed the basic training (80% by the end of 2015). Since 2015, human rights training is a compulsory part of the induction training given to all new employees in the target group. Kemira provides all employees regular, compulsory training on the Code of Conduct, including an awareness of human rights.

## PUBLIC POLICY

### GRI 415-1: Political contributions

The Kemira Code of Conduct, Kemira Group Sponsorship and Donation policy and the Kemira Group Gifts, Entertainment and Anti-Bribery Policy prohibit any financial support to politicians, political parties or political organizations. No financial or in-kind political contributions paid by Kemira have come to Kemira's attention during 2017.

## CUSTOMER HEALTH AND SAFETY

### GRI 416-1: Assessment of the health and safety impacts of product and service categories

According to Kemira's product stewardship policy, we are acting:

- To comply with all applicable chemical regulatory requirements in the countries where we either manufacture and/or sell chemicals,
- To perform regulatory compliance reviews for all New Product Development projects as well as all Product Introductions,
- To assess regulatory compliance, human health, and safety, as well as environmental protection aspects, as part of the Product Lifecycle Management processes,
- To proactively identify and manage chemical risks and concerns throughout its operations,

- To replace those substances in the portfolio that would pose an unacceptable risk to human health, safety or environment, according to the regulatory risk assessment methods applied by regulatory bodies; and
- To share information with our stakeholders about the health and safety aspects of products and to ensure that our customers can safely use our products.

Kemira complies with all laws and regulations relating to chemicals and trade. Kemira does not sell any banned products. We continuously screen substances that are covered by any regulatory restrictions, or subject to substitution requirements imposed by non-regulatory stakeholders. We proactively work to mitigate health, safety, environmental and image-related risks (GRI 102-2: Activities, brands, products, and services).

We regularly review substances with threat-for-use restrictions or authorization at different phases of regulatory processes in all jurisdictions where Kemira operates. We have some substances listed in the EU REACH regulation list for Substances of Very High Concern (SVHC). At the end of 2017, 40% (5 out of 15) of the identified 15 SHVC substances had a management plan approved by the Operational Excellence Board. During 2017, one substance, sodium dichromate, received an authorization until September 2029.

### GRI 416-2: Incidents of non-compliance concerning the health and safety impacts of products and services

We are not aware of any fine, penalty or warning for non-compliance with regulations and voluntary codes regarding our products or services in 2017.

## MARKETING AND LABELING/PRODUCT AND SERVICE INFORMATION

### GRI 417-1: Requirements for product and service information and labeling

Kemira's product portfolio consists of seven major product lines and approximately 2,000 different products. All of these products are duly documented and labeled according to legal requirements, including the identification of their hazardous components and information on their safe use. Kemira provides Safety Data Sheets (SDS) for all products, independent of the product safety classification, even if in most jurisdictions Safety Data Sheets are mandatory only for hazardous products. Our IT system for Product Lifecycle Management enables us to prepare SDS's and labels in alignment with the latest regulatory data requirements and in the official languages of the countries where our products are sold.

In EU member states, the information requirements are stated under REACH regulations with regard to substance properties, exposure, use and risk management measures, and the chemical safety assessment. Registered uses will also be communicated via the updated extended SDS's for downstream users. In addition to the information provided on product labels and Safety Data Sheets, more detailed information about products and their raw material ingredients can be provided on request.

In 2017, the Kemira Product Stewardship & Regulatory Affairs team responded to approximately 7,720 (7,700 in 2016) requests concerning product safety and/or regulatory. The response time for those requests is one of our internal key performance indicators (KPIs).

## GRI 417-1: Product and service information provided

Topic	Product and service information provided by Kemira
The sourcing of components of the product or service	Only if requested by customers
Content, particularly with regard to substances that might produce an environmental or social impact	As required by law, always in Safety Data Sheets (SDS) and on the Labels. Additional information about chemicals in our products for voluntary certification/compliance schemes such as eco-labeling is also provided to customers upon request and when applicable.
Safe use of the product or service	Safe use of a product or service is communicated in the SDS's and on the Labels. Additional information about the use, dosage and application is provided to customers when applicable
Disposal of the product and environmental/social impacts	When legally required, disposal of a product and environmental/social impacts are communicated in the SDS's and on the Labels

## GRI 417-2: Incidents of non-compliance concerning product and service information and labeling

Our customer complaints management process covers both claims and concerns reported by our customers. Customer Claims are defined as a formal reported complaint when the products or services provided do not meet the agreed customer or promised specifications, whereas Customer Concern is an informal complaint in which the customer has dissatisfaction with a product or service but Kemira has met the agreed requirements. All complaints are actively monitored, evaluated and corrected as required by the quality management system in use at Kemira.

