

# DSM Protective Materials



NUTRITION · HEALTH · SUSTAINABLE LIVING



# DSM Protective Materials

*We protect people and the environment they live in. Because all life is precious.*

## Personal Protection

We protect people in law enforcement, the military, the private security sector and the first responders.

## Maritime and Industrial

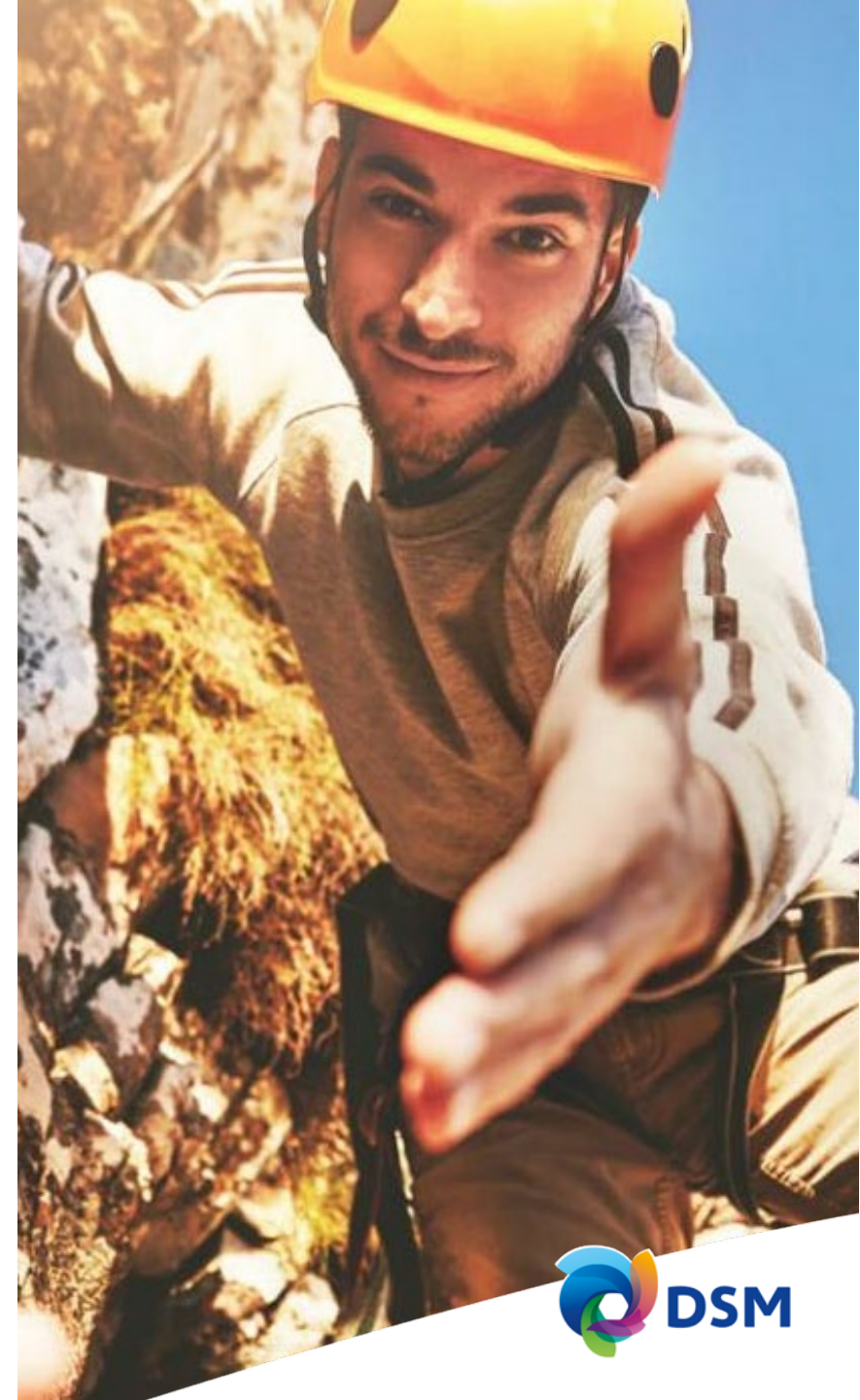
We enable the production of renewable energy by contributing to windmill installations, as well as better working conditions.

