



Avio Half Year 2019 Results

12 September 2019

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Executive Summary



1H 2019 Results : on track vs growth expectations

- Backlog : €745M (additional ~€80M orders in Q3 2019)
- Revenues : €189M (+6% vs 1H18)
- EBITDA : €16.1M (+11% vs 1H18)
- Net Income : €7.1M (+14% vs 1H18)
- NFP : €20.4M (€27M before IFRS 16 effect)

Vega VV15 flight anomaly : encouraging results from the investigation

- Most likely root cause identified : thermo-structural failure in the Z23 forward dome
- Verification plan and corrective actions defined with ESA and Independent Inquiry Commission
- Impact concentrated on certain Z23 motor subsystems, processes, equipment

Next steps

- Vega return to flight planned for 1Q20; adapt launch manifest (9 flights booked, pipeline full)
- ESA Ministerial Conference in November (new devel't and support programs up to 2022)
- Vega C Maiden Flight by 2Q20, commercial flights already scheduled thereafter
- P120 ready for Ariane 6 Maiden Flight in 2020; Ariane 6 backlog now filled with 8 booked flights
- Further progress on M10 for Vega E to reach first flight by 2025
- Execute share buyback program as approved by shareholders



- **VV15 Anomaly**
- Business Update
- HY 2019 Results

Update on VV15 flight anomaly

Results of the Independent Inquiry Commission(*) review



Established facts

- 1st stage (P80) propulsion and separation nominal
- 2nd stage (Z23) propulsion nominal up to 130.85s after lift-off (14.25s after ignition)
- At 130.85s : strong shock recorded, Z23 detached from launcher, trajectory degraded
- At 230s : neutralization commanded from ground

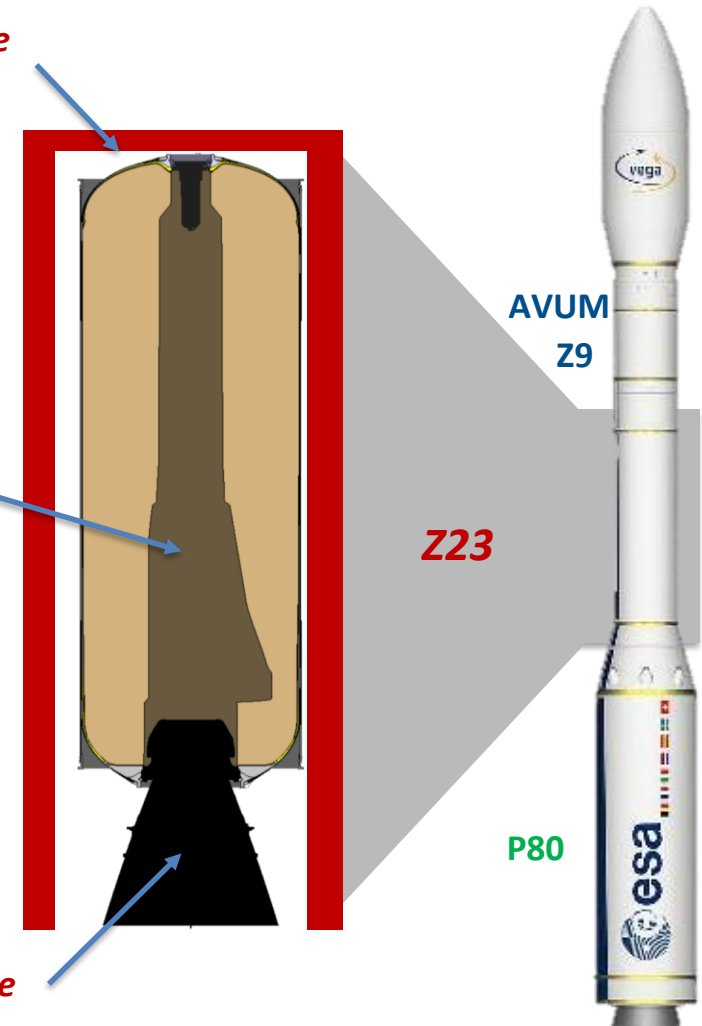
Root Cause Analysis

- Reconstructed flight dynamics as well as mechanical and thermal behavior
- Thermo-structural failure in the Z23 forward dome area considered most likely and compatible
- Z23 overall design considered robust, possibility of an undetected non-compliance in production
- Inadvertent Z23 neutralization or third party malicious act considered unlikely

