



# Annual Review 2016

Progress in operations and sustainability



# Committed to moving our customers' performance forward.



## Valmet reports 2016



### Annual Review 2016

The report describes Valmet's market environment and the progress of its strategy, operations and sustainability in 2016.



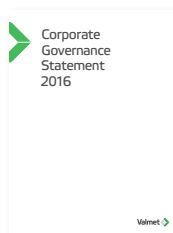
### GRI Supplement 2016

The report includes Valmet's sustainability reporting indicators and principles, and its alignment with the Global Reporting Initiative (GRI) G4 framework.



### Financial Statements 2016 and Information for Investors

The report includes Valmet's Financial Statements for 2016 and information about its shares, shareholders and management.



### Corporate Governance Statement 2016

The report covers Valmet's governance principles and activities, Board, management and remuneration in 2016.

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## In this report



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### Strategy

Valmet develops and supplies competitive process technology, services and automation to the pulp, paper and energy industries.



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### Our solutions

Our comprehensive offering and close cooperation with customers enable innovative technology and service development.



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### Health, safety and environment

We are committed to protecting the health, safety and environment of our people, partners, customers, and the communities where we operate.



# Consistent progress forward

Valmet took solid steps forward in its business performance and achieved a strong position as one of the world's sustainability leaders. We focused on strengthening our innovativeness and ability to bring the future solutions to our customers. We took a major leap during the year by launching a new, improved approach in services.

In 2016, we sharpened our view of the key megatrends and identified three large changes taking place that are creating opportunities for and posing challenges to Valmet. First, climate change and the scarcity of global resources are driving a global need to use resources more efficiently and to reduce emissions. The world is also becoming digital, with remarkable technologies being invented that are driving efficiency and enabling new ways of doing things. Furthermore, urbanization, increasing standards of living and sustainability awareness are resulting in increased consumption of renewable packaging and hygiene papers.

### **Our mission is a perfect fit with current megatrends**

Since the beginning, Valmet's Way Forward – the essence of the company's strategy – has been based on the mission of converting renewable resources into sustainable results. This means that with our unique combination of process technologies, services and automation solutions, we enable our customers to produce sustainable products from renewable raw materials, such as wood, waste or agricultural residues.

In 2016, we wanted to further define our role in the circular economy, and we realized that we are a key enabler of implementing the circular economy for our customers. We are developing future solutions to replace fossil fuels and plastics; to minimize the use of water, energy and other raw materials; and to enhance the lifetime and recyclability of our customers' production assets.

### **Solid and consistent business progress**

In 2016, Valmet made consistent business progress. Our profitability continued its steady improvement and for the second year in a row we reached our target range with a comparable EBITA margin of 6.7%.

The orders received by the Services business line increased by 6% and Automation business line contributed EUR 299 million to orders received. The services business developed well in all geographical areas, with Asia-Pacific and South America leading the growth. In automation, we continued to win market share via competitor replacements.

Some of the highlights were the agreements to supply a biomass-fired power boiler, biofuel storage and conveyor systems to Hofor's heat and power plant in Denmark and a biofuel boiler and environmental systems to Borås Energi in Sweden. We entered the Chinese energy market with a waste-to-energy boiler delivery agreement with Zibo Green Energy.

Our Advantage tissue technologies continued to receive excellent customer feedback, and we got five tissue machine orders from Poland, China, Mexico and the U.S. The market for board and paper technologies was activated in the latter part of the year. The order highlights were the agreement to supply an OptiConcept M board-making line to Pro-Gest in Italy, key technologies for Cheng Loong's new board machine in Vietnam, and an extensive board machine rebuild in Arkhangelsk in Russia.



## For the second consecutive year we reached the targeted profitability range.

Our ongoing pulp technology project at Metsä Group's bio-product mill progressed well. The CMPC Quaiba pulp mill project completed in Brazil in 2015 received an award from the Project management Institute (PMI) as one of the best projects in the world. In 2016, our services team successfully managed the first shutdown of the mill.

During the year, we received an order from CMPC for a white liquor plant for its Laja pulp mill project in Chile, and from Sappi in South Africa a demonstration-scale plant order for next-generation dissolving pulp cooking.

### **Our strong work in sustainability received recognition**

To Valmet and our customers, sustainability is at the core of the operations. Our Sustainability360° agenda covers all aspects of business and integrates our sustainability work with our strategic targets. In 2016, we carried out an extensive review of the agenda and introduced a new three-year action plan going forward. We also continued our special focus on developing sustainable procurement practices globally.

During the year, Valmet received two important third-party recognitions for our sustainability work and reporting: Valmet was included in the Dow Jones Sustainability World Index for the third consecutive year with a record high result, and on the CDP Climate A-list for its actions and strategy to mitigate climate change.

### **Important steps in customer excellence**

Our key tool to improve our performance is the set of four core focus areas we call "Must-Wins". They are aimed at improving our customer work, our position as an innovation and technology leader, our internal processes, and our culture and ourselves as a winning Valmet team.

In customer excellence, we finalized the first phase of a longer project to take our way to serve our customers into the next level. We introduced four core commitments to our customers and crystallized our services offering under three categories: performance services, reliability services and new technology. This sounds simple, but it was a major effort, and it means a large internal transformation and training process around the world.





Valmet  
Customer Days  
2016 gathered  
customers from  
35 countries  
to Stockholm,  
Sweden.

### **We want to create the future**

Last year, we continued to crystallize our R&D focus to ensure a future-oriented R&D portfolio and a solid roadmap going forward. Our R&D has three goals: to ensure advanced and competitive technologies and services, to enhance the efficient use of raw material and energy, and to promote renewable raw materials. This means that we develop leading, cost-competitive production and automation technologies and services; we combine our offering to reduce the consumption of raw material, water and energy; and we develop solutions to replace fossil materials with renewable ones.

We bring the benefits of the Industrial Internet to our customers by systematically building Industrial Internet solutions and a partner ecosystem. Our Industrial Internet solution has four building blocks: our strong fleet of installed process technologies, our automation platform, a vast number of applications and services to utilize the gathered data for customers' benefit, and the partner ecosystem that is being built to tie the best Industrial Internet knowledge together.

### **Focus on process improvements has brought results**

In building process excellence, we continued to focus on health, safety and the environment (HSE), quality, procurement, and project management processes. We have successfully introduced the Lean philosophy across all our businesses and functions. In 2016, we started a global enterprise resource planning (ERP) system renewal project, which is expected to bring a major leap forward in our internal operational excellence.

Our lost time incident frequency rate (LTIF) among our own employees was a record low 2.3 in 2016. Our systematic work to develop our safety culture and to embed HSE management practices into all aspects of our business has led to this

good development. In the coming years, we will put special emphasis on improving contractor safety management practices.

In procurement, we continued to reduce the procurement costs successfully. Our work to reduce costs caused by insufficient quality and to improve and harmonize our project management practices will still be intensified to reach the targets we have set for ourselves and to meet the highest customer expectations.

In the coming years, Valmet will be focusing on growing with improved profitability. Our new financial targets with a comparable EBITA margin target of 8-10 % are valid from 2017 onwards. Continuing our systematic internal development and ensuring organic business growth, especially in the stable business, meaning services and automation, are essential in reaching these targets.

### **We value our forward-oriented culture**

What is very special at Valmet today is our forward-looking, development-oriented mindset. We have reached this spirit by simplifying the way we do things and by sending signals across Valmet that we are moving forward all the time.

In 2016, we also discussed in more depth what is best about working at Valmet in order to attract forward-looking talent in the future, too. It turned out to be the feeling when we together as a team create sustainable and forward-moving results – that feeling when everything works together. I am confident that we can continue share this feeling of accomplishment with our customers and partners, and within the Valmet team in the coming year.

Thank you all for your trust, commitment and cooperation.

**Pasi Laine**  
**President and CEO**

**Must-Win: Customer excellence**

# Working together to move our customers' performance forward

Valmet serves 3,000 customer sites around the world. Every year, we implement hundreds of projects to supply new technology, upgrades or rebuilds to our customers. To succeed in achieving our mission of becoming the global champion in serving our customers, we target best safety performance, being close to customers both onsite and remotely, ensuring we have the right solutions to customer needs with the best quality, being reliable and prompt in our deliveries, and having the widest, most advanced and competitive offering on the market.

**Results with long-term services cooperation**

Valmet has several ongoing service agreements with CMPC's Maule folding boxboard mill. The Performance Agreement signed in 2012 has brought results in production records, quality improvements and energy savings. The agreements also include paper machine clothing, equipping the machine with forming fabrics, press felts and shoe press belts, and consumables covering e.g., doctor blades, sizer and coater rods, winder belts and blades. The agreements also cover related services.

**New greenfield board mill started up in China**

During 2016, Stora Enso started up their Valmet-supplied bleached chemi-thermomechanical pulp plant (BCTMP), consumer board-making line (BM 1) and automation system at their new Beihai Mill in Guangxi province in China. In designing the mill, special attention was paid to energy and raw material efficiency. The Beihai mill produces high-grade packaging board products that are used in beverages, food, medicine, cosmetics, graphics printing and other fields.

**New cooking technology for pulp mill modernization**

A Valmet-delivered modernization of a cooking system was successfully started up at Irving Pulp & Paper Limited in Saint John, New Brunswick, Canada, in March 2016. The delivery included CompactCooking G2 and ImpBin technologies. The technology enabled the mill to take a leap forward in performance with the latest cooking technology. The results included improved yield and pulp quality, and lower bleaching costs and energy consumption.





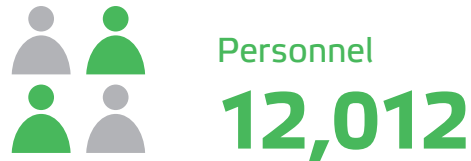
# This is Valmet

Valmet is the leading global developer and supplier of process technologies, automation and services for the pulp, paper and energy industries. We aim to become the global champion in serving our customers.

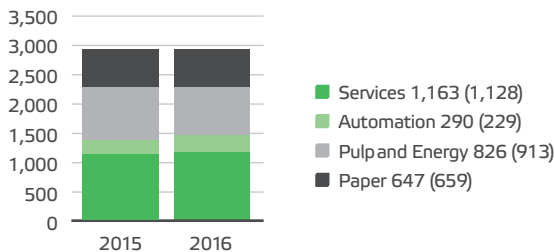
Valmet's strong technology offering includes pulp mills and tissue, board and paper production lines, as well as power plants for bioenergy production. Our advanced services and automation solutions improve the

reliability and performance of our customers' processes and enhance the effective utilization of raw materials and energy.

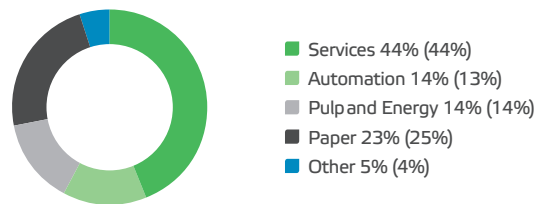
Valmet's net sales in 2016 were approximately EUR 2.9 billion. Our 12,000 professionals around the world work close to our customers and are committed to moving our customers' performance forward – every day. Valmet's head office is in Espoo, Finland, and its shares are listed on the Nasdaq Helsinki.



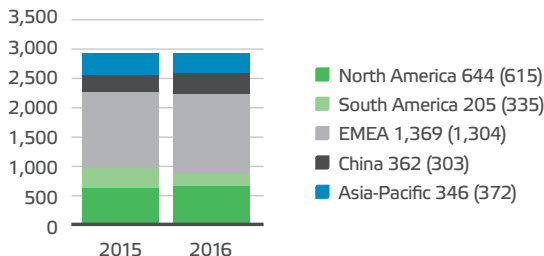
**Net sales by business line, MEUR**



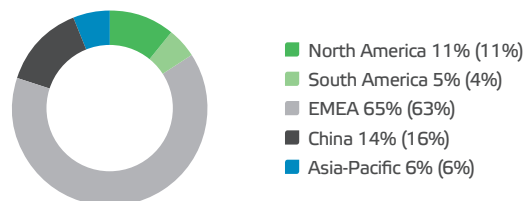
**Personnel by business line, %**



**Net sales by area, MEUR**



**Personnel by area, %**





## Key figures

	2016	2015 <sup>6</sup>	CHANGE
<b>FINANCIAL<sup>1</sup></b>			
Orders received, MEUR	<b>3,139</b>	2,878	9%
Services	<b>1,182</b>	1,119	6%
Automation	<b>299</b>	222	-
Pulp & Energy	<b>939</b>	864	9%
Paper	<b>718</b>	673	7%
Order backlog <sup>2</sup> , MEUR	<b>2,283</b>	2,074	10%
Net sales, MEUR	<b>2,926</b>	2,928	0%
Comparable EBITA <sup>3</sup> , MEUR	<b>196</b>	182	7%
% of net sales	<b>6.7%</b>	6.2%	
Operating profit (EBIT), MEUR	<b>147</b>	120	23%
% of net sales	<b>5.0%</b>	4.1%	
Dividend per share, EUR	<b>0.42<sup>4</sup></b>	0.35	20%
Return on capital employed (ROCE) before taxes, MEUR	<b>12%</b>	12%	
Research and development expenses, net, MEUR	<b>64</b>	59	8.5%
<b>SOCIAL</b>			
Personnel <sup>2</sup>	<b>12,012</b>	12,306	-2%
Lost-time incident frequency LTIF <sup>2, 5</sup>			
Own employees	<b>2.3</b>	3.3	-30%
Contractors	<b>4.4</b>	3.9	13%
Safety committee coverage, % personnel	<b>91</b>	80	
Support for non-profit organizations, MEUR	<b>0.3</b>	0.6	-54%
Number of supplier sustainability audits	<b>54</b>	41	32%
<b>ENVIRONMENTAL</b>			
CO <sub>2</sub> emissions <sup>7</sup> , 1,000 t	<b>83</b>	82	1%
Energy consumption, TJ	<b>1,346</b>	1,297	4%
Water consumption, 1,000 m <sup>3</sup>	<b>3,149</b>	3,031	4%
Waste, 1,000 t	<b>39</b>	39	0%
NO <sub>x</sub> , SO <sub>x</sub> and other significant air emissions, t	<b>69</b>	80	-14%



Orders received  
grew by  
**9%**



Comparable  
EBITA margin  
**6.7%**



**54**  
supplier  
sustainability  
audits



NO<sub>x</sub>, SO<sub>x</sub> and other  
significant air  
emissions reduced by  
**14%**

<sup>1</sup> Group figures: the formulas for calculation of the key financial figures are presented in the Financial Statements 2016.