## Sport and Lifestyle

We protect people in the outdoor, apparel, footwear, inflatables and composite materials industries.

## Mechanical Industrial

We protect people in the assembly, manufacturing, transportation, logistics and food industries.



# DSM Protective Materials

*The world's strongest fiber™*

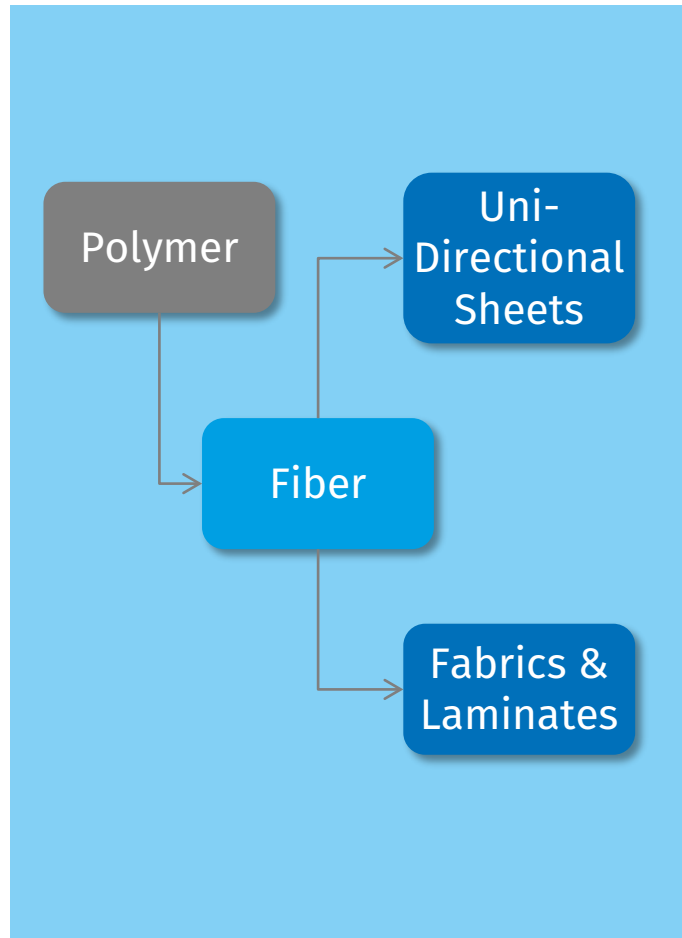
- Dyneema®, *the world's strongest fiber™*, is respected as the premium brand for Ultra-High Molecular Weight Polyethylene (UHMwPE) fibers, UD and fabrics. We manufacture and sell products in several forms, including fiber, UD and fabrics.
- The business is driven by the need for lightweight, sustainable solutions that offer extreme durability coupled with improved safety and ergonomics
  - DSM is the first manufacturer of high performance synthetics to use bio-based feedstock for the production of Dyneema® fiber
  - DSM's global product leadership is based on unique, IP-protected technology platforms
  - 15 times stronger than steel, 40% stronger than aramid, and floats on water
  - Dyneema® products typically replace traditional materials such as steel and aramid



# DSM Protective Materials

## Product overview

### Technologies and form factors



### Key markets



### Overview

Industry	Applications	Value proposition
▪ Defense & Law Enforcement	▪ Ballistic Vests, Inserts, Helmets, Vehicle protection	▪ Lightest weight protection and increased comfort
▪ Maritime, Offshore, Aquaculture, Industrial	▪ Ropes, cables, slings, nets, fishing and yachting lines	▪ Lower operation cost and footprint and increased worker's safety
▪ Automotive, Manufacturing, Food	▪ Cut resistant gloves, Protective workwear	▪ Better cut protection at higher comfort level
▪ Sports & Lifestyle	▪ Outdoor equipment, Footwear, Apparel and denim, inflatables	▪ Ultra-lightweight, increased performance



# DSM Protective Materials

## *Key market segments and applications*



### Maritime

Mooring and tow ropes made with Dyneema® SK78 are helping the Maritime industry to achieve new levels of safety, efficiency and reliability. Lighter, more durable, easier to handle and with limited rope backlash



