

## CREDIT OPINION

7 July 2020

Update

✓ Rate this Research

### RATINGS

#### Air Liquide S.A.

Domicile	Paris, France
Long Term Rating	A3
Type	LT Issuer Rating - Dom Curr
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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## Air Liquide S.A.

### Update to credit analysis

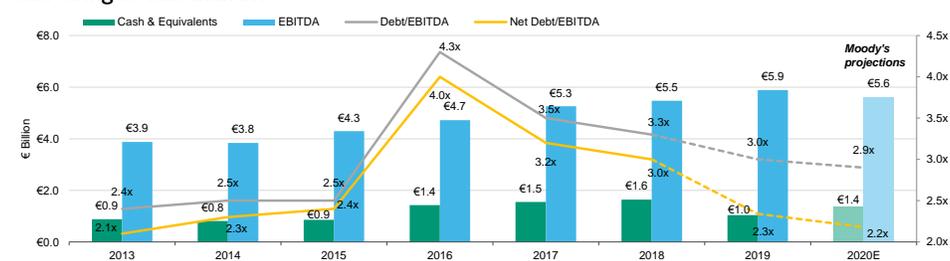
#### Summary

[Air Liquide S.A.](#)'s A3 rating with a stable outlook reflects its leading position in the oligopolistic industrial gas market, with a high degree of revenue visibility into long-term take-or-pay contracts in its large industry business unit that contain cost pass-through clauses; a high network density, also supporting its industrial merchant business unit; and a highly regulated market environment for its healthcare business. The rating furthermore benefits from its well-spread exposure across different customers, industries and geographies, as well as solid and stable profitability levels.

In light of its defensive characteristics, we deem Air Liquide's credit metrics to be consistent with the A3 rating category. We expect Air Liquide to continue to balance growth capital spending and acquisition spending, shareholder remunerations, and deleveraging. Striking this balance will lead to a continued, but slow, deleveraging. This will be supported by expected solid free cash flow (FCF) generation in through the cycle, which creates capacity for gross debt reduction and potential for gradually developing positive rating pressure. We forecast that its Moody's-adjusted gross leverage will remain largely unchanged from that in 2019 as the company, despite its resilient business profile, will not be immune to the economic repercussions of the coronavirus pandemic. At the same time, we expect the company to continue to focus on cost control to mitigate any negative impacts. Despite the integration of the less profitable Airgas, Air Liquide has managed to maintain its EBITDA margin above 25%, which also reflects the solid execution of deriving synergies from the Airgas acquisition and its NEOS efficiency program.

Exhibit 1

#### Air Liquide lowered its Moody's-adjusted gross leverage to 3.0x in 2019 and is likely to continue delevering to less than 3x



Sources: Moody's Investors Service

## Credit strengths

- » Global leader in the industrial gas market, underpinned by scale, regional network density and strong customer relationships
- » Long-term contracts, and balanced geographic and wide end-market diversifications, which provide revenue visibility and resilience
- » Solid and resilient profitability
- » Large exposure to emerging markets, the home healthcare and electronics segments, which provide organic growth potential

## Credit challenges

- » Capital intensity and generous dividend policy, which constrain FCF generation
- » Expectation of an only moderate decline in Moody's-adjusted gross leverage

## Rating outlook

The stable outlook reflects our expectation that Air Liquide will continue to reduce its leverage, although at a slow pace, and generate substantial cash over the next 18 months. The outlook also takes into consideration the fact that the issuer will not significantly increase its debt level for acquisitions or engage in more generous dividend distributions.

