

Global Markets & Technologies

Philippe Merino – Vice President GM&T

Morgan Stanley ChemTech Day
23 May 2018
London, UK



Air Liquide in Brief

The World Leader in Gases, Technologies and Services for Industry & Health

Established in
1902



>2 M
Clients

~65,000
Employees

1.5 M
Patients

FY 2017
Group Figures

>€20bn

Sales

16.5%

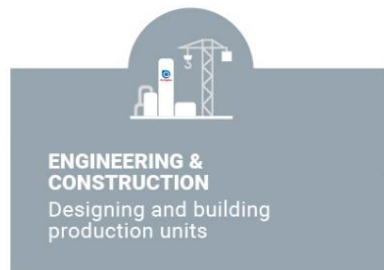
OIR margin



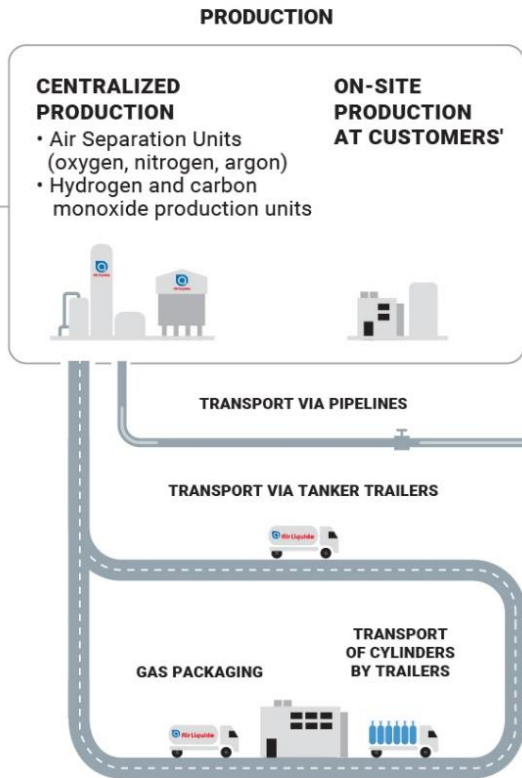
80 countries

Our activities

Shared resources and expertise to serve diverse customers



- Energy transition
- Maritime
- Scientific exploration



SECTORS SERVED / GAS & SERVICES ACTIVITIES



LARGE INDUSTRIES
Produce and deliver in large quantities

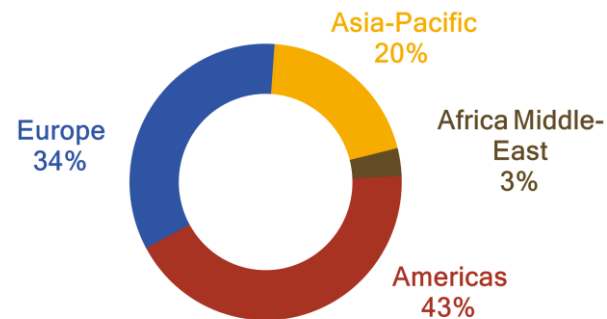
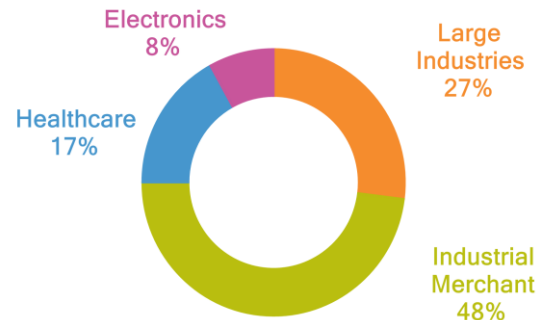
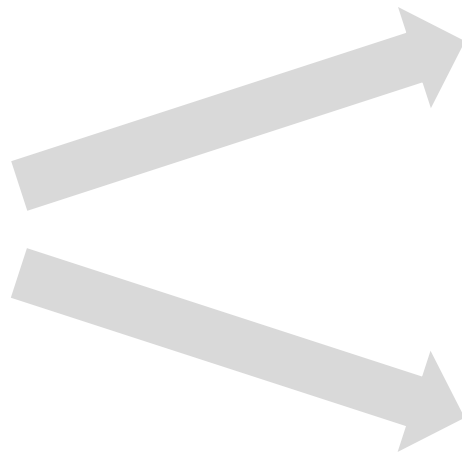
INDUSTRIAL MERCHANT
Supplying industrial and speciality gases, application technologies and services

HEALTHCARE
Supporting patients, all along the continuum of care, from hospital to home

ELECTRONICS
Designing, manufacturing and providing molecules for this sector

A Balanced Footprint

Gas & Services revenue in 2017



For

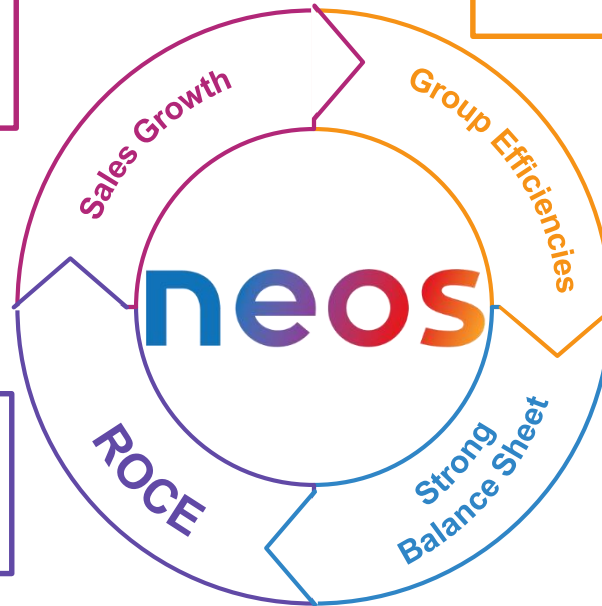
Profitable Growth over the Long-term

- Operational Excellence
 - Customer experience
 - Cost competitiveness
- Selective Investments
 - Aligned with Air Liquide new business profile
- Open Innovation
 - Core
 - Disruptive
- Network Organization
 - Digital workplace
 - Speed
 - Best practices

