Sustainability at Valmet

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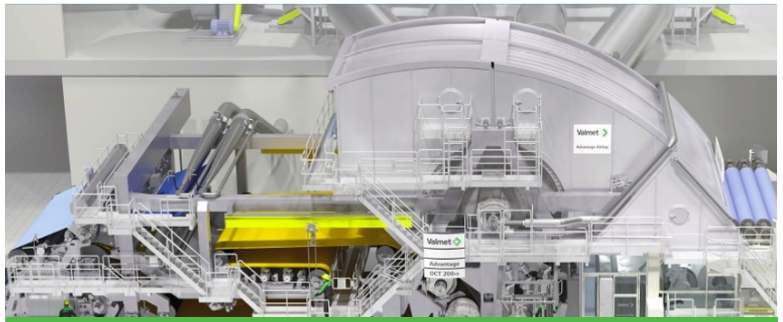
Valmet today – the market leader with a unique offering

Process technology, services and automation for pulp, paper and energy

Unique offering

- Widest offering in the market combining process technologies, services and automation
- Research and development spend EUR 66 million (in 2018)



Market leadership

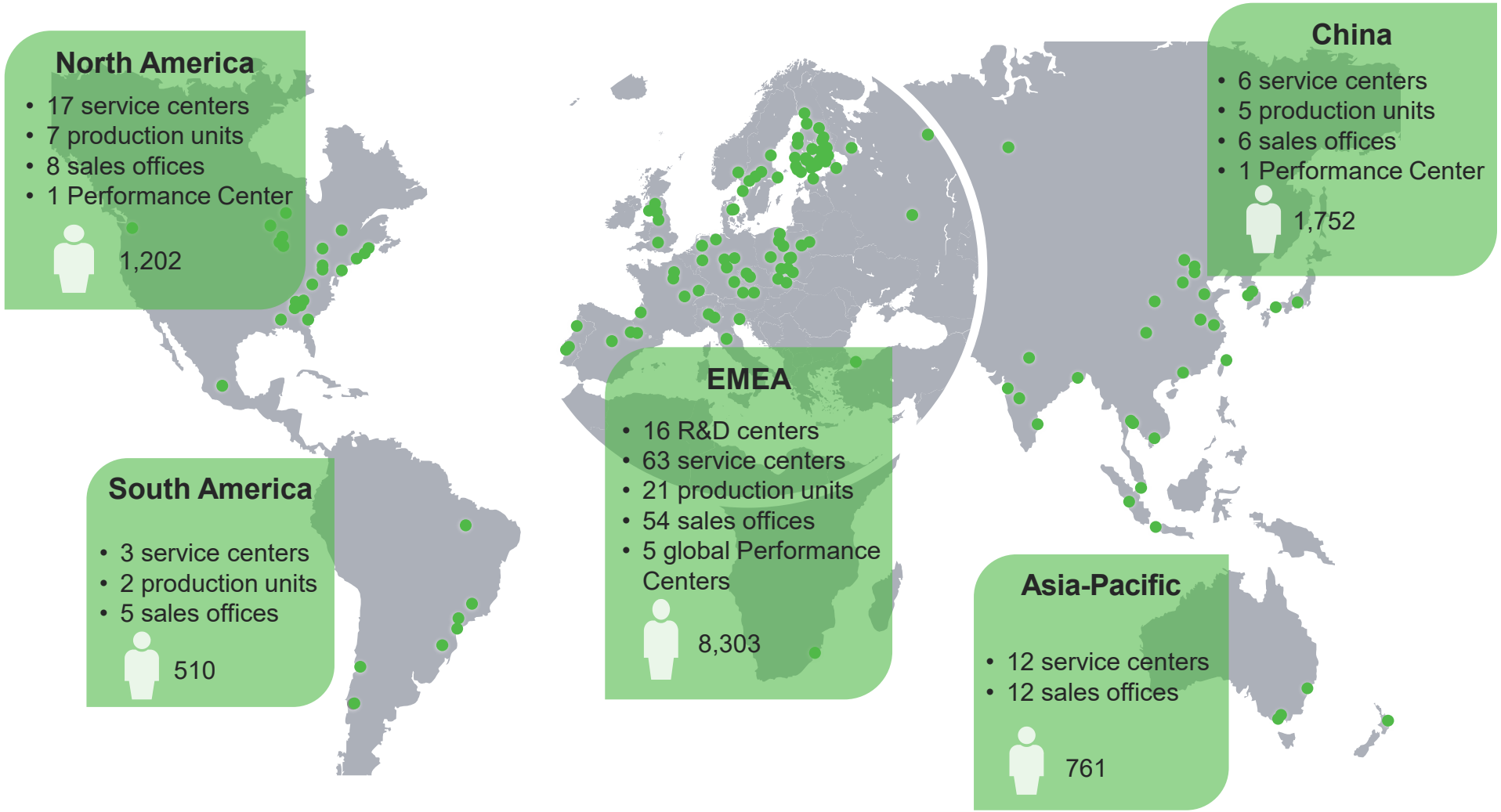
- Leading market position in all markets
  - Pulp #1–2
  - Energy #1–3
  - Board #1
  - Tissue #1
  - Paper #1
  - Services #1–2
  - Automation #1–3