Non-compliance related to product and service information usually makes reference to insufficient information on the label.

During 2017, a total of 88 customer claims were recorded relating to labeling, of which 49 cases were in the EMEA region, 25 in the Americas, and 14 in the APAC region. Corrective actions planned for 13 cases were underway at year end.

During 2017, no incidents of non-compliance with regulations resulting in any fine, penalty or warning were reported within Kemira's operations.

## SOCIOECONOMIC COMPLIANCE / PRODUCT REGULATORY COMPLIANCE

### GRI 419-1: Non-compliance with laws and regulations in the social and economic area

We are not aware of any fine, penalty or warning for non-compliance with laws and/or regulations in 2017.

## Reporting practice

### REPORTING SCOPE

#### **GRI 102-10: Significant changes to the organization and its supply chain**

In 2017, the company structure was changed from 3 segments into 2 segments, i.e Pulp & Paper and Industry & Water. There were no significant changes in the company size or ownership. At the end of 2017, Kemira operated 63 (63 in 2016) manufacturing sites which all were included in the environmental reporting scope. The external road transportation management activities were outsourced to Odyssey in North-America and EMEA in 2017.

#### **GRI 102-46: Defining report content and topic boundaries**

Kemira's corporate responsibility efforts and sustainability reporting are based on materiality. The materiality process provides a unified framework for investors, customers and other stakeholders to assess risks and opportunities that arise from the impacts related to material sustainability topics. The definition of material topics for Kemira's GRI reporting was carried out in accordance with the Principles for defining report content set by the GRI 101 (2016) Foundation standard.

#### **Identification**

Material topics relevant to Kemira have been identified based on their current or potential impacts and concerns raised by our stakeholders. The materiality assessment was updated in 2016-2017. For the update, interviews were conducted with representatives of our key stakeholder groups to identify stakeholder expectations towards Kemira's corporate responsibility. In addition, a benchmark study on material disclosure topics was carried out and major sustainability related development trends were analyzed.

#### **Prioritization**

The identified topics were prioritized with reference to the relative importance to stakeholders, and to the relevance to Kemira's business and strategy, as well as the significance of specific topics related to the global chemical sector. Because of the prioritization, we have selected 20 material disclosure topics out of 33 disclosure topics defined by the GRI (2016) standards. In addition to the GRI topics, we also disclose information and performance data on the topics which are material for us, but not covered by the GRI standards, such as offering sustainable products and services. The selected material disclosure topics reflect our significant economic, environmental, and social impact. Additionally, 3 GRI disclosure topics which are not material to us, are reported because considered useful based on continuity.

#### **Validation**

Data collection practices for the identified material aspects were reviewed and defined. These topics are listed together with a detailed description of the respective topic boundaries and data collection practices in the table 'Material topics and their boundaries' (see below).

#### **Review**

Group level targets and KPIs for corporate responsibility priorities are approved by the Management Board and reviewed by the Board of Directors.

