

AEROSPACE & DEFENSE WEBINAR

February 28, 2023

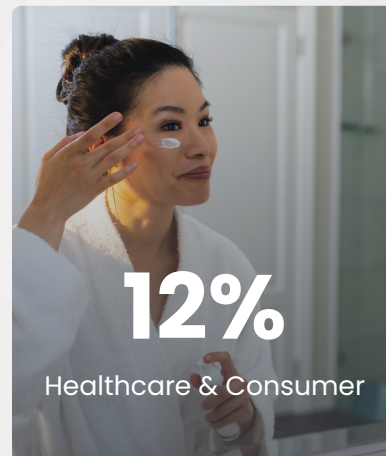


Disclaimer: this presentation layout was updated to Syensqo's corporate branding, but the content is unchanged versus the initial presentation

Our highly attractive Materials business is part of Syensqo



Aerospace & Defense represents a key market



Materials

% of net sales

Materials
FY 2022



Net Sales
~**€4.1bn**

Organic Sales Growth
(‘22-’26F)
~**10%**

EBITDA margin
>30%

We are an advanced material provider to OEMs and suppliers



Design, manufacture & assemble aircrafts

OEMs



Provide advanced materials to produce parts



Provide finished parts & systems to OEMs

Tier 3, 2 & 1 suppliers



**ADVANCED
MATERIAL SUPPLIERS**



Syensqo is 1 of 3 qualified carbon fiber composites suppliers globally



ADVANCED MATERIALS

SOLVE

the industry's most
critical performance
and sustainability
challenges

30% weight
reduction vs
aluminum



5 times
stronger vs
aluminum &
superior
properties¹



Improved
aerodynamics



Superior
manufacturing
& design
flexibility



Up to

25%



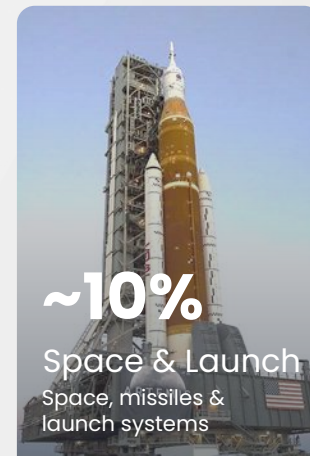
Increased
fuel
efficiency

&

Reduced
greenhouse
gas emissions²



Aerospace & Defense is a key market within our Materials business



% of net sales

Aerospace & Defense

Aerospace
& Defense
FY 2022



Net Sales
€0.95bn

'21-'22 Sales growth
~30%

Organic volume growth
('22-'26F)
~10%

Aerospace & Defense key takeaways



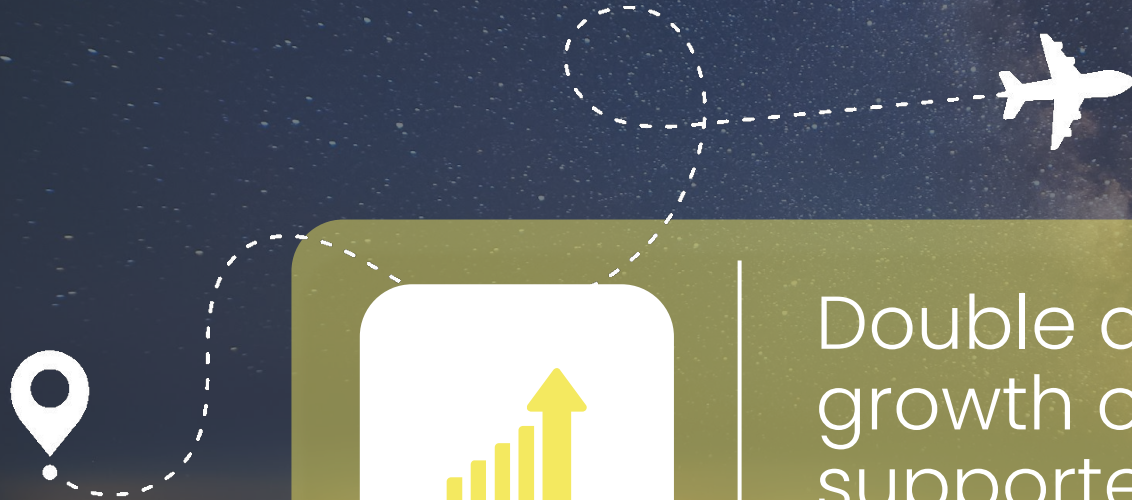
Double digit market growth outlook, supported by post COVID rebound



