

Polymer Processing Solutions Division





Georg Stausberg

CEO Polymer Processing Solutions

Joined Oerlikon: 2007

30 years experience in the
polymer processing industry

**Accelerate expansion
into Non-Filament and
capitalize on long-term
industry trends**

There is Not a Single Day Without Oerlikon

oerlikon



**Oerlikon machines process
polymers used in ...**



... yarns for apparel

Filament



... diapers and wipes



... pellets and bottles

Non-Filament



... future mobility

Polymer Processing Solutions at a Glance



Key metrics

2021

#1

Filament market leader

CHF 1.4bn

Sales

16%

Operational EBITDA margin

4'218

FTE's

Market leader for polymer processing solutions



Offering



Machines & plants

For polymer processing



Components

Hot runner systems, pumps



Services

Commissioning, maintenance & repair, advisory and upgrades

Integrated high-tech offering



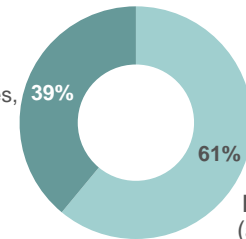
Sales split

2021

By markets¹

Non-Filament

(e.g., diapers, wipes, lightweight parts)

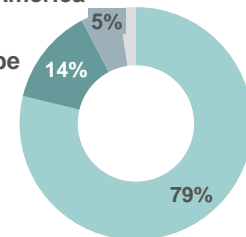


Filament (apparel)

By geography

North America

Europe



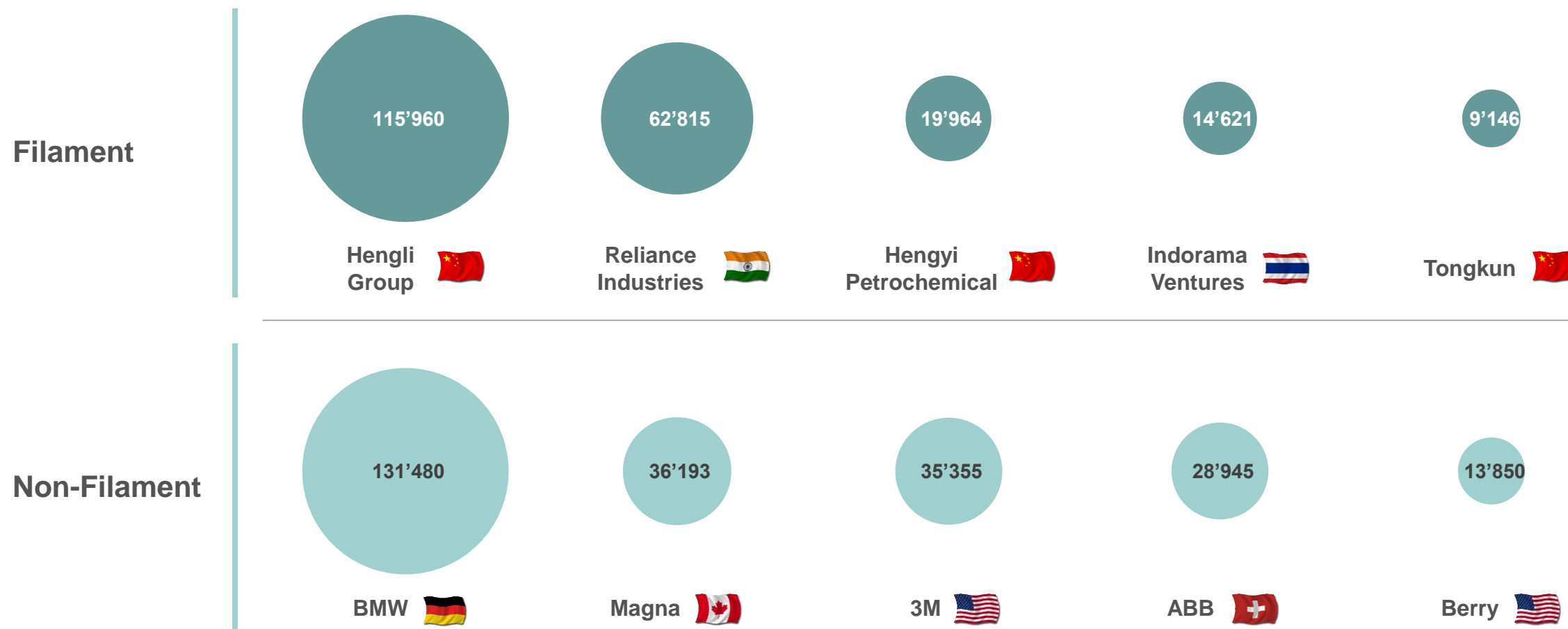
APAC

Focus on Non-Filament growth and diversification

(1) Assuming 12 months of INglass consolidation

Serving a Global Set of Leading Customers

Revenues of leading customers in USDm¹



(1) Latest reported period (annual) or company website

No Modern World Without Polymers – Oerlikon is a Crucial Enabler **oerlikon**



Essential

- **Resource scarcity:** No other option to dress the world – high scalability in manmade yarn production vs. capacity constrained natural fibers
- **Economic viability:** Competing materials are substantially more expensive
- **Superior characteristics:** Durability, stretchiness, water-resistance, stain resistance



Versatile

- **In countless applications** such as yarns and automotive parts
- **Replacing** materials like glass, metal and wood; reducing weight in automotive applications like e-mobility
- **Improved ecological** impact of manmade vs. natural yarns