## Material topics and their boundaries

GRI 102-47 Material topics	GRI 102-46; 103-1 Topic boundaries	Kemira data collection practices
<b>ECONOMIC STANDARD SERIES</b>		
Anti-corruption	Kemira operations <sup>*)</sup>	Data is collected from each region, from Kemira's legal archive, and through notifications from Kemira's Compliance and Ethics Hotline.
Anti-competitive behaviour	Kemira operations <sup>*)</sup>	Data is collected from each region, from Kemira's legal archive, and through notifications from Kemira's Compliance and Ethics Hotline.
<b>ENVIRONMENTAL STANDARD SERIES</b>		
Materials	Kemira operations as covered by our ERP <sup>**)</sup>	Data is extracted from Kemira's ERP system.
Energy	Kemira manufacturing sites <sup>***)</sup>	Data is collected from each production site and consolidated on the Group level.
Water	Kemira manufacturing sites <sup>***)</sup>	Data is collected from each production site and consolidated on the Group level.
Emissions	Kemira manufacturing sites <sup>***)</sup>	Data is collected from each production site and consolidated on the Group level.  Scope 3 emissions data is collected from Kemira's ERP system and the relevant organizational units. Default data and assumptions are as in the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain.
Effluents and waste	Kemira manufacturing sites <sup>***)</sup>	Data is collected from each production site and consolidated on the Group level.
Environmental compliance	Kemira manufacturing sites <sup>***)</sup>	Data is collected from each production site and consolidated on the Group level.
Supplier environmental assessment	Kemira suppliers	Harmony Contract Management Tool used to track suppliers' signing of Code of Conduct for SDA.

<sup>\*)</sup> Kemira's operations = All operations covered by Kemira's consolidation rules

<sup>\*\*)</sup> Kemira's operations covered by ERP = All operations covered by both Kemira's consolidation rules and the company's Enterprise Resource Planning (ERP)

<sup>\*\*\*)</sup> Kemira's manufacturing sites = All manufacturing sites covered by Kemira's consolidation rules

<sup>\*\*\*\*)</sup> PSRA Product Safety and Regulatory Affairs

GRI 102-47 Material topics	GRI 102-46; 103-1 Topic boundaries	Kemira data collection practices
<b>SOCIAL STANDARD SERIES</b>		
Occupational health and safety	Kemira operations <sup>*)</sup>	Synergy data management system. Data covers also contractors working at Kemira sites.
Training and education	Kemira operations <sup>*)</sup>	HR data management system.
Diversity and equal opportunities	Kemira operations <sup>*)</sup>	HR data management system.
Non-discrimination	Kemira operations <sup>*)</sup>	Data is collected from each region, from Kemira's legal archive, and through notifications from Kemira's Compliance and Ethics Hotline.
Freedom of association and collective bargaining	Kemira operations <sup>*)</sup>	Data is collected from each region, from Kemira's legal archive, and through notifications from Kemira's Compliance and Ethics Hotline.
Human rights assessment	Kemira operations <sup>*)</sup>	Human rights impact assessment 2014 Kemira Ethics & Compliance Hotline
Supplier social assessment	Kemira suppliers	Harmony Contract Management Tool used to track suppliers' signing of Code of Conduct for SDA.
Public policy	Kemira operations <sup>*)</sup>	Data is collected from each region, from Kemira's legal archive, and through notifications from Kemira's Compliance and Ethics Hotline.
Customer health and safety	Kemira operations as covered by our ERP <sup>**)</sup>	Data is extracted from Kemira's ERP system and from R&D New Product Development process documentation, and from Kemira's legal archives.
Marketing and labelling	Kemira operations as covered by our ERP <sup>**)</sup>	Data is extracted from Kemira's ERP system and from PSRA <sup>****)</sup> documentation, and from Kemira's legal archives.
Socioeconomic compliance	Kemira operations <sup>*)</sup>	Data is collected from each region, from Kemira's legal archive, and through notifications from Kemira's Compliance and Ethics Hotline.

## **GRI 102-48: Restatements of Information**

There were no restatements of information.

## **GRI 102-49: Changes in reporting**

In 2017, we consolidated our organization into two segments: Pulp & Paper and Industry & Water but this does not affect on GRI disclosures. Due to updated materiality assessment and transition to the GRI standards several changes have been made for the material disclosure topics. Most of the changes are because of the transition to the GRI standards, where some disclosure topics from the GRI G4 guidelines are combined. Kemira is also aiming to provide more concise information on corporate responsibility by focusing on the most material disclosure topics.

## **REPORT PROFILE**

### **GRI 102-50: Reporting period**

The reporting period is from 1 January to 31 December 2017.

### **GRI 102-51: Date of most recent report**

Kemira's previous Corporate Responsibility Report 2016 was published on 26 February 2016.