Attractive business with broad portfolio and high barriers to entry affording stable growth



Actively pursuing next-gen solutions leveraging our unique innovation capabilities



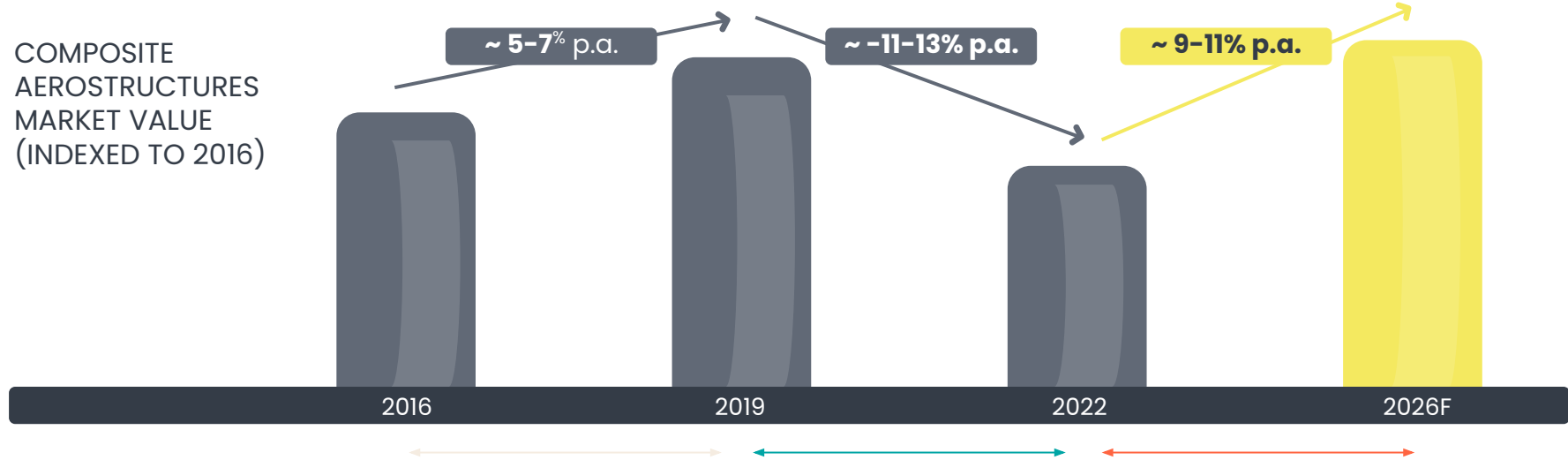
Double digit market
growth outlook,
supported by post
COVID rebound

Attractive market growth outlook

Aero industry recovery is underway following a period of decline



COMPOSITE
AEROSTRUCTURES
MARKET VALUE
(INDEXED TO 2016)



Key market
drivers



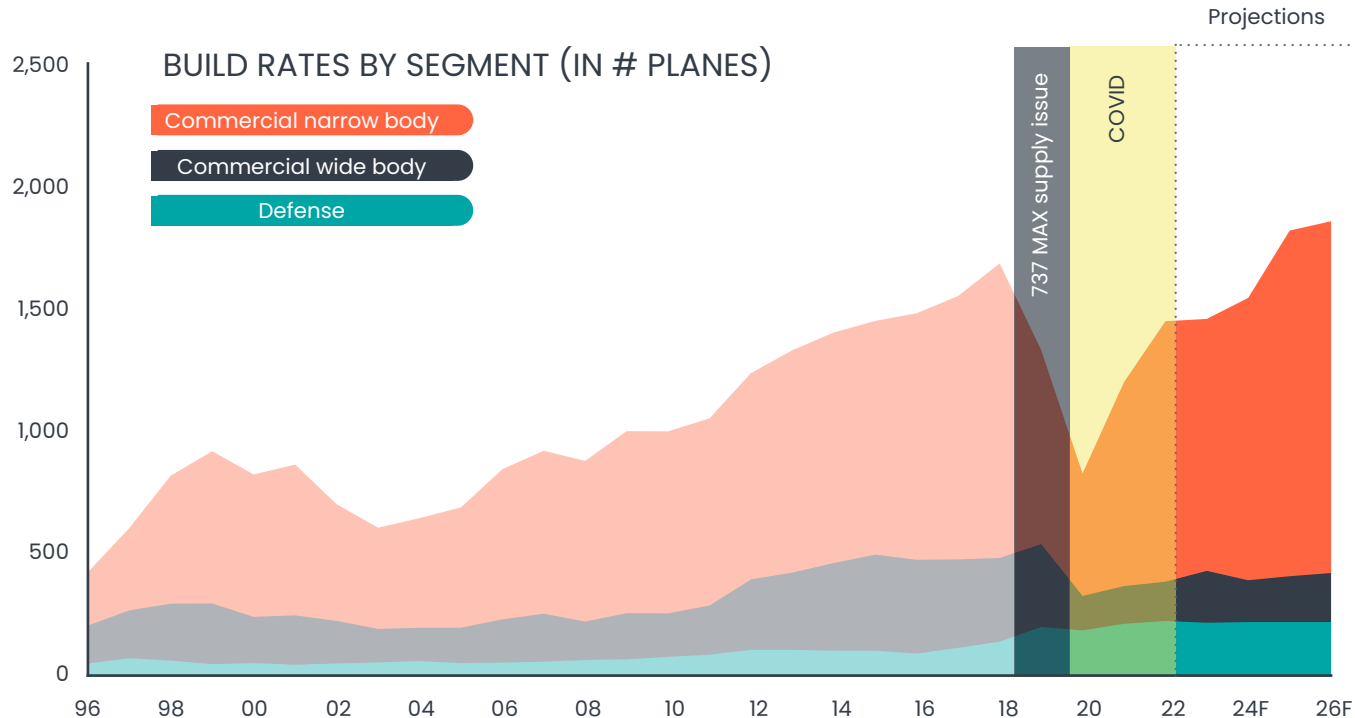
Market growth driven
by higher build rates
and introduction of
new programs