### Heavy Lifting

On- and offshore construction workers and crane operators can lift greater loads further, higher and more quickly with Dyneema® offering them stronger, safer and more efficient equipment that is always up to the task



### Personal Protection

Our market-leading technologies are developed with ballistic protection manufacturers to enable next-generation armor solutions across a wide range of fields in vehicle and personal armor



### Aquaculture

Ropes and nets made with Dyneema® enable more sustainable fishing techniques that optimize output, while remaining better for the environment

# DSM Protective Materials

## *Key market segments and applications*



### Sports & Lifestyle

Ultralight strength. These exceptional properties have made Dyneema® fiber and fabrics, indispensable for the outdoor, sports and fashion industries, offering innovation without compromising on style or performance



### Renewable Energy

Strong, lightweight, 'Greenest Strength' Dyneema® can help developers cut the cost of renewable energy today, and enable the innovative renewable technology we will need going forward

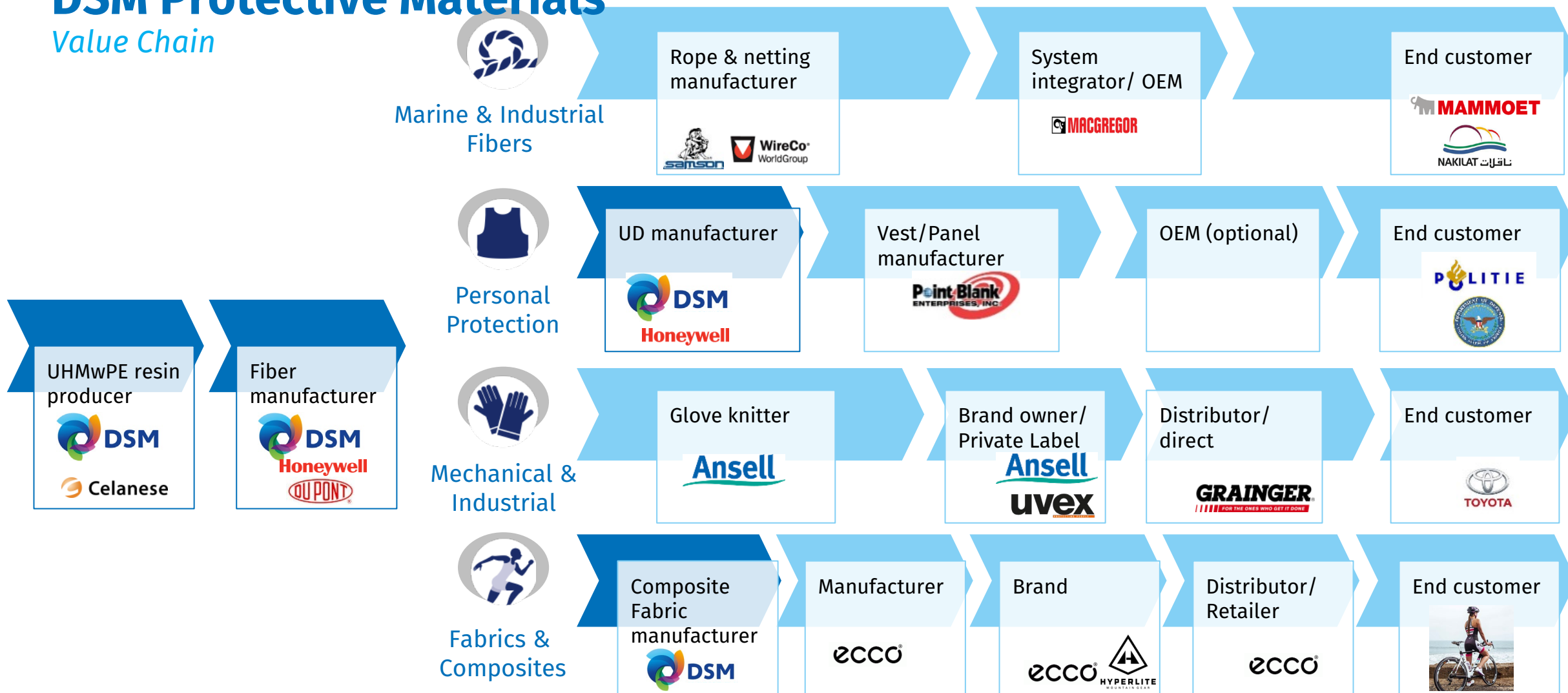


### Inflatables

Use of the fabrics for large scale industrial inflatables allows the end product to benefit from fuel savings, stability, strain endurance and structural elements, while providing space savings and manufacturability