Leader in sustainability

- Sustainability 360° agenda integrating sustainability into our key processes
- Five consecutive years in the Dow Jones Sustainability Index
- A rating in CDP Climate
- Three consecutive years in Ethibel Sustainability Index Europe

Strong, global presence close to our customers

Over 100 service centers, 85 sales offices, 35 production units, 16 R&D centers, 7 Performance Centers



Valmet's approach to sustainability

Sustainability is based on our key principles and integrated into our processes

Guiding principles and stakeholder expectations as a starting point

- Code of Conduct and related policies
- Valmet's values
- Compliance with UN Global Compact and selected globally acknowledged principles
- ISO 9001, ISO 14001 and OHSAS 18001 management systems
- Stakeholder expectations and requirements

Sustainability360º agenda with detailed 3-year action plans

- Sustainable supply chain
- Health, safety and environment
- People and performance
- Sustainable solutions
- Corporate citizenship

Comprehensive and transparent reporting

- Annual sustainability reporting according to global standards (GRI) and assurance by a third party
- Reporting to third party sustainability rankings and indices

Global Reporting Initiative™

MEMBER OF Dow Jones Sustainability Indices In Collaboration with RobecoSAM

CDP A LIST 2016 CLIMATE

THE GLOBAL COMPACT WE SUPPORT

Valmet

Valmet's globality and nature of its offering sets special requirements for sustainability

Global presence with >12,000 employees

Importance of

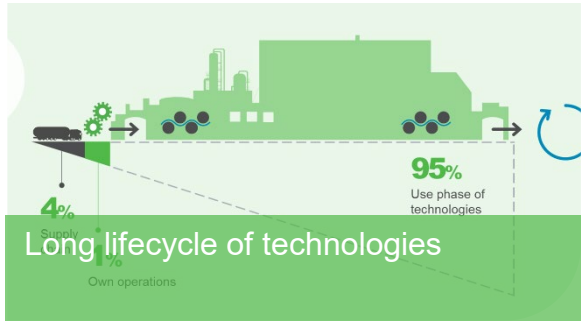
- Global Code of Conduct
- Ensuring compliance with Human and labor rights
- HSE management
- Sustainability assessments when changing the market presence or in M&As

Global supplier base of >10,000 active suppliers from 50 countries

- 24% of direct purchasing originate from medium to high sustainability risk countries
- Importance of
  - Transparency and sustainability of the supply chain
  - Commitment to working with suppliers to develop their operations
  - Clear processes to handle serious breaches in the supply chain – zero tolerance for forced or child labor

Global customer base in different levels of maturity in sustainability

- Very strict sustainability requirements from the most advanced customers acting as a prerequisite for a business relationship
- Many customers are moving towards stricter sustainability requirements for their suppliers



Long lifecycle of technologies

- 95% of the environmental impacts of our products are emitted at the customer sites after delivery

➔ Importance of the environmental performance of our technologies when they are used

  - Energy, raw material and water efficiency, fuel flexibility, air pollution control

Sustainability360º agenda

Summary of action plans 2019–2021

Sustainable supply chain

- We 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 invest in safety culture and effective HSE processes and practices
- We collaborate with customers and partners to improve HSE results

People and performance

- We boost employee engagement and develop the best talent
- We are a responsible employer and promote diversity

Sustainable solutions

- We continuously develop the sustainability performance of our technologies
- We actively promote the sustainability aspects of Valmet's offering