- Decrease due to
narrow body build rate
slowdown (i.e.,
737MAX) followed by
COVID crisis

- Increasing build rates,
supported by a COVID
recovery, and increasing
advanced material
penetration

Build rates

Strong outlook, supported by post COVID rebound and mainly driven by narrow-body airplanes



Commercial narrow body
Long-term high single digit growth
6-7% p.a.



Commercial wide body
Long-term low single digit growth
1-2% p.a.



Defense
Highly resilient long-term mid-single digit growth, **4-5% p.a.**

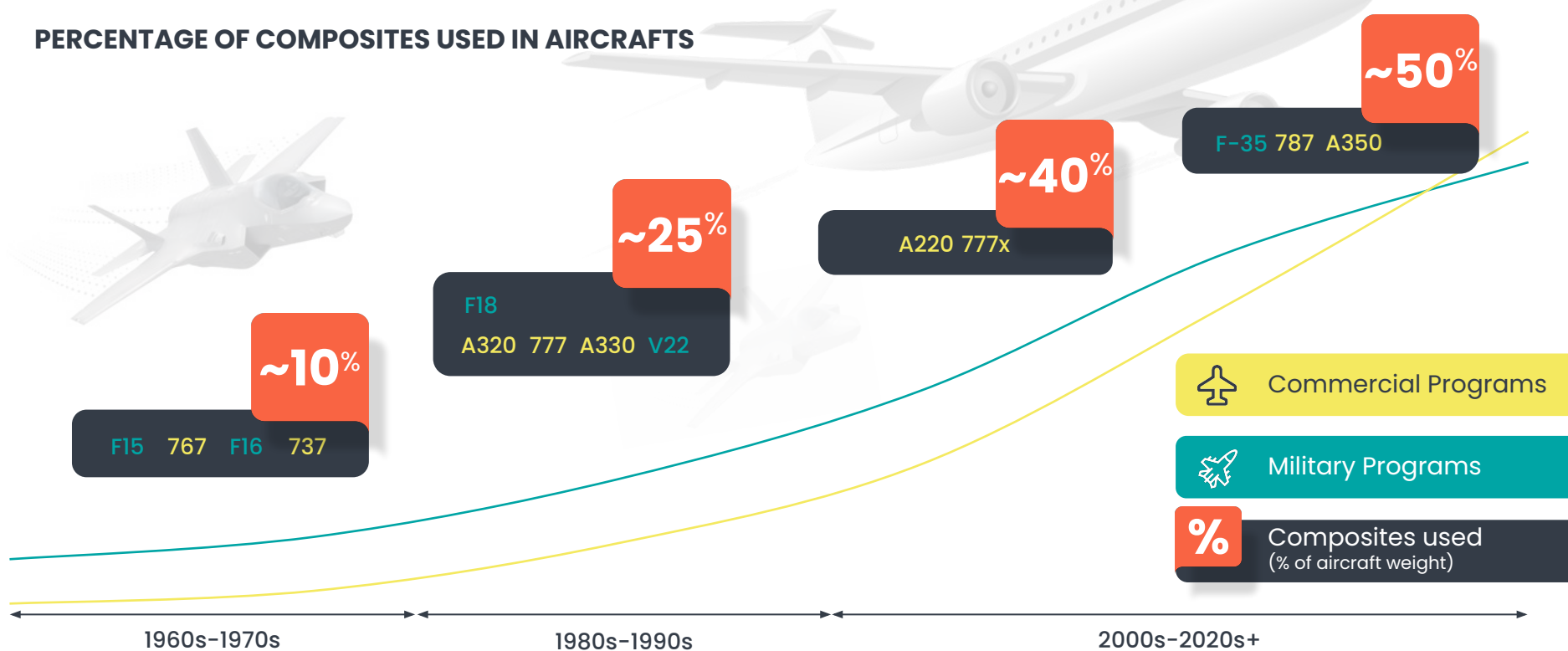


Advanced material penetration

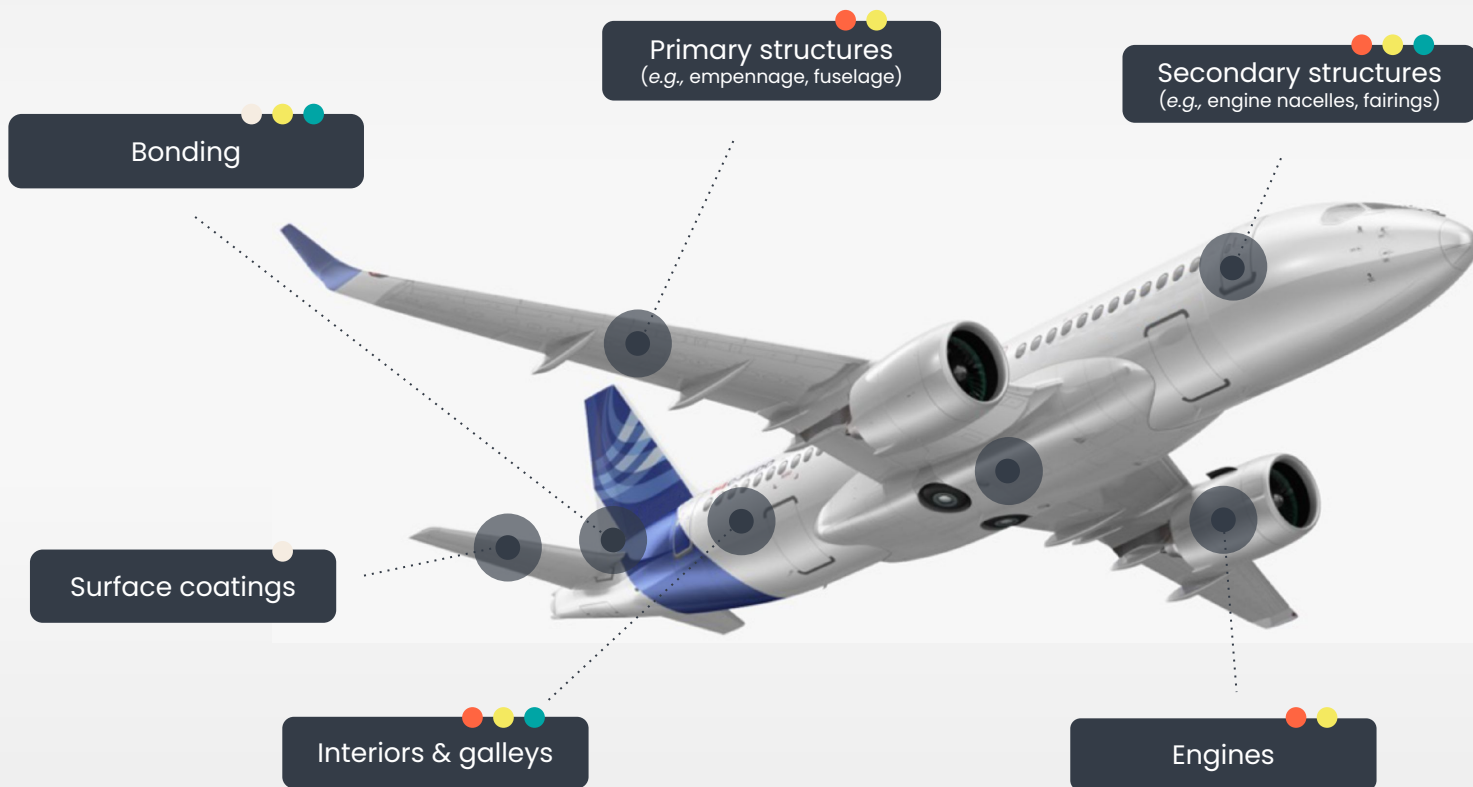
Continued increase across airplane programs over time