<sup>2</sup> At the end of period.

<sup>3</sup> Comparable earnings before interest, taxes and amortization.

<sup>4</sup> Board of Directors' proposal.

<sup>5</sup> LTIF reflects the number of injuries resulting in an absence of at least one workday per million hours worked.

<sup>6</sup> 2015 figures include Automation, which has been included in Valmet's reporting since April 1, 2015.

<sup>7</sup> Scope 1 and 2 (location-based) emissions.

## Valmet business lines



### Services

Valmet’s comprehensive services offering increases the environmental and cost efficiency of production processes while ensuring safe and reliable operations.

We are dedicated to offering flexible and fit-for-purpose services to promote improved performance and reliability. Our services include spare parts, maintenance and shut-down management, consumables, process support and optimization, and process upgrades. Our remote service solutions complement our extensive local service network.



### Automation

Valmet’s automation solutions are designed to maximize the profitability of customers’ businesses by improving their production performance and their cost, material and energy efficiency.

Our offering includes advanced automation, quality control, measurement and analyzer solutions, as well as global expert services for the pulp and paper, power generation, marine, oil and gas, and other process industries. Valmet’s intelligent machines are fully automated, with connectivity available for Industrial Internet applications.



### Pulp and energy

Valmet’s technologies for pulp and energy production maximize the value of renewable raw materials while increasing production efficiency and minimizing environmental impact.

For pulp production, Valmet offers entire pulping lines, from wood handling to pulp drying. Our heat and power generation solutions focus on fluidized bed boilers fueled by biomass, waste or multiple fuels. We also offer environmental protection systems and innovative solutions for biomass conversion.

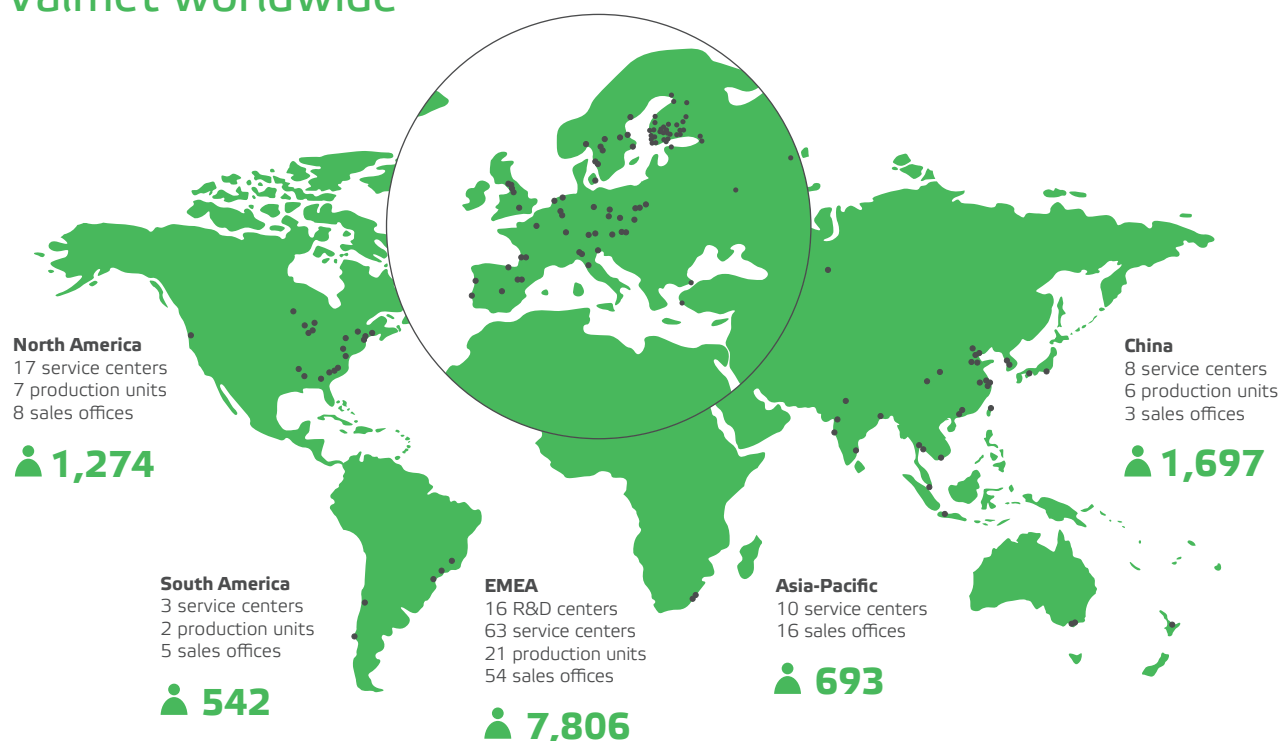


### Paper

Valmet has solid experience of developing and providing advanced technologies for board, tissue and paper production. Our technologies are designed particularly for high operational and environmental efficiency, flexibility and reliability.

Valmet’s offering ranges from key components and individual machine sections to entire production lines and machine rebuilds. The focus is currently on modularized and standardized technology concepts to meet the needs of the market.

## Valmet worldwide



Valmet is organized around four business lines and five geographical areas. The business lines – Services, Automation, Pulp and Energy, and Paper – are responsible for technology and product development, technology projects, and services solutions. The areas – North America, South America, EMEA (Europe, Middle-East and Africa), Asia-Pacific, and China – are responsible for sales and providing services, as well as supporting project deliveries in their respective regions.

Valmet has achieved a leading position in all its key market segments, delivering thousands of technology solutions and automation systems, and serving over 3,000 customer plants and mills globally.

### Global solutions with local presence

Valmet has a strong global presence that provides a good platform for growth. We have operations at a total of 161 locations in 33 countries. We have systematically increased our presence close to our global customers to serve different local needs.

North America is a mature, services-focused market with a large installed base to be served. The market provides recurring technology project opportunities in the pulp, energy, board and tissue industries. In South America, Valmet has a strong position in pulp mills and services. The market pro-

vides opportunities for services and technology projects in pulp, board, tissue and energy industries.

EMEA is Valmet's largest and most important area, with significant services and technology markets in all businesses.

In China and the Asia Pacific area, the services market is developing, with growth potential through the increasing installed base and aging machinery. In China, there are opportunities in board and tissue investments, while in Asia-Pacific there are project opportunities in pulp, energy, board and tissue through customers' portfolio changes or production line upgrades.

### Building the future based on a long industrial history

Over the decades, Valmet's businesses have evolved hand-in-hand with our customer industries. This development is continuing with the drive towards more efficient and sustainable process technologies, advanced automation, new biotechnology applications, and opportunities to utilize the Industrial Internet.

Valmet, and the different companies that over the years have become part of Valmet, have a long history. In 2017, Valmet celebrates 220 years of industrial history. The oldest part of today's Valmet – the fabrics business – started in 1797, when Tamfelt was established and became one of the leading suppliers of technical textiles.

# Valmet's value creation

## INPUTS



### Financial

- Total equity EUR 886 million
- Net interest-bearing debt EUR 52 million
- Cash and cash equivalents EUR 240 million

### Natural

- Purchased components (mainly metals-based)
- Purchased raw materials (mainly metals, minerals, polymers and gas)
- Energy consumption 1,346 TJ
- Water consumption 3,149,000 m<sup>3</sup>

### Human

- Number of employees 12,012
- FTE<sup>1</sup> of subcontractors and supervised workers
- Investment in development and know-how
- Investment in occupational health and safety

### Infrastructure

- 161 locations in 33 operating countries<sup>2</sup>
- 36 production units and over 100 service centers
- 86 sales offices
- Suppliers in over 50 countries

### Intellectual

- Proven customer references
- Technology know-how
- Product portfolio
- 16 technology centers and pilot facilities
- R&D expenses EUR 64 million
- 1,400 protected inventions

### Social and relationship

- Open dialogue with stakeholders (e.g. customer events, investor meetings, supplier days, stakeholder surveys)
- Cooperation with over 30 universities and research institutes
- Over 25 memberships in associations
- Relationships and partnerships
- Collaboration with local communities



## BUSINESS MODEL



### Customers

- Pulp and paper industry
- Energy industry
- Other process industries

### Key processes



### Our employees, expertise and experience

### Valmet's Way Forward:

Mission, Strategy, Must-Wins, Vision and Values



<sup>1</sup> Full-time equivalent  
<sup>2</sup> Includes technology centers  
 All figures are from Dec 31, 2016, unless otherwise stated.

## OUTPUTS



### Process technologies

- Pulping process equipment, process islands and complete pulp mills
- Individual board, tissue and paper machine sections, complete production lines and machine rebuilds
- Boiler islands, power plants, heating plants
- Environmental solutions
- Technologies for converting biomass to fuels, chemicals, and materials

### Automation

- Distributed Control Systems (DCS)
- Quality Control Systems
- Analyzers and measurements
- Performance and service solutions
- Industrial Internet and remote solutions

### Services

- Spare parts and components
- Maintenance and shutdown management
- Outsourcing services
- Production consumables
- Process support and optimization
- Process upgrades
- Remote solutions and services

### Other outputs

CO<sub>2</sub> emissions:

- Scope 1<sup>3</sup>: 16,600 tCO<sub>2</sub>
- Scope 2<sup>4</sup>: 66,000 tCO<sub>2</sub>
- Scope 3<sup>5</sup>: 1,377,000 tCO<sub>2</sub>

Waste:

- Non-hazardous waste 37,140 t
- Hazardous waste 2,050 t



## OUTCOMES



### Economic

- Wages and benefits EUR 795 million
- Payments to suppliers EUR 2,014 million
- Taxes EUR 56 million
- Support for non-profit organizations EUR 0.3 million
- Retained equity EUR 28 million
- Payments to shareholders and creditors EUR 67 million
- More efficient and profitable customers' processes

### Social

- Direct and indirect employment
- Improved employee competences
- Direct and indirect occupational health and safety
- Customer loyalty
- Trust and reputation
- License to operate
- Influence on operating environment and regulations

### Environmental

#### Valmet's own operations

- More efficient processes enable the use of less natural resources and lower CO<sub>2</sub> emissions

#### Customers' operations

- Valmet's technology and services enable the production of customer's products with less energy, water and raw materials and improved flexibility in fuel source selection to replace fossil fuels with renewable ones



## CUSTOMERS' END PRODUCTS

### Board



### Paper



### Tissue



### Pulp



### Process steam



### District heating



### Electricity



### Biofuels



### Biomaterials



<sup>3</sup> Scope 1 emissions are direct GHG emissions from sources that are owned or controlled by Valmet, such as fossil fuels burned on site.

<sup>4</sup> Scope 2 (location based) emissions are indirect GHG emissions resulting from the generation of electricity, heating and cooling, or steam generated off site but purchased by Valmet.

<sup>5</sup> Scope 3 data covers only four selected relevant categories; category 1: purchased goods and services; category 4: upstream transportation and distribution; category 6: business travel; and category 9: downstream transportation and distribution.