Corporate citizenship

- We ensure respect for human rights and compliance with guiding principles across the value chain
- We promote transparent reporting and active stakeholder collaboration

MAIN QUANTITATIVE TARGETS

40

Supplier sustainability audits per year

Sustainability screening

100%

of new suppliers

Orders received for new products and services

>25%

by 2018

Emissions

-60%

by 2030

Waste to landfill

-80%

by 2030

Water consumption

-20%

by 2030

Safety observations

4

per employee/ year

by 2025

OurVoice high-level action completion

100%

Lost-time incident frequency (LTIF)

1

by 2025

Total recordable incident frequency (TRIF)

2.5

by 2025

Certified management system coverage

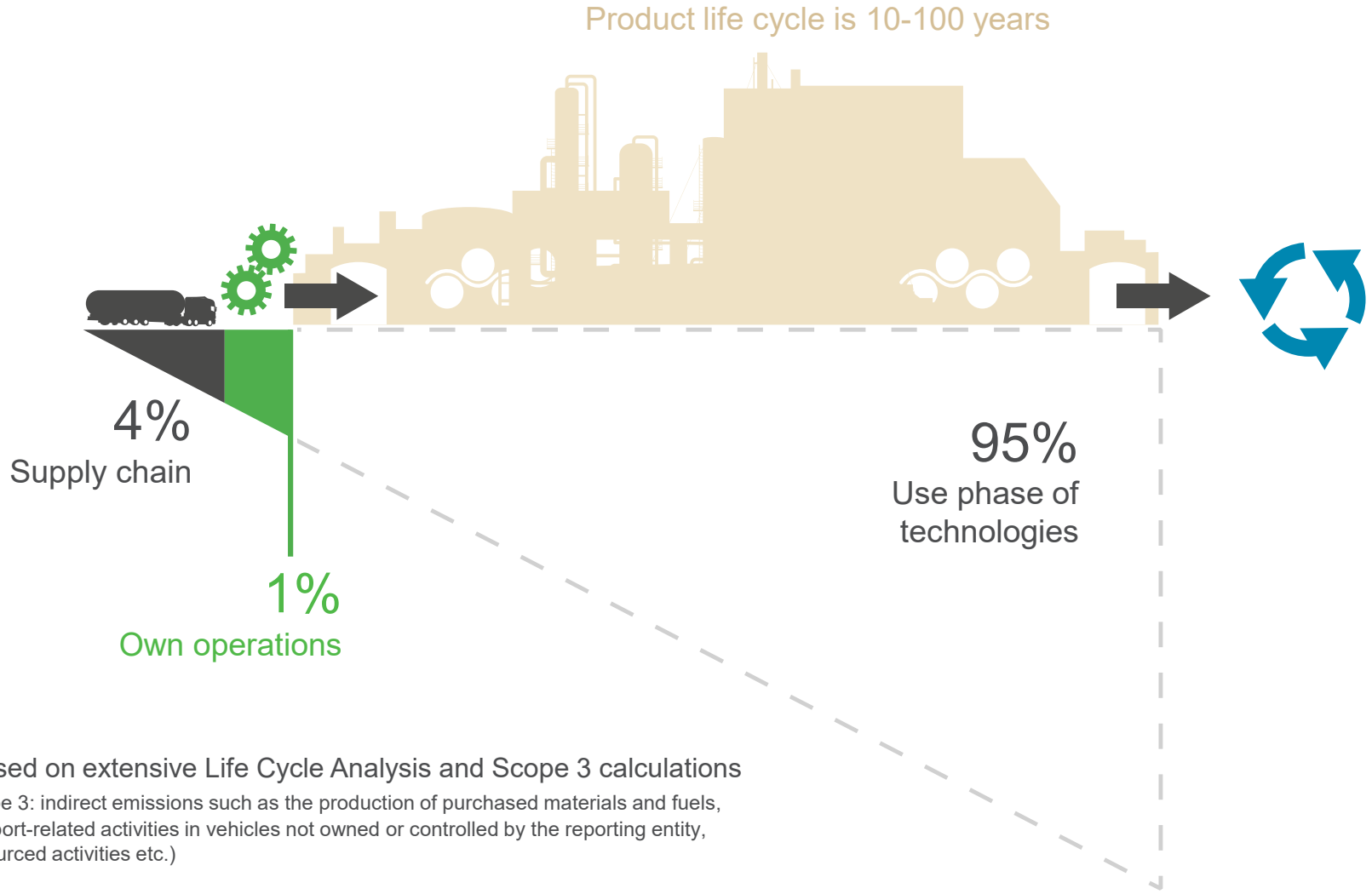
>90%

of employees by 2025

Valmet contributing to climate change mitigation

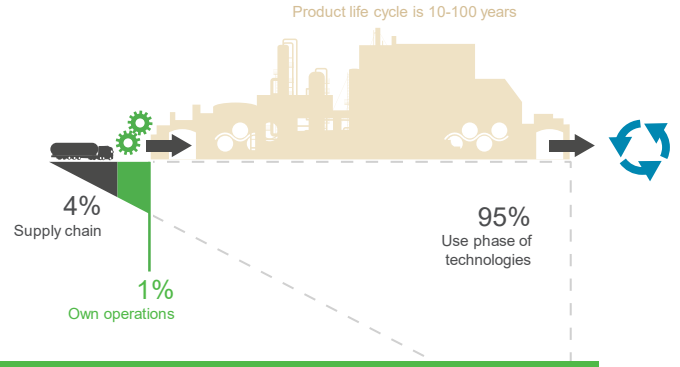
Valmet's value chain impact

Distribution of environmental footprint of Valmet's value chain*



* based on extensive Life Cycle Analysis and Scope 3 calculations
(Scope 3: indirect emissions such as the production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, outsourced activities etc.)

Valmet's climate actions through the value chain



Products & solutions 95%

- Our solutions improve our customers' environmental performance
  - modular board & paper machines
  - multifuel power boilers