Our first annual report prepared according to the GRI guidelines was published for the reporting year 2011. Prior to 2010 we used the Responsible Care Reporting Guidelines

of the European Chemical Industry Council (CEFIC) as a reporting framework to report on our environmental performance since the early 1990s. Reports for the years 2003–2016 are available on Kemira's website [www.kemira.com](http://www.kemira.com).

### **GRI 102-52: Reporting cycle**

Kemira's annual report is published annually by calendar year. The annual report consist of Business overview, GRI disclosures, Corporate governance statement and Financial statements.

### **GRI 102-53: Contact point for questions regarding the report**

The contact point for questions is Kemira Communications and Corporate Responsibility. Contact details are available at [www.kemira.com](http://www.kemira.com).

### **GRI 102-54: Claims of reporting in accordance with the GRI standards**

- The report is prepared in accordance with the GRI-standards (2016): core option.
- Communication on Progress (COP) of the UN Global Compact at Global Compact Active level by using the GRI-standards reporting principles.

## Assurance report

### **GRI 102-56: External assurance**

The corporate responsibility information presented in the GRI disclosure and Business overview are externally assured by an independent third party. Information on the organization's policy and current practice with regard to external assurance can be found in the Assurance statement.

### **Independent limited assurance report**

#### **To the Management of Kemira Oyj**

We have been engaged by Kemira Oyj (hereafter Kemira) to provide a limited assurance on Kemira's corporate responsibility information for the reporting period of January 1, 2017 to December 31, 2017. The information subject to the assurance engagement is the Kemira GRI Disclosures section in the Annual Report and corporate responsibility information disclosed in the Kemira Business Overview section in the Annual Report (hereafter: Responsibility Information).

#### **Management's responsibility**

Management is responsible for the preparation of the Sustainability Information in accordance with the Reporting criteria as set out in Kemira's reporting practice on pages 89-91 of the GRI Disclosures section and the Sustainability Reporting Standards (Core) of the Global Reporting Initiative. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of the Sustainability Information that are free from material misstatement, whether due to fraud or error, selecting and applying appropriate criteria and making estimates that are reasonable in the circumstances.

#### **Assurance provider's responsibility**

Our responsibility is to express a limited assurance conclusion on the Responsibility Information based on our engagement. We conducted our assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised) to provide limited assurance on performance data and statements within the Responsibility Information.

This Standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain limited assurance whether any matters come to our attention that cause us to believe that the Responsibility Information has not been prepared, in all material respects, in accordance with the Reporting criteria.

We did not perform any assurance procedures on the prospective information, such as targets, expectations and ambitions, disclosed in the Responsibility Information. Consequently, we draw no conclusion on the prospective information. Our assurance report is made in accordance with the terms of our engagement with Kemira. We do not accept or assume responsibility to anyone other than Kemira for our work, for this assurance report, or for the conclusions we have reached.

A limited assurance engagement with respect to responsibility related data involves performing procedures to obtain evidence about the Responsibility Information. The procedures performed depend on the practitioner's judgment, but their nature is different from, and their extent is less than, a reasonable assurance engagement. It does not include detailed testing of source data or the operating effectiveness of processes and internal controls and consequently they do not enable us to obtain the assurance necessary to become aware of all significant matters that might be identified in a reasonable assurance engagement.

Our procedures on this engagement included:

- Conducting interviews with senior management responsible for corporate responsibility at Kemira to gain an understanding of Kemira's targets for corporate responsibility as part of the business strategy and operations;
- Reviewing internal and external documentation to verify to what extent these documents and data support the information included in the Responsibility Information and evaluating whether the information presented in the Responsibility Information is in line with our overall knowledge of corporate responsibility at Kemira;
- Conducting interviews with employees responsible for the collection and reporting of the Responsibility Information and reviewing of the processes and systems for data gathering, including the aggregation of the data for the Responsibility Information;
- Performing analytical review procedures and testing data on a sample basis to assess the reasonability of the presented responsibility information;
- Performing site visits to Äetsä in Finland and Eastover in United States (U.S) to review compliance to reporting policies, to assess the reliability of the responsibility data reporting process as well as to test the data collected for responsibility reporting purposes on a sample basis;
- Assessing that the Responsibility Information has been prepared in accordance with the Sustainability Reporting Standards (Core) of the Global Reporting Initiative.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

## **Our independence, quality control and competences**

We complied with Deloitte's independence policies which address and, in certain cases, exceed the requirements of the International Federation of Accountants Code of Ethics for Professional Accountants in their role as independent assurance providers and in particular preclude us from taking financial, commercial, governance and ownership positions which

might affect, or be perceived to affect, our independence and impartiality and from any involvement in the preparation of the report. We have maintained our independence and objectivity throughout the year and there were no events or prohibited services provided which could impair our independence and objectivity.

