Global Markets & Technologies

Philippe Merino – Vice President GM&T

Morgan Stanley ChemTech Day
23 May 2018
London, UK
The World Leader in Gases, Technologies and Services for Industry & Health

Established in 1902

- 80 countries
- ~65,000 Employees
- >2 M Clients
- 1.5 M Patients

FY 2017 Group Figures

- >€20bn Sales
- 16.5% OIR margin
Our activities
Shared resources and expertise to serve diverse customers

ENGINEERING & CONSTRUCTION
Designing and building production units

GLOBAL MARKETS & TECHNOLOGIES
Developing new markets requiring a global approach or markets with significant technological content

PRODUCTION

CENTRALIZED PRODUCTION
- Air Separation Units (oxygen, nitrogen, argon)
- Hydrogen and carbon monoxide production units

ON-SITE PRODUCTION AT CUSTOMERS'

TRANSPORT VIA PIPELINES

TRANSPORT VIA TANKER TRAILERS

GAS PACKAGING

TRANSPORT OF CYLINDERS BY TRAILERS

SECTORS SERVED / GAS & SERVICES ACTIVITIES

LARGE INDUSTRIES
- Produce and deliver in large quantities

INDUSTRIAL MERCHANT
- Supplying industrial and specialty 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

Chemicals
Refining
Metals
Materials & energy
Automotive & manufacturing
Food & pharmaceuticals
Technology & research
Professionals & retail
Hospitals
Home healthcare
Hygiene/Specialty ingredients
Semi-conductors
Flat panels
Photovoltaic

Energy transition
Maritime
Scientific exploration

The world leader in gases, technologies and services for Industry and Health

23 May 2018 | MS Conference, London
A Balanced Footprint

Gas & Services revenue in 2017

96% of Group Revenue

- Large Industries: 27%
- Industrial Merchant: 48%
- Asia-Pacific: 20%
- Africa Middle-East: 3%
- Americas: 43%
- Europe: 34%
- Healthcare: 17%
- Electronics: 8%
Strategy: a Customer-Centric Transformation

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

Revenue (in €m)

+6.0% CAGR over 30 years

1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017

EPS\(^{(1)}\) (in €)

+7.5% CAGR over 30 years

1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017

Cashflow (in €m)

+6.9% CAGR over 30 years

1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017

Dividend\(^{(1)}\) (in € per share)

+8.6% CAGR over 30 years

1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017

(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.
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
Deep Tech: From ISS and ITER to Core Business

Air Liquide partner in High Tech programs

International Space Station (ISS)

Source of development for various applications in core business

International Space Station (ISS)

ITER

Air Liquide partner in High Tech programs

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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

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Energy Transition: Focus on Hydrogen Energy

Seven roles for hydrogen in the Energy transition

1. Enable large-scale renewables integration and power generation
2. Distribute energy across sectors and regions
3. Act as a buffer to increase system resilience

Decarbonize end uses
4. Decarbonize transportation
5. Decarbonize industry energy use
6. Help decarbonize building heating and power
7. 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 CO$_2$** 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
Air Liquide Ambition

- Lead our industry
- Deliver long-term performance
- Contribute to sustainability
Corporate Sustainability Objectives

For better health
- Foster clean mobility
- Develop Healthcare

For better environment
- Help customers lower GHG* emissions
- Grow with reduced carbon intensity

*GreenHouse Gas

For better environment
- Continue to improve Safety
- Do business responsibly
- Extend Air Liquide Foundation

Engaging with all stakeholders
Improving Air quality

For better health
- Foster clean mobility
- Develop Healthcare

For better environment
- Help customers lower GHG* emissions
- Grow with reduced carbon intensity

*GreenHouse Gas
FY 2017 G&S Revenue Breakdown by Region

**EUROPE**
- €6.8bn

**AMERICAS**
- €8.1bn

**ASIA-PACIFIC**
- €4.1bn

**Revenue Breakdown by Region**

- **EUROPE**
  - Large Industries: 31%
  - Healthcare: 31%
  - Electronics: 5%

- **AMERICAS**
  - Large Industries: 31%
  - Healthcare: 31%
  - Electronics: 37%

- **ASIA-PACIFIC**
  - Large Industries: 31%
  - Healthcare: 31%
  - Electronics: 37%

**Revenue Breakdown by Sector**

- **Industrial Merchant**
  - Europe: 69%
  - Americas: 45%
  - Asia-Pacific: 67%

- **Large Industries**
  - Europe: 17%
  - Americas: 10%
  - Asia-Pacific: 10%

- **Healthcare**
  - Europe: 10%
  - Americas: 12%
  - Asia-Pacific: 12%

- **Electronics**
  - Europe: 4%
  - Americas: 3%
  - Asia-Pacific: 3%
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\(^{(1)}\)

<table>
<thead>
<tr>
<th></th>
<th>FY 2017</th>
<th>Q1 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact</td>
<td>-1.6%</td>
<td>-8.2%</td>
</tr>
</tbody>
</table>

Estimated FY 2018: \(-5\%\)