## Market data by business

BUSINESS	MARKET SIZE <sup>1</sup> & GROWTH	MARKET DRIVERS	PRODUCT GROUP	VALMET'S POSITION AND COMPETITION
<b>Services</b>	EUR 8.0bn ~1–2%	<ul style="list-style-type: none"> <li>Increasing pulp, paper<sup>2</sup> and energy production</li> <li>Demand for more efficient processes, maintenance and outsourcing of non-core operations</li> <li>Size and gradually aging installed base, capacity increases in China, South America and Asia-Pacific</li> <li>Machine and mill closures in EMEA and North America</li> </ul>	Rolls and Workshop Services	<ul style="list-style-type: none"> <li>#2–3</li> <li>Key competitors: Voith, Xerium</li> </ul>
			Mill Improvements	<ul style="list-style-type: none"> <li>#1–2</li> <li>Key competitors: Andritz, Voith</li> </ul>
			Performance Parts	<ul style="list-style-type: none"> <li>#1–2</li> <li>Key competitors: Andritz, Kadant, Voith</li> </ul>
			Fabrics	<ul style="list-style-type: none"> <li>#4–5</li> <li>Key competitors: Albany, AstenJohnson, Voith, Xerium</li> </ul>
			Energy and Environmental	<ul style="list-style-type: none"> <li>#1–2</li> <li>Key competitors: Amec FosterWheeler, Andritz</li> </ul>
<b>Automation</b>	EUR 2.0bn ~1%	<ul style="list-style-type: none"> <li>Aging machines and installed automation systems</li> <li>Investments in new pulp and paper machines and power plants</li> <li>Demand for intelligent technology</li> </ul>	Distributed Control System (DCS)	<ul style="list-style-type: none"> <li>#2 in P&amp;P<sup>3</sup>, niche player in Energy</li> <li>Key competitors: ABB, Honeywell, Emerson, Siemens, Yokogawa</li> </ul>
			Quality Management System (QMS)	<ul style="list-style-type: none"> <li>#1–2 in P&amp;P<sup>3</sup></li> <li>Key competitors: ABB, Honeywell, Voith</li> </ul>
			Analyzers and measurements	<ul style="list-style-type: none"> <li>#1 in P&amp;P<sup>3</sup></li> <li>Key competitors: ABB, BTG</li> </ul>
<b>Pulp</b>	EUR 1.4bn ~1%	<ul style="list-style-type: none"> <li>Growth in board and tissue consumption in Asia</li> <li>Need for virgin wood pulp. Decreasing availability of recycled paper and limitations to recycling rates</li> <li>Increased size of pulp lines and mills</li> </ul>		<ul style="list-style-type: none"> <li>#1–2</li> <li>Key competitor: Global leader with Andritz</li> </ul>
<b>Energy</b>	EUR 2.0bn ~1%	<ul style="list-style-type: none"> <li>Growth in energy consumption</li> <li>Demand for sustainable energy</li> <li>Modernization of aging plants</li> <li>Incentives and regulation</li> </ul>		<ul style="list-style-type: none"> <li>#1–3</li> <li>One of few global players in bioenergy niche</li> <li>Key competitors: Andritz, Amec FosterWheeler, Babcock &amp; Wilcox</li> </ul>
<b>Board</b>	EUR 1.0bn ~2–3%	<ul style="list-style-type: none"> <li>World trade, e-commerce and emerging markets growth driving packaging</li> <li>Demand for light-weight board</li> <li>Shift from plastic packaging to renewable materials</li> </ul>		<ul style="list-style-type: none"> <li>#1</li> <li>Key competitors: Voith, Bellmer</li> </ul>
<b>Paper</b>	EUR 0.3bn ~1%	<ul style="list-style-type: none"> <li>Increasing role of digital media decreasing demand for printing and writing papers</li> <li>Some growth in emerging markets</li> </ul>		<ul style="list-style-type: none"> <li>#1</li> <li>Key competitor: Voith</li> </ul>
<b>Tissue</b>	EUR 0.7bn ~3%	<ul style="list-style-type: none"> <li>Rise in purchasing power and living standards</li> <li>Fastest growth in emerging markets</li> </ul>		<ul style="list-style-type: none"> <li>#1</li> <li>Key competitors: Voith, Andritz, Toscotec</li> </ul>

<sup>1</sup> Market size is defined as Valmet's target market, meaning those geographical markets, product segments and customer industries where Valmet is currently competing or aiming to compete.

<sup>2</sup> Refers to board, paper and tissue, as well as other paper grades.

<sup>3</sup> Figures for 2015 production and 2015–20 growth based on RISI estimates

## Market data by area

AREA	MARKET SIZE <sup>1</sup> & GROWTH	MARKET CHARACTERISTICS	VALMET'S POSITION
<b>North America</b>	<p>Target market size: EUR 2.9bn</p> <p>P&amp;P annual production<sup>3</sup>: 150m tonnes, growth +0.2%</p>	<ul style="list-style-type: none"> <li>• Mature, services-focused market addressing large installed base</li> <li>• Capacity closures in printing papers partly offset by new capacity in board and tissue</li> <li>• Customer service agreements important driver for growth</li> <li>• Continued high customer focus on availability &amp; reliability in mills</li> <li>• Rebuild and new capacity opportunities in board and tissue grades</li> <li>• Rebuild projects in pulp mills expected to increase</li> </ul>	<ul style="list-style-type: none"> <li>• Net sales: EUR 0.6bn (22% of total)</li> <li>• Employees: 1,274 (11% of total)</li> <li>• Leading position in pulp and paper process technology projects, a well-established position in the services and automation business, and a dominant position in biomass boilers</li> </ul>
<b>South America</b>	<p>Target market size: EUR 1.5bn</p> <p>P&amp;P annual production<sup>3</sup>: 40m tonnes, growth +3.8%</p>	<ul style="list-style-type: none"> <li>• Services growth potential in new pulp lines, agreement-based business and service solutions for more efficient customer operations</li> <li>• Cyclical process technology business driven by large pulp mill investments</li> <li>• Project opportunities in tissue and board with new lines and rebuilds</li> <li>• Challenging economic situation in several countries, including Brazil and Argentina, negatively affecting growth in Latin American market</li> </ul>	<ul style="list-style-type: none"> <li>• Net sales: EUR 0.2bn (7% of total)</li> <li>• Employees: 542 (5% of total)</li> <li>• Valmet has a strong position and installed base in pulp mills and services</li> <li>• Continued strong competition from regional players expected in energy as well as from Andritz for large new pulp mills</li> <li>• Local presence important, especially in Brazil due to customs duties</li> </ul>
<b>EMEA</b>	<p>Target market size: EUR 6.2bn</p> <p>P&amp;P annual production<sup>3</sup>: 160m tonnes, growth +1.0%</p>	<ul style="list-style-type: none"> <li>• Valmet's largest area, with significant services and technology markets in all Valmet's businesses and a large installed base</li> <li>• Services growth potential through broader service offering and agreement-based business</li> <li>• Process technology project opportunities in board, tissue, pulp and energy, graphic paper continues to decline.</li> </ul>	<ul style="list-style-type: none"> <li>• Net sales: EUR 1.4bn (47% of total)</li> <li>• Employees: 7,806 (65% of total)</li> <li>• Leading position in pulp and paper process technology projects as well as in biomass boilers in energy</li> <li>• Leading position in the more fragmented services market and in P&amp;P automation</li> </ul>
<b>China</b>	<p>Target market size: EUR 2.2bn</p> <p>P&amp;P annual production<sup>3</sup>: 120m tonnes, growth +2.6%</p>	<ul style="list-style-type: none"> <li>• Growing services market while process technology market is flat with investment mainly in tissue and board technologies</li> <li>• Developing services market with growth potential through increasing installed base, aging machinery and need for increased efficiency</li> <li>• Process technology project opportunities in board and tissue, particularly in mid-size machines</li> </ul>	<ul style="list-style-type: none"> <li>• Net sales: EUR 0.4bn (12% of total)</li> <li>• Employees: 1,697 (14% of total)</li> <li>• Valmet is a leader in pulp and paper process technology business and has a strong position in services and P&amp;P automation market</li> <li>• Continued strong competition in mid-size machine segment</li> </ul>
<b>Asia Pacific</b>	<p>Target market size: EUR 2.6bn</p> <p>P&amp;P annual production<sup>3</sup>: 100m tonnes, growth +2.1%</p>	<ul style="list-style-type: none"> <li>• Service growth potential in both emerging and mature markets in growing installed base and market share</li> <li>• Process technology project opportunities in rebuilds grade changes and new capacity in pulp, board and tissue, and in multifuel boilers and renewable energy projects in selected countries</li> </ul>	<ul style="list-style-type: none"> <li>• Net sales: EUR 0.3bn (12% of total)</li> <li>• Employees: 693 (6% of total)</li> <li>• Leading position in P&amp;P process technology projects and increasing local presence</li> <li>• Increasing competition from Chinese players moving into Asia-Pacific region</li> </ul>



# Strategy

Valmet's Way Forward is our strategic roadmap. It crystallizes the identified megatrends, our mission, strategy and the related strategic actions that describe how we aim to achieve our vision of becoming the global champion in serving our customers.

Our mission defines our core purpose. With Valmet's solutions, our customers can refine renewable raw materials into sustainable and environmentally responsible products. Furthermore, our solutions help customers as well as Valmet to perform profitably and responsibly.

Valmet's business environment is impacted by megatrends that create both opportunities and risks. We have defined three key megatrends in the areas of resource efficiency, digitalization and consumer behavior, which we carefully consider when making strategic choices. Our values and sustainability agenda are closely linked to our strategy and Must-Wins.

Valmet focuses on pulp, paper and energy customers. Our strategy emphasizes the commitment to improving our customers' performance through our unique offering, combining process technologies, automation and services. Services and automation businesses operate in relatively stable markets that are driven by the size of the installed technology base and customer mill operating rates. Our process technologies comprise board, paper and tissue machines, as well as pulp mills, and heat and power boilers, which are all driven by our customers' new investments. All our businesses serve the same customer base, which enables us to deliver customer benefits through our full combined offering.

## Valmet's Way Forward





## Megatrends



### Resource-efficient and clean world

Climate change, environmental awareness and resource scarcity are driving the need to improve resource efficiency and lower emissions.

Increasing environmental awareness is driving more strict sustainability requirements from both authorities and consumers, resulting in an increasing need for clean and renewable energy and bio-products.

Scarcity of minerals, fossil fuels, biomass and other natural resources is driving the need to use recycled and renewable raw materials and side streams, as well as the need for constant improvement of process efficiency.

The increasing importance of sustainability and corporate citizenship is affecting companies' need to act in a responsible way.



The Paris Agreement, with the aim of limiting global warming, entered into force on November 4, 2016.



### Digitalization and new technologies

Digitalization, automation and new high-impact technologies are driving efficiency and new business models.

Digitalization is driving changes in consumption, for example, continuing the shift from printed to electronic media and increasing e-commerce, leading to changes in business models and the creation of new revenue streams.

The use of digital technologies is bringing possibilities to improve efficiency in existing businesses through faster information sharing between systems and machines, as well as the growing availability of digital information.

New high-impact technologies such as various biotechnologies, virtual reality and 3D printing are opening up opportunities for new high-value products and production methods.



The amount of online devices installed will increase to 24 billion by 2020<sup>1</sup>.



### Aware, urban and global consumer

Urbanization, increasing living standards, changing demographics, and globalization are driving changes in consumer behavior.

Urbanization is driving increasing concentration of energy demand, waste and emissions, sales of consumer goods through modern retail channels, and hygiene and sanitation levels.

The growing middle class and higher levels of education are leading to increasing purchasing power, living standards and consumer awareness, while the aging population, globalization and individualization are creating changing consumer preferences and making products, services and information increasingly available all over the world.



It is estimated that 2/3 of the global population will be living in urban areas by 2050<sup>2</sup>.

<sup>1</sup> Source: BI Intelligence, The Internet of Things report, 2015

<sup>2</sup> Source: United Nations, World Urbanization Prospects, 2014 revision

## Strategy implementation

Valmet's vision of becoming the global champion in serving our customers means that we want to be the leader in both market share and customer service. Our four Must-Wins bring structure and tell us where we should focus in our strategy implementation to reach these goals.

Valmet's strategy and financial targets are reviewed every year in our annual strategy process and confirmed by Valmet's Board of Directors. The strategy was reconfirmed in June 2016, when we also decided to set to ourselves higher, more demanding financial targets (see page 21). This is a result of our successful Must-Win implementation actions, which enabled us to reach our EBITA margin target range already in 2015.

### Major steps in customer excellence

As part of our strategic Customer excellence Must-Win, Valmet focuses on providing the best customer service by further strengthening our capabilities and presence close to our customers, and by providing customer benefits through our integrated offering.

Strengthening our local presence means we continue to build a strong sales and service network to ensure that we have capable and committed teams close to customers. We are fo-

In 2016, over 1,000 Valmet employees participated in 38 global Shared Journey workshops.

cusings particularly on countries with high market growth as well as countries where Valmet does not currently have a strong presence.

In 2016, we launched a renewed services offering and unified way to serve to enable better customer experience and growth in the services business. This new services approach is called "Shared Journey Forward" to convey the message of Valmet and customers working together toward the same goal of improving the performance and reliability of customer processes.

After the renewal, Valmet's entire range of services is easy to understand and choose from. Valmet's services are built to

## Strategy highlights 2016



### Marine scrubber delivery

Valmet announces an order to supply an exhaust gas scrubber system for two new TUI Cruises vessels, Mein Schiff 7 & 8.



### Fourth service center inaugurated in Brazil

The new service center in Maranhão focuses on serving the pulp, paper, tissue and panelboard industry.



### Board production line and automation system delivery in Italy

Valmet announced an order to supply an OptiConcept M containerboard production line and a mill-wide Valmet DNA automation system for Pro-Gest S.p.a. for the new Mantova site in Italy.

improve the reliability and performance of customers' processes and introduce new technology to keep the processes up-to-date in a changing business environment.

As part of this development work, we also crystallized our customer commitments: keeping safety as the number one priority, being close to our customers, serving customers with solutions that meet their needs, and being a trusted partner. This means that we never compromise on safety and safety culture, and we continuously develop our safety procedures. We are globally present, with over 100 service centers, and we utilize the Industrial Internet to help customers remotely as well. We need to earn our customers' trust every day by listening to them to find the best solutions for their specific needs.