Deloitte Oy applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. This engagement was conducted by a multidisciplinary team including assurance and sustainability expertise with professional qualifications. Our team is experienced in providing sustainability reporting assurance.

## **Conclusion**

On the basis of the procedures we have performed, nothing has come to our attention that causes us to believe that the information subject to the assurance engagement is not prepared, in all material respects, in accordance with the Sustainability Reporting Standards (Core) of the Global Reporting Initiative or that the Responsibility Information is not reliable, in all material respects, with regard to the Reporting criteria.

Our assurance statement should be read in conjunction with the inherent limitations of accuracy and completeness for responsibility information.

Helsinki 8.2.2018

Deloitte Oy

Jukka Vattulainen  
Authorized Public Accountant

Lasse Ingström  
Authorized Public Accountant



## GRI content index

### GRI 102-55

Abbreviations

BR = Business Report

GRI = GRI report

GS = Corporate Governance Statement

FS = Financial Statements

- The report is prepared in accordance with the GRI-standards (2016): core option.
- Communication on Progress (COP) of the UN Global Compact at Global Compact

GRI Standard	Disclosure	Page number(s)	United Nations Global Compact
<b>GRI 101: Foundation 2016</b>			
<b>General Disclosures</b>			
<b>Organizational profile</b>			
	102-1 Name of the organization	Kemira Oyj	
	102-2 Activities, brands, products, and services	BO 17–24	
	102-3 Location of headquarters	BO 2	
	102-4 Location of operations	BO 2	
	102-5 Ownership and legal form	BO 2	
	102-6 Markets served	BO 2, 17–24	
	102-7 Scale of the organization	BO 2	
	102-8 Information on employees and other workers	BO 2, GRI 47–56	
<b>GRI 102: General Disclosures 2016</b>	102-9 Supply chain	GRI 21–24	Principle 8
	102-10 Significant changes to the organization and its supply chain	GRI 60	
	102-11 Precautionary Principle or approach	GRI 13, BO 25–26	
	102-12 External initiatives	GRI 6	
	102-13 Membership of associations	GRI 7	
<b>Strategy</b>			
	102-14 Statement from senior decision-maker	BO 5–7	Commitment to Global Compact
	102-15 Key impacts, risks, and opportunities	BO 25–26, GRI 8–9	
<b>Ethics and integrity</b>			
	102-16 Values, principles, standards, and norms of behavior	GRI 27–28	Principle 6, 8
	102-17 Mechanisms for advice and concerns about ethics	GRI 27–28	Principle 1, 6, 8

GRI Standard	Disclosure	Page number(s)	United Nations Global Compact
<b>GRI 101: Foundation 2016</b>			
<b>General Disclosures</b>			
<b>GRI 102: General Disclosures 2016</b>	<b>Governance</b>		
	102-18 Governance structure	GRI 11	
	102-19 Delegating authority	GRI 11	
	<b>Stakeholder engagement</b>		
	102-40 List of stakeholder groups	GRI 7	
	102-41 Collective bargaining agreements	GRI 48	Principle 3
	102-42 Identifying and selecting stakeholders	GRI 7	
	102-43 Approach to stakeholder engagement	GRI 7	
	102-44 Key topics and concerns raised	GRI 7	
	<b>Reporting practice</b>		
	102-45 Entities included in the consolidated financial statements	FS Note 6.2	
	102-46 Defining report content and topic Boundaries	GRI 60	
	102-47 List of material topics	GRI 10, 61	
	102-48 Restatements of information	GRI 62	
	102-49 Changes in reporting	GRI 62	
	102-50 Reporting period	GRI 62	
	102-51 Date of most recent report	GRI 62	
	102-52 Reporting cycle	GRI 62	
	102-53 Contact point for questions regarding the report	GRI 62	
	102-54 Claims of reporting in accordance with the GRI Standards	GRI 62	
102-55 GRI content index	GRI 65		
102-56 External assurance	GRI 63		
GRI Standard	Disclosure	Page number(s) and/or URL(s)	United Nations Global Compact
<b>Material Topics</b>			
<b>GRI 200 Economic Standard Series</b>			
<b>ECONOMIC PERFORMANCE</b>	Not material but reported		
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10	
	103-2 The management approach and its components	GRI 29	
	103-3 Evaluation of the management approach	GRI 29	
<b>GRI 201: Economic Performance 2016</b>	201-1 Direct economic value generated and distributed	GRI 29	
	201-3 Defined benefit plan obligations and other retirement plans	GRI 33	
	201-4 Financial assistance received from government	GRI 33	