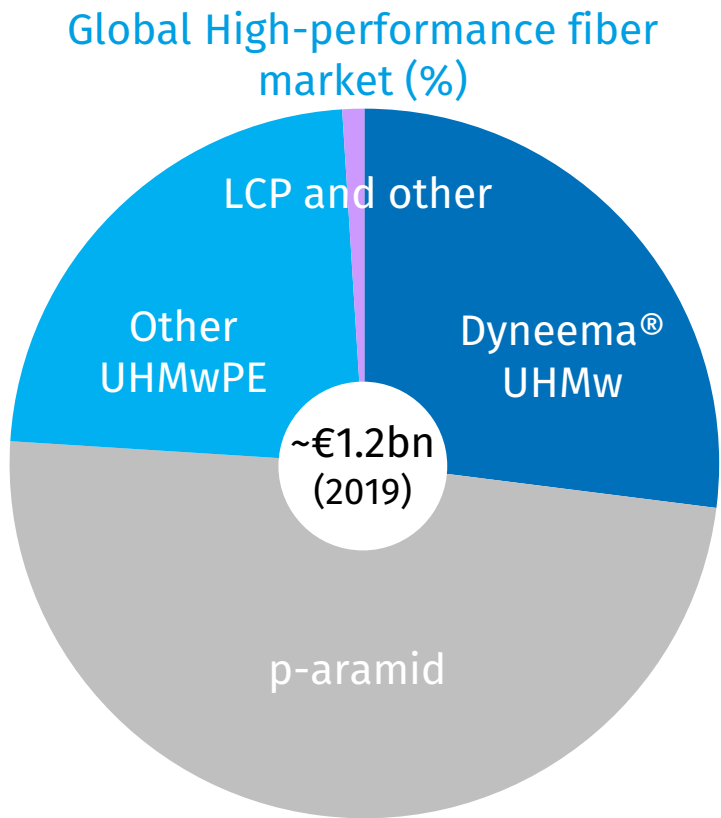
# DSM Protective Materials

## Value Chain

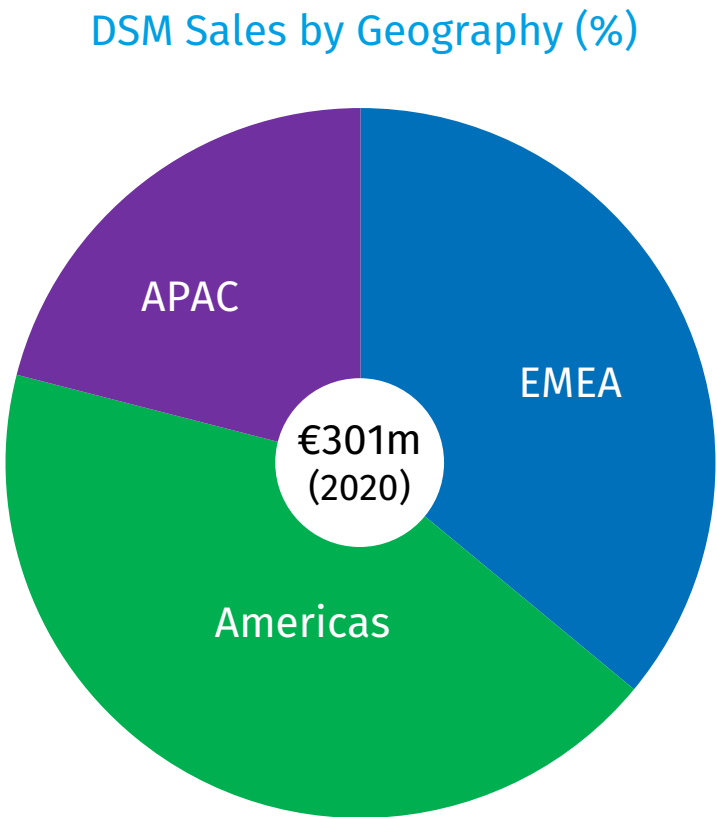
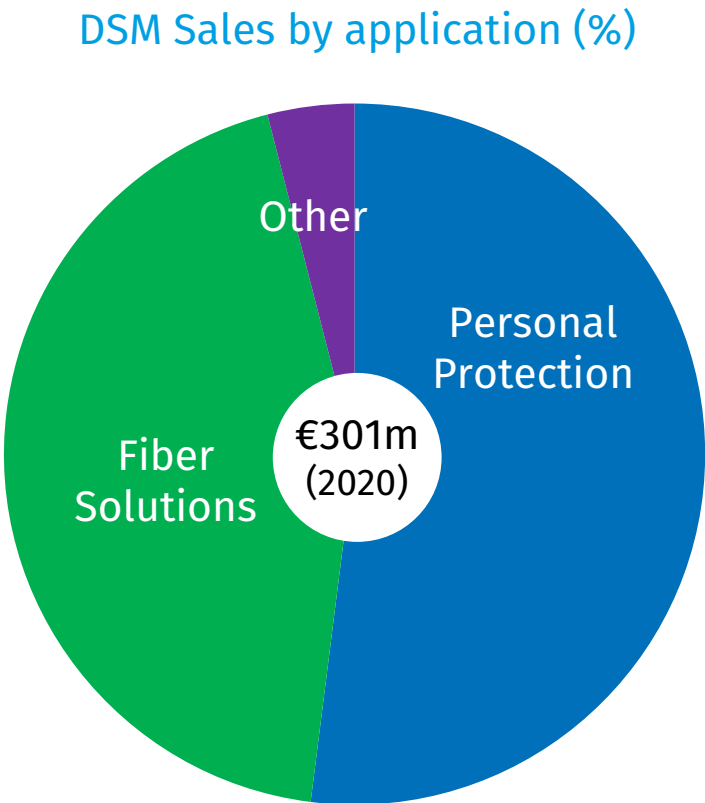