Forward dome

Propellant grain

Nozzle



Update on VV15 flight anomaly

Avio next steps



Plan for return-to-flight by 1Q 2020 (agreed with Commission and ESA)

- Verification plan via sub-system tests, inspections and further engineering analyses
- Corrective actions on subsystems, processes and equipment linked to failure
- Key point before year end to review effective implementation of measures and safety
- Deliver new flight items for VV16 in Kourou before year end 2019

Work with Arianespace to adapt launch manifest

- Review planned launch dates with Arianespace and customers and evaluate options
- Define new launch sequence for 2020

Estimate and manage short-term economic impact

- Estimate cost deriving from corrective measures (analyses, tests, new flight items, etc.)
- Review available budget to treat flight anomalies within ESA contractual framework
- Promptly report any relevant updates before year end 2019

Deliver on Vega C

- Maintain schedule for completion of Vega C development (at this stage no significant anticipated impact of VV15 event on Vega C configuration)
- Prepare for Maiden Flight during 2Q 2020



- VV15 Anomaly
- **Business Update**
- HY 2019 Results

Ariane – HY 19 highlights – Ariane 6 commercial momentum



Flight & Production activity



GSAT-31

5 February

VA247

102nd consecutive
successful flight



eutelsat

20 June

VA248

103rd consecutive
successful flight



INTELSAT 39

6 August

VA249

104th consecutive
successful flight

2019 flight schedule – upcoming flights:

- 1/2 Ariane 5 flights expected by year end

Development & complementary activity

- Development of Ariane 6/P120 on track
- First Ariane 6 production order for the procurement of materials for the first batch of 14 launchers (acquired by Q3 2019)
- Arianespace commercial achievements for Ariane:
 - Signed 1st commercial launch contract for Ariane 64 (Viasat)
 - Signed launch contract with Ovation for a 1,500 kg GEO communication satellite (Ovation 3) with Ariane 5, switching from a previous agreement with SpaceX
 - Ariane 62 Maiden flight with OneWeb satellites in 2020
 - Signed launch contract for Ariane 5 or Ariane 64 for the JUICE (JUperiter ICy moons Explorer) satellite for ESA

Vega – Vega C and Vega E development on track



Flight & Production activity



21 March

VV14

*14th consecutive
successful flight*

Target orbit: 97.9° SSO, 617 Km

*Satellite type: SAR- Earth
Observation*

Payload mass: 879 kg

Customer: Italian Space Agency

Development & complementary activity

- Vega C development milestones and accomplishments:
 - System Critical Design Review completed in Feb.
 - P120 successful firing test in January
 - Z40 successful firing test in May
- Entered Vega C qualification phase for Maiden Flight
- Currently ongoing Vega C activity:
 - Hardware-in-the-loop system tests (HWIL)
 - Electro-Magnetic Compatibility test (UCEMC)
 - Completion of ground segment adaptations
- Vega C Maiden Flight expected in 2Q 2020
- Vega E development accomplishments :
 - Conducted sub-scale test campaign
 - Completed turbopump and comb. chamber PDR
 - Getting ready for full scale test on comb. chamber

Vega C getting ready for Maiden Flight



Sub-systems readiness

System-level tests

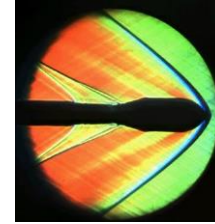
FAIRING



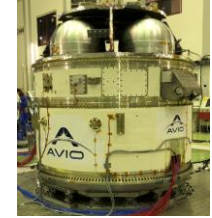
Fairing



Vampire adapter

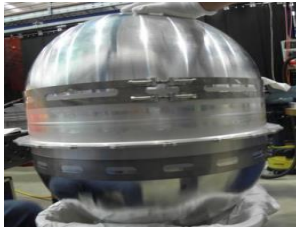


Wind Tunnel Test



Vibration tests

AVUM



New prop. tanks



AVUM new gas tank



HWIL tests

UCEMC test

On-going

Z23

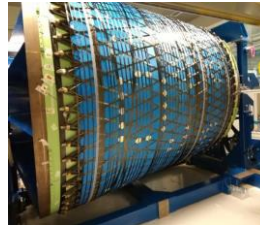
IS2/3

Z40

IS1/2



Z40 Firing Test (May)