**Competitive technology and customer-driven innovation**

With the Leader in technology and innovation Must-Win, our aim is to ensure that we are able to provide products that are competitive in terms of both cost and performance while developing new products and technologies that better meet our customers' needs.

Industrial Internet capabilities are utilized already today with e.g. 430 remote support agreements.

Improving our product cost competitiveness is key in reducing our customers' operational and investment costs and improving Valmet's profitability. We achieve this through increasing the modularization and standardization of our product design and by optimizing our delivery chain.

We continuously renew our existing product portfolio while developing innovative new solutions that improve our customers' performance and create new revenue streams for both our customers and Valmet. We place significant focus on developing our Industrial Internet solutions in areas, that enable us to bring new benefits to our customers, such as remote monitoring. (Read more about R&D on page 24).



**New sustainability action plans for 2016–2018 introduced**

After conducting an extensive review of the Sustainability360° agenda, Valmet set new roadmaps for 2016–2018. The roadmaps define specific actions, targets and KPIs for each focus area.



**Valmet's new services approach launched**

The renewed services offering and unified way to serve, called Shared Journey Forward, was launched to enable better customer experience and growth in the services business.



**First annual shutdown CMPC Guaiba II pulp mill**

The first annual shutdown at the Valmet delivered CMPC pulp mill was managed successfully. The pulp mill was started up in 2015 and the project won 2nd place in PMI's Project of the Year competition in 2016.

### Efficient global processes

Through the Excellence in processes Must-Win, our focus is to continuously increase our cost competitiveness and efficiency by improving our processes and operations.

Our global sales and project management initiatives aim to improve our gross profit by developing our common processes, tools and KPIs. To enhance our quality, we are implementing selected Lean projects and continuous improvement practices across our businesses. In HSE, we continue to systematically reinforce safety awareness and implement new procedures to improve the health and safety of both Valmet employees and our contractors.

In procurement, we are targeting cost savings through expanding our category management, design-to-cost implementation and supplier relationship management. To keep our cost structure competitive, we continuously aim to

increase our flexibility and optimize our value chain while responding to cyclical demand. Finally, we are investing in operational excellence through our new ERP (enterprise resource planning) program, which spans all our business lines, geographical areas and corporate functions.

### High-performing teams close to customers

With our Winning team Must-Win initiative, we want to ensure that Valmet's capabilities are globally balanced and close to our customers, and that we have engaged and performance driven teams with a shared set of values.

To further strengthen our shared values, which we defined in 2014, we are systematically building employee engagement and implementing targeted actions based on the OurVoice engagement survey. To drive high performance, we are improving our performance management practices by developing managerial skills and adjusting our reward practices. Finally, to ensure our capabilities are globally balanced, we are boosting internal mobility and enhancing our training offering with a focus on local needs.

The progress of our Must-Wins is presented in the table on page 19.

Our lost time incident frequency rate (LTIF) among Valmet employees was a record low 2.3 in 2016.

#### First W-to-E plant in China

Valmet agreed on the first waste-to-energy boiler plant delivery in China for Zibo Green Energy. The plants uses about 350.000 tons of solid recovered fuel (SRF) annually.

#### Large biomass CHP plant in Denmark

Valmet delivers a 500 MW biomass-fired power boiler, biofuel storage and conveyor systems for HOFOR's new BIO4 power plant in Denmark.

#### Entry to Japanese energy market

Valmet's first multifuel boiler delivery agreement to the Japanese market.

#### Three tissue production lines for Sofidel

Valmet supplies two Advantage NTT tissue production lines for Sofidel America's new mill in the USA. Earlier, Sofidel had invested in their first Advantage NTT line at their mill in Poland.

#### Recognized leader in sustainability

Valmet was included in the Dow Jones World and Europe Sustainability indices and CDP's Climate A list.

MEMBER OF  
**Dow Jones Sustainability Indices**  
In Collaboration with RobecoSAM



SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

## Progress of Must-Win actions

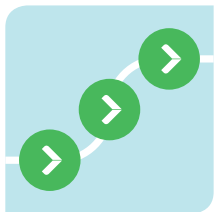
MUST-WIN	STRATEGIC GOALS	KEY ACHIEVEMENTS IN 2016	KEY ACTIONS FOR 2017
<b>Customer excellence</b>	Valmet has strong, capable, and committed teams close to customers. We serve our customers with our full offering and differentiate by combining process technology, automation and services.	<ul style="list-style-type: none"> <li>• Sales management program launched with 20 Agility through Sales workshops conducted covering over 800 participants</li> <li>• 75 mill team pilots started to implement common customer account management and to increase market share</li> <li>• Renewed service approach "Shared Journey Forward" launched</li> </ul>	<ul style="list-style-type: none"> <li>• Further strengthen key account management at corporate level</li> <li>• Continue mill team development</li> <li>• Continue implementation and communication of "Shared Journey Forward"</li> </ul>
<b>Leader in technology and innovation</b>	Valmet provides leading technology and competitive products and services that improve resource efficiency and reduce our customers' operating and investment costs. We innovate and develop solutions that create new customer revenues, and we promote renewable materials and Industrial Internet offering.	<ul style="list-style-type: none"> <li>• Competitiveness or gross profit improved in most of selected products although not all goals reached</li> <li>• Orders received for new products increasing for third consecutive year</li> <li>• Number of new product launches exceeding the target</li> <li>• Increased focus on Industrial Internet</li> </ul>	<ul style="list-style-type: none"> <li>• Improve competitiveness and gross profit of selected products</li> <li>• Develop new technologies and services</li> <li>• Cooperate with customers and partners to develop spearhead Industrial Internet solutions</li> </ul>
<b>Excellence in processes</b>	Valmet operates with efficient and harmonized processes with continuously increased cost competitiveness. In process technology business we increase our flexibility to respond to cyclical demand. Quality, health and safety are constantly improved.	<ul style="list-style-type: none"> <li>• New ERP program launched</li> <li>• Harmonized sales process introduced for solution sales</li> <li>• Extensive Lean implementation and training roll-out continued; over 4,000 Valmet employees have completed the Lean e-learning course</li> <li>• Lost time incident frequency decreased from 3.3 to 2.3</li> <li>• Procurement cost saving target exceeded</li> <li>• 31% of new suppliers gone through supplier approval process and screened for sustainability</li> <li>• 54 supplier sustainability audits conducted by Valmet and a third-party auditor</li> </ul>	<ul style="list-style-type: none"> <li>• Roll-out ERP program in Service Finland</li> <li>• Implement globally harmonized sales process to improve product margin</li> <li>• Continue implementation of Valmet-wide project execution model</li> <li>• Implement continuous improvement practices throughout Valmet</li> <li>• Introduce common safety risk assessment standards and reinforce safety culture</li> <li>• Contractor safety in focus</li> <li>• Expand category management and design-to-cost activities</li> <li>• Ensure globally aligned approval process for new suppliers</li> <li>• Support key suppliers as part of the sustainable supply chain program</li> </ul>
<b>Winning team</b>	Valmet has engaged, performance-driven teams living Valmet's shared values. Competences are globally balanced and close to customers.	<ul style="list-style-type: none"> <li>• Definition and execution of values roadmap to further strengthen values</li> <li>• Mandatory mid-year review process and new feedback channel implemented to strengthen feedback culture</li> <li>• ManagerAcademy training launched to strengthen managerial skills in line with manager role</li> <li>• Talent Review process expanded to include all key managerial positions</li> <li>• Actions to improve resourcing capability on strategic and operational levels</li> </ul>	<ul style="list-style-type: none"> <li>• Execute OurVoice personnel engagement survey and utilize results to plan future actions</li> <li>• Use 360° feedback to continue leadership development</li> <li>• Build competence development solutions to support Shared Journey Forward and sales capabilities</li> <li>• Utilize global training portfolio, building programs for project execution and R&amp;D</li> <li>• Promote internal mobility</li> </ul>

# Sustainability embedded into our strategy implementation

Valmet's sustainability agenda was renewed in 2016 with updated action plans for 2016–2018. The Sustainability360° agenda is embedded into our strategy implementation and Must-Wins, and Valmet has a comprehensive approach to sustainability. The agenda focuses on five core areas: supply chain; health, safety and environment; people; sustainable solutions; and corporate citizenship. The sustainability agenda is approved by Valmet's Executive Team and it is reviewed annually.

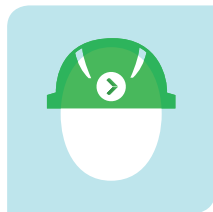
Our Sustainability360° agenda is also aligned with the United Nations Sustainable Development Goals (see below), which aim to end poverty, protect the planet, and ensure prosperity for all. With our products and services, we especially contribute to the following UN goals: climate action; affordable and clean energy; industry, innovation and infrastructure; responsible consumption and production; and clean water and sanitation. Furthermore, we actively contribute to the goals of decent work and economic growth, reduced inequality, and gender equality.

## Sustainability360° agenda focus areas



### Sustainable supply chain

- We continue to develop sustainable procurement practices globally
- We support selected key suppliers to meet the level of sustainability expected by Valmet



### Health, safety and environment (HSE)

- We develop our processes, competences and culture for HSE excellence
- We secure that our operations meet our HSE standards



### People and performance

- We develop and engage our people
- We continuously strengthen leadership and managerial skills
- We are a responsible employer and promote diversity



### Sustainable solutions

- We increase the understanding of our customers' sustainability needs
- We integrate sustainability criteria into our R&D processes



### Corporate citizenship

- We ensure that our people know and understand Valmet's Code of Conduct
- We transparently communicate about our operations
- We support local communities in which we operate

## Relevant UN Sustainable Development Goals linked to Valmet's Sustainability360° agenda

 5 GENDER EQUALITY	 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	 8 DECENT WORK AND ECONOMIC GROWTH	 8 DECENT WORK AND ECONOMIC GROWTH	 9 INDUSTRY INNOVATION AND INFRASTRUCTURE	 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	 6 CLEAN WATER AND SANITATION	 10 REDUCED INEQUALITIES	 5 GENDER EQUALITY	 8 DECENT WORK AND ECONOMIC GROWTH
 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	 7 AFFORDABLE AND CLEAN ENERGY	 13 CLIMATE ACTION	 10 REDUCED INEQUALITIES	 8 DECENT WORK AND ECONOMIC GROWTH	 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	 6 CLEAN WATER AND SANITATION	 10 REDUCED INEQUALITIES	 5 GENDER EQUALITY	 8 DECENT WORK AND ECONOMIC GROWTH

## New financial targets

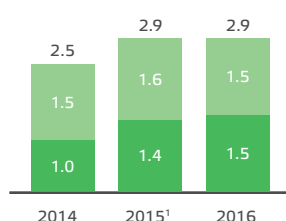
Since the demerger from Metso in 2013, Valmet has systematically strengthened its offering and market position. We have also succeeded in achieving good results in our internal efficiency programs. As a result of this systematic work, Valmet's financial performance has improved every year, and the company reached its comparable EBITA margin target range in 2016 for the second consecutive year.

In parallel with its strategy review in June 2016, Valmet announced new, more demanding financial targets that are valid from 2017 onwards. The company aims to grow with

improved profitability, and has raised and narrowed its comparable EBITA margin target range from 6-9 percent to 8-10 percent. It is also targeting growth in net sales of its stable business (Services and Automation business lines) of over two times the market growth. In its process technology businesses (so called capital businesses meaning Pulp and Energy, and Paper business lines) the company is targeting a net sales growth that exceeds the market growth. To reach these new targets, Valmet will continue to implement its strategy with its four Must-Win initiatives.

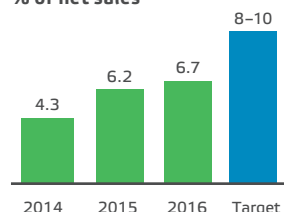
	TARGET	KEY ACTIONS TO REACH THE TARGET
<b>Growth</b>	Net sales in stable business to grow over two times the market growth Net sales in capital business to exceed market growth	<ul style="list-style-type: none"> <li>• New Valmet way to serve</li> <li>• Improved sales process</li> <li>• Leverage strong installed base</li> <li>• Innovation and new technology development</li> </ul>
<b>Profitability</b>	Comparable EBITA target 8-10%	<ul style="list-style-type: none"> <li>• Sales process management</li> <li>• Project management and project execution</li> <li>• Procurement &amp; quality</li> <li>• Technology, R&amp;D and ERP</li> </ul>
<b>ROCE</b>	Comparable return on capital employed (pre-tax), ROCE target 15-20%	<ul style="list-style-type: none"> <li>• Profitability improvement</li> <li>• Net working capital improvement</li> </ul>
<b>Dividend payout</b>	At least 50% of net profit	

Net sales, EUR billion

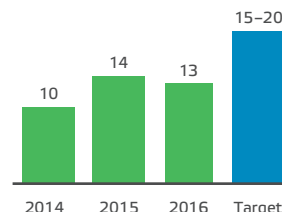


■ Stable business  
■ Capital business

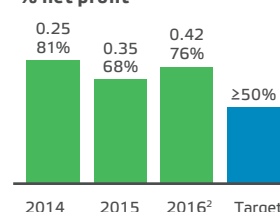
Comparable EBITA, % of net sales



Comparable ROCE, %



Dividend per share, EUR/  
% net profit



<sup>1</sup> Figures include Automation net sales from April 1, 2015 onwards

<sup>2</sup> Proposal by the Board of Directors

**Must-Win: Customer excellence**

## Unique offering combining process technology, automation and services

Valmet's offering combines process technology, automation and services. This unique combination differentiates Valmet from its competitors. Continuous development of solutions is based on strong research and technology development as well as close cooperation with our customers.