As the world's strongest fiber™, Dyneema® is uniquely positioned when continuous high performance is of utmost importance

# DSM Protective Materials - Global Market & Dyneema® Sales



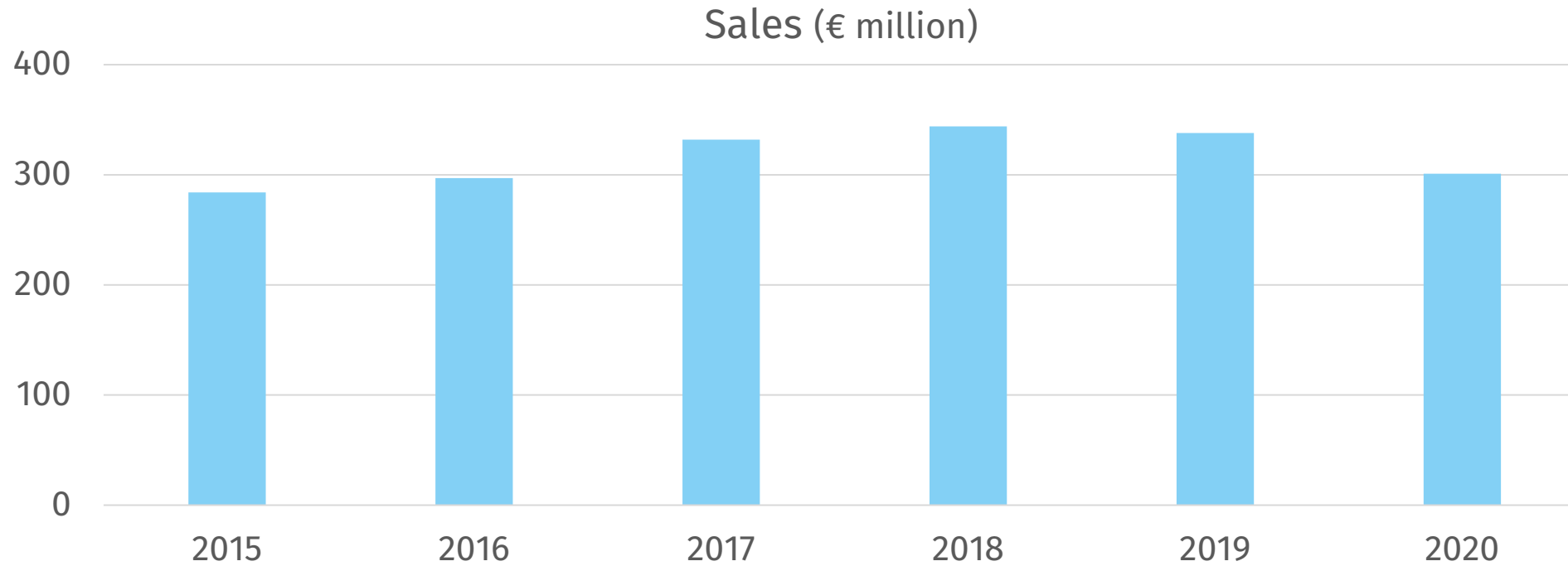
Market Growth 2-3%





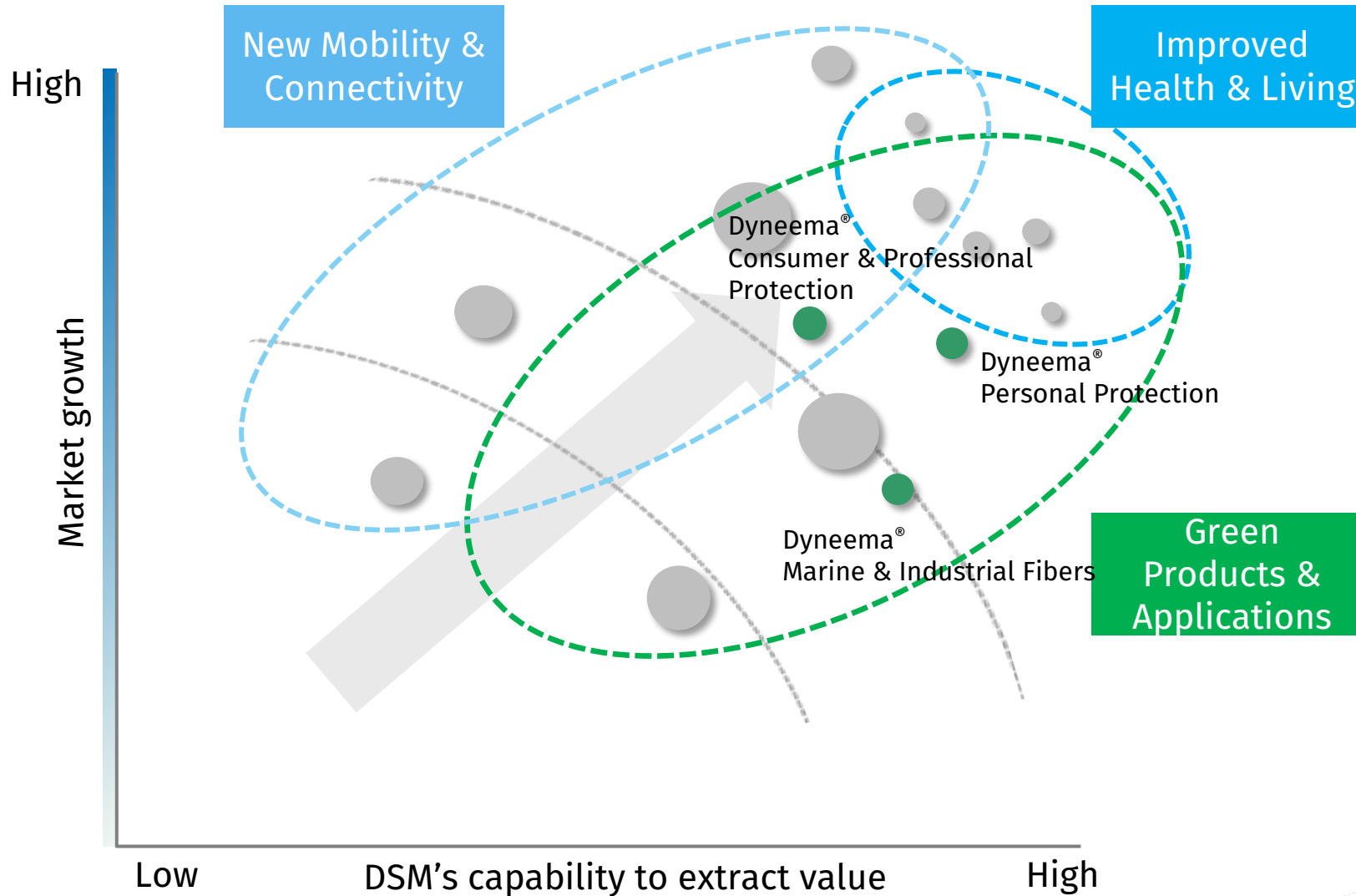
# DSM Protective Materials - €301m sales (2020)