IS2/3



A2 Assy test

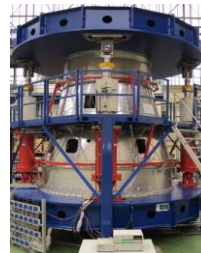


UCMEC tests

P120



P120 Firing Test (Jan.)



IS1/2

New facilities



P120 BBP



P120 BIP Extension



Vega E development : nearing full scale M10 firing test



M10
LOX-CH
Upper stage



- Conducted extensive firing test campaign on **sub-scale combustion chamber**
- **M10 LOX-CH Engine components PDR :**
 - **Turbopumps** (Liquid Oxygen and Methane)
 - **Combustion Chamber** (realized with **additive manufacturing**)
 - **Igniter**
- **Full-scale combustion chamber test article** manufactured
- Full-scale model expected to be tested by **NASA in 3Q 2019**



- VV15 Anomaly
- Business Update
- **HY 2019 Results**

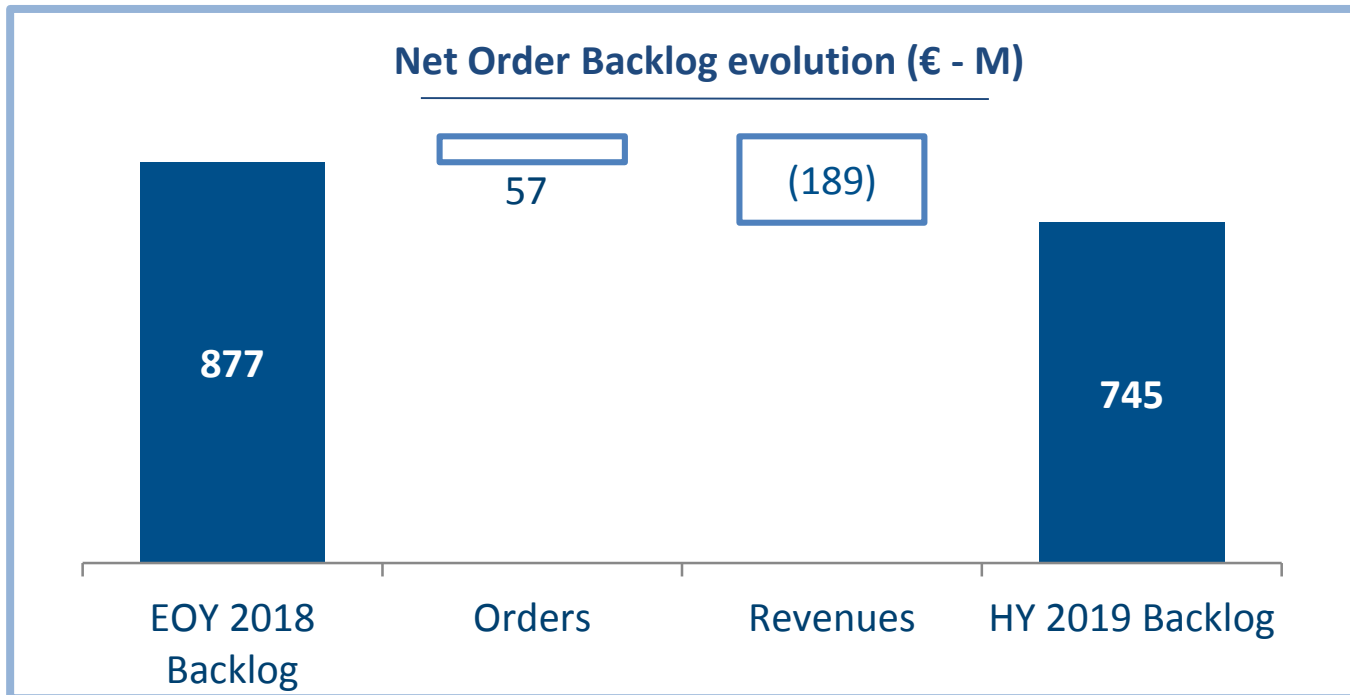
Key economics – Revenues and income growth