Financial Objectives

+6% to +8%
CAGR 2016-2020⁽¹⁾

Efficiencies >€300m on average/year⁽²⁾
+ Airgas synergies >\$300m



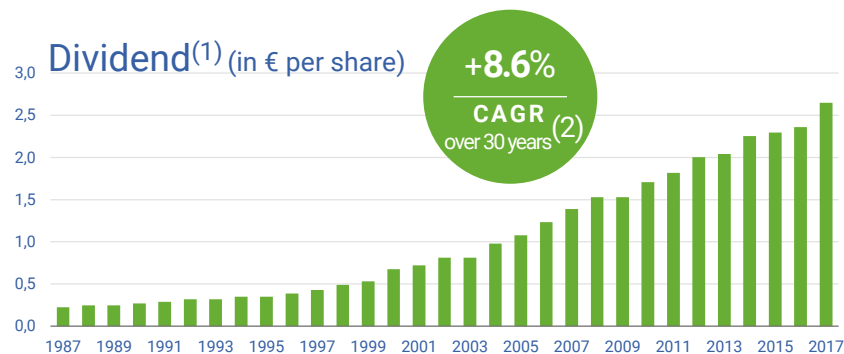
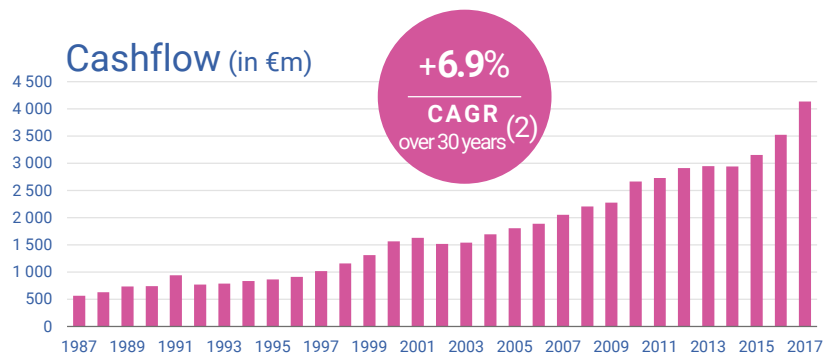
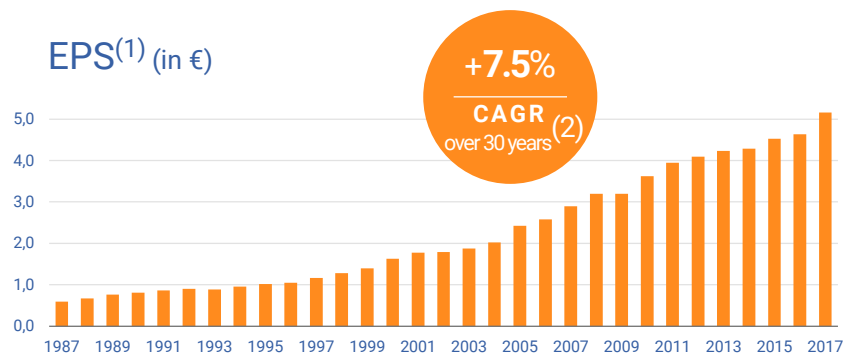
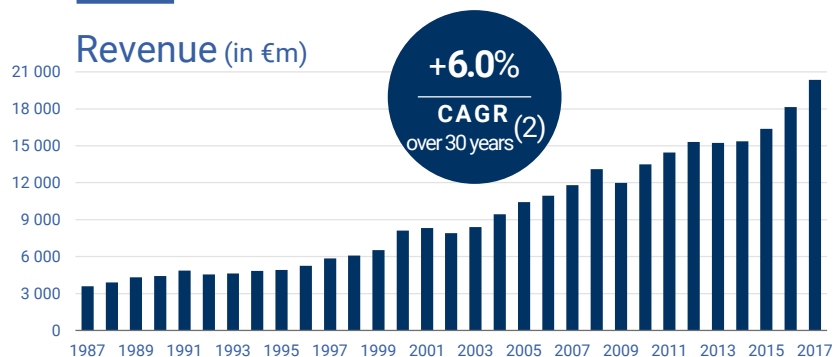
>10%
after 5-6 years

Maintain
“A” range rating

Capex/Sales 2017-2020: 10% to 12%

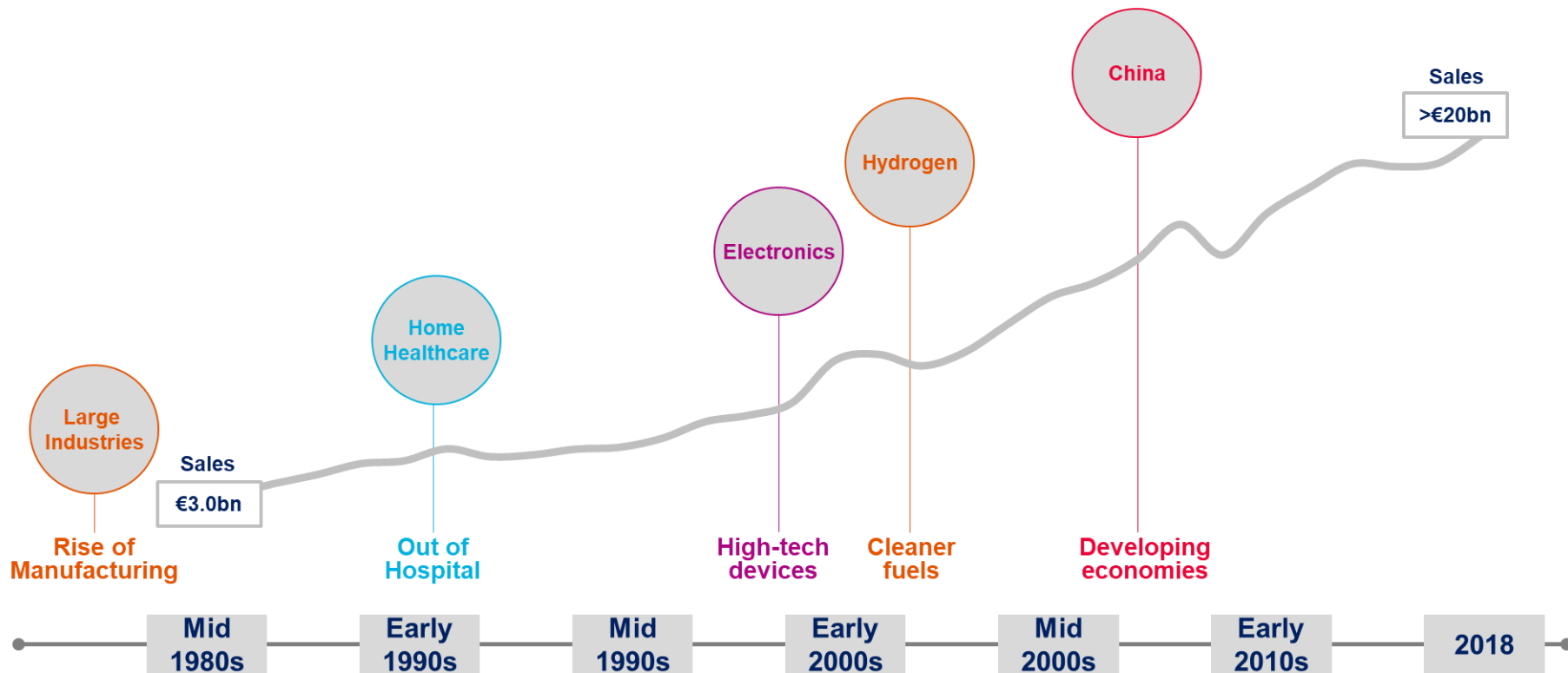
(1) Including Airgas scope effect in 2017 contributing +2% to the CAGR. (2) Over the 2017-2020 period

Regular and Sustained Performance



(1) Adjusted for the 2-for-1 share split in 2007, for attributions of free shares and for a factor of 0.974 reflecting the value of the rights of the capital increase completed in October 2016. (2) Calculated according to prevailing accounting rules over 30 years.