- Our sustainability guidelines for R&D projects ensure that environmental targets for CO_2 reduction are in key technology development

Supply chain 4%

- Supplier approval and screening process incl. Sustainable Supply Chain Policy
- Key supplier sustainability engagement program to support suppliers on environmental management
- Sustainable transportation of goods and development of the tracking of our carbon footprint in transportation

Own operations 1%

- Environmental efficiency program with long-term targets for energy, CO_2 emissions, water and waste to landfill
- We design and operate our facilities to promote the sustainable use of resources and to prevent pollution
- Energy audits of locations to identify energy improvement opportunities
- Environmental guidelines for offices

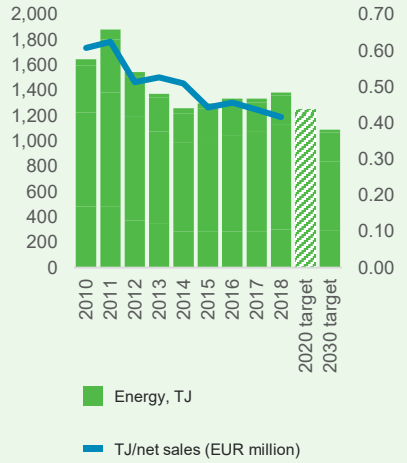
We progress steadily towards our 2030 targets for our operations

Actions to reduce the footprint of our own operations

- All production locations have environmental efficiency actions towards our 2030 reduction targets
- Own operations of improvements focus on:
  - Production process optimization
  - Continuous upgrade equipment such as motors and machines with more energy-efficient alternatives.
  - Use of emission control technologies
  - Building energy efficiency – improving insulation, installing LED lighting, installing ventilation and heating control systems, installing heat exchangers
  - Installing or sourcing renewable energy alternatives