Circular

- **Recyclability** as the enabler of circularity
- **Biopolymers** is a fast-growing segment, substituting fossil-based polymers



Driven by megatrends and superior characteristics



Enhance leadership in Filament

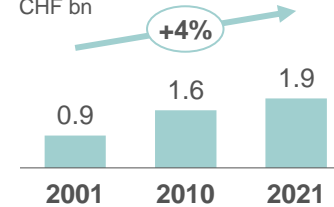
pg. 9 – 12

3 areas in focus

- Filament equipment market grew with 4% CAGR 01-21 driven by underlying manmade fibers market growth
- Positive 22-26 outlook supported by need for energy saving machines and vertical integration of filament products

Filament equipment market

Oerlikon Sales CAGR 14-21: +3%
CHF bn



Oerlikon outlook 22-26



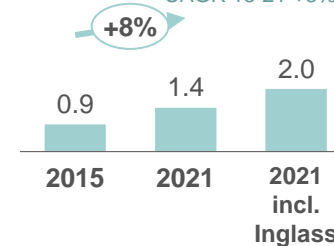
Expand in Non-Filament

pg. 13 – 17

- Solid market growth; Oerlikon increased strategic focus on Non-Filament since 2015
- Expansion supported by technology synergies with Filament and opportunistic bolt-on M&A in highly fragmented markets

Non-Filament equipment market

Oerlikon sales CAGR 15-21 +8%



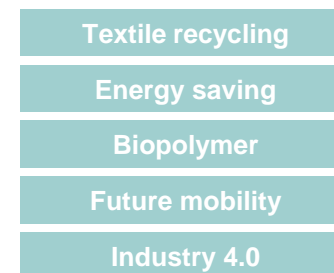
Oerlikon outlook 22-26



Capitalize on long-term trends

pg. 18 – 23

- Drive R&D to capitalize on long-term trends like textile recycling and biopolymers beyond 2025
- Supported by leveraging of machinery and process knowhow as well as market access



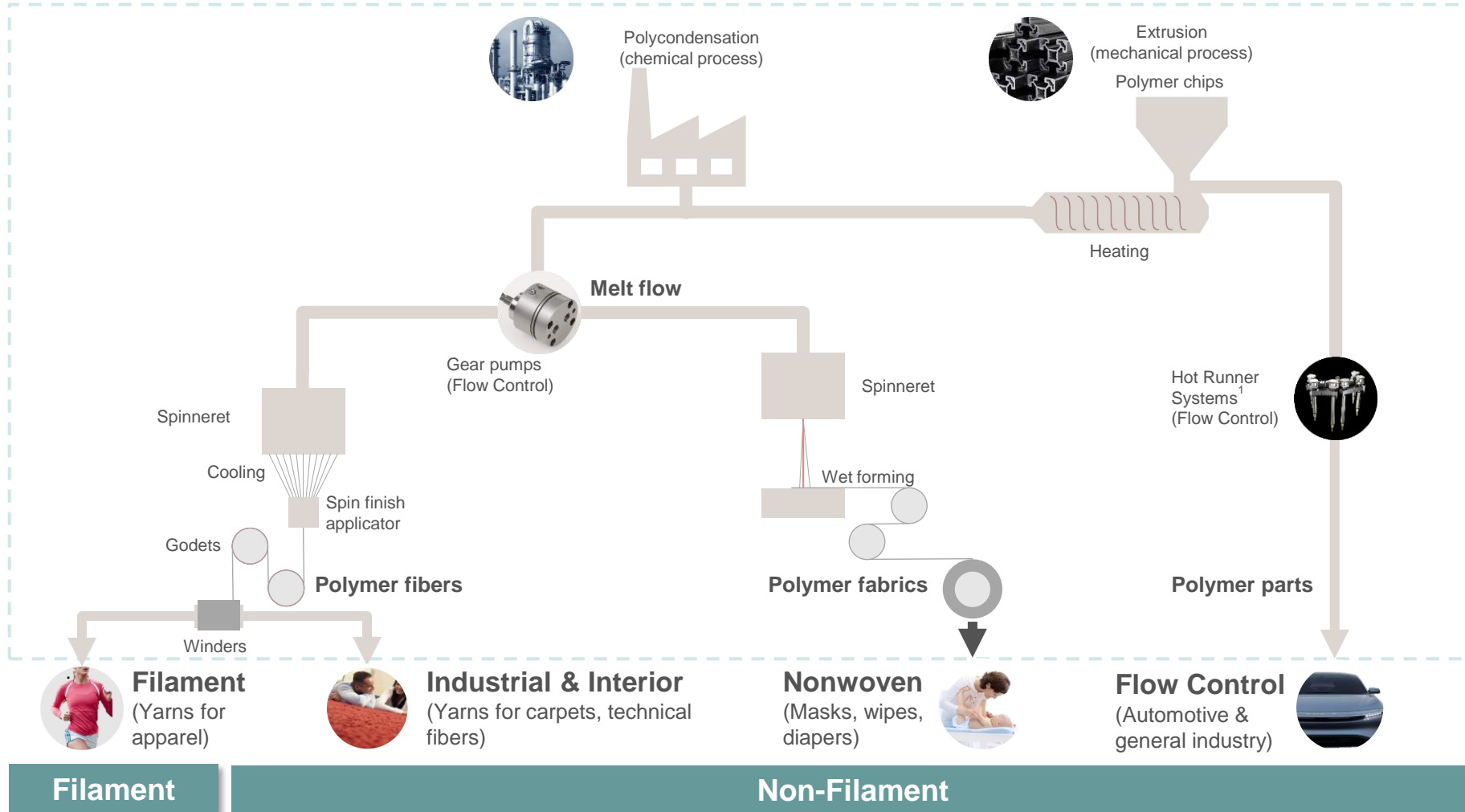
Oerlikon outlook



4-6% profitable sales growth

Mid-term growth potential p.a.