Agility to Build on Innovation and Open New Markets



Innovation at Air Liquide

Global Network Supporting Innovation

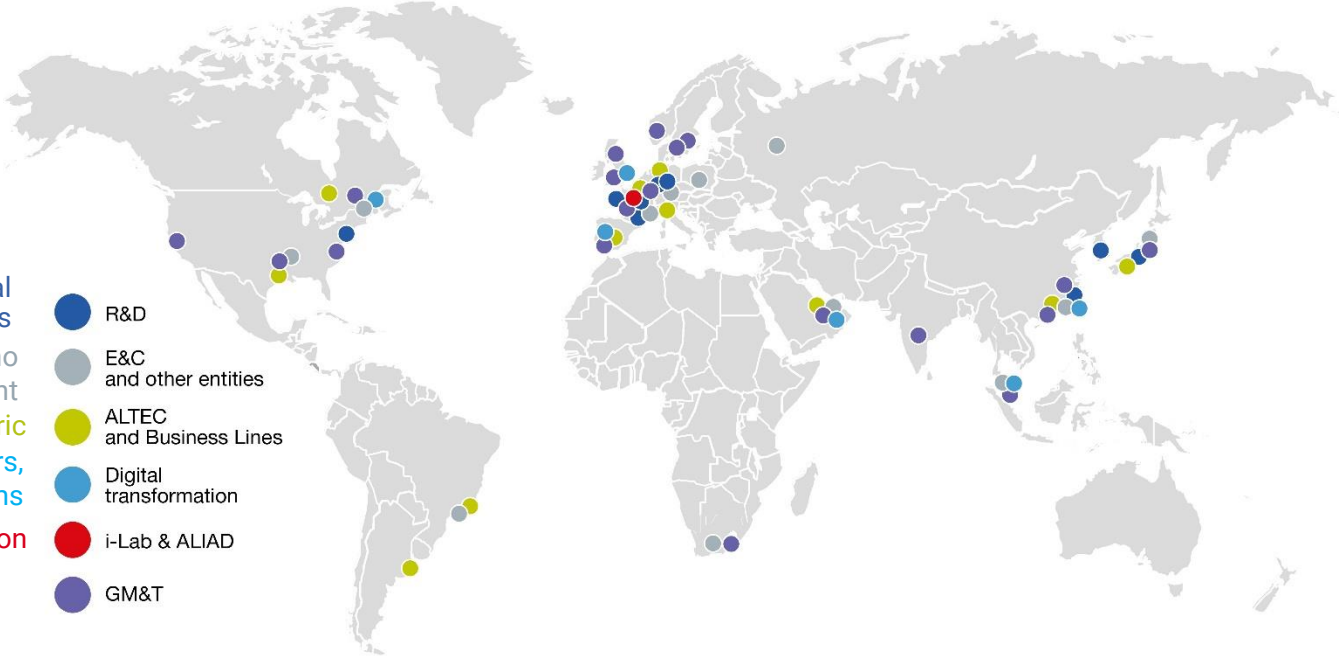
3,800

Employees

~€290m

Innovation expenses

- Small Essential Molecules
 - Core Techno Development
 - Customer Centric Assets, Customers, Ecosystems
 - Open Innovation
- R&D
 - E&C and other entities
 - ALTEC and Business Lines
 - Digital transformation
 - i-Lab & ALIAD
 - GM&T



Global Markets & Technologies (GM&T)

Global Markets & Technologies (GM&T) High Growth

1,800
Employees

€372m
2017
Revenue

**Double
digit
growth**

- **Manage innovative activities
and new market initiatives
on a global basis**



GM&T: Opening New Markets

Deep Tech



Space & Aerospace



Extreme cryogenics

Energy Transition



Biomethane



Hydrogen

Cryogenic Maritime Logistics



Cryogenic transportation



Maritime usages

Deep Tech: From ISS and ITER to Core Business

Air Liquide partner in High Tech programs



International
Space
Station
(ISS)