## Factors that could lead to an upgrade

- » Visibility into gross debt/EBITDA remaining below 2.5x on a sustained basis, supported by a reduction in gross debt
- » Retained cash flow (RCF)/net debt remaining above 25% through the cycle
- » Maintenance of a conservative financial policy

## Factors that could lead to a downgrade

- » Leverage increasing above 3.5x on a sustained basis
- » EBITDA margin eroding to the low-20s in percentage terms on a sustained basis
- » RCF/net debt remaining below 20% on a sustained basis

## Key indicators

Exhibit 2

### Air Liquide S.A.

US Millions	Dec-14	Dec-15	Dec-16	Dec-17	Dec-18	Dec-19
Revenue	20,406	17,563	20,065	22,992	24,812	24,540
Net Property Plant and Equipment	18,326	17,927	22,400	23,420	23,194	23,653
EBITDA Margin %	25.0%	27.1%	26.0%	25.8%	26.1%	26.8%
EBIT / Avg. Assets	9.3%	9.7%	7.7%	7.6%	8.0%	8.4%
Debt / EBITDA	2.5x	2.5x	4.3x	3.5x	3.3x	3.0x
RCF / Debt	22.5%	20.8%	13.4%	17.6%	16.3%	18.9%
EBITDA / Interest Expense	12.1x	11.3x	8.6x	8.9x	9.9x	11.1x

All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

Source: Moody's Financial Metrics™

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on [www.moody's.com](http://www.moody's.com) for the most updated credit rating action information and rating history.

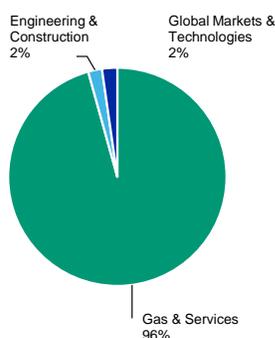
## Profile

Headquartered in Paris, France, Air Liquide S.A. (Air Liquide) is a world leader in gas, technologies and services for industries and healthcare, generating €22 billion of revenue in 2019. The company employs about 66,000 people across 80 countries. After the merger of its two main competitors, Linde and Praxair, Air Liquide is currently the second-largest company in the industrial gas market.

The company divides its operations into three business units: Gas and Services (G&S), which is the main unit (96% of sales), supplying industrial gases and related services; Engineering and Construction (E&C), which designs and constructs industrial gas production units (2% of sales); and Global Markets and Technologies (GM&T), which delivers technological solutions to support the new markets of energy transition, maritime logistics and deep tech. Through a truly global footprint, the group G&S sales are well balanced across the world's main manufacturing regions, with the Americas accounting for 40% of sales, Europe 34%, Asia-Pacific 23%, and the Middle East and Africa 3%.

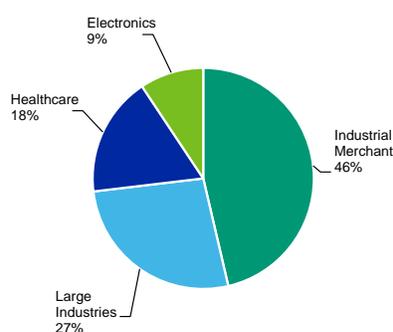
Air Liquide is listed on the Paris stock market, and its market capitalization as of June 30, 2020, was about €60 billion.

Exhibit 3  
Revenue split by business unit (2019)



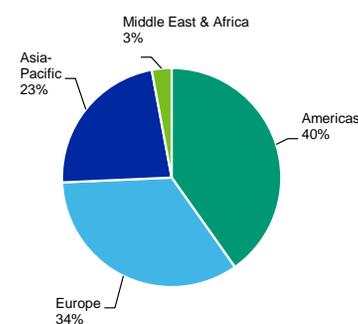
Source: Company's 2019 annual report

Exhibit 4  
G&S global revenue split by business lines (2019)



Source: Company's 2019 annual report

Exhibit 5  
G&S revenue split by region (2019)



Source: Company's 2019 annual report

## Detailed credit considerations

### Scale, diversification and industry characteristics support the resilient business profile

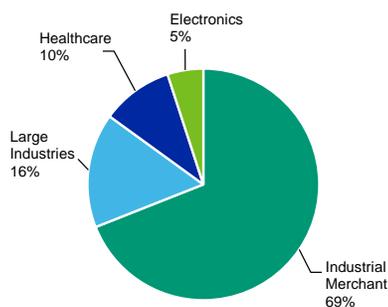
Air Liquide's resilient business profile with a diversified customer base, long-term cost indexed take-or-pay contracts in its large industries segment and its leading position in the industrial gas segment of the chemical industry are key factors supporting its rating. We expect the defensive characteristics to support resilient EBITDA and cash generation, even during the economic downturn caused by the coronavirus outbreak.