PERCENTAGE OF COMPOSITES USED IN AIRCRAFTS



Our technology is integral to many parts of an airplane



OUR PRODUCTS

TSC

Thermoset composites

TPC

Thermoplastic composites

ADH

Adhesives & surfacing

SpP

Specialty polymers



SYENSQO

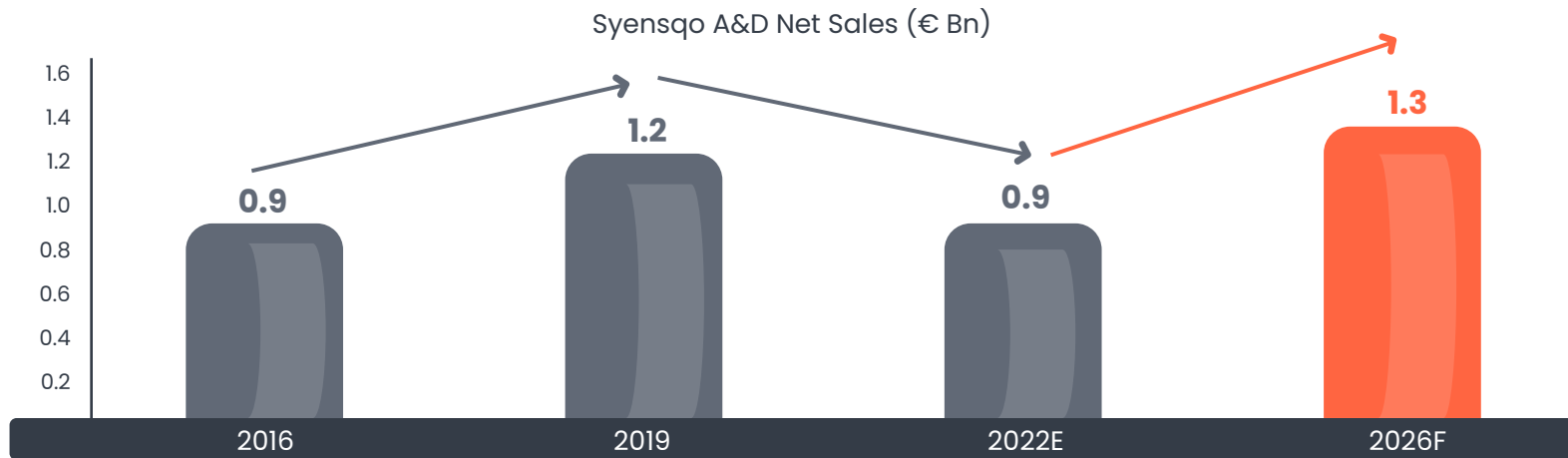
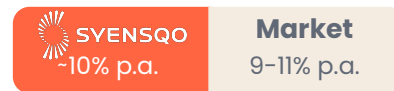


Attractive business with
broad portfolio and
high barriers to entry
affording stable growth

Syensqo maintains leadership in this attractive market



with double-digit growth expected in the mid-term



Protected by
High barriers
to entry



Broad
Portfolio

Specified on all
major programs

Long-standing
customer
relationships

Certified
Global Assets

Aerospace & Defense market






Commercial Aviation

Syensqo is specified in all main airplane programs



KEY EXAMPLES

SPECIFIED IN KEY AIRPLANE & ENGINE PROGRAMS

| Solvay value per shipset | Key airplane programs | Order backlog (Dec '22) |
|--------------------------|--|-------------------------|
| >\$1m |  BOEING 777x | ~440 |
| |  COMAC C919 | ~100 |
| \$0.5-\$1m |  BOEING 787 | ~575 |
| | AIRBUS A220 | ~550 |
| |  BOEING 737 | ~4,200 |
| <\$0.5m | AIRBUS A350 | ~410 |
| |  BOEING 767 | ~120 |
| | AIRBUS A330 | ~200 |
| | AIRBUS A320 | ~6,100 |



Major supplier of primary & secondary structures for A220



Primary and secondary structures for Biz Jets



Secondary structures, structural adhesives and surfacing films for A350 and 787 family



Trusted long-term advanced material supplier of Safran for engine & nacelle programs