©ESA NASA

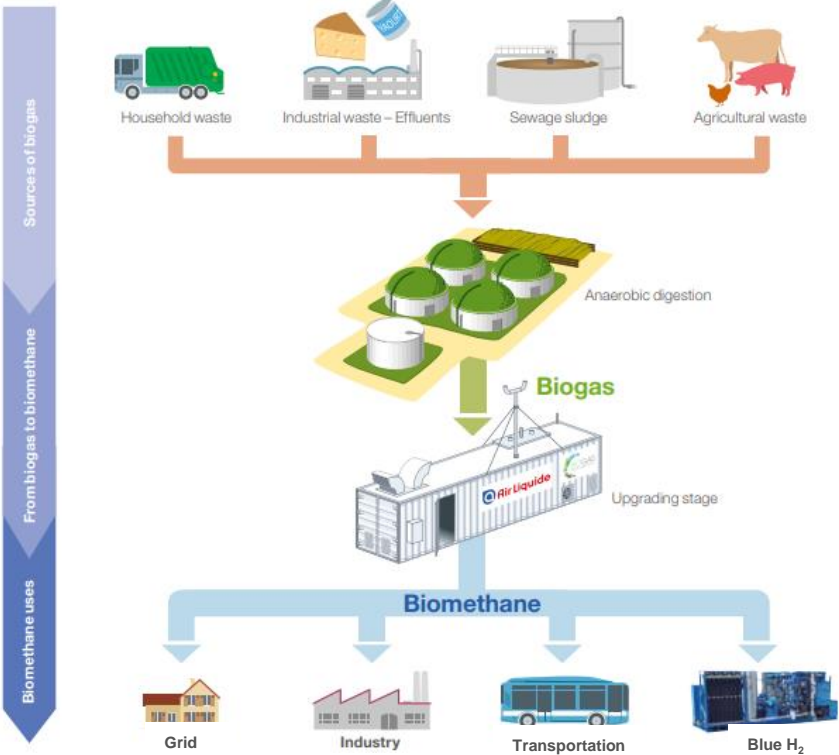


ITER

Source of development
for various applications
in core business



Energy Transition: Focus on Biomethane Production

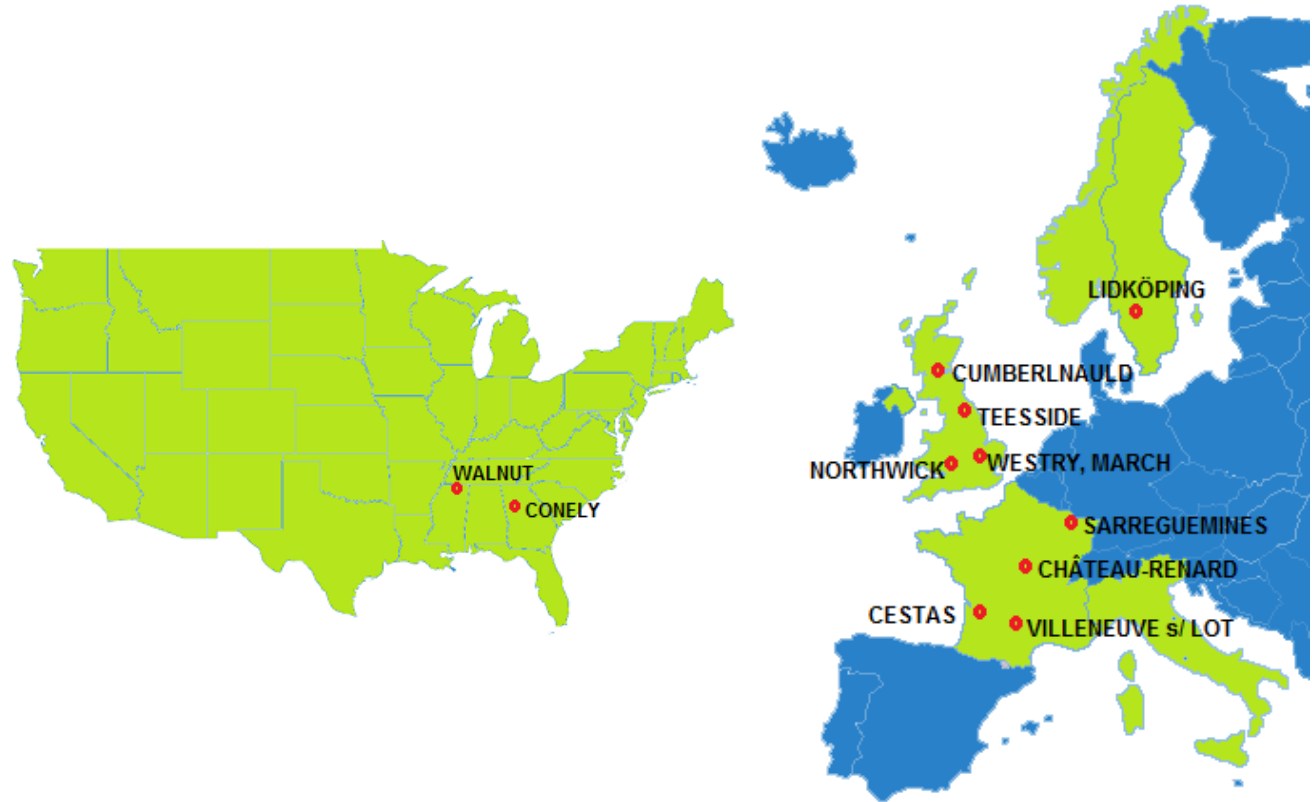


Answers the double challenge of particles and CO₂ emissions

Air Liquide: The Only Global Actor in Biomethane

>10
Production
Sites

>60
Stations



Energy Transition: Focus on Hydrogen Energy

Seven roles for hydrogen in the Energy transition

Enable the renewable energy system

Enable **large-scale renewables integration** and **power generation**



Distribute energy across sectors and regions



Act as a **buffer** to increase system resilience

Decarbonize end uses



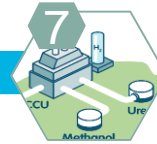
Decarbonize **transportation**



Decarbonize **industry energy use**



Help decarbonize **building heating and power**



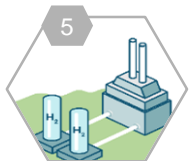
Serve as **feedstock**, using captured carbon

Source: Hydrogen Council

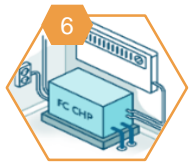
Hydrogen: Important Milestones Already for 2030



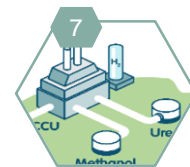
- **1 in 12 passenger cars sold** in early-adoption markets (Germany, California, Japan and South Korea) FCEVs



- **3.5 Mt hydrogen used for high-grade heat** in first large-scale projects



- **50 million households** connected to a network safely blending hydrogen and natural gas

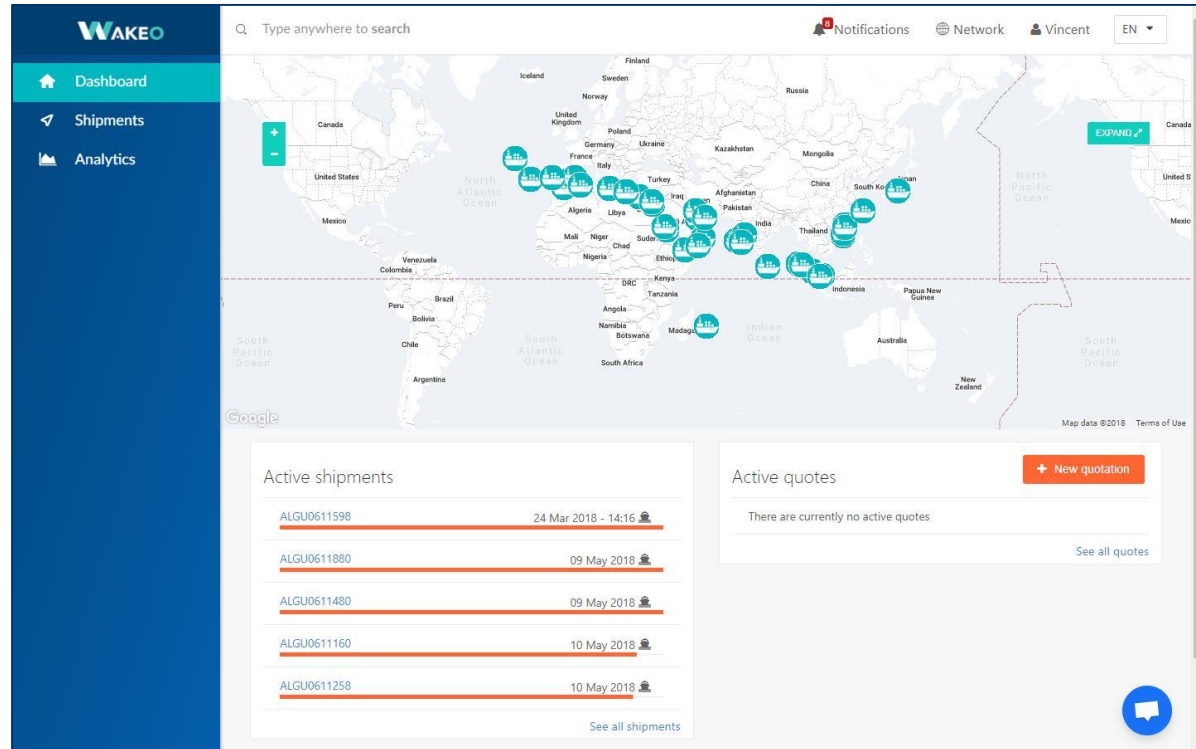


- **20 Mt CO₂** converted to chemicals and intermediates such as **methanol** using hydrogen

SOURCE: Hydrogen Council

Focus on Cryogenic Maritime Logistics

- **Cryogenic transportation by sea of high value-added molecules, such as helium, argon, carbon dioxide**
- **Offshore oil and gas platforms and wind turbines welding, inerting, support to drilling, diving**
- **Helium cavern**