### Large multifuel boiler and automation project

Turun Seudun Energiantuotanto Oy is building a new combined heat and power plant (CHP) in Naantali, Finland, scheduled for start up in autumn 2017. Valmet is delivering a circulating fluidized bed (CFB) multifuel boiler, flue gas cleaning equipment, and an automation system for the project. The fuel capacity of the power plant is about 430 MW, which will produce 146 MW of electricity and 250 MW of heat. The plant can run on wood, straw, peat, coal, refinery gas and recovered fuel (REF).



### Four energy efficient tissue machine start-ups in three months

Between September and December 2016, Valmet delivered four Advantage DCT tissue production lines and related automation systems to one of China's leading paper and pulp producers, Lee & Man Manufacturing Ltd's mill in Chongqing, China. The Advantage DCT machines are equipped with an Advantage ViscoNip press, an AirCap steam-heated hood, and cast Yankee dryer, providing a new way to significantly reduce energy consumption and achieve high environmental performance.

### Extensive board machine rebuild in India

Valmet will supply an extensive board machine rebuild from headbox to reel and including an automation solution for machine and quality control, to the ITC Bhadrachalam mill in India. The rebuilt production line will produce high-quality lightweight coated board in a wide range of grades. The project started in 2016, and the rebuilt machine is scheduled to start up in the first quarter of 2018.







# Our solutions

Valmet's unique product and services offering is based on leading technology and a continuous drive to develop new and innovative solutions for improving our customers' performance in terms of both competitiveness and sustainability.

Valmet's unique combination of process technology, automation and services is built on strong technology knowledge and sets us apart from our competitors.

We offer comprehensive process technology and automation solutions for pulp, paper and energy production. Our services offering increases the resource and cost efficiency of production processes, while ensuring safe and reliable operations.

Our comprehensive offering and close cooperation with customers enable innovative product and service development. Valmet launches close to 100 new products to the market every year. The value of new products in Valmet's orders received has increased over recent years, and it was about EUR 751 million in 2016.

## **Products and services promoting sustainability**

Customers' sustainability needs also drive Valmet's product development. During recent years, we have seen growing interest in optimization regarding e.g. energy, chemicals savings, efficiency of operations and availability of equipment.

Valmet's solutions are at the forefront of the global megatrends of resource efficiency, clean solutions and digitalization. One clear indicator is the role our solutions play in the circular economy e.g. by increasing resource efficiency, with product recyclability and new renewable products and materials.



## Research & development

Valmet's research and technology development work aims to ensure that we have an advanced and competitive offering of process technologies, automation and services for current and future customers; to enhance raw material, water and energy efficiency; and to promote the use of renewable raw materials.

In the longer term, our vision is to develop mills that can produce pulp, paper and other bioproducts without emissions and with minimum consumption of resources, and new high-value end products utilizing bio-based raw materials.

Valmet's research and development work is driven by customer needs. These include improved production efficiency, availability, usability, safety and environmental performance, reduced investment and operational costs, maximizing the value of raw materials, and providing high-value end products and new revenue streams.

### Combining our own and our partners' resources

Valmet has about 1,400 protected inventions in its patent portfolio. Valmet's 16 R&D centers and pilot machines form the backbone of our research and development work. With the help of these centers, we can decrease the time to market and reduce risks in commercializing new technologies. Valmet's pilot machines carry out both internal R&D and customer projects. Valmet has the equivalent of 400 full-time

R&D professionals working across its businesses and areas. In 2016, Valmet's R&D spend was EUR 64 million.

At Valmet, we actively work to combine our own resources and networks to create a competitive edge in product development. This work includes cooperating with universities, research institutes, customers and suppliers, as well as joint development consortiums.

### Industrial Internet applications

Valmet has put special development effort into keeping and developing its advantage in Industrial Internet applications. Valmet's Industrial Internet offering consists of process technologies, automation platforms, applications and services, and ecosystems that bring together Valmet's experts, partners and customers' production processes.

Valmet offers advanced remote control solutions for mills and plants, and is constantly working to utilize big data analytics in preventative maintenance as well as remote communication possibilities. The first steps have been taken in introducing motion and voice control into control rooms, and virtual and augmented reality applications are making their way into Valmet's services offering, as well. One example is a virtual boiler inspection demonstration, which integrates thousands of individual measurement results into a virtual reality 3D model.

## About

# 1,400

protected inventions

In 2016, R&D spend of

# EUR 64 million

### VALMET'S R&D CENTERS

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Energy and Biotechnology, Tampere, Finland

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Automation, Tampere, Finland

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Fabrics and Service, Tampere, Finland

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Fabrics, Juankoski, Finland

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Paper and Board Technology, Jyväskylä, Finland

---

Polymer and Hard Coating, Jyväskylä, Finland

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Fiber Technology, Inkeroinen, Finland

---

Finishing Technology, Järvenpää, Finland

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Cutter Technology, Pori, Finland

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Air Systems, Raisio, Finland

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Automation, R&D Center, Kajaani, Finland

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Fiberline and Biotechnology, Sundsvall, Sweden

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Cooking and Biotechnology, Karlstad, Sweden

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Tissue Technology, Karlstad, Sweden

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Evaporator Technology, Gothenburg, Sweden

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Filter Fabrics, Ovar, Portugal

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## Valmet's unique customer offering

– combining process technologies, automation and services



## Sustainability360° agenda: Sustainable solutions progress

TARGETS	ACTION PLAN 2016–2018	KEY ACHIEVEMENTS 2016
<b>Deepen understanding of customers' sustainability needs</b>	<ul style="list-style-type: none"> <li>• Conduct interviews with selected key customers and integrate improvement actions into key account management process</li> <li>• Arrange sustainability training for sales teams</li> </ul>	<ul style="list-style-type: none"> <li>• Five in-depth interviews with key customers conducted</li> <li>• Benchmark study on 10 key customers covering e.g., sustainability strategy, goals, actions, measurements and reporting</li> <li>• Training arranged for Key Account Managers on Valmet's sustainability messages and actions</li> </ul>
<b>Integrate sustainability into research and development processes and tools</b>	<ul style="list-style-type: none"> <li>• Integrate sustainability aspects into R&amp;D guidelines, processes and product portfolio management tools</li> </ul>	<ul style="list-style-type: none"> <li>• Guidelines for sustainable and responsible research, product development and design in Valmet developed</li> <li>• R&amp;D report template modified to include sustainability aspects of main new product and prototype launches</li> </ul>
<b>Ensure product compliance</b>	<ul style="list-style-type: none"> <li>• Investigate and map the scope and depth of take-back programs</li> </ul>	<ul style="list-style-type: none"> <li>• Existing take-back programs identified</li> </ul>

## Valmet's role in the circular economy

The circular economy aims to keep products, components and materials in a continuous cycle instead of disposing of them. Valmet has a strong role in the circular economy by offering customers technology and services for converting renewable resources into sustainable products such as pulp, board and bioenergy.

### Helping customers to implement the circular economy

Customers can improve and optimize their resource efficiency by using Valmet's technology and maintenance solutions. Intelligent machines and advanced automation optimize resource use and save raw materials and energy.

Valmet's energy boilers and gasification technologies enable the flexible use of a wide range of renewable fuel sources for energy production, reducing the need for non-renewable fuels. This includes efficient energy recovery from various waste streams, including agricultural, industrial and municipal waste.

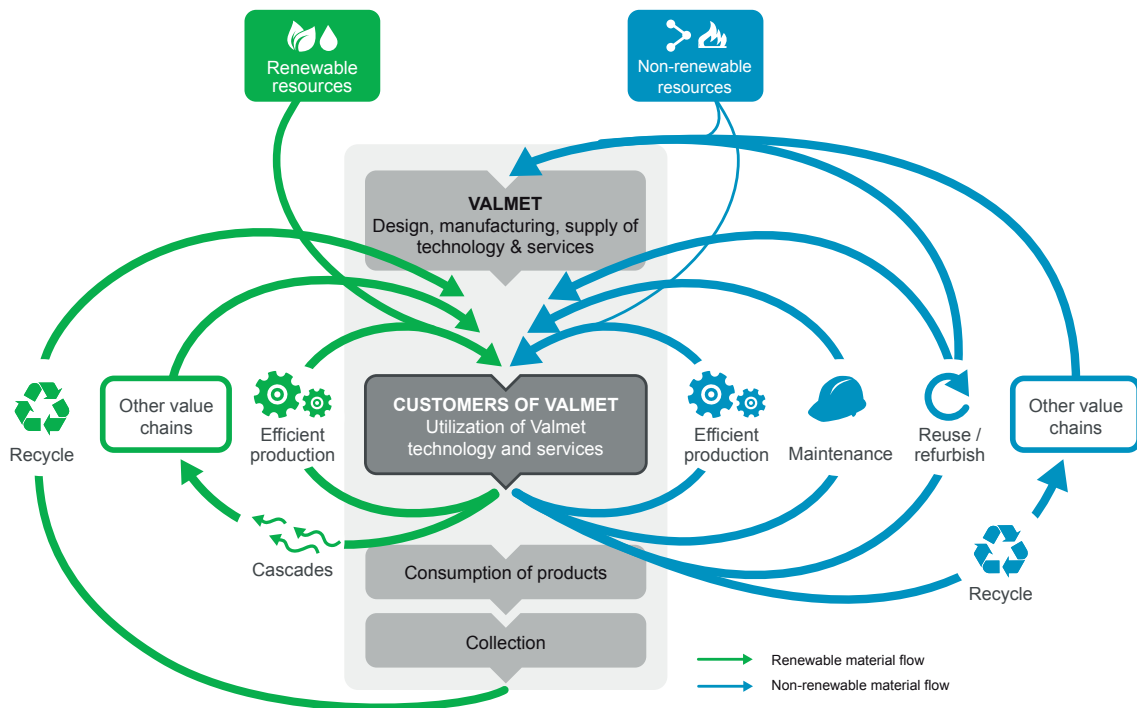
Valmet's solutions for pulp production are built on efficient and sustainable extraction of fibers from wood, while also focusing on chemical and energy recovery in the processes. This allows materials to circulate within customers' production processes for longer and decreases the need for virgin resources.

Valmet's machinery design and services enable flexible reuse and conversions. The effective lifetime of equipment can be significantly prolonged with well-planned maintenance and partial replacements of production assets. Modular design and smart engineering enable to use the same equipment for other purposes, and make it possible to modernize production equipment and maximize their efficiency with the latest solutions, with only having to upgrade part of the machinery.

Valmet is introducing new technologies to expand the use of bio-based materials and to introduce new bio-based products, decreasing the need for non-renewable materials. The possible cascades include e.g., bio-oil, biocoal and extracted lignin, which can further be used for making bio-based chemicals and materials.

### Resource efficiency in Valmet's own operations

Valmet is also implementing the circular economy in its own operations by continuously improving resource efficiency, maximizing utilization of metals, using a resource efficient supply chain, shared use of assets and preventive maintenance.



**Must-Win: Leader in technology and innovation**

## Advanced and competitive technologies based on innovations

Valmet has a systematic approach to research and technology development. Transforming an idea into a commercial product consists of various steps often including pilot tests in Valmet's own R&D Centers, and may in some cases take several years. Over the years Valmet has been able to introduce both small product improvements and revolutionary innovations to the market. Our innovations improve the competitiveness of our technologies and satisfy customer needs.

### Cutting lead times and time to market with 3D printing

3D printing, also called additive manufacturing, is an example of an emerging technology that we can utilize in our product development. Valmet has already adopted 3D printing technology to manufacture molding patterns and selected spare parts. The benefits of 3D printing include shorter lead times, rapid on-demand deliveries, and cutting the time to market of new products.



### Renewable biomass to replace coal

One of Valmet's technologies to move from fossil to renewable energy production is steam-exploded black pellets (biocoal). Black pellets are safer, easier to transport, and hold about 15% more energy than conventional "white" biomass pellets. The black pellets have high moisture durability and can replace up to 70–100% of fossil coal, depending on the size of the power plants, thus significantly reducing carbon emissions.

### Lightweighting with aqua cooling calendering

In coated board production, lightweighting means that at least the same end-product quality can be produced with less raw materials. Using aqua cooling calendering, fiber saving potential of up to 5% can be gained while maintaining strength and visual properties. In this method, the web is cooled by spraying a controlled amount of water onto the web surfaces and immediately evaporating the water by blowing cool, dry air over it.



# Supply chain

Valmet works to continuously enhance its supply chain management and the transparency of its value chain. Sustainability is fully integrated into Valmet's way to operate in procurement.

Valmet purchases a variety of different metals-based products and components, electronics, and different services globally. Procurement operations play a significant role in ensuring Valmet is efficient and profitable. Products and components comprise 72% and purchased services 28% of Valmet's total procurement spend.

Suppliers are an integral part of our manufacturing and delivery processes. Valmet has some 10,000 active direct suppliers from more than 50 countries. Some 65% of Valmet's purchases originate from Finland, Sweden and the United States.