Air Liquide's presence in the large industries segment, which contributed around 26% to the company's 2019 revenue, provides it with a high degree of visibility into profit and cash generation. Air gases are mainly obtained by the separation of air into its main components, oxygen and nitrogen, through air separation units, a process that is energy and capital intensive. This segment predominantly serves customers in the refining, metals and chemical industries through on-site plants and pipeline networks. Because of the high capital intensity of the large industries business, supply contracts are generally closed for 15 years. The contracts contain a minimum take-or-pay level, and prices are indexed on electricity and natural gas prices. Air Liquide also operates more than 9,400 kilometers (km) of pipelines in the most gas-intensive manufacturing basins, such as the US Gulf Coast and the Rotterdam area, allowing the company to provide a reliable and cost-efficient service to customers.

The large industries division also supplies gas to Air Liquide's other business lines. The company's industrial merchant business serves a broad range of industries and customers (44% of group revenue). The industrial merchant business mainly relies on gas supply from the large industries business unit. Supply modes range from on-site facilities and bulk deliveries to packaged gases in the form of cylinders. Air Liquide's dense distribution and production network to some degree constitutes a barrier to market entrance because distribution usually only takes place within a 250-km radius around the production site. The industrial merchant business will be the most affected

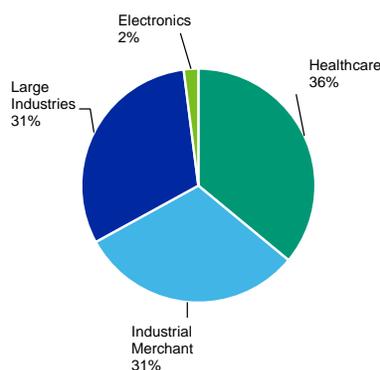
by the ongoing coronavirus outbreak. However, around 25% of revenue of the industrial merchant business is generated from rental income and another 25% from sales to industries that can be considered defensive, such as the pharmaceutical and food and beverage sectors.

Exhibit 6  
G&S revenue split by business line in the Americas (2019)



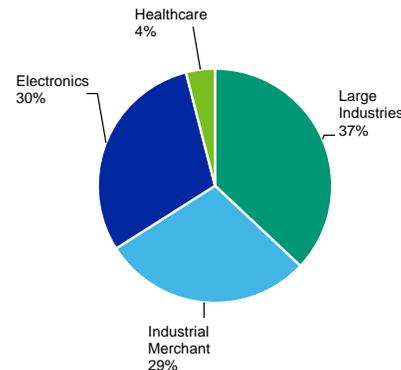
Source: Company's 2019 annual report

Exhibit 7  
G&S revenue split by business line in Europe (2019)



Source: Company's 2019 annual report

Exhibit 8  
G&S revenue split by business line in the Asia-Pacific (2019)



Source: Company's 2019 annual report

Apart from gases for the industrial and technology sectors, Air Liquide is also engaged in the healthcare sector. From its healthcare division, Air Liquide supplies medical gases (oxygen, nitrous oxides and xenon) to 15,000 hospitals and clinics, and comprehensive treatments to 1.7 million home healthcare patients suffering from chronic diseases. Medical gases are treated as drugs and thus constitute a highly regulated market, demanding health authorities' approval. The hospitals and clinics segment is experiencing pricing pressure in developed economies as healthcare systems look to curb spending. However, the home healthcare segment has positive fundamentals, in both advanced and developing economies, as patient care is increasingly shifting from hospitals to homes. An aging population and an increasing rate of chronic diseases are also growth factors in this sector. While the division benefits from strong demand in medical gases amid the coronavirus pandemic, home healthcare might be temporarily hurt to some degree by lower prescriptions during the pandemic. We, however, expect demand fundamentals to remain intact.