GM&T: Building the Future, Delivering Today

Deep Tech



Energy Transition



Cryogenic Maritime
Logistics



➤ **Manage**

**innovative activities and
new market initiatives on
a global basis**

Appendix

Air Liquide Ambition



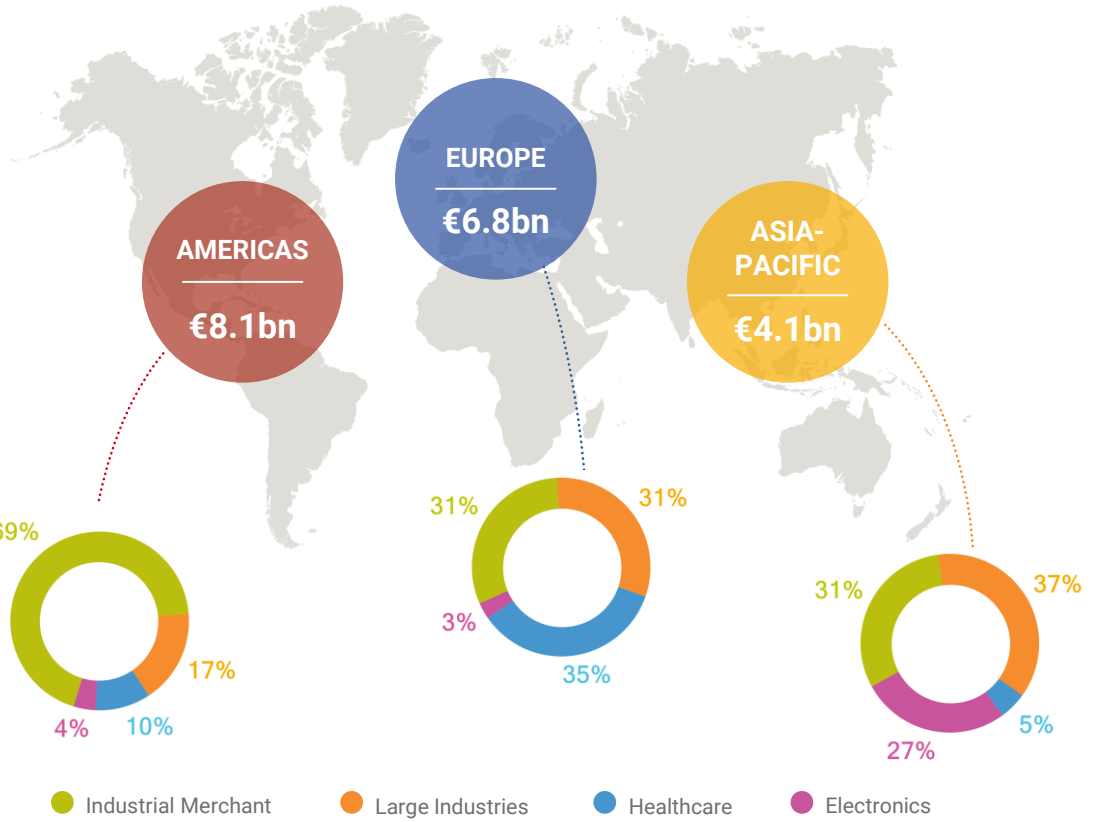
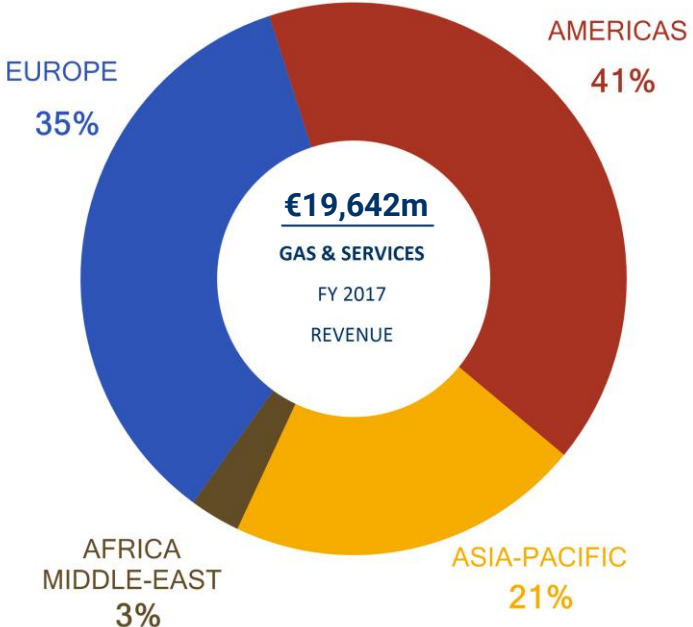
- Lead our industry
- Deliver long-term performance
- Contribute to sustainability

Corporate Sustainability Objectives



*GreenHouse Gas

FY 2017 G&S Revenue Breakdown by Region



Q1 2018 Activity

Highlights

- Strong quarter in all business lines and geographies
- Group sales up +6%
 - ✓ Very high base business
 - ✓ Strong LI, thriving bidding activity and improving E&C
- Performance well on track
 - ✓ Efficiencies and Synergies delivered
 - ✓ Solid cash-flow

FX Headwind in Q1 2018

Increased Negative FX Impact⁽¹⁾



FY 2017



Q1 2018



Estimated
FY 2018

Slightly Negative Energy Impact⁽¹⁾



FY 2017



Q1 2018



Estimated
FY 2018

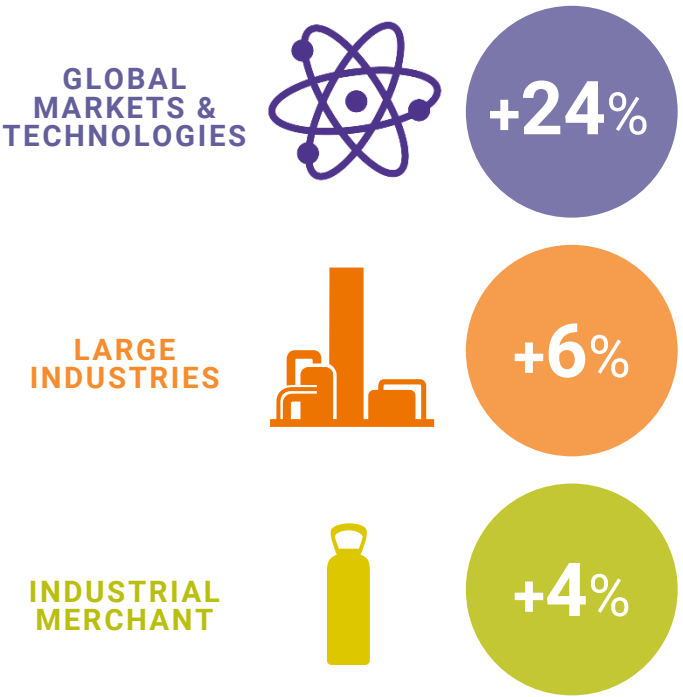
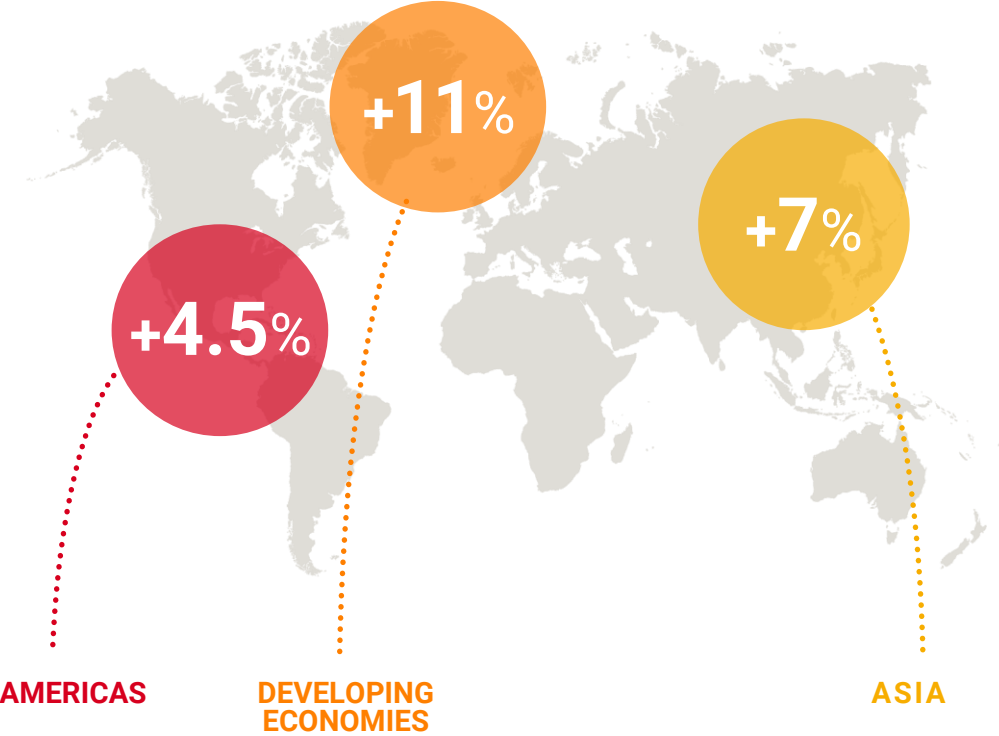
(1) On Group sales