Valmet continues to target annual savings of no less than 3% in procurement and to implement a sustainable supply chain. The supply chain focus is moving from traditional cost reduction to new actions, e.g., increasing design-to-cost (DTC) to create new sources for savings, enhancing global category management, and improving supplier involvement through supplier relationship management (SRM).

Valmet recognizes its responsibility to reduce negative environmental and social impacts throughout its value chain, starting from its supply chain, throughout its own operations and during the customer use phase of its technologies, automation and services.



### Sustainable procurement practices

Ensuring a sustainable supply chain is one of Valmet's five sustainability agenda focus areas. Valmet has a systematic approach to further integrating sustainability into its procurement practices globally. Valmet's procurement process includes gates and actions to ensure that Valmet cooperates only with suppliers who share its ethical principles and ideology of responsible business practices.

In ensuring a sustainable supply chain during the reporting year 2016, the main challenges were related to supplier audit follow-ups, where we sometimes experienced long response times from our audited suppliers to the agreed corrective actions.

### Sustainable supply chain management process

To secure transparent and unified global supplier management, Valmet continued to implement a common supplier evaluation process in 2016. The process is mandatory in evaluating new suppliers before cooperation begins.

Sustainability gates are an integrated and automated part of the supplier evaluation process. The automated process ensures that all suppliers are assessed in relation to their potential sustainability risk, sign the Sustainable Supply Chain Policy, and complete a sustainability self-assessment, if required based on the risk assessment. The online self-assessment is available in nine languages. In 2016, 31% of all new suppliers were automatically screened on sustainability. The remaining suppliers have been manually assessed on sustainability risk. The screening covers business ethics, compliance, human rights and labor rights, health, safety and environment management, as well as product safety topics.

**1,100**  
supplier sustainability  
audit findings

**450**  
Valmet procurement  
professionals trained in  
sustainability

### Purchases (10 largest countries)

EUR MILLION	2016	2015
Finland	758	770
Sweden	211	194
USA	130	143
China	114	132
Germany	75	78
Poland	65	30
Italy	40	29
Estonia	30	35
United Kingdom	29	20
Brazil	24	74

## A global supplier sustainability management process

### Required from all suppliers

#### Sustainable Supply Chain Policy

All suppliers are required to sign Valmet's Sustainable Supply Chain Policy.

#### Sustainability risk assessment

All suppliers are evaluated through a five-level sustainability risk assessment.

### Required based on supplier risk assessment

#### Supplier self- assessments

A weak result in the risk assessment leads to a supplier sustainability self-assessment.

#### Sustainability audits

A weak result in the self-assessment leads to an audit.

Valmet expects all its suppliers to comply with the sustainability requirements in the policy and has zero tolerance towards the use of forced labor or child labor. Compliance with the policy is the starting point for entering into and maintaining all business relationships with Valmet. The policy acts as a basis for supplier risk evaluations, sustainability self-assessments and supplier sustainability audits.

In 2016, Valmet conducted a total of 54 supplier sustainability audits using Valmet's global sustainability audit protocol together with an independent, certified, third-party auditor, in Croatia, Poland, Lithuania, India, Thailand, China, Brazil, Mexico and Indonesia. The majority of findings (60% of all findings) were related to human and labor rights, as well as health and safety. In 2016, Valmet also developed tools and guidance related to the sustainability audit process and continued with internal training, and enhanced ways to operate for its global procurement organization.

Valmet's sustainability audit protocol was created in late 2015, and all audits done in 2016 used the new checklist, which enables a unified way to operate in sustainability audits globally. The protocol ensures the process is consistent and enables comparability between suppliers. Sustainability audit findings are either based on non-conformity with Valmet's Sustainable Supply Chain Policy or local or international law. All findings from sustainability audits are followed up

through a corrective action plan performed by the supplier. All corrective actions are monitored and verified accordingly. If the supplier does not proceed with corrective actions agreed together, Valmet is prepared to support the supplier in implementing the corrective action. If the supplier does not want to proceed with the corrective actions, Valmet reserves the right to terminate the contract with the supplier.

#### Developing more sustainable transportation solutions

Valmet has developed the tracking of its carbon footprint in transportation. Valmet constantly seeks more sustainable ways to transport its goods. In 2016, Valmet created a roadmap with several concrete steps to develop more sustainable transport solutions and to reduce its CO<sub>2</sub> impact from transportation by 2018. Activities include e.g., developing more lightweighting solutions in packaging, developing standardized packaging solutions, increasing collaboration with key transportation suppliers, and increasing the use of alternative shipping modes.

During 2016, Valmet developed its reporting on CO<sub>2</sub> emissions and cooperated with selected suppliers to ensure transportation mode- and spend-based reporting. In long-term transportation contracts as well, Valmet continues to strive for efficiency, both in performance and in reducing CO<sub>2</sub> emissions. Upstream and downstream transportations accounted for 58,000 CO<sub>2</sub> tonnes in 2016.

## Sustainability360° agenda: Sustainable supply chain progress

TARGETS	ACTION PLAN 2016–2018	KEY ACHIEVEMENTS 2016
<p><b>Develop sustainable procurement practices globally</b></p> <ul style="list-style-type: none"> <li>• 100% of new direct suppliers go through supplier approval and screening process</li> <li>• 50 supplier sustainability audits per year</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure globally aligned approval process for new suppliers</li> <li>• Increase the number of nominated Valmet sustainability auditors in selected areas</li> <li>• Develop templates and guidelines for sustainability audit practices</li> <li>• Continue with sustainability training for global procurement and integrate sustainability into procurement training programs</li> <li>• Continue with a program to ensure compliance relating to hazardous substances</li> <li>• Develop the carbon footprint calculation</li> </ul>	<ul style="list-style-type: none"> <li>• 31% of new suppliers went through the supplier approval process and were screened for sustainability</li> <li>• 54 supplier sustainability audits conducted by Valmet and a third-party auditor in Mexico, Indonesia, Poland, Brazil, China, Thailand, India, Croatia and Lithuania</li> <li>• Global protocol implemented and used in all supplier sustainability audits globally</li> <li>• Hazardous substances compliance program proceeded as planned with a variety of initiatives globally, incl. mapping current status and starting agreed development actions globally</li> <li>• Sustainability training sessions for procurement conducted in all geographical areas. A total of 450 professionals received training</li> <li>• Sustainability reporting of the supply chain was developed to include assured data from transportation and logistics activities</li> <li>• During the year, Valmet developed its sustainability risk assessment process to include indirect procurement purchasing categories and initiated actions based on the assessment results</li> </ul>
<p><b>Support selected key suppliers to meet the level of sustainability expected by Valmet</b></p> <ul style="list-style-type: none"> <li>• Engage 100% of selected key suppliers</li> </ul>	<ul style="list-style-type: none"> <li>• Establish a sustainability engagement program for medium- and high-risk key suppliers with targets, KPIs and follow-up mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• Actions planned for 2017</li> </ul>



**Must-Win: Excellence in processes**

## Supplier audit starts best practice approach

Valmet conducts over 50 supplier sustainability audits globally every year as part of its Sustainable Supply Chain Management Program. SFUP in Poland is one of the companies that has been audited. This manufacturer of steel equipment for the paper, chemical and power generation industries, is one of the key suppliers to Valmet. One year after the audit, SFUP has succeeded to implement a more sustainable approach to its business operations than before.

**Action plan triggers renewal process**

The sustainability audit findings were related to business ethics and compliance, human and labor rights, health and safety, as well as environmental management. The findings led to a jointly agreed corrective action plan for SFUP. Valmet supported the company throughout the implementation process by providing guidance. SFUP completed all corrective actions agreed and the final outcome was verified in a reaudit in 2016. Valmet was pleased to see SFUP completing all corrective actions only eight months after the first audit, and during this time even exceeding Valmet's requirements.

**Corrective actions enhances to responsible operations**

SFUP made a leap in developing more responsible operations after Valmet's audit. In addition to developing its processes, the company made progress in increased engagement with its employees, and also introduced a new code of conduct. SFUP introduced a new supplier code of conduct for its suppliers and partners, and also started to follow up on the requirements. Through these actions, SFUP inspired also its suppliers to develop more sustainable operations – with good results.

**Results exceed audit requirements**

SFUP decided to certify its operations according to the environmental management system ISO 14001, and received certification in June 2016. SFUP also started to implement a health and safety management system, with the target to receive OHSAS 18001 certification by 2018. "This is hard work, but we see it all as an investment in the company. We have gained clear benefits and added value through better performance and new processes," says Aleksandra Partyka, Trade Department Manager at SFUP.



# People and performance

Together we are Valmet. Our 12,000 employees from 33 countries and 54 nationalities form a diverse Valmet community – one that lives our values, executes our strategy and moves our customers' performance forward.

## **Taking action, building engagement**

In 2016, we continued to build engagement systematically through the purposeful execution of OurVoice actions throughout the company. All business lines, areas and Valmet as a whole, defined core areas on which to focus based on the results of the 2015 OurVoice engagement survey. We completed 92% of these actions in 2016. Global Valmet-wide actions focused on using customer feedback to improve our work processes and activating managers as role models for our values. The next OurVoice survey is conducted in January 2017.

We defined and began executing a renewed values roadmap, which works to strengthen the behaviors associated with our values. For example, when talking about People – we work together to make a difference, we emphasize diversity, respect and teamwork. Roadmap activities include actively recognizing values-based behaviors, promoting our values as a Must-Win deep dive topic in our strategy team discussions, and hosting values refresher events at various Valmet locations. By the end of 2016, 20 values events had been held with more planned for the beginning of 2017.



### Pushing for high performance

We continue to push for high performance through setting targets, giving feedback, fostering active dialogue and utilizing rewarding practices as key drivers for this work. The focus of the 2016 annual review discussion process was on ensuring high-quality manager–employee discussions, with an online training course to support managers in this task. The mid-year review process that began in 2015 became mandatory in 2016 to support the achievement of planned targets. Both the annual and mid-year review processes achieved high completion rates for the annual review population: 99% and 95%, respectively.

Building a culture where we improve performance through actively sharing feedback is an important part of how we learn and grow. Positive feedback accelerates performance, and constructive feedback works to correct performance, getting it back on track. In August, we launched HighFive, a new feedback channel designed to facilitate the exchange of positive feedback across the company. In the first four months, Valmet people sent over 3,500 HighFives – all sent to the recipients and their managers to ensure maximum recognition and transparency. Feedback was also the first topic in a new series for sharing best practices within the manager community.

Establishing reward and recognition practices that target our top performers and encourage top performance continues to be a priority. Valmet granted a total of 2,721 individual and team awards in 2016 as part of our Spot and Special Reward program. Work is ongoing to ensure the strategic implementation of our reward and recognition tools throughout Valmet through the establishment of a library with examples of rewards, wider integration between HR systems, and targeted training.

### Valmet values



#### Customers

We move our customers' performance forward.



#### Renewal

We promote new ideas to create the future.



#### Excellence

We improve every day to deliver results.



#### People

We work together to make a difference.

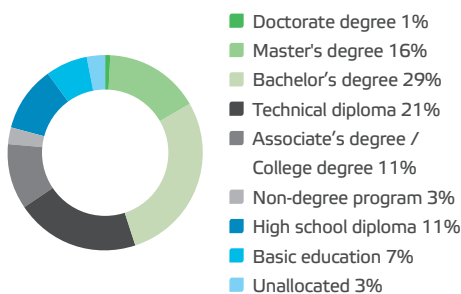
### Strengthening our managerial skills

In 2016, we continued to build managerial capabilities in line with our manager development framework. Key actions included a 96% completion rate for the Forward for managers training and launching ManagerAcademy, a virtual learning environment with 12 learning paths designed to develop managerial capabilities. Valmet managers selected several learning paths to complete over the course of the year. In total, managers completed 2,678 learning paths, spending 12,728 hours in the learning environment. The most popular learning paths were Conducting a successful annual review discussion, Leading through values and Driving change.

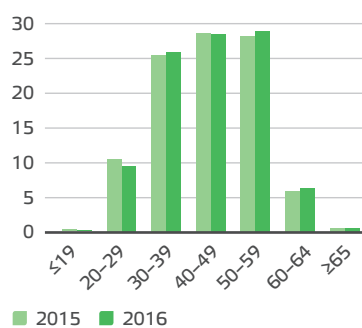
The final element in the framework is 360 Feedback, which was updated to match the defined Manager Role and values and will be utilized heavily over the coming two-year period to support managers in their development. At the end of 2016, we created an extensive rollout plan covering a critical mass of around half of all line managers.

### Personnel data

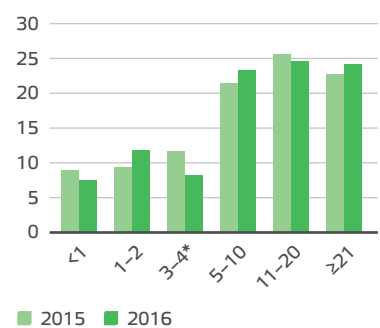
Education structure, %



Age structure, %



Service years, %



\* Decrease in 3-4 year category due to fewer new hires in 2013.

### Ensuring we have the best talent

Our efforts in capability development focus on ensuring we are operating with the best tools and processes, offering training opportunities to match our strategic needs, and attracting and developing the best talent. In 2016, our Talent Review process was expanded to include all key managerial positions, giving us a stronger understanding of the talent pool. In total, 1,550 management, successor and high-potential resources were assessed and assigned development actions as part of the process; 906 actions were completed in 2016 for this group.