Air Liquide's electronics unit serves the semiconductor, flat panel display and photovoltaic markets. Around 38% of revenue in its electronics unit is generated by carrier gases, where deliveries are usually based on long-term gas supply agreements. The electronics business has strongly grown over the last couple of years; in 2019, it generated revenue of €1.96 billion, compared with €830 million in 2003.

While contributing only a combined 4% of the company's total revenue, the E&C and GM&T business units are strategically important for Air Liquide. E&C provides crucial engineering support to internal gas projects. Building gas units for third-party customers can also lead to supply contracts for large industry operations. As E&C orders depend on customers' long-term investment decisions, revenue in that business unit is more volatile. The GM&T business unit is focused on maritime logistics, scientific exploration (aerospace) and the development of renewable fuels, such as hydrogen and biogas for which technology is a major differentiator.

### The coronavirus outbreak will affect volumes, but impact on credit metrics will remain manageable, partially offset by cost containment

The subdivisions of Air Liquide's G&S business will be affected by the economic weakening in varying degrees. We expect the negative impact to be most pronounced in the industrial merchant subdivision, while the company's healthcare business will temporarily benefit from increased demand. At the same time, we would expect the company to maintain broadly flat EBITDA, because of cost-containment measures and a more favorable mix in large industries.

The company indicated that in April 2020, when the coronavirus pandemic reached peak levels in most of the regions, its sales in industrial merchant dropped by around 40% in European packaged gas and by 30%-40% for European bulk gas. In particular, sales to the auto and steel industries are hit, while other markets such as food and pharmaceuticals have been more stable. The company trend

in US industrial merchant with sales in April down 25%-30%. Air Liquide's healthcare business has been growing by around 10% during Q1 2020, and the company expects the healthcare business to continue to perform solidly. The electronics business so far has not been negatively affected and investment activity in this sector remained strong; however, lower consumer spending could hurt demand in the electronics sector.

Large industries, in particular the steel industry, will be hurt by the ongoing pandemic. However, take-or-pay clauses plus fees will result in a relatively stable revenue pattern, providing some protection to Air Liquide's EBITDA generation as well. Typically, volumes sold in excess of the take-or-pay level generate a lower margin than that for volumes up to the contractually agreed take-or-pay level.

In addition to the synergies from the Airgas acquisition, Air Liquide maintains an efficiency program originally set at €300 million per year during 2017-20 (that is, €1.2 billion in total). As of year-end 2018, Air Liquide increased its target to €400 million per year in 2019 and 2020. The company reported further efficiency gains in Q1 2020 compared with Q1 2019, which, to some degree, demonstrates the company's continued focus on cost savings. In light of the ongoing coronavirus outbreak, the company has announced an additional cost-containment plan, but has, however, not quantified the cost savings related to these additional measures. Assuming that economic activity will gradually pick up from Q3 2020, we expect the continued focus on cost control and lower volume sales in excess of take-or-pay volumes to allow Air Liquide to increase its Moody's-adjusted EBITDA margin in the current environment, allowing the company to maintain its absolute EBITDA around the levels observed in 2019.