## *Sales Overview*



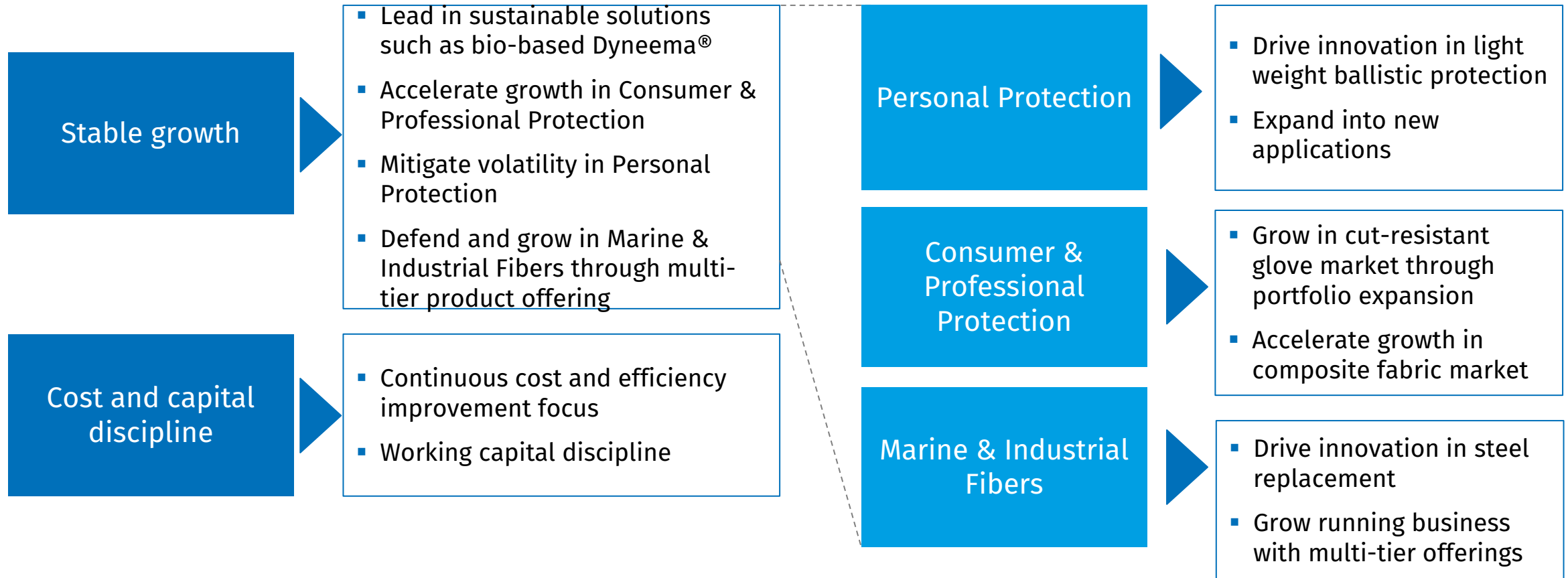
# DSM Protective Materials

*Solid growth strategy well anchored*



# DSM Protective Materials

*DSM Protective Materials focuses on innovation leadership, drives the industry towards sustainable solutions, and address demand at different price points with multi-tier portfolio*



# DSM Protective Materials

*Innovation for sustainable real-world applications*



Dyneema® Composite Fabrics are made from multiple oriented fiber and resin layers that dramatically increase the performance against tear, puncture and abrasion, while cutting weight and reducing bulk



Dyneema® Force Multiplier Technology fuses breakthrough polymer science, next generation fiber technology and unique uni-directional engineering for maximum ballistic protection in a lightweight solution, enhancing comfort and mobility