(2) Based on Bloomberg forward rates as of beginning of April
(€1 = US\$1.24)

Higher G&S Growth, Improving E&C and Strong GM&T

Sales in €m	Q1 17	Q1 18	Q1 18/17 Comparable	Q1 18/17 As published
Gas & Services	5,046	4,831	+5.0%	-4.3%
Engineering & Construction	53	85	+75.2%	+62.7%
Global Markets & Technologies	77	94	+24.4%	+21.4%
Group Total	5,176	5,010	+6.0%	-3.2%

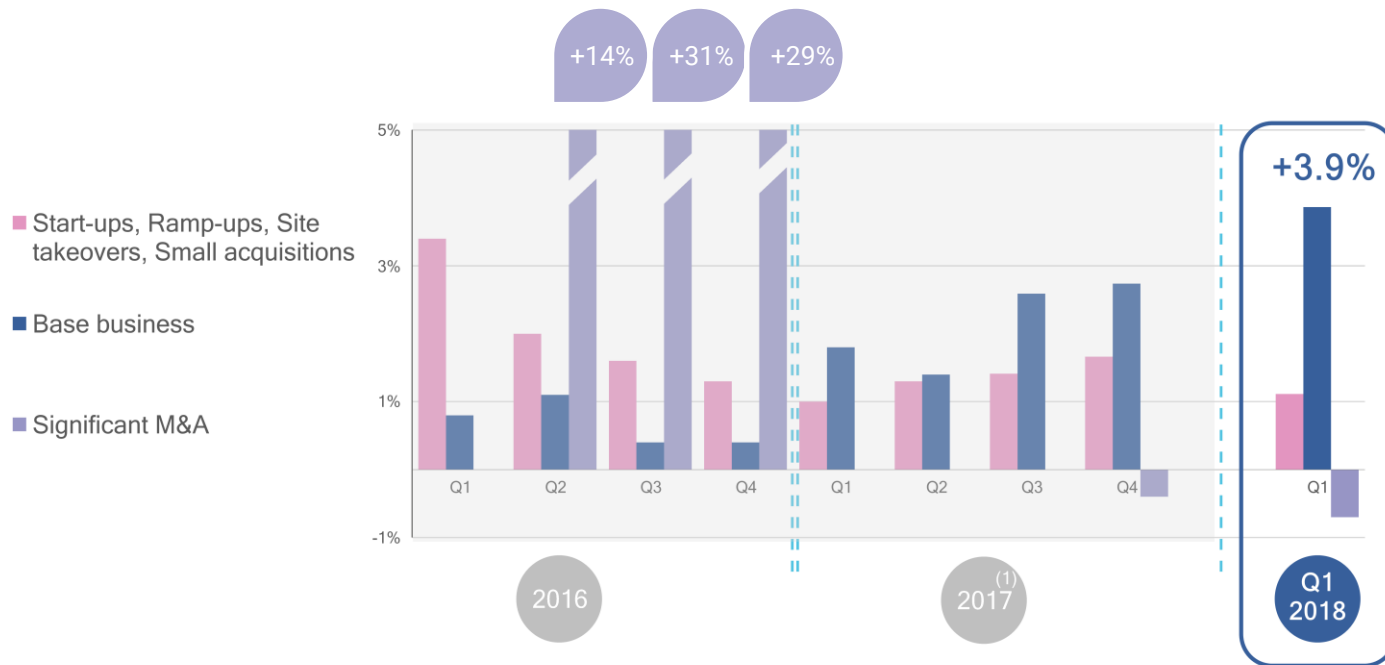
Growth Across Major Geographies and Businesses



Comparable sales growth

Very High Base Business

G&S Quarterly Growth Analysis



Strongest
base business
since
Q2 11

(1) Comparable growth based on 2016 adjusted sales

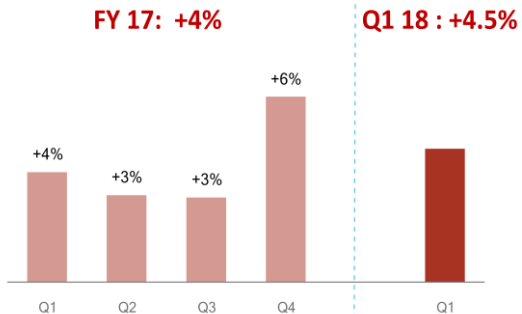
Group Sales, 6 Quarters of Accelerating Growth

Comparable Sales Growth

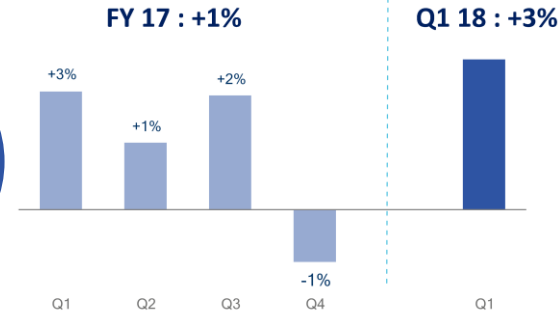


Q1- Robust Growth in North America and Europe

AMERICAS
Q1 2018
€1,901m



EUROPE
Q1 2018
€1,753m



G&S Comparable Sales Growth

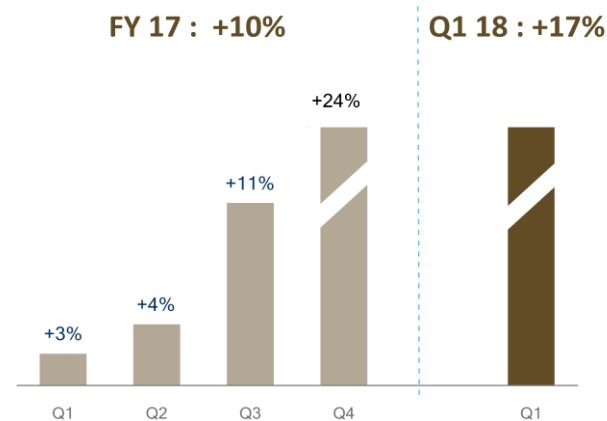
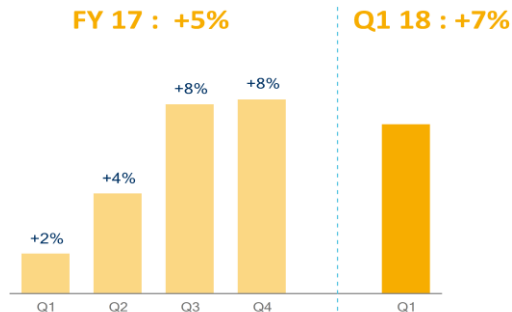
Robust IM and LI growth in North America