Technological synergies between Oerlikon machinery for Filament and Non-Filament



Synergies driving innovation

(1) Hot Runner Systems only go through the process of extrusion, not polycondensation

Filament – Enabling Customers to Dress the World

61% of sales¹

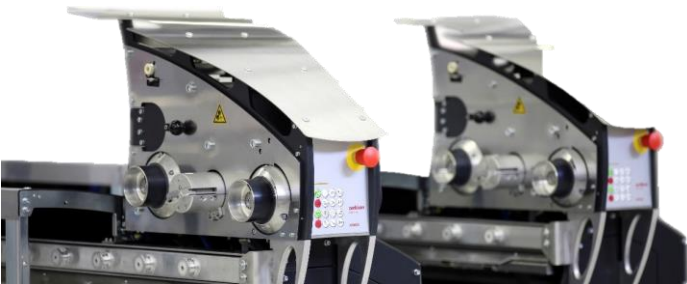


Oerlikon offering



Over 35m t of filaments / manmade fibers are produced on Oerlikon equipment p.a.

Market leader with 40-50% equipment market



Customers' products based on Oerlikon equipment



Leisure apparel

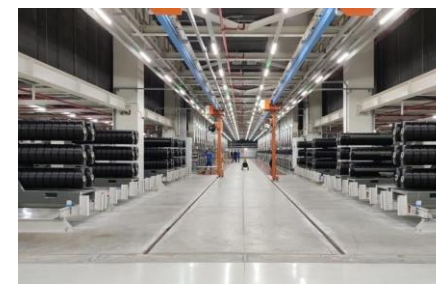


Yarns used in a broad range of apparel

Functional wear



Lighthouse projects



SASA



USD ~10.7bn Invested (2015-29)²

10m t/yr Total capacity (2029)²

Fully automated plant built for one of the world's leading manufacturers of fibers, filaments and specialty polymers



Modern Syntex



0.25m t/yr Total capacity (2023)

First manmade fibers plant in Bangladesh as Oerlikon turn-key melt-to-yarn production

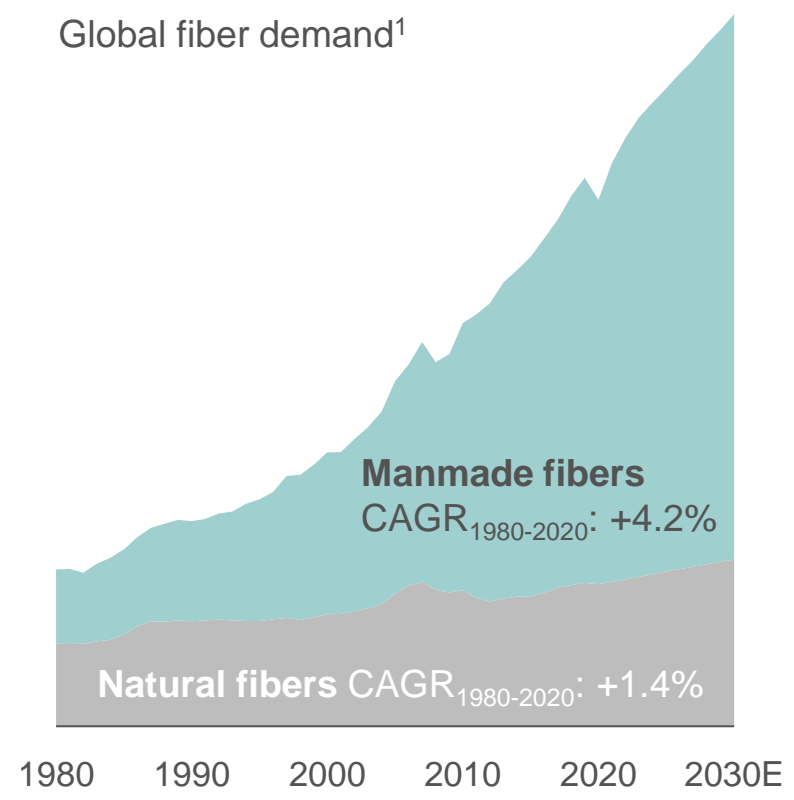
(1) Assuming 12 months of INglass consolidation; (2) Total investment, not only Oerlikon and filament

Manmade Fibers Outgrowing Natural Fibers ...