GRI Standard	Disclosure	Page number(s)	United Nations Global Compact
<b>ANTI-CORRUPTION</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 27	
	103-3 Evaluation of the management approach	GRI 27–28, 33–34	
<b>GRI 205: Anti-corruption 2016</b>	205-1 Operations assessed for risks related to corruption	GRI 33	Principle 10
	205-2 Communication and training about anti-corruption policies and procedures	GRI 33	Principle 10
	205-3 Confirmed incidents of corruption and actions taken	GRI 34	Principle 10
<b>ANTI-COMPETITIVE BEHAVIOR</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 27	
	103-3 Evaluation of the management approach	GRI 27–28, 34	
<b>GRI 206: Anti-competitive Behavior 2016</b>	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	GRI 34	
<b>GRI 300 Environmental Standards Series</b>			
<b>MATERIALS</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 12	
	103-3 Evaluation of the management approach	GRI 17–24	
<b>GRI 301: Materials 2016</b>	301-1 Materials used by weight or volume	GRI 35	Principle 7, 8
	301-2 Recycled input materials used	GRI 35	Principle 8
<b>ENERGY</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 17–21	
	103-3 Evaluation of the management approach	GRI 17–21	
<b>GRI 302: Energy 2016</b>	302-1 Energy consumption within the organization	GRI 36	Principle 7, 8
	302-3 Energy intensity	GRI 36	Principle 8
	302-4 Reduction of energy consumption	GRI 36	Principle 8, 9
<b>WATER</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 17–21, 41	
	103-3 Evaluation of the management approach	GRI 17–21, 41	
<b>GRI 303: Water 2016</b>	303-1 Water withdrawal by source	GRI 41	Principle 7, 8
	303-3 Water recycled and reused	GRI 41	Principle 8

GRI Standard	Disclosure	Page number(s)	United Nations Global Compact
<b>EMISSIONS</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 17–21	
	103-3 Evaluation of the management approach	GRI 17–21	
<b>GRI 305: Emissions 2016</b>	305-1 Direct (Scope 1) GHG emissions	GRI 39	Principle 7, 8
	305-2 Energy indirect (Scope 2) GHG emissions	GRI 39	Principle 7, 8
	305-3 Other indirect (Scope 3) GHG emissions	GRI 39	Principle 7, 8
	305-4 GHG emissions intensity	GRI 39	Principle 8
	305-5 Reduction of GHG emissions	GRI 39	Principle 8, 9
	305-6 Emissions of ozone-depleting substances (ODS)	GRI 43	Principle 7, 8
	305-7 Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	GRI 43	Principle 7, 8
<b>EFFLUENTS AND WASTE</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 17–21	
	103-3 Evaluation of the management approach	GRI 17–21	
<b>GRI 306: Effluents and Waste 2016</b>	306-1 Water discharge by quality and destination	GRI 41–42	Principle 8
	306-2 Waste by type and disposal method	GRI 44	Principle 8
	306-3 Significant spills	GRI 45	Principle 8
	306-4 Transport of hazardous waste	GRI 45	Principle 8
<b>ENVIRONMENTAL COMPLIANCE</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 17–21	
	103-3 Evaluation of the management approach	GRI 17–21	
<b>GRI 307: Environmental Compliance 2016</b>	307-1 Non-compliance with environmental laws and regulations	GRI 46	Principle 8
<b>SUPPLIER ENVIRONMENTAL ASSESSMENT</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 21–24	
	103-3 Evaluation of the management approach	GRI 21–24	
<b>GRI 308: Supplier Environmental Assessment 2016</b>	308-1 New suppliers that were screened using environmental criteria	GRI 21–24	Principle 8