HY 2018	MAIN ECONOMICS	HY 2019	DELTA	Comments
€ - M		€ - M	%	
877.0 ⁽¹⁾	NET ORDER BACKLOG	744.9	-15%	<ul style="list-style-type: none"> Backlog cyclical pattern Additional ~€80M orders in Q3 2019
178.8	REVENUES	189.0	+6%	<ul style="list-style-type: none"> Growth mainly attributable to Vega production and development (Vega C)
14.5 8.1%	EBITDA REPORTED <i>% on net revenues</i>	16.1 8.5%	+11%	<ul style="list-style-type: none"> Higher amortization expenses (including IFRS16) Non-recurring costs reduced by 50% HY 19 results include €0.9M of R&D Tax Credit relative to 2017 and 2018 (€1.2M in HY 18) R&D tax credit relative to 2019 to be assessed at year end based on actual progress of development activities
16.1 9.0%	EBITDA ADJUSTED <i>% on net revenues</i>	16.9 8.9%	+5%	
7.7 4.3%	EBIT REPORTED <i>% on net revenues</i>	8.1 4.3%	+5%	
9.3 5.2%	EBIT ADJUSTED <i>% on net revenues</i>	8.9 4.7%	-5%	
6.2 3.5%	NET INCOME <i>% on net revenues</i>	7.1 3.7%	+14%	<ul style="list-style-type: none"> Lower income taxes