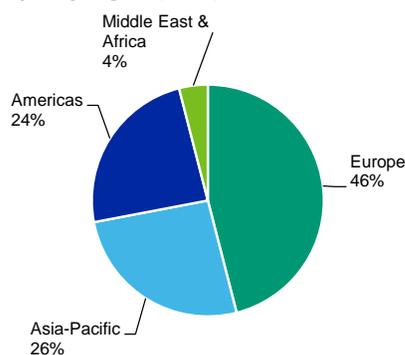
### The Airgas acquisition contributed to broader geographic diversification, with Air Liquide maintaining its focus on cost management after Airgas synergies have been achieved

The acquisition of Airgas in May 2016 further contributed to a geographic diversification of Air Liquide within the oligopolistic industrial gas market. Air Liquide and [Linde plc](#) (A2 stable) are clear market leaders in the industrial gas market, with 2019 revenue of \$24 billion and \$28 billion, respectively. The Airgas acquisition broadened Air Liquide's geographic diversification, by adding a downstream distribution network to Air Liquide's US operations, which were previously more focused on upstream operations.

As the largest independent gas distributor in North America and mainly back-integrated in air separation, Airgas has increased the group's exposure to the US, the world's largest gas market and the fastest-growing among advanced economies, underpinned by its abundant and cheap natural gas, competitive energy prices, and large investments in oil refining and hydrocarbon cracking. Airgas has also improved Air Liquide's business profile by increasing the share of packaged gases in the industrial merchant business line. Packaged gases provide some revenue stability because up to 25% of revenue in that segment is generated through the continued rental of cylinders by customers. Airgas also expanded the group's healthcare business in the US, although Air Liquide still only serves the medical gases segment there.

Exhibit 9

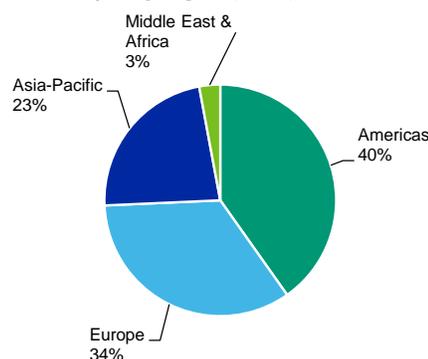
#### G&S revenue split by region (2015)



Source: Company's 2015 annual report

Exhibit 10

#### G&S group revenue split by region (2019)



Source: Company's 2019 annual report

At the beginning of 2019, Air Liquide achieved \$300 million in synergies, a year earlier than initially planned. In 2019, Air Liquide's Moody's-adjusted EBITDA margin was 26.8%, compared with 27.1% in 2015 before the Airgas acquisition. Despite the margin-dilutive

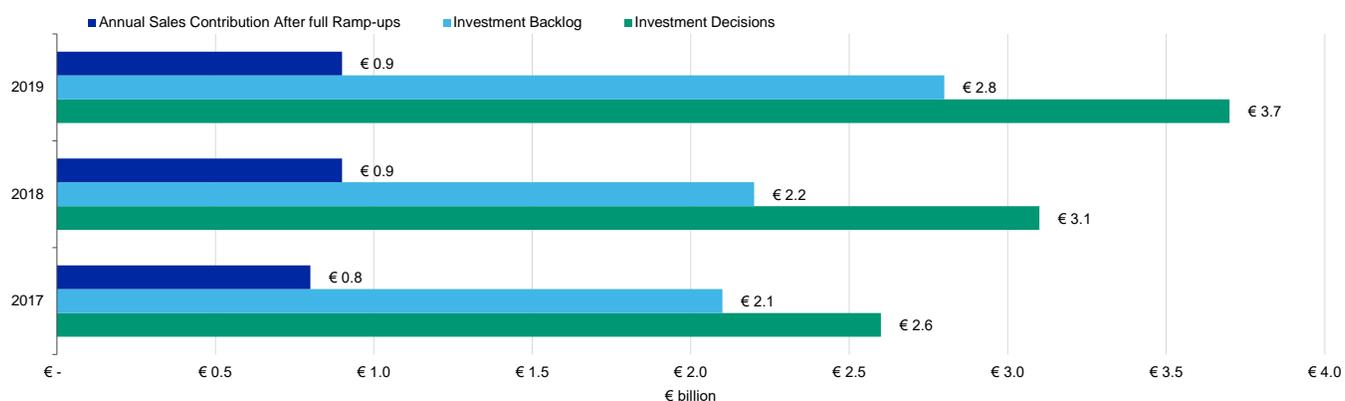
effect of the acquisition (Airgas' EBITDA margin was around 21% prior to the acquisition), Air Liquide has managed to maintain its adjusted EBITDA margin in excess of 25%, which supports the current rating positioning.