- **LI: high air gases** in the U.S., ramp-ups in South America
- **IM: very solid** in all end markets, strong manufacturing
- **Strong HHC** in South America & Canada
- Low E&I in **EL**

Solid growth in all activities

- **LI: very high H₂ volumes** and strong **cogen**
- **Solid IM** despite 1 fewer working day, better pricing
- Sustained **HC** driven by HHC and Seppic
- Strong **Developing Europe**

Q1- Strong Asia, Major Start-up in South Africa



G&S Comparable Sales Growth

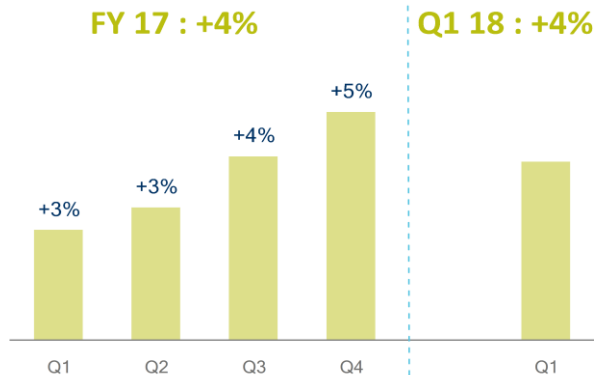
Strong momentum in all activities

- **LI:** projects ramp-up in China, high volumes
- **IM:** very strong growth driven by China, improving Australia
- **EL:** >+10%, including high E&I

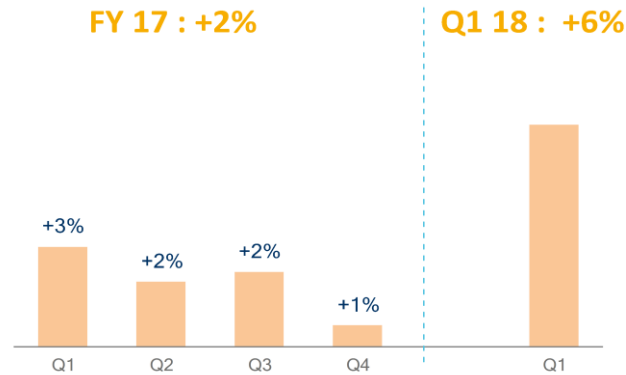
Very strong LI with major SU

- Sasol **start-up** in South Africa
- High loading at Yanbu (Saudi)
- Dynamic LI and IM in **Egypt**
- Strong HC development

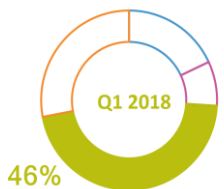
Q1- Well-oriented Markets in IM, Increased Volumes in LI



G&S Comparable Sales Growth

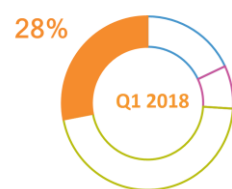


Very robust growth despite negative working day



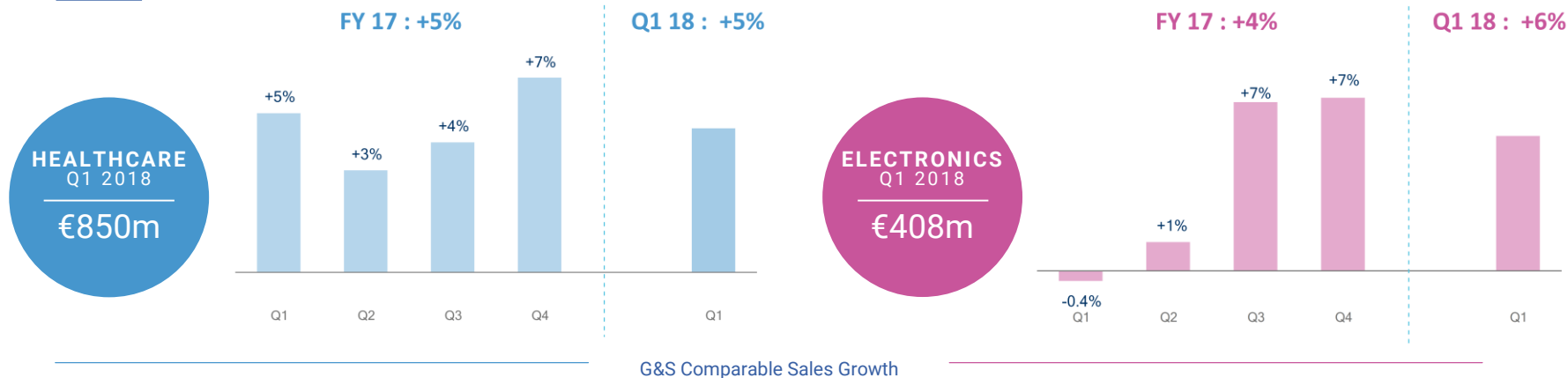
- **>+15% growth** in China
- **All end markets** well oriented
- **High volumes** in cylinders
- Firming pricing **+2.1%**

High activity & a major start-up

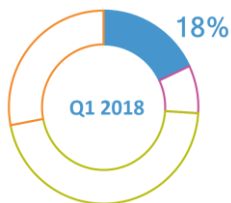


- Very solid growth in **all regions**
- Major ASU **start-up** in South Africa
- **Ramp-ups** in China
- Air gases and hydrogen higher volumes

Q1- Solid HC and EL

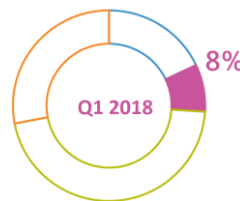


Sustained growth, strategic acquisitions



- Strong growth in **Home Healthcare**
- **Contribution from acquisitions** in Japan and Saudi
- Dynamic growth in **developing economies**