-30%

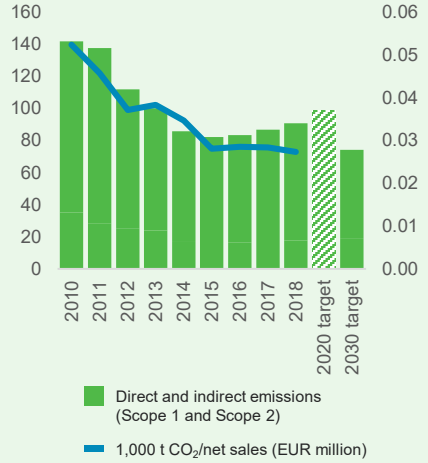
Energy
TJ



Target baseline: 2005-2009 average

-60%

CO_2 emissions
1,000 t

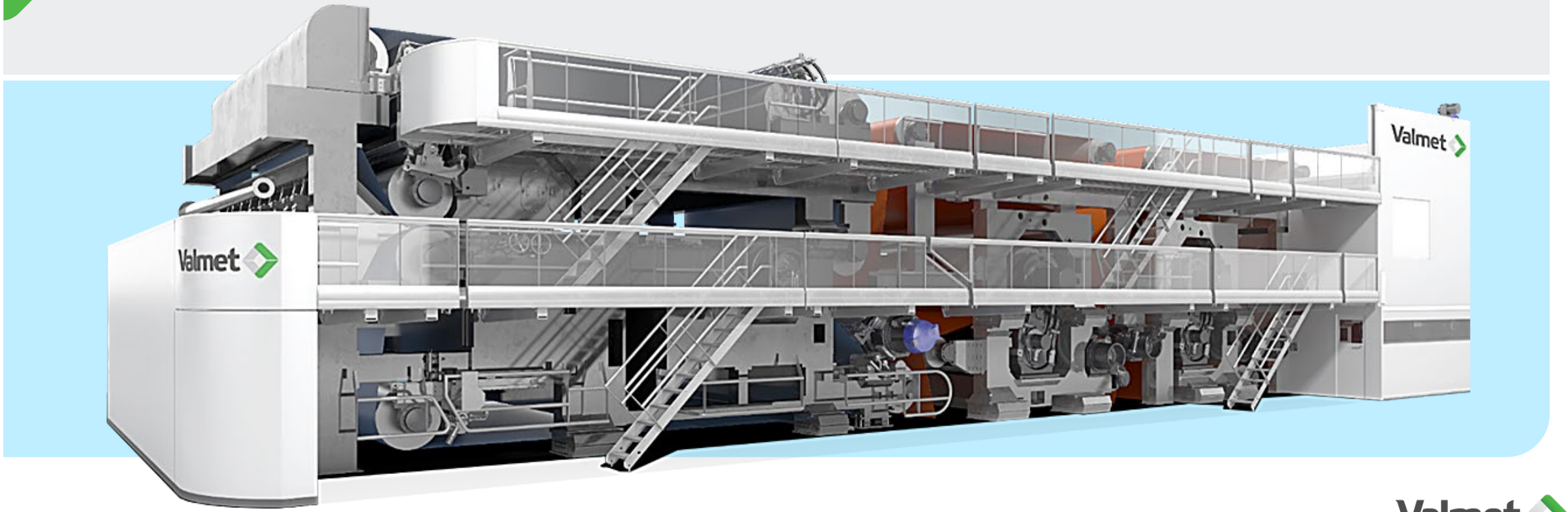


Target baseline: 2005-2009 average

OptiConcept M modular board and paper production line

A completely new, modular way to build a board or paper machine with

- significant savings in energy, water and raw-material usage
- built-in safety and usability
- smaller carbon footprint through compact design