GRI Standard	Disclosure	Page number(s)	United Nations Global Compact
<b>GRI 400 Social Standards Series</b>			
<b>EMPLOYMENT</b>			
	Not material but reported		
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 25–26	
	103-3 Evaluation of the management approach	GRI 25–26	
<b>GRI 401: Employment 2016</b>	401-1 New employee hires and employee turnover	GRI 49	Principle 6
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	GRI 50	
<b>LABOR/MANAGEMENT RELATIONS</b>			
	Not material but reported		
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 25–26	
	103-3 Evaluation of the management approach	GRI 25–26	
<b>GRI 402: Labor/Management Relations 2016</b>	402-1 Minimum notice periods regarding operational changes	GRI 50	Principle 3
<b>OCCUPATIONAL HEALTH AND SAFETY</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 17–21, 50–51	
	103-3 Evaluation of the management approach	GRI 17–21, 50–51	
<b>GRI 403: Occupational Health and Safety 2016</b>	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	GRI 50–51	
<b>TRAINING AND EDUCATION</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 25–26, 52	
	103-3 Evaluation of the management approach	GRI 25–26, 52	
<b>GRI 404: Training and Education 2016</b>	404-1 Average hours of training per year per employee	GRI 52	Principle 6
	404-2 Programs for upgrading employee skills and transition assistance programs	GRI 52	
	404-3 Percentage of employees receiving regular performance and career development reviews	GRI 53	Principle 6
<b>DIVERSITY AND EQUAL OPPORTUNITY</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 25–28	
	103-3 Evaluation of the management approach	GRI 25–26, 54–55	
<b>GRI 405: Diversity and Equal Opportunity 2016</b>	405-1 Diversity of governance bodies and employees	GRI 54–55	Principle 6
	405-2 Ratio of basic salary and remuneration of women to men	GRI 56	Principle 6

GRI Standard	Disclosure	Page number(s)	United Nations Global Compact
<b>NON-DISCRIMINATION</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 25–28	
	103-3 Evaluation of the management approach	GRI 25–28	
<b>GRI 406: Non-discrimination 2016</b>	406-1 Incidents of discrimination and corrective actions taken	GRI 28, 56	Principle 6
<b>FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 25, 28	
	103-3 Evaluation of the management approach	GRI 25, 28	
<b>GRI 407: Freedom of Association and Collective Bargaining 2016</b>	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	GRI 57	
<b>HUMAN RIGHTS ASSESSMENT</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 27–28	
	103-3 Evaluation of the management approach	GRI 27–28	
<b>GRI 412: Human Rights Assessment 2016</b>	412-1 Operations that have been subject to human rights reviews or impact assessments	GRI 57	Principle 1
<b>SUPPLIER SOCIAL ASSESSMENT</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 21–24	
	103-3 Evaluation of the management approach	GRI 21–24	
<b>GRI 414: Supplier Social Assessment 2016</b>	414-1 New suppliers that were screened using social criteria	GRI 21–24	Principle 2
<b>PUBLIC POLICY</b>			
<b>GRI 103: Management Approach 2016</b>	103-1 Explanation of the material topic and its boundary	GRI 10, 61	
	103-2 The management approach and its components	GRI 27–28	
	103-3 Evaluation of the management approach	GRI 27–28	
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**KEMIRA IS** a global chemicals company serving customers in water intensive industries. We provide expertise, application know-how and chemicals that improve our customers' product quality, process and resource efficiency. Our focus is on pulp & paper, oil & gas and water treatment. In 2017, Kemira had annual revenue of around EUR 2.5 billion and 4,730 employees. Kemira shares are listed on the Nasdaq Helsinki Ltd.

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