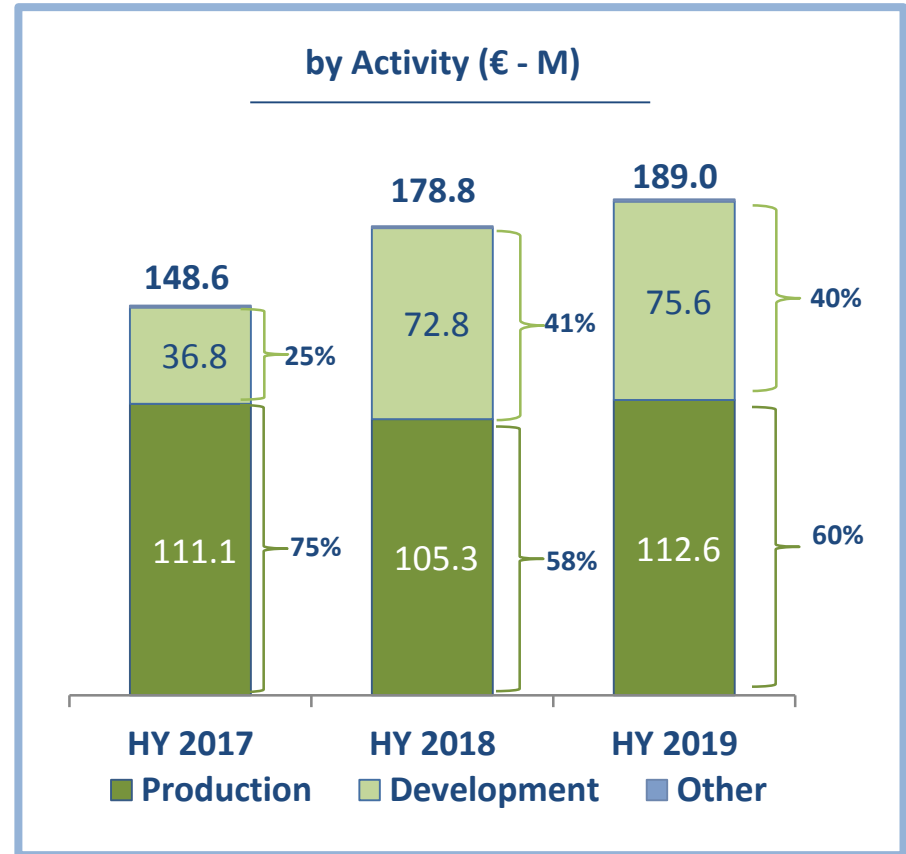
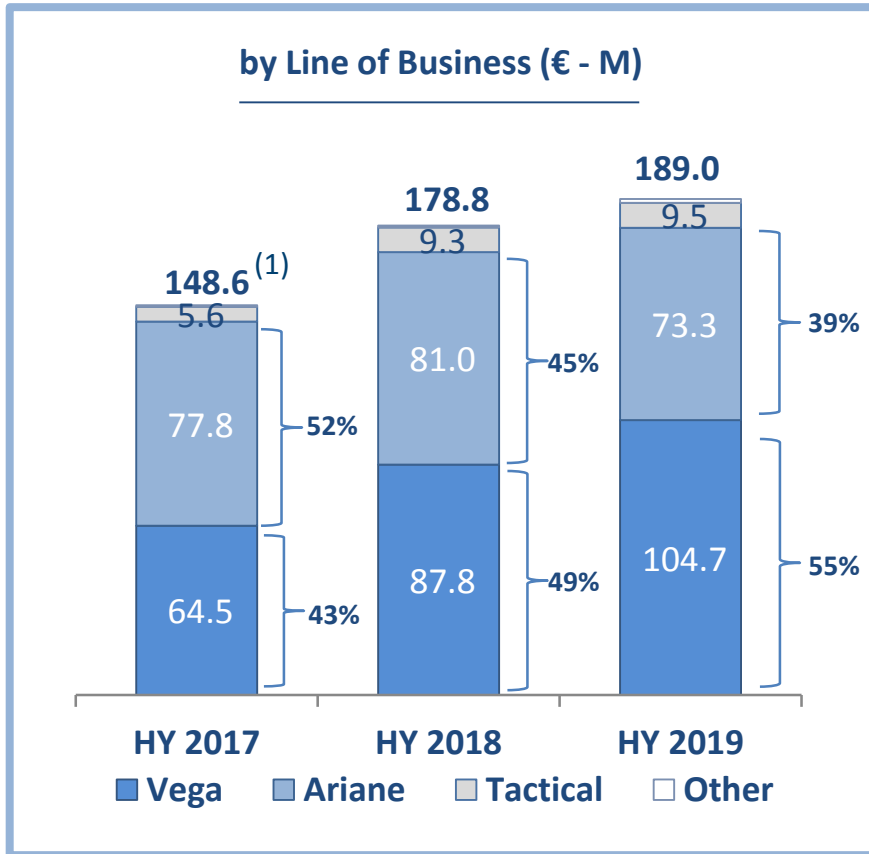
(1) As of 31st December 2018

Net Order Backlog – Cyclical pattern waiting for ESA Ministerial Conference in November



- +€57 M of new contracts signed in HY 2019 including:
 - Vega and Vega C: industrial activities and maintenance
 - Ariane 5: industrial activities and maintenance
 - ASTER-30 booster production order
- Additional ~€80M orders in Q3 2019
- New contracts expected to be awarded during 2020 after ESA 2019 ministerial conference