Strong visibility on long-term orderbook of our main customers, worth ~€5bn



Defense

Long-standing partnerships with key OEMs



LEADING POSITION IN THE U.S. DEFENSE MARKET

- ✓ **Leading position** with strong heritage and over 50 years of industry experience
- ✓ Supplying **hundreds of products** across all main defense programs (e.g., Black Hawk, Osprey, Apache, F-35, F-18, F-16, A400M)
- ✓ Offering **customized high performance material solutions**, with strong focus on heat exposed parts
- ✓ **Access to main OEMs & tier 1 suppliers** (e.g., >30 year-long partnership with Lockheed Martin)



EXAMPLE PRIMARY SUPPLIER FOR F-35



Unique
portfolio of
>50
products
supplied

SUPPLYING THE HIGHEST COMPOSITE
DEFENSE PROGRAM BY TOTAL VALUE

Strong customer co-development

across the entire lifecycle of the aircraft programs



Virtual engineering

Part manufacturing

Material & part testing

Continuous support of the airplane program



One-team
approach
to customers



SYENSQO INNOVATION CENTERS

5

AMERICAS

6

EMEA

3

ASIA

>100 Researchers


Co-development case
example



CYCOM® EP2750

>3 years of closed collaboration
to develop a next generation
composite material



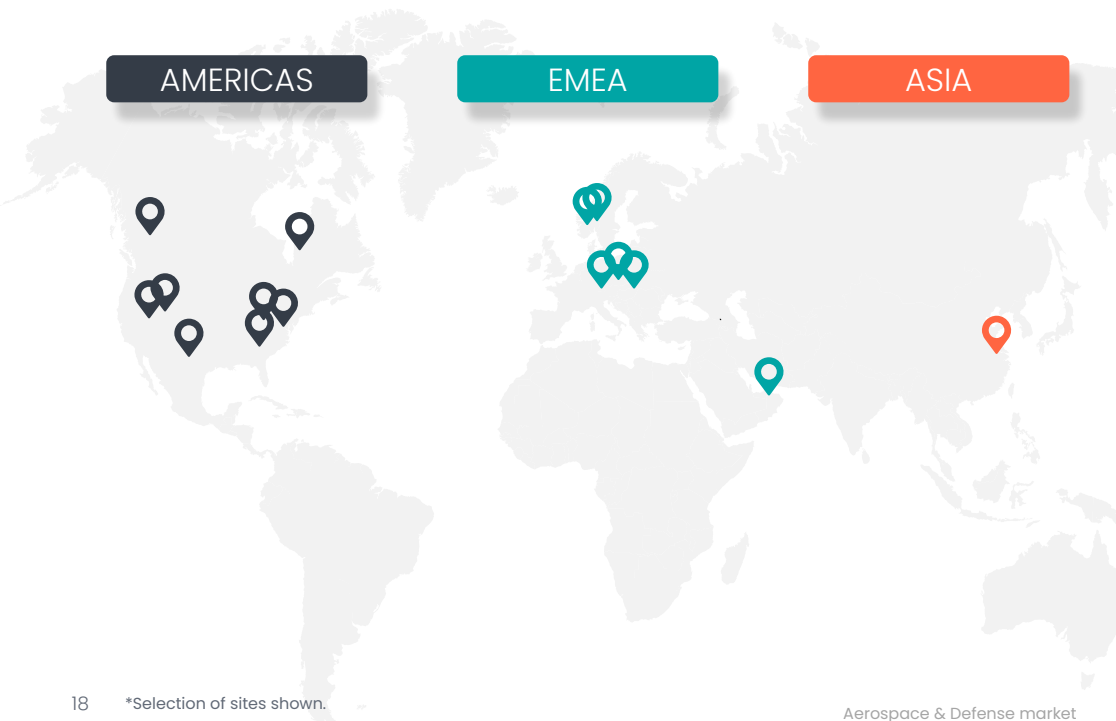
- Allows 10–20x increased manufacturing rate on the back of reduced curing time
- Reduced production cost, making composite parts cost competitive with metals



Agile and evolving footprint



STRONG AEROSPACE & DEFENSE FOOTPRINT* CLOSE TO OUR MAIN CUSTOMERS



AGILE & EVOLVING FOOTPRINT



Footprint optimization program
launched before COVID

Accelerated through COVID
(3 sites closed) to adapt cost
structure in line with market needs
(annual cost reduction of ~€70M)

Continuous optimization
of agile footprint





Actively pursuing
next-gen solutions
leveraging our unique
innovation capabilities