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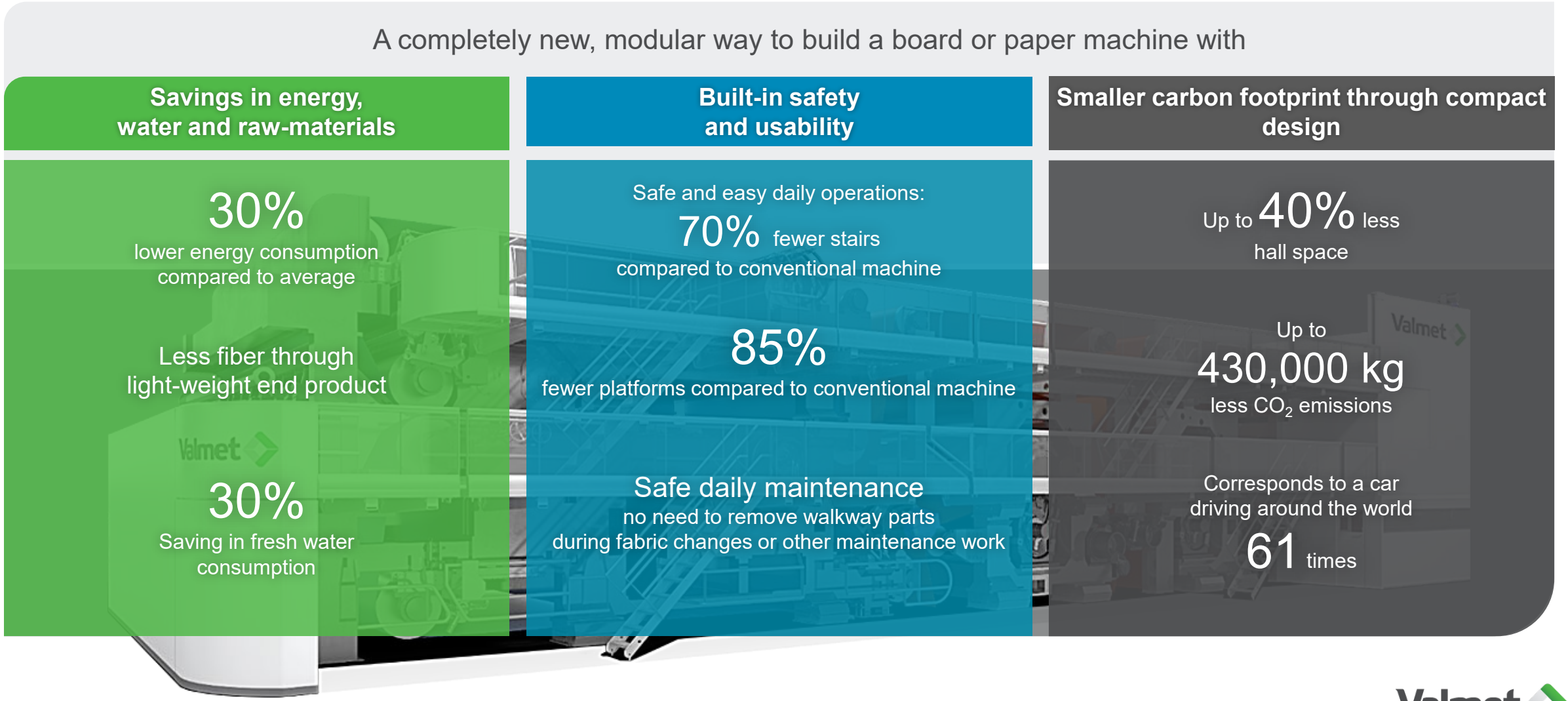

Savings in energy, water and raw-materials

30%
lower energy consumption compared to average

Less fiber through light-weight end product

30%
Saving in fresh water consumption

Built-in safety and usability

Safe and easy daily operations:

70% fewer stairs
compared to conventional machine

85%
fewer platforms compared to conventional machine

Safe daily maintenance
no need to remove walkway parts during fabric changes or other maintenance work

Smaller carbon footprint through compact design

Up to **40%** less hall space

Up to
430,000 kg
less CO_2 emissions

Corresponds to a car driving around the world
61 times

Valmet’s multifuel power boilers

With HYBEX and CYMIC boilers, fossil fuels can be replaced with renewables in continuously varying proportions. Our multifuel solutions offer

- Fuel flexibility
- High efficiency
- High reliability
- Low emissions

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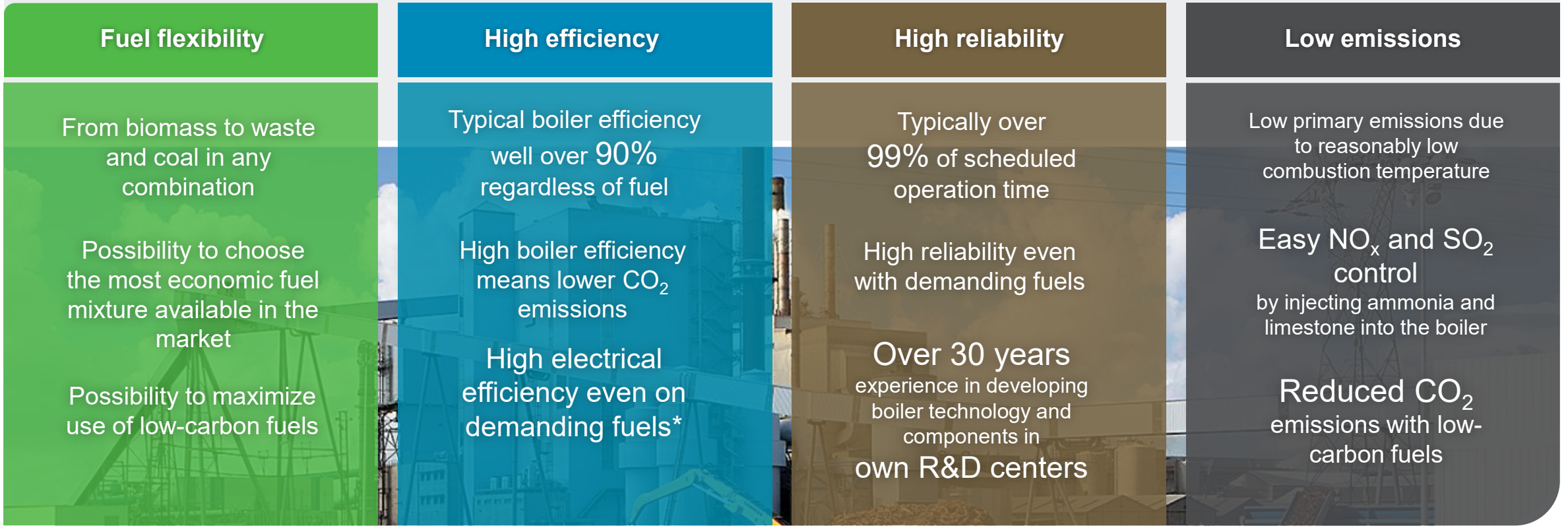