We continued to fully utilize our global training portfolio, running 13 programs with 423 participants. The portfolio will be expanded in 2017 to include project execution and R&D. Additional strategic training courses are planned to support the implementation of our new services approach Shared Journey Forward, as well as to build on the common way of working established in the Agility Through Sales program.

In 2016, the training database was renewed to expand our reporting capabilities and provide better visibility to the full training offering available. Across Valmet we emphasized a 70-20-10 learning philosophy, where 70% is based on on-the-job learning, 20% on learning relationships and 10% on formal learning. Opportunities for mentoring increased with a new Valmet-level program in addition to mentoring programs run on a business line and area level.

### Building teams for the future

We believe that we can move company performance forward by building a diverse, engaged and flexible workforce. To achieve this aim, we unveiled a new employer value proposition, set up a talent scout function, and made a step change in our internal mobility practices. Internal mobility is among the best and fastest ways to provide new challenges, bring fresh perspectives, and facilitate the cross-organizational exchange of talent across the company. Other ways we've worked to increase diversity within Valmet include prioritizing diversity talent in our global training, and mentoring nomination processes and supporting cultural exchange programs within Valmet.

### A responsible employer

We value teamwork as an important part of our organization's success, and we emphasize respectful behavior and a fair, inclusive and well-managed working environment. We continually evaluate our policies, guidelines and ways of working to secure our track record as a responsible employer. In 2016, we put an equality and parity plan in place in Finland to ensure non-discrimination as part of new governmental regulations. We also expanded the people and performance sustainability focus area to include actions relating to human rights, sustainability and wellbeing.

## Sustainability360° agenda: People and performance progress

TARGETS	ACTION PLAN 2016–2018	KEY ACHIEVEMENTS 2016
<b>Boost employee engagement</b>	<ul style="list-style-type: none"> <li>Conduct OurVoice survey and execute development actions</li> <li>Plan and implement values roadmap</li> </ul>	<ul style="list-style-type: none"> <li>92% of OurVoice actions completed</li> <li>Executed values roadmap according to plan</li> </ul>
<b>Develop the best talent</b>	<ul style="list-style-type: none"> <li>Ensure annual review discussion coverage of &gt; 95% for the annual review population</li> <li>Develop training opportunities to enhance skills</li> <li>Develop global training portfolio to support our strategic goals</li> <li>Conduct Talent Review (TR) process</li> </ul>	<ul style="list-style-type: none"> <li>Annual and mid-year review processes achieved high completion rates for the annual review population: 99% and 95% respectively</li> <li>Launched renewed training database</li> <li>Expanded Talent Review process to include key managers</li> </ul>
<b>Increase diversity</b>	<ul style="list-style-type: none"> <li>Create programs and processes to support career development of diversity candidates</li> <li>Prioritize diversity of talent in global training portfolio nomination process</li> <li>Define employer value proposition (EVP)</li> <li>Widen recruitment pool beyond traditional candidates</li> </ul>	<ul style="list-style-type: none"> <li>Renewed internal mobility guidelines</li> <li>Prioritized diversity talent in global training portfolio nomination process</li> <li>Launched employer value proposition (EVP)</li> </ul>
<b>Be a responsible employer</b>	<ul style="list-style-type: none"> <li>Establish human rights monitoring framework and conduct gap analysis</li> <li>Continue with leadership and managerial skill development activities</li> <li>Continue with sustainability and wellness awareness activities</li> </ul>	<ul style="list-style-type: none"> <li>Created human rights working group, conducted gap analysis</li> <li>Implemented ManagerAcademy, 12,728 hours of training recorded in 2016; 96% completion rate for the Forward for managers training</li> <li>Participated in Global Challenge</li> </ul>

For entire action plan, see [valmet.com](http://valmet.com)

**Must-Win: Winning team**

## Valmet steps forward with the Global Challenge

The year 2016 was the first year that Valmet participated in the Global Challenge, a workplace health and engagement program. For the 100 days between May 25 and September 1, around 1,500 Valmet employees counted their steps as they competed in teams of seven in a virtual race around the world. Physical activity was rewarded with steps, which counted towards daily totals, with mini-challenges and team competitions adding to the fun. The program also gave tips and practical advice for nutrition, sleep, activity and overall wellbeing.

**214 teams equals a lot of team spirit**

The Global Challenge not only brought out the competitive side in us but also brought us closer together as colleagues. The challenge became a conversation starter, which led to small talk and eventually to building new connections on a deeper level. It gave the teams reasons to interact in new ways – bringing managers and teams closer and breaking cross-organizational boundaries.

**A little healthy competition**

By engaging in a little healthy competition, the global challenge worked to change the daily routines of 1,500 Valmetees. The health benefits of the program were clear, with 77% of people reaching the target of 10,000 steps a day, up from 17% before the challenge, 62% seeing an increase in energy levels, and 57% reporting an increase in productivity or concentration levels. Also, 67% of those who were tracking their weight, managed to lose weight.

**Bringing teams together**

“The energy generated by the global challenge was palpable. Originally we planned for 1,000 participants, but we increased the number because the interest was so high and all the places were taken within a day. For me, the biggest impact came from the team element. Throughout the 100 journey, I watched as teams came together, created shared memories, and improved their health and wellbeing,” says Julia Macharey, SVP Human Resources.



# Health, safety and environment

We are committed to protecting the health, safety and environment (HSE) of our people, partners, customers, and the communities where we operate. We constantly emphasize risk management, prevention and learning as we strive towards our goal of zero harm.

## Safe and healthy workplaces for all

An unrelenting focus on everyone going home safe and healthy every day drives our health and safety development at Valmet. In 2016, fewer people were injured in our business than ever before. Our total recordable incident frequency (TRIF) improved from 2015 by 31% for our own employees and by 19% for external workers. At the end of the year, 40 of 54 production and service units had achieved more than one year without any lost time incidents.

Tragically, we did not achieve our goal of zero fatalities, as two external workers died on project sites at customer mills.

In June, a subcontractor employee of one of Valmet's contractors in a pulp mill expansion in Sweden, was fatally injured during installation work. In October, a contracted technical advisor in a rebuild project was fatally injured at a pulp mill in the United States of America. Valmet is consistently working to improve our processes and routines to ensure a safe workplace for everyone.

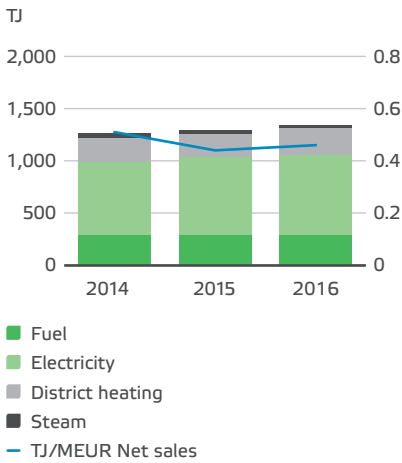
## Driving of safety culture

We are intent on reinforcing a culture where HSE is a personal matter. In January, the updated Safety@Valmet e-learning

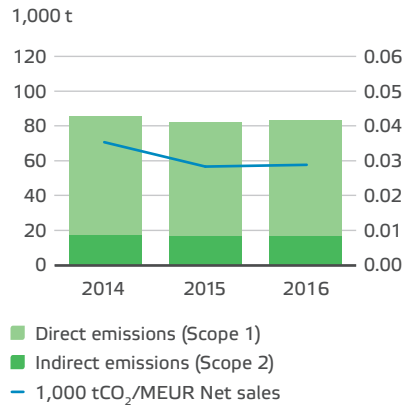


# Health, safety and environmental data

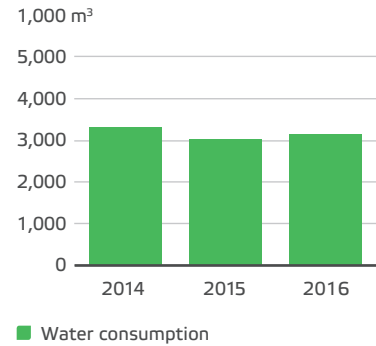
## Energy



## CO<sub>2</sub> emissions



## Water consumption



## Waste

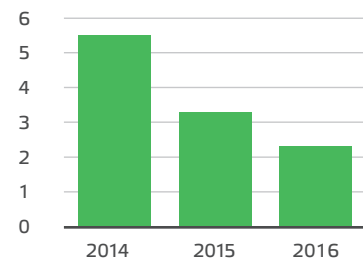


## Management systems (% of headcount)

SHARE OF CERTIFIED OPERATIONS <sup>1</sup>	2016
ISO 9001 Quality Management System	84%
ISO 14001 Environmental Management System	70%
OHSAS 18001 Occupational Health and Safety Management System	55%

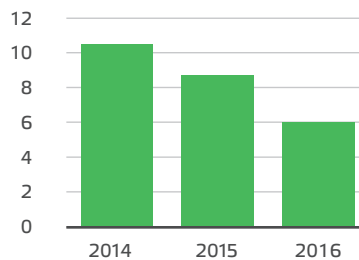
<sup>1</sup>Including offices

## Lost time incident frequency (LTIF)<sup>2</sup>, own employees



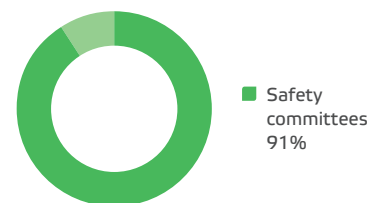
<sup>2</sup> LTIF reflects the number of injuries resulting in an absence of at least one workday per million hours worked

## Total recordable incident frequency (TRIF)<sup>3</sup>, own employees



<sup>3</sup> LTIF+medical treatment and restricted work cases

## Coverage of safety committees<sup>4</sup>, % of workforce



<sup>4</sup> Percentage of workforce represented in formal joint management-worker health and safety committees

course was launched to promote safety awareness and reinforce safety fundamentals in Valmet. By year end, over 55% of employees had completed the course, creating a common foundation for us all as we continue to develop Valmet’s safety culture and standards. During 2017, this training will be openly available to Valmet partners.

Our annual activities, such as the WWF Earth Hour in March and our HSE awareness week in October, also promoted the message that through our responsible individual behavior, we have a real impact on both sustainable workplaces and communities.

Engaged leaders who set a personal example are essential to driving our safety culture. We continued with the standard practice of leadership safety walks, both on customer sites and at our own locations. Over 350 walks were performed in 2016. In addition, sessions aimed at developing safety leadership were held across the organization. Training in changing the safety mindset was given in Finland, Germany, Great Britain and Australia. Our Pulp and Energy business piloted a renewed “Leading HSE on sites” training course for project and site personnel. Overall, we reached our targeted level of 7.2 hours of HSE training per person in 2016.

### Embedding HSE in all activities

We work systematically to integrate sound HSE management practices into all aspects of our business. Our global minimum safety standards are fundamental to our safety practices. During 2016, all the standards were reviewed to ensure they cover critical risks and reflect best practice. As part of our lean transformation program, safety is integrated as part of lean practices in production locations, for example in daily visual management routines and also as part of implementing standardized ways of working through 5S<sup>1</sup>.

In 2016, we also introduced a Project Execution Model (PEM) that standardizes project management in Valmet. Valmet’s common project and site HSE activities are integrated into the gates and milestones. During the year, we completed a two-year project to harmonize and implement common best practice site HSE routines for all operations, with the aim of ensuring that safety standards are followed in our customer deliveries.

We performed HSE audits of 10 customer projects and 18 production units during the year, with a focus on implementing HSE standards and benchmarking best practices.

### Collaboration for contractor safety

Valmet engages in an active and open dialog on HSE with our customers, suppliers and other partners. We believe common rules, effective collaboration and good co-ordination

## Sustainability360° agenda: Health, safety and environment (HSE) progress

TARGETS	ACTION PLAN 2016–2018	KEY ACHIEVEMENTS 2016
<b>Drive safety culture</b>	<ul style="list-style-type: none"> <li>Continue leadership safety walks</li> <li>Implement Safety@Valmet e-learning</li> <li>Create and launch behavioral safety toolbox</li> </ul>	<ul style="list-style-type: none"> <li>Over 350 Leadership safety walks and conversations</li> <li>55% of employees completed Safety@Valmet</li> <li>Behavioral safety tools piloted in 5 units</li> </ul>
<b>Best in class HSE management practices</b>	<ul style="list-style-type: none"> <li>Implement global development initiatives on preventing life-changing injuries</li> <li>Launch common site safety procedures</li> <li>Create and launch collaborating for contractor safety program</li> <li>Continue to develop Valmet health and wellbeing concept</li> <li>Renew Valmet’s Environmental Efficiency Program with science-based targets</li> </ul>	<ul style="list-style-type: none"> <li>Global promotion of Valmet minimum safety standards.</li> <li>LTIF 2.3 and TRIF 6.0 own employees; LTIF 4.4 and TRIF 7.6 independent and supervised contractors</li> <li>Collaborating for contractor safety program started</li> <li>Common Valmet site safety procedures in use</li> <li>Valmet health and wellbeing concept defined</li> <li>Science-based targets under development</li> </ul>
<b>Secure compliance and improvements</b>	<ul style="list-style-type: none"> <li>Local HSE action plans in all locations and follow-up of selected units</li> <li>Expand local HSE committees to cover 90% of personnel</li> <li>Implement certified global management system</li> <li>Create HSE induction e-learning for Valmet’s locations and project sites</li> <li>Complete minimum 20 HSE audits per year</li> <li>Implement a global process to monitor non-compliance incidents</li> </ul>	<ul style="list-style-type: none"> <li>Follow up of action plans and performance of 15 units held</li> <li>Local HSE Committees established in 5 units. Coverage of local HSE committees increased to 91%.</li> <li>Global management system project started</li> <li>Project site HSE induction e-learning pilot ready</li> <li>HSE audits of 10 customer site and 18 locations</li> <li>7.2 hrs HSE training/person/year</li> </ul>

<sup>1</sup> Systematic approach to organizing workplaces (Lean)



are fundamental to achieving safety on shared worksites. Currently, our contractor safety management procedures are under review, and we are initiating various actions to improve how we proactively identify and then successfully bridge gaps in HSE systems, culture and leadership between contractors and Valmet's and our customers' standards and expectations.