### Investments remained high in 2019 and Q1 2020; customer capital spending cuts because of the economic environment could hamper growth prospects

In 2019, Air Liquide committed to around €3.7 billion of investments (€3.1 billion in 2018), which typically are spread over two to three years. Expected delays in project execution because of the coronavirus outbreak have led the company to revise its expectation of sales contribution from startups in 2020. Air Liquide now expects project startups to contribute €150 million-€180 million to revenue in 2020, compared with previous expectation of €230 million sales contribution. We understand that Air Liquide's investment decisions are subject to a thorough process of evaluating risks associated with a given decision, including counterparty risks, asset quality, the location of the customer site and contract clauses, among others.

Exhibit 11

#### Continued high level of investments provides good visibility into revenue growth



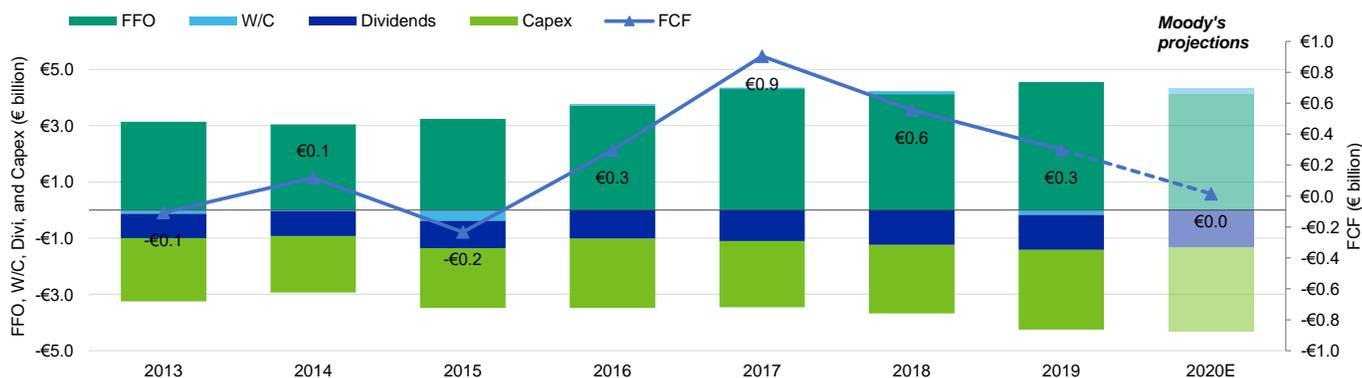
Source: Company's 2017, 2018 and 2019 full-year result presentations

### The pace of improvement in credit metrics is likely to remain slow, but break even FCF and Schuelke proceeds creates some capacity for gross debt reduction in 2020

Since the acquisition of Airgas in 2016, Air Liquide's credit metrics have only gradually recovered as the company has balanced its cash allocation among growth investments, shareholder returns and debt reduction. However, against the backdrop of the company's strong business profile, good revenue visibility, forecast deleveraging and moderate debt reduction supported by continued positive FCF, its metrics remain commensurate with the A3 rating assigned. Furthermore, the company is publicly committed to maintaining an A rating.