Vega: production and development activities on the rise



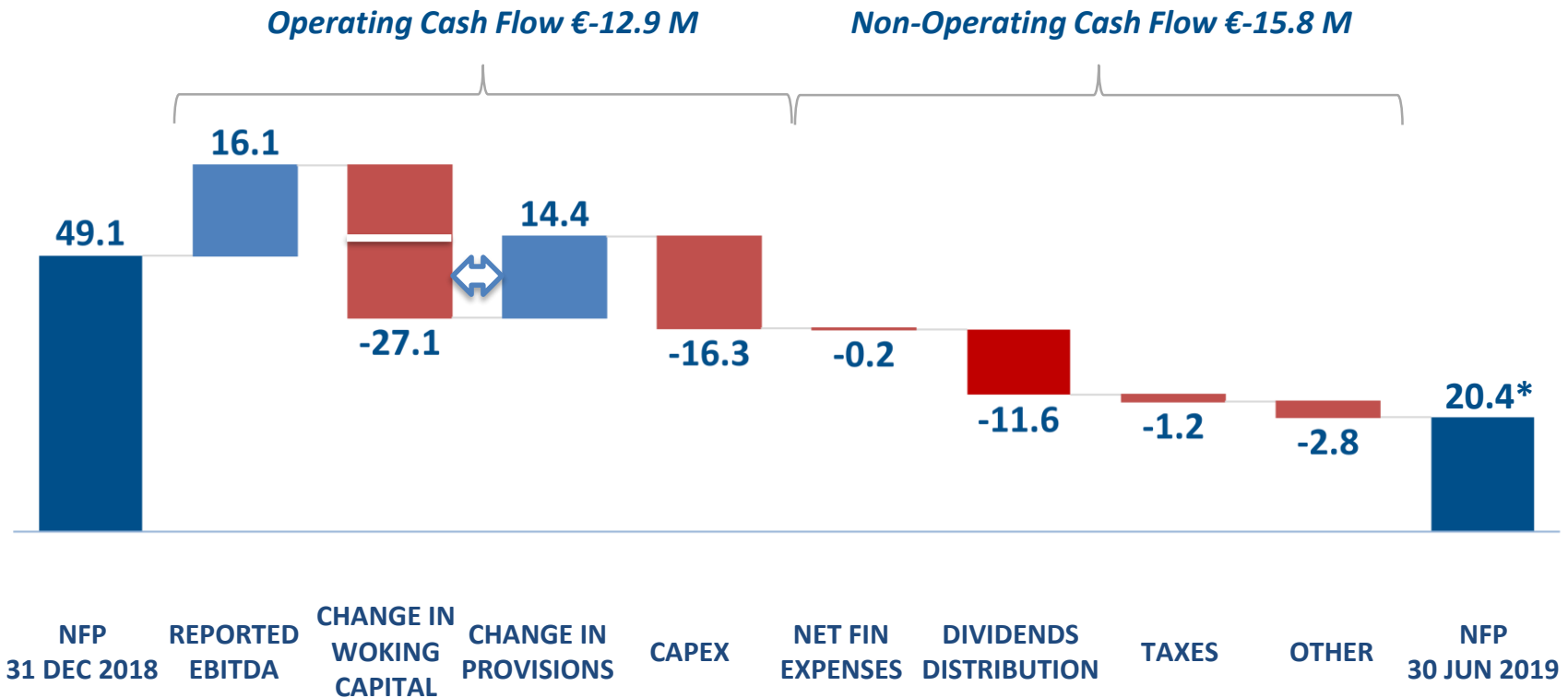
- Significant growth of Vega business

- Significant growth of development activities approaching Vega C and Ariane 6 Maiden Flights (2020)

Net Financial Position in line with expectations



NFP evolution and Cash Flows (€ - M)



* Includes IFRS 16



Accounting treatment of one off settlement of contractual provisions and associated indemnities related to the Colleferro industrial site. Compensating effect between provisions and Working Capital

Share buyback program launched in August



Objectives

- **Efficient use of liquidity** generated by the ordinary business activities through a **medium-long term investment**
- Offer an additional **return to shareholders** along with dividend payments
- Possible use **own shares in M&A transactions**

Program scheme

- **€9M maximum investment amount** (as decided by shareholders in April)
- Initial mandate by BoD in August for €5M lasting until **October 2020**
- **Share Buyback** carried out by an **independent broker (Equita SIM, S.p.A.)**