Better lashing Synthetic link chains with Dyneema® are eight times stronger than comparable steel chains, and more than 85% lighter. They are soft, quiet, easy to handle and don't whip back should they break

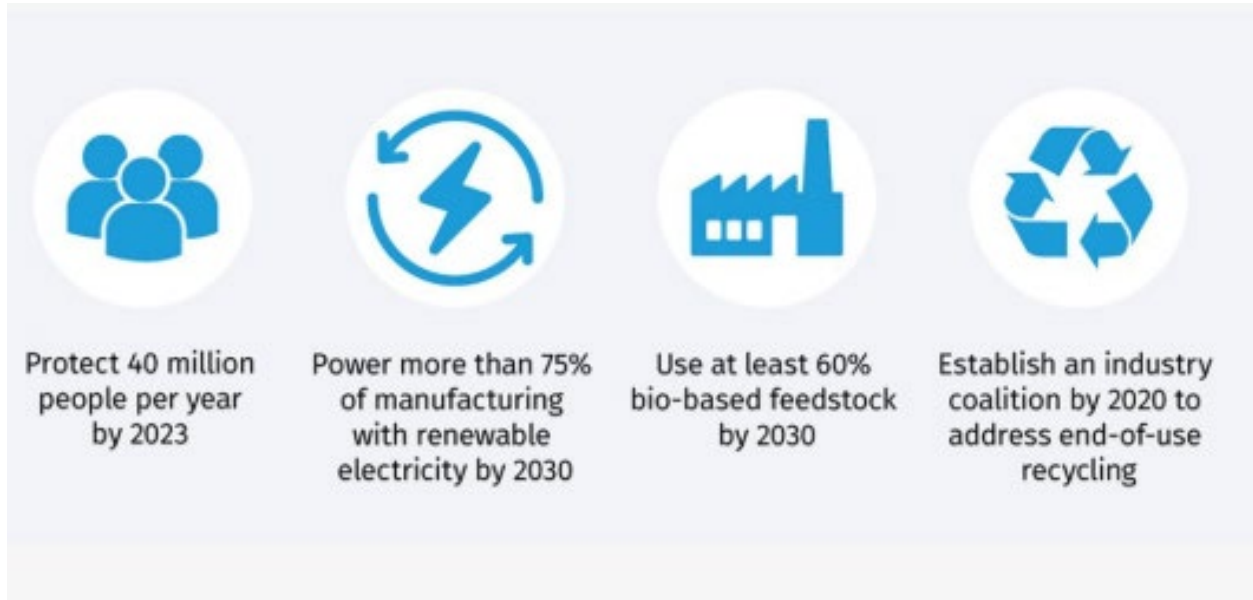


Sustainable clean energy Dyneema® is ideal for applications in renewable energy technology and sustainable transport. Dyneema® is being used to build the next generation of wind turbines and will be used to harness the potential of tidal and wave energy



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*Protecting people and the environment they live in. Because all life is precious.*



## Ambitious targets launched

- In 2020, DSM Protective Materials (DPM) introduced the first ever bio-based ultra-high molecular weight polyethylene fiber, an important step in realizing our goal to source at least 60% of the feedstock from bio-based raw material by 2030. A mass balance approach will be used and ISCC Plus certified.
- DPM's renewable electricity usage saves CO<sub>2</sub> emissions equivalent to nearly 13,000 vehicles off the road for one year.

## Circularity Summit

- In November 2019, DPM organized a Circularity Summit to establish an industry coalition consisting of customers and recycling companies focused on the recycling of end-of-use products with Dyneema®.





# Safe harbor statement

- This factbook may contain forward-looking statements with respect to DSM's future (financial) performance and position. Such statements are based on current expectations, estimates and projections of DSM and information currently available to the company. DSM cautions readers that such statements involve certain risks and uncertainties that are difficult to predict and therefore it should be understood that many factors can cause actual performance and position to differ materially from these statements. DSM has no obligation to update the statements contained in this factbook, unless required by law
- A more comprehensive discussion of the risk factors affecting DSM's business can be found in the company's latest Annual Report, which can be found on the company's corporate website, [www.dsm.com](http://www.dsm.com)



**BRIGHT SCIENCE. BRIGHTER LIVING.™**