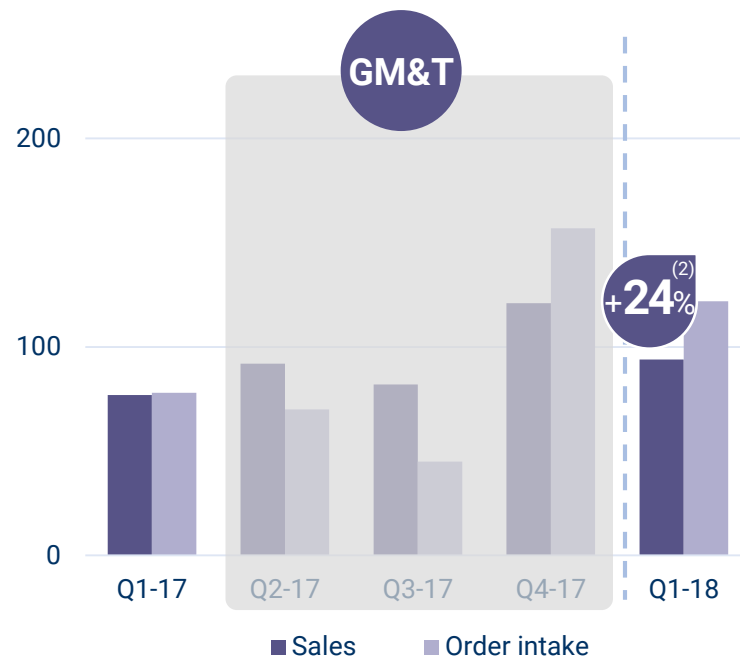
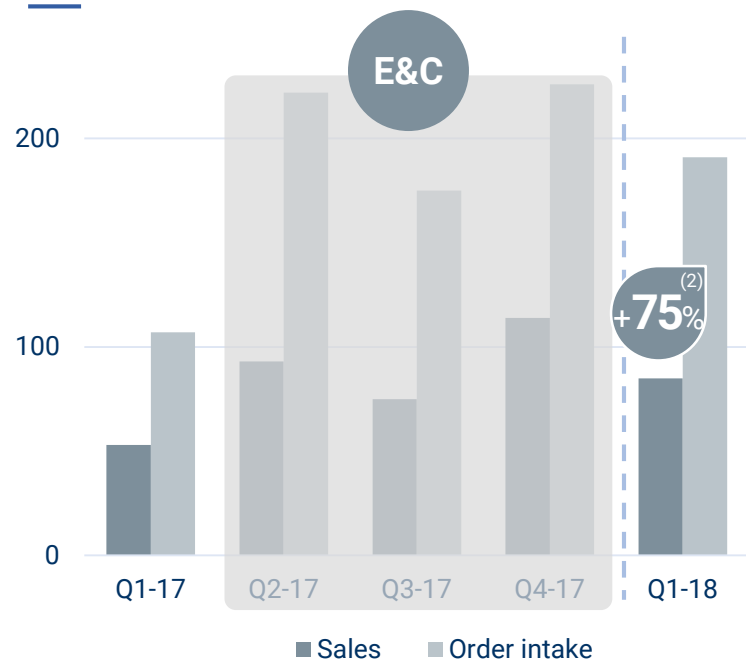
Strong momentum in Asia



- **Asia** driving growth
- Strong **Carrier Gases**
- High E&I sales

Improving E&C, Very Strong GM&T

Sales and Order intake⁽¹⁾ – in €m



(1) Group and third-party order intake

(2) Comparable growth

Q1 – Performance Well On Track

Efficiencies



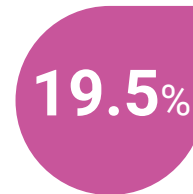
- Industrial efficiencies accounting for half
- First Airgas efficiencies

Airgas Synergies



- Growth synergies accounting for 1/3 in Q1
- US\$237m cumulated synergies

Cash Flow⁽¹⁾



- Gross Capex = €570m

(1) Operating Cash Flow before change in Working Capital Requirements/Group Revenue

All Indicators Improving, Higher Project Activity

Investment Opportunities⁽¹⁾
12-month portfolio



- **Increased bidding activity**
- Medium-size projects and more take-overs

Q1 2018 Investment Decisions⁽¹⁾



- **Major long-term contracts**
- **EL Carrier Gas contracts** in Japan and Taiwan

Q1 2018 Start-up/Ramp-up Sales Growth Contribution

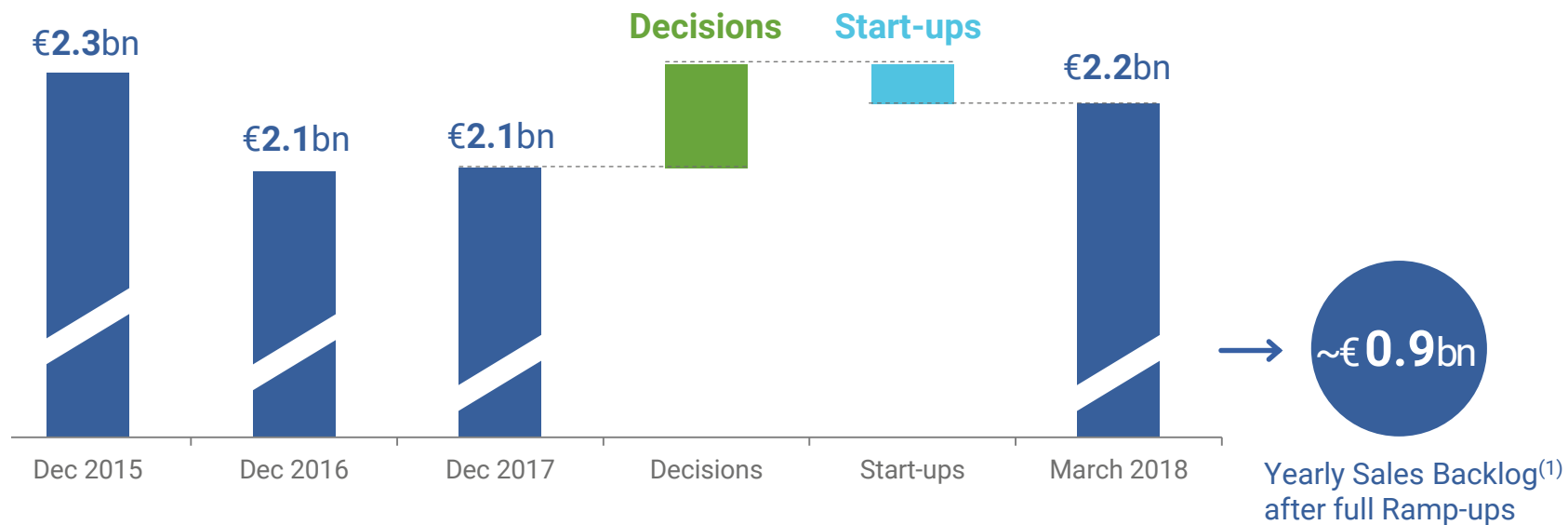


- **3 start-ups**
- Ramp-ups in **China** and **South Africa**

(1) See definitions in appendix

Increased Backlog

Investment Backlog⁽¹⁾ in €bn



(1) See definitions in appendix

2018 Outlook

Q1
2018

- Group sales up +6%
- High base business
- Buoyant bidding activity
- Performance well on track

2018

“Assuming a comparable environment, Air Liquide is confident in its ability to deliver net profit growth in 2018, calculated at constant exchange rate and excluding 2017 exceptionals⁽¹⁾.”

(1) Exceptional non-cash items having a net positive impact on 2017 net profit

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