Deep industry expertise and understanding of our customers' needs



Industrialization and Productivity

Need for faster
and lower-cost
production



Greener transportation

Reduction of emissions
and increasing
importance
of sustainability



New and more demanding applications

Focus on primary
structures and new
market segments

Enabling the next generation of aircrafts

Resin Infusion
Bonding technology
Multi-functionality
Thermoplastic composites

Innovation themes

Fiberglass based composites
Thermoset prepregs

Carbon fiber based composites
Adhesives & Sealants

Resin infusion technologies
Out-Of-Autoclave technologies

R&D timing: '50s-'70s

'70s-'00s

'00s-'20s

2020+

Target markets

Initial **adoption in space & launch**
and expansion into tertiary parts
in airplanes (e.g., interior parts)



Adoption in secondary airplane
structures (e.g., spoilers, rudders,
ailerons, flaps)



Adoption in primary airplane
structures (e.g., fuselage, wings)



Next-gen of space & launch
Advanced air mobility



KEY MARKET DRIVERS

- ✓ Lighter weight and lower emissions
- ✓ Greater productivity efficiencies
- ✓ Sustainability and circularity

~€3bn

Addressable market¹
by 2040

Driving innovation for the future of Commercial Aviation



Developing the innovations required for next-generation aircraft with breadth and depth of technical expertise and a legacy of innovation

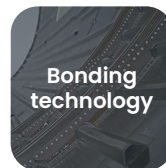
Continue to drive adoption of composite materials by replacing metal in primary structures

Meet customers needs for faster, more cost-effective production processes with lighter-weight materials that do even more

Innovation Themes



- Increased production efficiency
- Improved quality control
- Lower cost
- Lower energy consumption



- Improved reliability & performance
- Light weighting
- Faster assembly
- Increased design freedom



- Structural integration & performance
- Manufacturing flexibility: compatible with in/out of autoclave curing
- Lower recurring manufacturing costs



- Next level of materials performance providing:
- Electrical conductivity
 - Vibration/noise dampening
 - Embedded sensors
 - Antimicrobial surfaces



- Next generation composite materials providing:
- Faster and simpler production processes
 - Similar/superior mechanical performance
 - Potentially recyclable

KEY MARKET DRIVERS

- ✓ Commercialization of space
- ✓ More small launch vehicles for growing satellite network
- ✓ Focus on reusability of launch vehicles

€1bn¹

Addressable market
by 2040

Actively accelerating technology for Space market



.....
Solution provider for innovative and high performance **lightweight materials** for space applications (e.g., composite fairings, nozzle ablatives, adhesives)
.....

.....
Innovation via **new manufacturing techniques**, to **lower cost** of launch vehicles (e.g., Out-Of-Autoclave, Automated Fiber Placement)
.....

Strong track record with
>50 years of experience



Gemini

1965



NASA Space Shuttle SRB

1970s – 2011



Long-term agreement for Vega programs

2021



Apollo 11



Arianespace rocket – James Webb telescope



Proud supplier of ablative materials for use in the Artemis mission's solid rocket motor (SRM) nozzles, **successfully launched** on 16th November 2022

KEY MARKET DRIVERS

- ✓ Concentration of population in urban areas
- ✓ Need for sustainable transportation solutions
- ✓ Mobility as a Service (MaaS) acceleration

~€6bn

Addressable market
by 2040

Pioneer in developing Advanced Air Mobility market



- ... Ideal material supplier for AAM with a comprehensive portfolio and strong legacy, able to assist with technical challenges through all stages of the process
- ... Scale AAM vehicle production through innovative composite technologies
- ... Solving the AAM industry's most critical challenge: light weighting

MULTIPLE RELATIONSHIPS ESTABLISHED



Electric air-taxi
program
VX4



Hybrid water
landing aircraft
Seagull



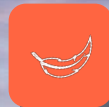
Indoor inspection
drone
ASIO

Thermoplastic Composites Platform

Potential to reinvent how to produce and recycle composite resins



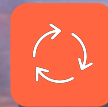
Up to
5x faster
manufacturing¹



30-50%
reduced weight²



Up to 40%
more
cost-effective²



Recyclability
&
circularity



Addressable market by 2035

➤ **€1bn³, thereof ~€400m Aero&Def**

Note:

(1) Compared to thermoset composites

(2) Compared to metal components

(3) High temperature Thermoplastic composites total market

Ongoing TPC adoption across industries drives the experience curve



1980 →

2020 →

2030+ →

First adoption in A&D
(penetration from military
to commercial programs)



Translation of capabilities
to Energy
(e.g., offshore risers, flexible pipes)



Continued penetration in
Secondary structures
(e.g., window frames)