Growth drivers

-  **Population growth and affluence**
-  **Better availability**
-  **Lower resource intensity**
-  **Superior product characteristics**
(e.g., stretch, waterproof)

+4% manmade fibers growth



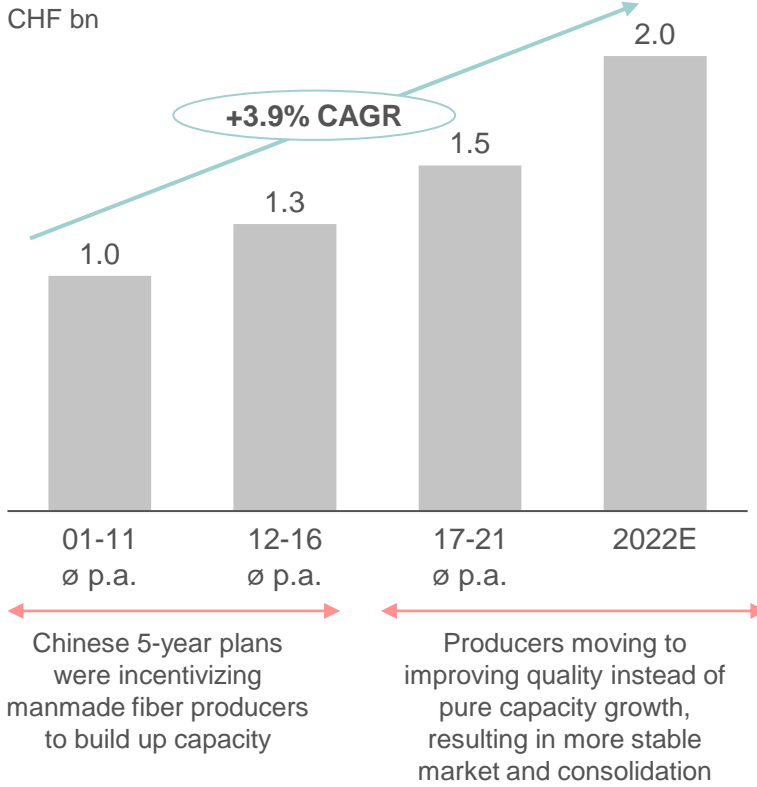

Need for equipment

(1) Source: PCI Redbook 2020 Update Q4/21; in m t

... Leading to Continued Growth in the Equipment Market



2001-21 filament equipment market with +3.9% CAGR



2022-26 with expected strong order flow

Upstream investments

- Upstream investments of top Chinese customers resulting in significant new demand for spinning equipment until 2025
- “Vision India” aims to provide substantial new manmade fiber capacity until 2025

Consolidation

- Top 25 manmade fiber manufacturers expected to account for 60% of production in 2025 vs. 50% in 2020

Replacements with energy saving machines

- Installation of resource saving machines: New Oerlikon machines saving significant energy compared to older generation
- Environmental regulation as a future driver for replacement

Full order books

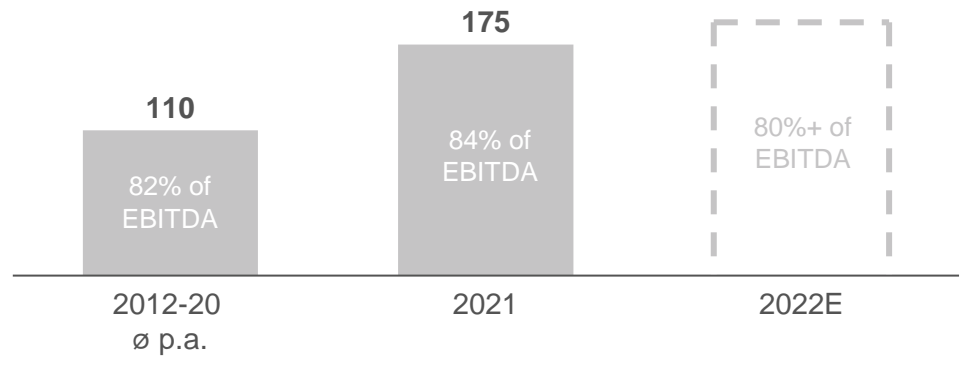
Order book filled for 2023; 2024 firmly on-track

Filament is a Cash Generative Foundation

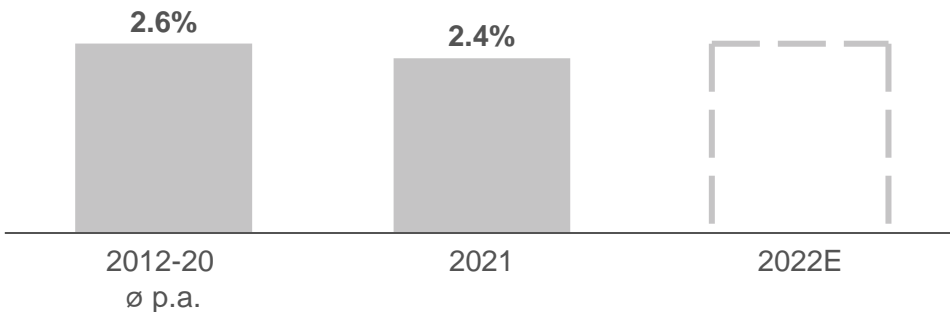
Low capital intensity supported by sound business model

Cash generation ¹

CHFm



Capex / sales



- Filament has 40-50% market share
- Niche market
- Technology entry barriers
- Long-term customer relationships



Providing base to expand into Non-Filament

(1) Refers to total Polymer Processing Solutions; cash generation is EBITDA minus Capex

Growth in Nonwoven & Plant Engineering

16% of sales¹



Nonwoven

5%

Market growth
(CAGR 21- 26E)

CHF ~450m

Market size
(equipment)

- Equipment market growth supported by mid to high single-digit market growth rates in underlying end markets of hygiene, wipes and filters
- Underlying end market growth drivers include substitution of less economic alternatives, hygiene standards, sustainability trends and regulation