Fuel flexibility	High efficiency	High reliability	Low emissions
From biomass to waste and coal in any combination Possibility to choose the most economic fuel mixture available in the market Possibility to maximize use of low-carbon fuels	Typical boiler efficiency well over 90% regardless of fuel High boiler efficiency means lower CO_2 emissions High electrical efficiency even on demanding fuels*	Typically over 99% of scheduled operation time High reliability even with demanding fuels Over 30 years experience in developing boiler technology and components in own R&D centers	Low primary emissions due to reasonably low combustion temperature Easy NO_x and SO_2 control by injecting ammonia and limestone into the boiler Reduced CO_2 emissions with low-carbon fuels

* based on high steam temperature and pressure

Gasification technology for biomass and waste

Valmet's gasification technology converts biomass, recycled materials and waste into product gas. The gas can then be burned into energy in a power boiler or a lime kiln with

- excellent electrical efficiency
- minimized carbon footprint
- possibility to connect as co-gasifier to existing power boiler

Gasification technology for biomass and waste

Valmet's gasification technology converts biomass, recycled materials and waste into product gas. The gas can then be burned into energy in a power boiler or a lime kiln with:

Excellent electrical efficiency

Up to 60%
more electricity
from same amount of waste
compared to grate firing

Clean and corrosion free
operation even with high steam parameters

Minimized carbon footprint

Valmet's gasifiers use only low-carbon fuels such as biomass or waste

In co-gasification, the gasifier can replace
up to
100%
of fossil fuel

Possibility to connect as co-gasifier to existing boiler

Economical and time-efficient investment

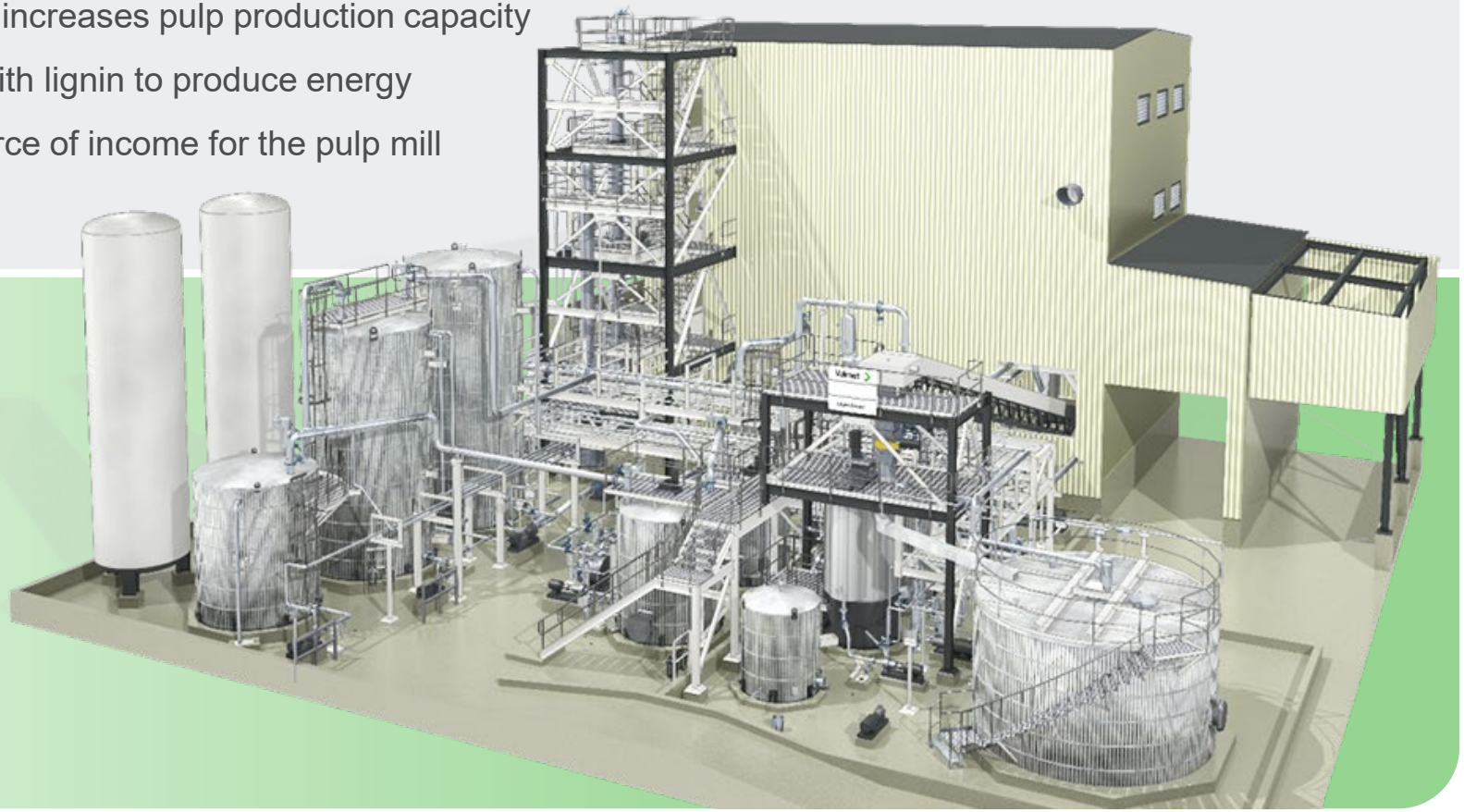
Minimal downtime
of existing energy production

Co-gasifier extends existing boiler's service life

LignoBoost lignin separation technology for pulp mills

LignoBoost separates lignin from kraft black liquor in pulp making

- Reducing the amount of lignin increases pulp production capacity
- Fossil fuels can be replaced with lignin to produce energy