### Encouraging wellbeing

We cooperate closely with occupational health services at our locations to ensure fitness for work and effective management of occupational health risks, as well as to support health promotion activities. During the year a wellbeing learning path was opened in our Manager Academy. Exercise activities are organized or supported at many Valmet locations, enabling a healthy work-life balance for our people. Absenteeism due to sickness and injuries at work continues at 2.5% of workhours (2.5 in 2015). During 2016, we introduced a global travel security assistance system.

### Responsible operations

We design and operate our facilities to promote the sustainable use of resources and prevent pollution. We continue to implement actions towards our 2020 operational efficiency targets for energy, CO<sub>2</sub> emissions, water and waste. We follow a ten-year energy auditing schedule for our main production

units, and in 2016, audits were performed on our Swedish operations. Our energy and CO<sub>2</sub> emissions increased slightly during 2016 mainly because of a colder heating season in the Nordics. Our focus on responsible use of hazardous substances continues with activities in the supply chain and own operations. Environmental guidelines for our offices were also launched during the year.

There were no significant spills in our facilities.

### Global management system

Everyone at Valmet is accountable for implementing and following our HSE management systems and processes rigorously, as well as for continually improving them. In 2016, we decided to move away from a unit-based certification structure and to instead certify our way of working in one common global management system by the end of 2018. This system will be certified for occupational health and safety (ISO 45001, formerly OHSAS 18001), environment (ISO 14001), and quality (ISO 9001).

We believe that a certified global system assures all interested parties that Valmet embeds systematic and standardized quality and HSE management practices in all operations to meet our strategic objectives, our customer requirements and regulatory obligations. Our target is that by 2020, at least 90% of Valmet's people work in operations certified by all three standards.

## Environmental efficiency program targets

INDICATORS (ROLLING 12 MONTHS)	2020
Energy consumption and CO <sub>2</sub> emissions reduction (% reduction in yearly consumption compared to net sales, baseline reference yearly average 2005–2009)	20%
Municipal water consumption reduction (% reduction in yearly consumption compared to net sales, baseline reference yearly average 2011–2012)	15%
Total waste amount reduction (% reduction in yearly amounts compared to net sales, baseline reference yearly average 2011–2012)	15%
Waste utilisation rate (%) (% increase in waste utilisation (recycled waste + incineration / total waste), baseline reference yearly average 2011–2012)	10%

## Health and safety targets

	2018
Lost time incident rate (LTIF) (Lost time incidents per 1,000,000 working hours)	<2
Total recordable incident rate (TRIF) (LTIF + medical treatment and restricted work cases)	<5
Near miss and safety observations	3 / employee / year
HSE training	8h / employee / year
Number of documented safety inspections per million whrs	150

**Must-Win: Excellence in Processes**

## Engagement and participation in focus

Our global initiative to drive HSE excellence focuses on actions to enhance our processes, competences and culture. Local HSE committees implement global actions, and they plan, monitor and advise on local HSE issues, such as training, environmental efficiency actions and health promotion. The participation of all our people in HSE management practices and initiatives is fundamental to safe and responsible operations. One measure of this engagement is safety observation reporting, and again in 2016, we saw a steady increase throughout the year.

### Enabling work-life balance

The Montreal office has been promoting health and an active lifestyle for many years, and seeing the benefits in energized and happy people. Aside from having a well-equipped gym at the location, employees have the opportunity to participate in lunch-time exercise classes five days a week. George Brezuica, Team Leader for Accounts Payable, has a background in martial arts and teaches kickboxing to his colleagues once a week.



### Safety is everyone's business

In February, training was held in Jyväskylä for managers working in roll and field servicing. The session included exercises on openly giving and receiving safety feedback. Managers then received coaching on how to conduct the same training for their teams. "We want a climate where everyone has the tools and the commitment to getting involved in taking care of each other," says Marko Lassila, Director of Service Operations in Finland.

### Solar power for our office

In October, Valmet's Lentokentänkatu facility in Tampere became the first Valmet location to have its own solar power plant. "These 567 solar panels on our roof, covering 920 m<sup>2</sup>, represent concrete action to reduce our environmental impact. It will reduce annual CO<sub>2</sub> emissions by approximately 80 tonnes. It is part of our energy efficiency program to combat climate change," says Kimmo Kohtamäki, Director of Real Estate Management.



# Corporate citizenship

Valmet is socially responsible and globally aligned in its operations. In 2016, Valmet maintained its position among the world's sustainability leaders. The company received recognition for its strategic and integrated approach to sustainability and for its sustainability reporting.

Valmet is a truly global company, with operations in 33 countries. We provide employment and business opportunities not only directly to Valmet's more than 12,000 employees globally, but also to a large number of different stakeholders, and we indirectly build wealth in local societies. We aim to be seen as a trusted local partner and to build active relations with our stakeholders.

We are transparent in our communications with our stakeholders and we strive to ensure that all our operations are carried out in accordance with laws and regulations in a socially responsible and globally aligned manner.

## **Code of Conduct and other guiding policies**

Valmet's Code of Conduct guides the behavior and decisions of Valmet's employees and its partners, and it creates a uniform foundation for all our business transactions and work assignments. In 2016, Valmet reinforced the implementation of its Code of Conduct that was updated in 2015. We actively communicated the renewed Code of Conduct through the whole organization.

Valmet's Code of Conduct is an obligatory global e-learning course for all employees. By the end of 2016, 99.8% of our employees had completed the training. All new employees



are introduced to, and must familiarize themselves with, the Code of Conduct. The Code of Conduct e-learning course is available in 19 languages.

The Code of Conduct is supported by a set of policies defining more detailed principles for specific activities. All these policies are described in more detail in Valmet's GRI Supplement on page 11. Training on these topics is held on a regular basis.

### Active stakeholder dialogue

Our most relevant stakeholders are defined as existing and potential customers, existing and potential employees, suppliers and subcontractors, shareholders and investors, the media, non-governmental organizations, authorities and local communities, as well as research institutes, universities and vocational schools.

Valmet actively communicates with its stakeholders through multiple channels such as events, face-to-face meetings, the customer magazine, company reports and brochures, online channels, and surveys.

During 2016, Valmet continued the tradition to support non-governmental (NGO), humanitarian organizations that work on a local level with youth activities, environmental protection, and research and education (see graph on page 43).

In 2016, the following projects were supported by Valmet:

- Our seasonal donation was directed to Save the Children. The donation enables school supplies for children in Nepal, food for a month for malnourished children in Africa, and stays in support families.

- In Finland, Valmet took part in a new type of internship program to introduce and integrate educated asylum seekers into Finnish working life.
- In the state of Maranhão in Brazil, Valmet participated in social and environmental programs through a local non-profit organization, Instituto Ayrton Senna. The target is to support the development of local schools and basic education.

### Stakeholder meetings and events in 2016

Valmet maintained the dialogue with its customers through regular meetings and other direct contact such as fairs, seminars and customer satisfaction surveys, and through specific industry organizations.

The biggest customer event was our customer days with over 200 customers from 35 countries participating. The topics covered the latest innovations, Industrial Internet solutions and customer reference cases. Valmet's new services approach was introduced, as well as the renewed Sustainability360° agenda.

We held a global supplier innovation day with more than 50 key suppliers invited. Topics included e.g., innovation and R&D, enhanced networking, sustainability and ensuring health and safety in operations throughout the value chain.

Valmet's IR team engaged with investors and analysts through different channels such as conference calls, roadshows, and meetings. The dialogue also included a Capital Markets Day, webcasts, site visits and the Annual General Meeting.

## Sustainability360° agenda: Corporate citizenship progress

TARGETS	ACTION PLAN 2016–2018	KEY ACHIEVEMENTS 2016
<b>Ensure compliance with guiding principles</b> <ul style="list-style-type: none"> <li>• 100% of existing and new employees completed Code of Conduct training</li> </ul>	<ul style="list-style-type: none"> <li>• Systematically arrange Code of Conduct training for selected employees and increase awareness with examples</li> <li>• Review the Code of Conduct content and relaunch e-learning</li> </ul>	<ul style="list-style-type: none"> <li>• Code of Conduct and related e-learning implemented globally</li> </ul>
<b>Promote transparent reporting and active stakeholder collaboration</b>	<ul style="list-style-type: none"> <li>• Report to Dow Jones Sustainability Index</li> <li>• Externally report and assure CO<sub>2</sub> levels of procurement, logistics and business travel</li> <li>• Ensure stakeholder feedback through a specific stakeholder survey</li> <li>• Create a long-term roadmap for social projects</li> <li>• Add voluntary employee activities to Sponsorships database</li> <li>• Create and implement sustainability e-learning for Valmet personnel</li> </ul>	<ul style="list-style-type: none"> <li>• Inclusion in Dow Jones Sustainability World and Europe Indices (DJSI) for a third consecutive year</li> <li>• Rated on the A List in CDP's climate change program</li> <li>• Positive feedback about sustainability performance in stakeholder surveys</li> <li>• Active stakeholder dialogue</li> </ul>

**Valmet recognized as a sustainability leader**

Valmet has been recognized for its actions and strategy to mitigate climate change and for its reporting on sustainability actions. In 2016, the company was included in the Dow Jones Sustainability Index (DJSI) for the third consecutive year, making it among the most sustainable companies in the world. Valmet was listed in both the DJSI World and Europe indices.

Valmet also reports to CDP, the international non-profit organization that promotes sustainability. Valmet was top-ranked and awarded a position on the 2016 Climate A List, which includes the best companies globally that have publicly reported on their actions to mitigate climate change.

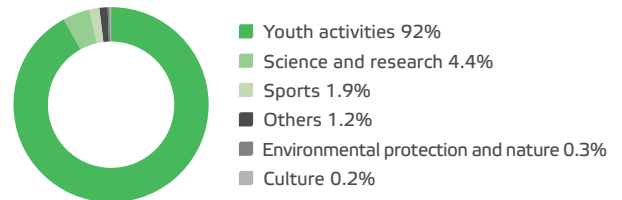


MEMBER OF  
**Dow Jones Sustainability Indices**  
In Collaboration with RobecoSAM

**Income taxes**  
(10 largest countries)

EUR MILLION	2016	2015
Finland	51.1	17.2
USA	9.2	7.6
China	2.8	2.2
Japan	2.4	1.3
Canada	1.7	0.8
Portugal	1.2	1.0
Chile	0.8	0.6
Sweden	0.8	6.5
Germany	0.6	0.6
Italy	0.5	0.6

**Support for non-profit organizations, %**  
EUR 252,734.9 in total



**Distribution of economic value added to our stakeholder groups**

Direct economic value generated

Economic value distributed

Retained in business

Revenues  
EUR 2,961 million

Operating costs: EUR 2,014 million  
Employee wages and benefits: EUR 795 million  
Payments to providers of capital: EUR 67 million  
Payments to government: EUR 56 million  
Support for non-profit organizations: EUR 0.3 million

EUR  
28 million

**Must-Win: Excellence in processes**

# Ensuring responsible business operations wherever we operate

In 2016, we defined a new global sustainability assessment process to ensure that we are able to operate according to our Code of Conduct whenever we expand our current operations or establish a new legal entity in a new country. The sustainability assessment process is based on a checklist covering five main topics based on human rights, labor rights, health and safety, environmental management and business ethics. The piloting of the new assessment process took place in Jakarta in 2016.

**Local conditions are identified**

The target of the new sustainability assessment is to create a comprehensive understanding of the current practices and the stakeholders' expectations on Valmet. When expanding our business presence, we need to understand local market practices to identify our economic, social and environmental impacts, as well as potential risks. The sustainability assessment is part of a smooth entry or expansion to the market.

**Assessment on Jakarta services center as a first pilot**

Valmet is setting up a new services center in Jakarta, Indonesia, to provide our Asia Pacific pulp, paper and energy customers with a wider services offering. Jakarta served as a first pilot for Valmet's new assessment process in 2016. The assessment team was led by the sustainability function and included representatives from Valmet's Indonesia country management and legal functions. The assessment led into concrete actions to manage the potential risks of the investment.

**Understanding stakeholder expectations**

A comprehensive stakeholder dialogue helps to ensure that Valmet is operating in a responsible manner. The assessment in Jakarta included meetings with selected external stakeholders: suppliers, the local main contractor of the services center, local municipal representatives, a grass roots non-governmental organization (NGO), and other partners. The discussions helped to learn about current practices and the stakeholders' expectations on Valmet.





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### Design and production

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