### Slightly Negative Energy Impact\(^{(1)}\)

<table>
<thead>
<tr>
<th></th>
<th>FY 2017</th>
<th>Q1 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact</td>
<td>+1.5%</td>
<td>-0.3%</td>
</tr>
</tbody>
</table>

Estimated FY 2018: \(0\%\)

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\(^{(1)}\) 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

<table>
<thead>
<tr>
<th></th>
<th>Q1 17</th>
<th>Q1 18</th>
<th>Q1 18/17 Comparable</th>
<th>Q1 18/17 As published</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales in €m</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas &amp; Services</td>
<td>5,046</td>
<td>4,831</td>
<td>+5.0%</td>
<td>-4.3%</td>
</tr>
<tr>
<td>Engineering &amp; Construction</td>
<td>53</td>
<td>85</td>
<td>+75.2%</td>
<td>+62.7%</td>
</tr>
<tr>
<td>Global Markets &amp; Technologies</td>
<td>77</td>
<td>94</td>
<td>+24.4%</td>
<td>+21.4%</td>
</tr>
<tr>
<td>Group Total</td>
<td>5,176</td>
<td>5,010</td>
<td>+6.0%</td>
<td>-3.2%</td>
</tr>
</tbody>
</table>
Growth Across Major Geographies and Businesses

- **Americas**: +4.5%
- **Developing Economies**: +11%
- **Asia**: +7%
- **Global Markets & Technologies**: +24%
- **Large Industries**: +6%
- **Industrial Merchant**: +4%

Comparable sales growth

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Very High Base Business

G&S Quarterly Growth Analysis

(1) Comparable growth based on 2016 adjusted sales
Group Sales, 6 Quarters of Accelerating Growth

Comparable Sales Growth

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Group</th>
<th>Gas &amp; Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4 16</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Q1 17</td>
<td>+0.5%</td>
<td>+1.7%</td>
</tr>
<tr>
<td>Q2 17</td>
<td>+1.7%</td>
<td>+3.0%</td>
</tr>
<tr>
<td>Q3 17</td>
<td>+2.0%</td>
<td>+4.7%</td>
</tr>
<tr>
<td>Q4 17</td>
<td>+2.7%</td>
<td>+5.0%</td>
</tr>
<tr>
<td>Q1 18</td>
<td>+6.0%</td>
<td>+5.0%</td>
</tr>
</tbody>
</table>
Q1 - Robust Growth in North America and Europe

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 $H_2$ 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

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

**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

**INDUSTRIAL MERCHANT Q1 2018**

€2,208m

**LARGE INDUSTRIES Q1 2018**

€1,365m
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

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**E&C**

- **Q1-17**: Sales 30, Order intake 40
- **Q2-17**: Sales 50, Order intake 60
- **Q3-17**: Sales 40, Order intake 50
- **Q4-17**: Sales 60, Order intake 70
- **Q1-18**: Sales 80, Order intake 90

**GM&T**

- **Q1-17**: Sales 100, Order intake 110
- **Q2-17**: Sales 120, Order intake 130
- **Q3-17**: Sales 110, Order intake 120
- **Q4-17**: Sales 130, Order intake 140
- **Q1-18**: Sales 150, Order intake 160

(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

- 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

€2.3bn

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

Q1 2018 Investment Decisions\(^{(1)}\)

€0.6bn

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

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

€67m

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

\(^{(1)}\) See definitions in appendix
Increased Backlog

Investment Backlog\(^{(1)}\) in €bn

<table>
<thead>
<tr>
<th>Year</th>
<th>Backlog (€bn)</th>
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<tbody>
<tr>
<td>Dec 2015</td>
<td>€2.3bn</td>
</tr>
<tr>
<td>Dec 2016</td>
<td>€2.1bn</td>
</tr>
<tr>
<td>Dec 2017</td>
<td>€2.1bn</td>
</tr>
<tr>
<td>March 2018</td>
<td>~€0.9bn</td>
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<tr>
<td></td>
<td>€2.2bn</td>
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</tbody>
</table>

Yearly Sales Backlog\(^{(1)}\) after full Ramp-ups

\(^{(1)}\) See definitions in appendix
2018 Outlook

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

“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
For further information, please contact:

**Investor Relations**

- Aude Rodriguez  ☎️ + 33 (0)1 40 62 57 08
- Louis Laffont  ☎️ + 33 (0)1 40 62 57 18
- Ludmilla Binet  ☎️ + 33 (0)1 40 62 57 37
- Jérôme Zaman  ☎️ + 33 (0)1 40 62 59 38
- Joseph Marczely  ☎️ + 1 610 263 8277

www.airliquide.com  Follow us on Twitter @AirLiquideGroup

L’Air Liquide S.A.
Corporation for the study and application of processes developed by Georges Claude
with registered capital of 2,356,439,277.50 euros

Corporate Headquarters:
75, Quai d’Orsay
75321 Paris Cedex 07
Tel : +33 (0)1 40 62 55 55
RCS Paris 552 096 281