- Lignin can become a new source of income for the pulp mill



LignoBoost lignin separation technology for pulp mills

LignoBoost separates lignin from kraft black liquor in pulp making

Increased pulp production capacity

Up to
25%
more pulp by removing 25% of the lignin in the black liquor

Fossil fuels replaced with lignin to produce energy

50 liters
of oil saved
per ton of produced pulp when firing lignin in the lime kiln

Lignin is a
CO_2
neutral fuel

New sources of income for the pulp mill

Green energy from lignin can be profitably sold to the power grid
Lignin can be sold as fuel in the form of pellets or powder

Lignin can be sold as raw material for bio products and chemicals

Important notice

It should be noted that certain statements herein which are not historical facts, including, without limitation, those regarding expectations for general economic development and the market situation, expectations for growth, profitability and investment willingness, expectations for company development, growth and profitability and the realization of synergy benefits and cost savings, and statements preceded by “anticipates”, “believes”, ”estimates”, “expects”, ”foresees” or similar expressions, are forward-looking statements. Since these statements are based on current decisions and plans, estimates and projections, they involve risks and uncertainties which may cause the actual results to materially differ from the results currently expressed. Such factors include, but are not limited to:

1) general economic conditions, including fluctuations in exchange rates and interest levels which influence the operating environment and profitability of customers of the company or economic growth in the company’s principal geographic markets.

2) industry conditions, intensity of competition situation, especially potential introduction of significant technological solutions developed by competitors, financial condition of the customers and the competitors of the company,

3) the company’s own operating factors, such as the success of production, product development and project management and the efficiencies therein including continuous development and improvement

4) the success of pending and future acquisitions and restructuring.


Valmet
FORWARD