Hygiene articles
Wipes & Diapers
Facial masks

Disposable

Filters
Geotextiles

Durable

Growth initiatives to outperform market

- Increase market share in applications where Oerlikon has a strong position in terms of technology and customer access; extend product offering to further hygiene applications
- Win market share in wipes by introducing new plants processing biodegradable materials



Plant Engineering

2.5%

Market growth
(CAGR 21- 26E)

CHF ~650m

Market size
(equipment)

- Polycondensation plants growth driven by GDP as well as PET packaging; Polycondensation plants produce PET for textile and non-textile application, including packaging
- Staple fibers equipment market expected stable



Polycon-
densation
plants



Staple fiber
equipment



Textile and non-textile
applications (incl. PET
packaging)



Textile and
non-textile applications

Growth initiatives to outperform market

- Polycondensation plants targeting to increase market share in continuous polymerization (CP) business outside China and continuing its diversification into packaging
- New, disruptive staple fibers equipment to improve fiber quality, reduce energy costs by ~23% and increase production speed by up to 25%

(1) Pro-rated for 12 months of INglass; market data on slide refers to addressable market

Innovate Industrial & Interiors to Outperform Market

10% of sales¹

Industrial Yarn (IDY)

Carpet Yarn (BCF²)

Market growth

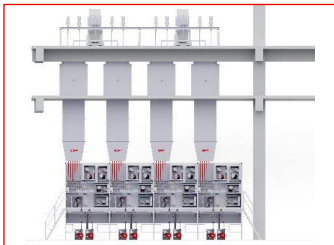
CHF ~90m
Market size
(equipment)

Market growth

CHF ~80m
Market size
(equipment)

- Growth supported by increasing applications of technical- and geotextiles
- Increasing demand within manufacturing industry and automotive, e.g., airbags
- Industrial yarns representing innovation driver for other manmade fiber segments

- Residential business supported by homebuilding, home office and replacement
- Contract business supported by building and renovation of commercial property, such as hotels and offices



Airbags
Safety belts
Bandages
Geotextiles
Sails



Carpets

Growth initiatives to outperform market

- Drive machine and process innovation to increase speed, reduce energy
- Extend service portfolio
- Establish modular platform for synergetic development of both technologies

(1) Pro-rated for 12 months of INglass; market data on slide refers to addressable market; (2) Bulk-Continuous Filament

Flow Control Overview

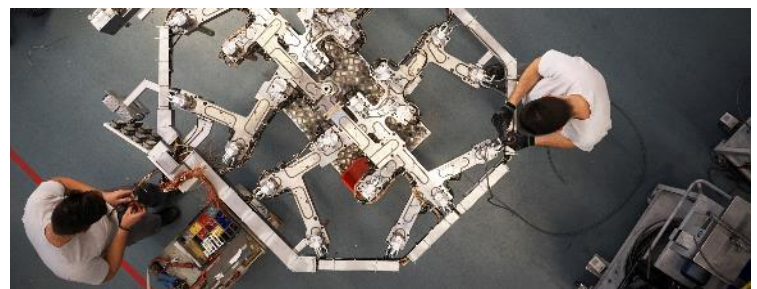
12% of sales¹



Oerlikon offering



Gear pumps and hot runner systems (HRS) to control and optimize the flow and distribution of molten polymers



(1) Pro-rated for 12 months of INglass



Customers' products based on Oerlikon solutions



Car interiors, e.g., cockpit parts

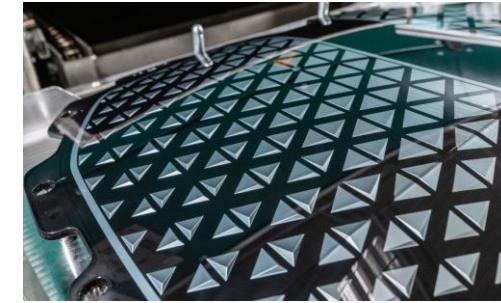
End products include light-weight parts of car interiors as well as exteriors such as headlights and bumpers

Durable containers and packaging



Projects

ENGEL for BMW i4



BMW grille is injected with HRSflow and coated by Surface Solutions

BSH BOSCH SIEMENS Haushaltsgeräte



Significant material saving due to replacement with Oerlikon HRS machines

Opportunity to Expand Into New Flow Control End Markets

Gear metering pumps

Hot runner systems (HRS)

3% **CHF ~200m**
Market Growth Market size

5% **CHF ~600m**
Market growth (CAGR 20-24E) Market size

5% **CHF ~2bn**
Market growth Market size

- Market for textile pumps benefits from strong demand for spinning equipment business
- Further diversification into non-textile segments such as paint metering pumps, coating, and adhesives

Automotive

- Demand for HRS products driven by model launches of new cars
- Benefiting from accelerated model launches as a result of transition to electric vehicles (EV) and increasing market differentiation with introduction of new brands (e.g., Cupra, NIO)
- Benefiting from ongoing trend to higher polymer share in cars to reduce weight