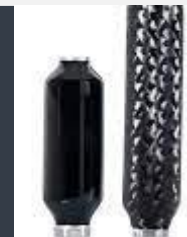
Electronics & Other



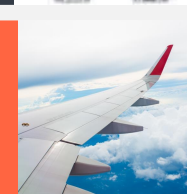
Automotive
(e.g., carbon wrapped eMotors)



Expansion to Energy
transition
(e.g., onshore applications,
hydrogen tanks)



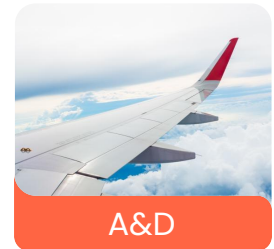
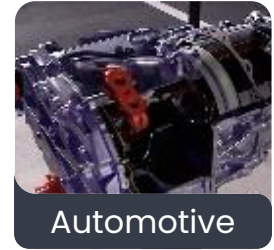
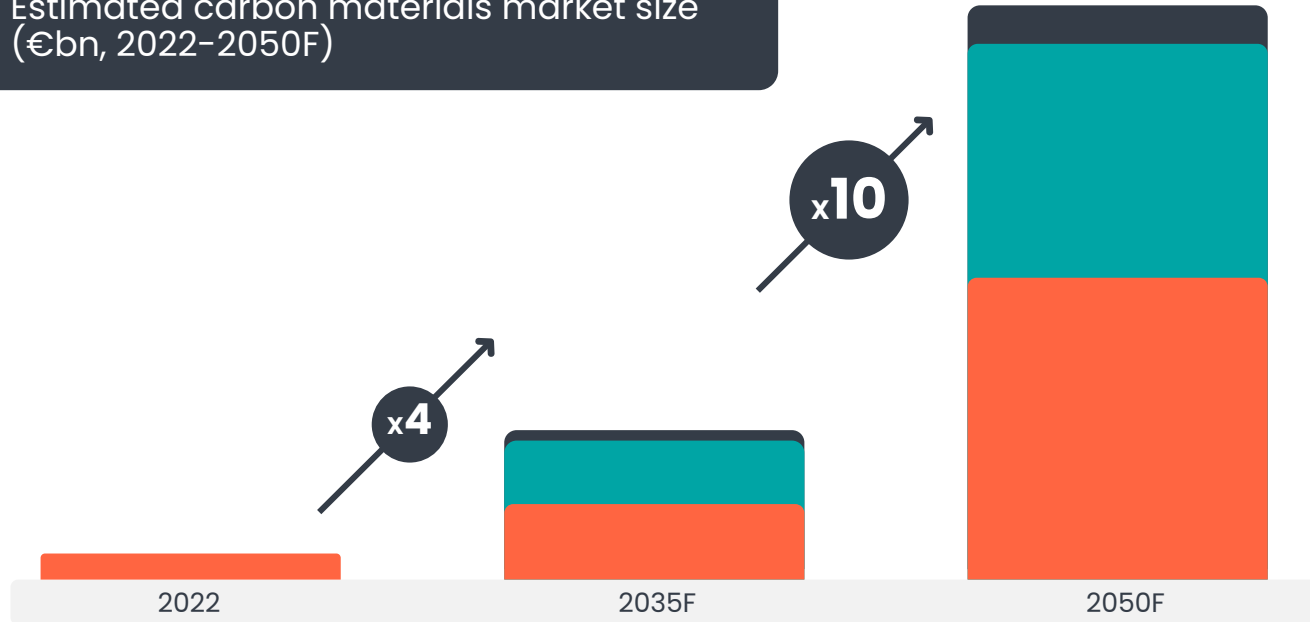
Expansion to
Primary structures
and Adv. Air Mobility



A&D Energy Automotive Electronics & Other

High-end composite materials market expected to grow 4x by 2035, and >10x by 2050

Estimated carbon materials market size (€bn, 2022-2050F)



Recap: Aerospace & Defense key takeaways



Double digit market growth outlook, supported by post COVID rebound

- Growth driven by higher build rates in commercial narrow body
- Increasing advanced material penetration across all segments

Attractive business with broad portfolio and high barriers to entry affording stable growth

- Broadest product portfolio to meet all customer needs
- Specified into all main commercial & defense programs
- Visibility on €5bn customer order book backlog
- Long-standing customer relationships with a high degree of co-development

Actively pursuing next-gen solutions leveraging our unique innovation capabilities

- Market maker posture to drive innovation and focus on supporting the industry in solving its main challenges
- Actively supporting the development of new market segments: commercial launch and advanced air mobility

Safe harbor

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