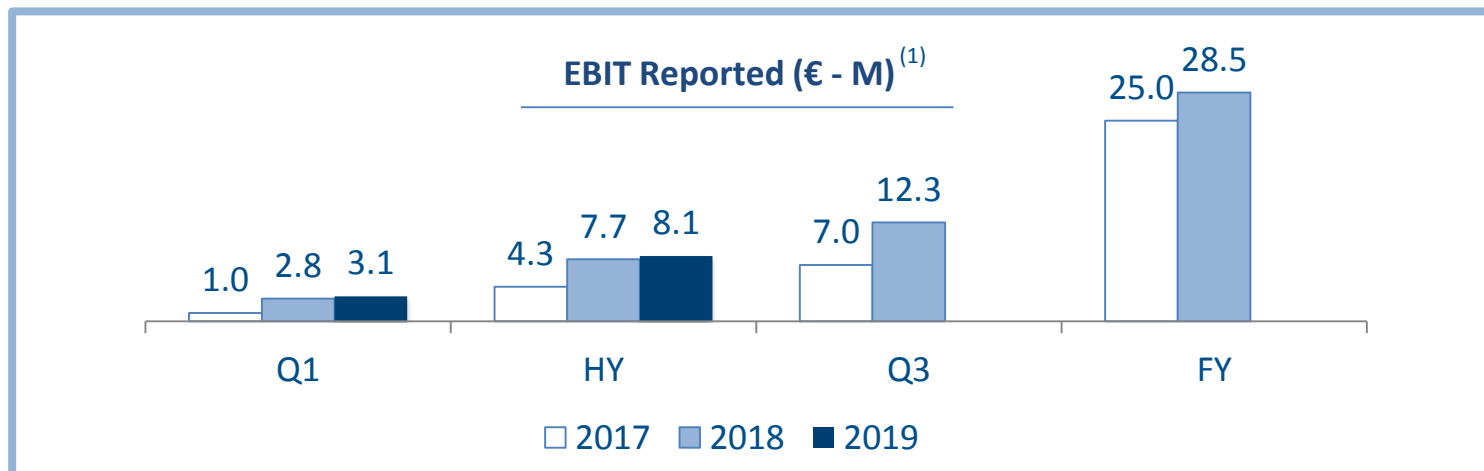
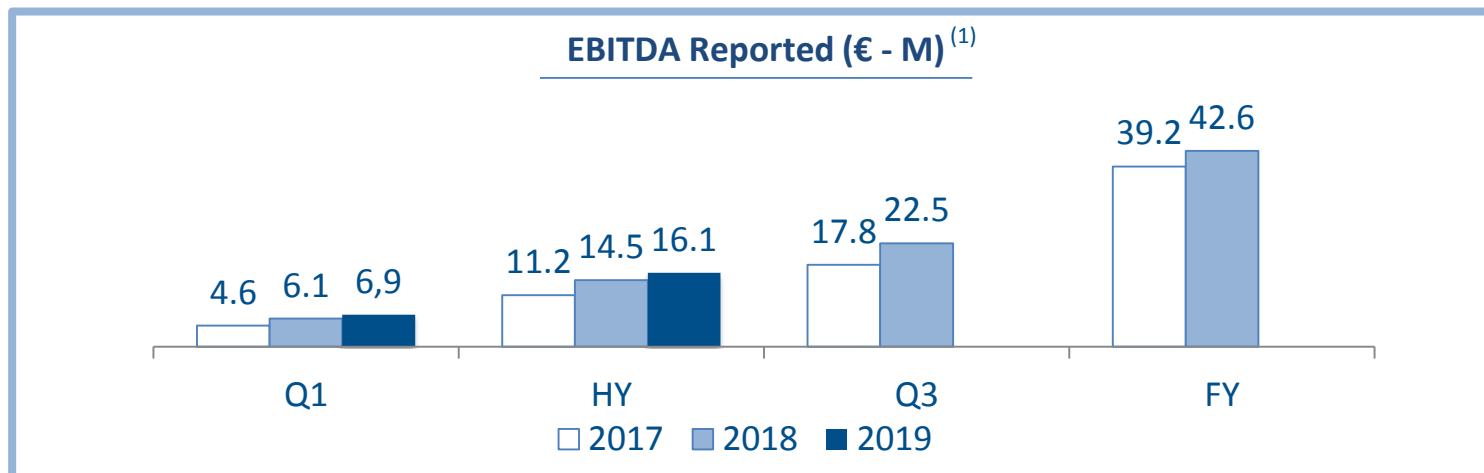
Following the purchases made so far, Avio S.p.A. holds # 45,050 own shares, corresponding to 0.17% of total Avio's share capital (9th August – 12th September)*