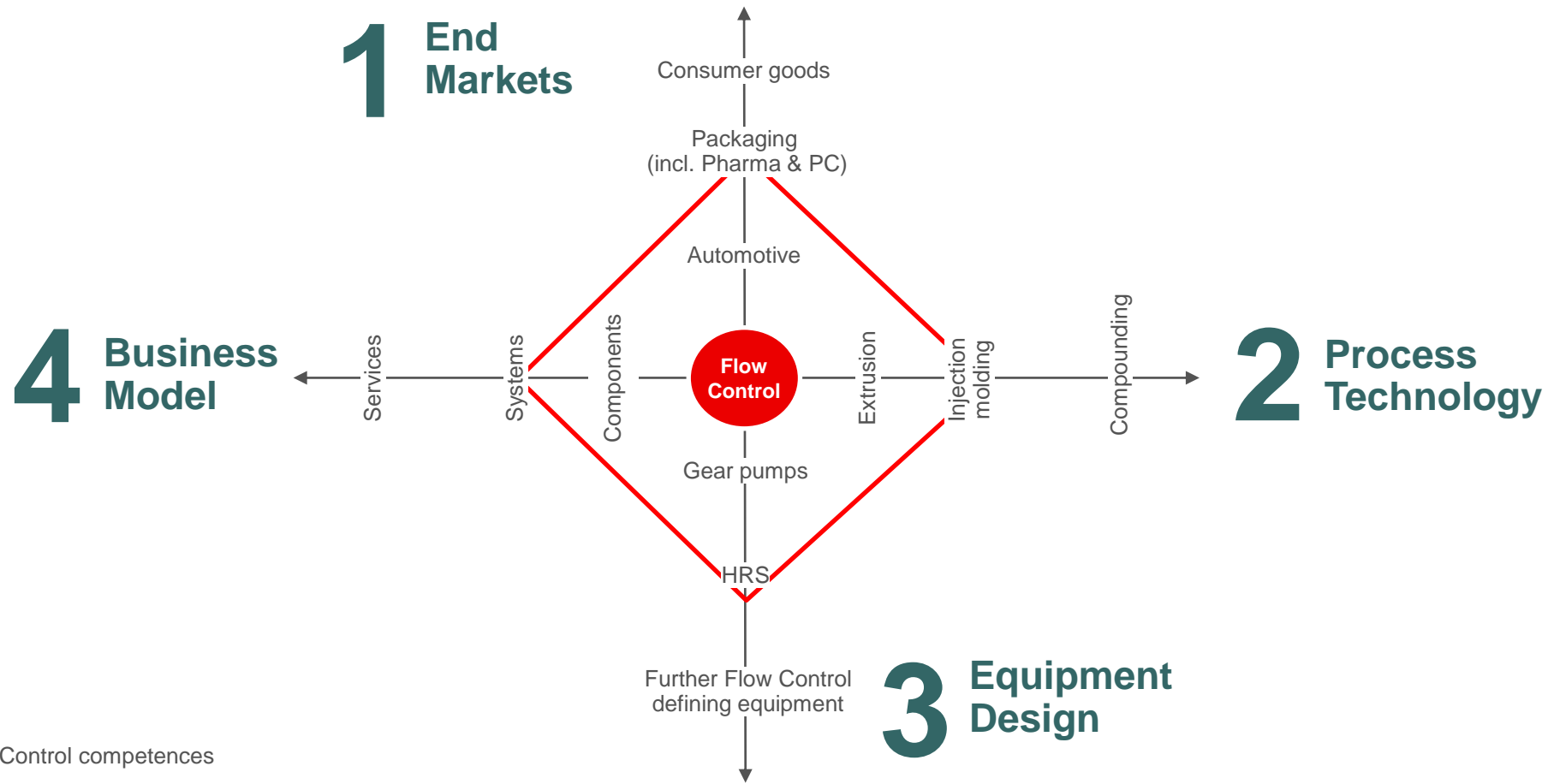
Non-automotive


- Oerlikon well-positioned to outperform competitors, aiming to increase current 1% market share to ~10%
- Enter adjacent markets such as transportation systems, packaging, med-tech, pharma and personal care
- Organic growth initiatives focusing on innovation and customer synergies with Surface Solutions
- Complemented with opportunistic bolt-on M&A in highly fragmented market

Non-automotive with sales upside of CHF ~200m

Source; HRS market sizes per IC Market Tracking for Hot Runner Systems 2021

Organic and Inorganic Growth Avenues in Flow Control



 Current Flow Control competences

Flow Control represents a growth platform with various interfaces for further expansion of business and core competences

Growth Opportunities From End-market Trends

Sustainability



Sector trends

- Textile recycling
- Energy savings as growth driver
- Biopolymers
- Future mobility and lightweight materials

Oerlikon contribution

Innovate and capture growth opportunities

Digitalization



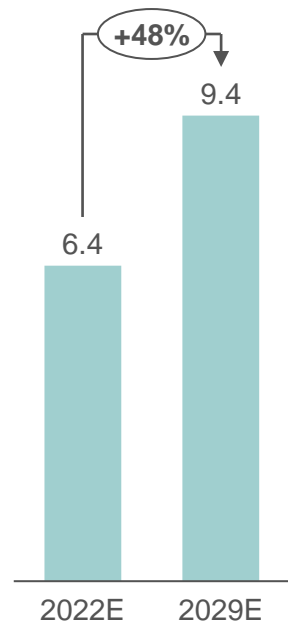
- Machine-based learning technology / connectivity

Industry 4.0
Remote services

Textile Recycling to Change the Fiber Industry

Manmade fibers increasingly based on recycled PET

Recycled PET production in million tonnes ¹



~54% CO₂ reduction for yarn production from rPET vs. virgin PET; representing 14 million tonnes CO₂ in 2022, equaling 45% of Swiss CO₂ emissions ²

Oerlikon well-positioned to participate in PET textile recycling

PET is most recycled polymer

- Oerlikon is right in the heart of the textile value chain, with significant potential to change the industry to become circular
- Oerlikon is already in the market with various mechanical recycling solutions, e.g., processing PET bottles into yarn; Oerlikon is also conducting R&D for textile-to-textile recycling

Oerlikon is the partner to develop textile recycling

- Textile industry with its complexity in feedstock requires more than just mechanical recycling technologies to reach circularity
- Oerlikon engaged in R&D and partnerships to further develop chemical recycling, increasing scalability and versatility of feedstock processed

Incremental market for textile recycling equipment presenting upside of up to CHF 500m p.a. beyond 2028

(1) Source: Wood Mackenzie and Oerlikon market intelligence; (2) mainly from avoiding waste incineration and upstream oil & gas

Energy Savings as Growth Driver

Increasing energy efficiency requirements



Reduce greenhouse gases impact from footwear & apparel



Demand by end customers for sustainable products



Increasing regulatory / governmental requirements

New Oerlikon equipment significantly reducing greenhouse gases emissions¹

~30%
Energy reduction

Saving **~2.6 million tonnes CO₂** p.a. on installed base vs older generation equipment; equivalent to energy consumption of **~328k households**



328'000

~30%
Waste reduction

Saving **57k tonnes of waste** p.a. vs. older generation equipment; which is equivalent to the weight of **380 million t-shirts**



380'000'000

~35%
Space reduction

Space saving in manmade fiber plants of **204'000m²** in installed base vs. older generation equipment, which is equivalent to **29 football fields**



29

Filament industry in China reduced energy consumption by 45% per ton between 2015 and 2019 - Oerlikon significantly contributed

Growth opportunity

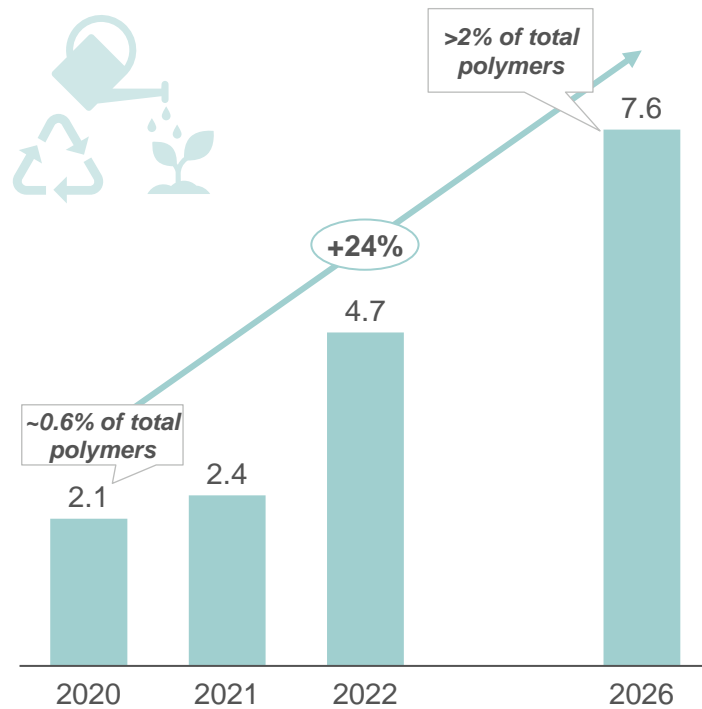
Customers shortening machine replacement cycle to increase efficiency

(1) Data per 2020 for new vs. older generation of FDY on POY take-up and winding machinery

Biopolymers to Gain Traction as Alternative Raw Material

Future trend to biopolymers¹

Global production capacities of biopolymers (in m t)



- Biopolymers have different processing characteristics compared to conventional polymers, resulting in new challenges for equipment suppliers
- Biopolymers required to improve sustainability in industries such as packaging and single-use-polymers
- Oerlikon with footprint in packaging via Flow Control (HRS) (e.g., coffee capsules, bottle caps) and in single-use products via Nonwoven (e.g., wet wipes)
- Oerlikon with technological edge to engineer solutions for versatile biopolymer applications

Growth opportunity

Oerlikon to outperform competition based on biopolymer-compatible equipment

Source: European Bioplastics (2021)

(1) Biopolymers are bio-based, bio-degradable, or both; biobased = material or product is (partly) derived from biomass e.g., food waste, cellulose or sugar cane; bio-degradation = natural chemical process during which material is converted to natural substances

Future Mobility as Incremental Growth Area

Growth of high-performance lightweight polymer parts

- Industry transition to increasingly lightweight and fuel-efficient vehicles
- Substitution of metals and other materials resulting in higher polymer share in cars
- Electric vehicles range extension: every 10% weight reduction in a vehicle improves efficiency by 5-7%
- Global automotive polymer market expected to grow with 4.4% CAGR₂₁₋₂₈

Selected lightweight polymer parts processed by HRSflow equipment



 **Growth opportunity**

Drive growth of lightweight and increasingly sophisticated polymer components

Artificial Intelligence as Enabler for Autonomous Yarn Manufacturing

Interlinking and optimizing equipment with Industry 4.0

- 1** **Smart Service Apps** combining data analytics and process know-how will become an additional differentiator in the polymer processing industry