*Daily purchases capped by law at 25% of average daily volumes of the previous 20 trading days

Appendix



Annual pattern of Reported EBITDA and Reported EBIT

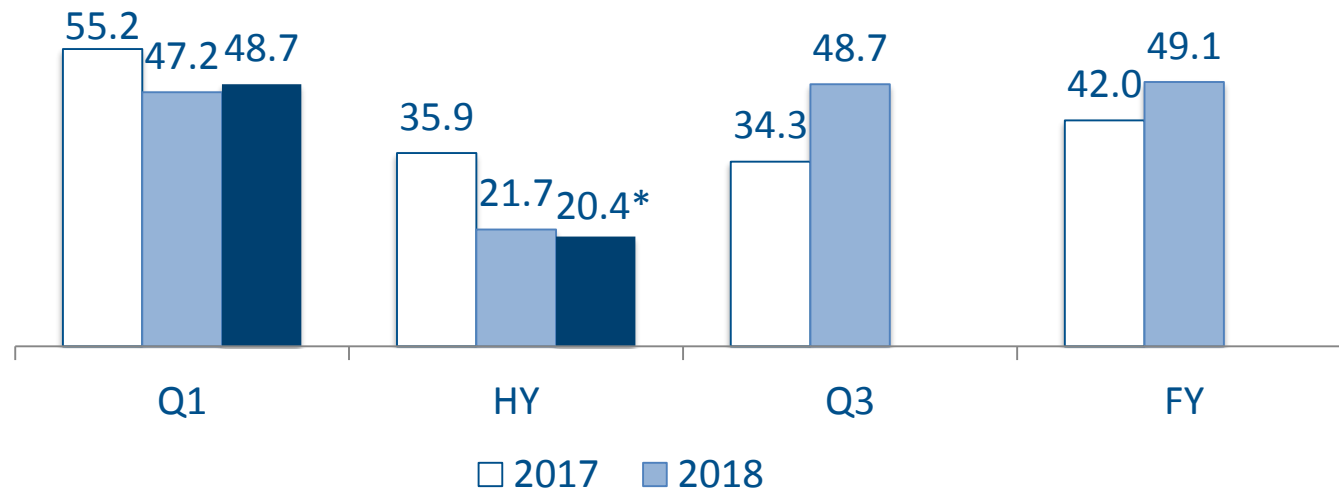


(1) Includes R&D tax credit:
 - 2017 recognized only in Q4 (6.1M)
 - 2018 recognized as follows: HY (1.2M), FY (7.4M)
 - 2019 recognized as follows: HY (0.9)

Net Financial Position quarterly pattern in line with previous years



NFP quarterly evolution (€ - M)



- 2019 NFP quarterly pattern in line with 2018

* Includes IFRS 16

Balance Sheet



31 DEC 2018 ACTUAL	MAIN SOURCE AND USES	30 JUN 2019 ACTUAL	DELTA	Comments
€ - M		€ - M	€ - M	
(86.9)	WORKING CAPITAL	(59.8)	27.1	<ul style="list-style-type: none"> Cyclical trend of Net WIP for activities vs advances already collected of 11M (15M in H1 2018) WC and Provisions include a compensating effect of 16M related to an agreement on legacy contracts with previous owners
76.2	DEFERRED TAX ASSETS	76.5	0.3	
(26.6)	PROVISIONS (EMPLOYEES' BENEFITS AND RISKS)	(41.0)	(14.4)	
61.0	GOODWILL	61.0	-	
39.6	CUSTOMER RELATIONSHIP ASSET	38.1	(1.5)	
177.8	FIXED ASSETS	185.3	7.5	
5.8	FINANCIAL RECEIVABLES	6.0	0.2	
246.9	NET INVESTED CAPITAL	266.2	19.3	
49.1	NET FINANCIAL POSITION (IFRS)	20.4	(28.7)	<ul style="list-style-type: none"> €11.6M Dividend payment in May, typical seasonality business cycle
(296.0)	EQUITY	(286.6)	9.4	<ul style="list-style-type: none"> Net decrease principally from dividend payment and net income of the period
(246.9)	TOTAL SOURCES	(266.2)	(19.3)	



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