- 2** **Oerlikon's Common Service Platform (CSP) is the enabler to**

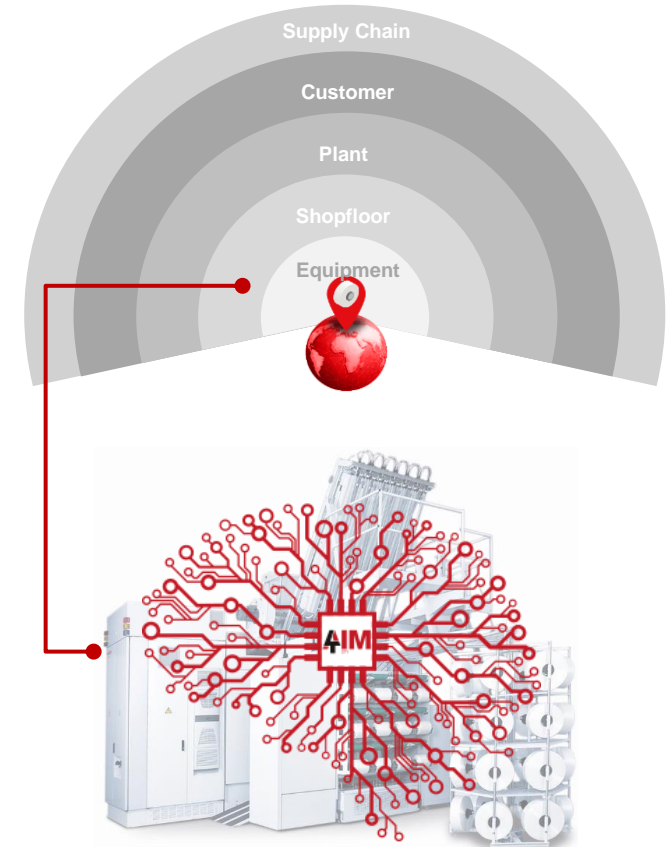
 - support customers based on individual requirements and maturity within their digital transformation
 - generate additional value for customers, e.g., by providing structured datasets or software applications, such as AIM4DTY¹
 - maintain data sovereignty and continue to develop data driven business models where feasible

- 3** **Customer benefits are reduced costs and industry-leading quality** through

 - remote services and better understanding of lifecycle
 - preventive diagnostics supported by machine-based learning technology
 - reduction in waste and downtime

(1) Drawn textured yarn

CSP as Digital Ecosystem



Artificial Intelligent Manufacturing for DTY (AIM4DTY)

Autonomously and instantly translates the pattern of a fault graph into a clear recommended action to reach operational excellence at all times

Conclusion: Well Positioned for Profitable Growth

1 Leader in Filament

- **Positive 22-26 outlook** supported by upstream investments and replacement cycles at customers
- +4% market CAGR 01-21 driven by underlying manmade fibers growth

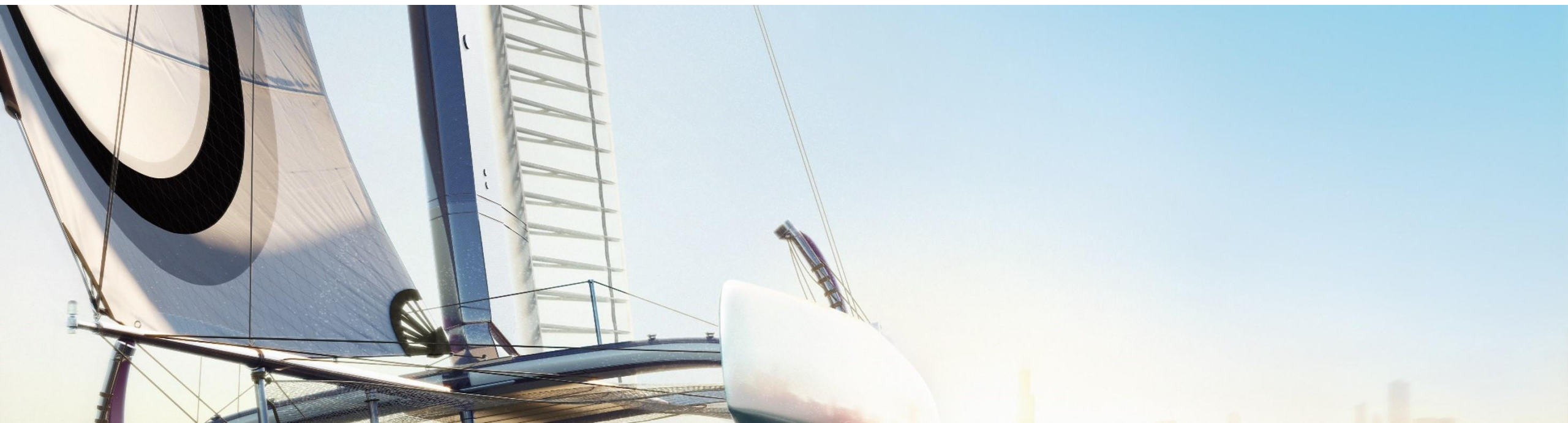
2 More growth from Non-Filament

- **Expanded** from CHF 2bn Filament to total CHF ~5bn+ addressable market by further developing Non-Filament business
- Oerlikon to outperform mid-single-digit market growth through market extension and market share gains
- Upside from bolt-on M&A

3 Upside from long-term trends

- **Invest** into sustainable innovation and benefit from trend towards energy-saving equipment
- Textile recycling as potential third growth pillar
- Long-term population growth and rising affluence underpin the need for polymer processing

Q&A



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