Exhibit 12

#### Air Liquide is likely to at least generate breakeven FCF in 2020



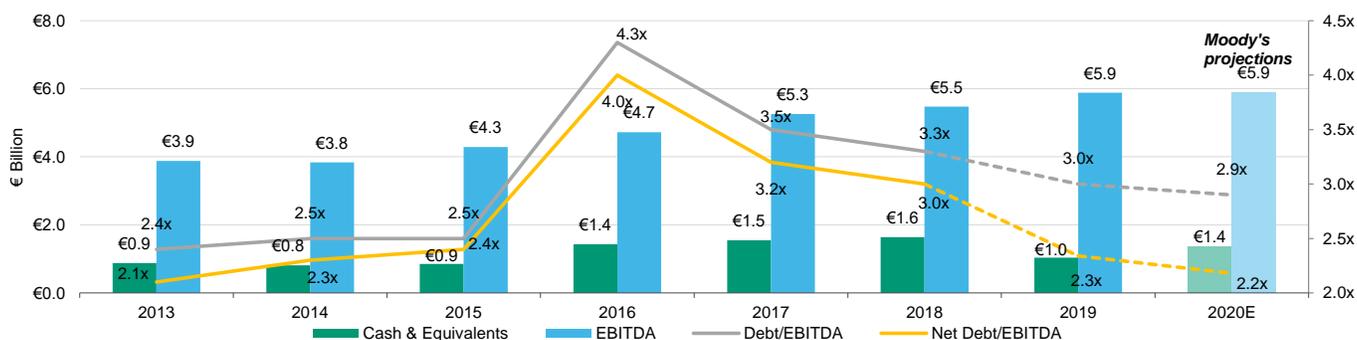
Sources: Moody's Financial Metrics™ and Moody's estimates

The ongoing coronavirus outbreak will result in EBITDA in 2020 and even beyond to remain roughly similar to the 2019 level. In our view, deleveraging will be rather slow as the company continues to balance cash allocation among business growth, in line with its NEOS objectives, a continued distribution of higher dividends and deleveraging. However, expected FCF generation in 2020 and the sale of its subsidiary Schuelke & Mayer create capacity for the company to reduce gross debt in 2020, which should further support a moderate deleveraging during the year.

The FCF generation in 2020 will be supported by lower capital spending, because of delays related to the coronavirus outbreak. We expect the company to at least generate breakeven FCF in 2020, which, in combination with the proceeds from the sale of Schuelke & Mayer, creates capacity for the company to reduce gross debt. We expect the company to continue to remain acquisitive, which could further slow the pace of debt reduction; vice versa, additional asset disposals would potentially create additional capacity to repay debt. Its capacity for any larger debt-financed M&A within the A3 rating category remains limited. An expected reduction in gross debt, in combination with flat EBITDA levels in 2020, will result in Moody's-adjusted gross debt/EBITDA approaching 2.9x in 2020, with further reduction.

Exhibit 13

#### Air Liquide lowered its Moody's-adjusted gross leverage to 3.0x in 2019 and is likely to continue deleveraging



Sources: Moody's Financial Metrics™ and Moody's estimates

### Liquidity analysis

Air Liquide's liquidity profile is strong. As of 31 March 2020, the company had around €2.4 billion of cash on balance sheet (which includes proceeds from the €1 billion bond issuance in March) and access to an undrawn syndicated revolving credit facility. These sources, in combination with forecast FFO generation in excess of €4 billion, should be more than sufficient to address upcoming debt maturities, dividend payments, capital spending and unexpected swings in working capital.

## Rating methodology and scorecard

Air Liquide's scorecard-indicated outcome of A2 is one notch above the actual rating assigned. The rating assigned places a higher emphasis on the company's credit metrics, also compared to direct peers.

Exhibit 14

### Scorecard factors for Air Liquide S.A.

Chemical Industry Scorecard [1][2]	Current 12/31/2019		Moody's 12-18 Month Forward View	
	Measure	Score	Measure	Score
<b>Factor 1 : Scale (15%)</b>				
a) Revenue (USD Billion)	\$24.5	A	\$22 - \$23	A
b) PP&E (net) (USD Billion)	\$23.7	Aa	\$23.6 - \$24	Aa
<b>Factor 2 : Business Profile (25%)</b>				
a) Business Profile	Aaa	Aaa	Aaa	Aaa
<b>Factor 3 : Profitability (10%)</b>				
a) EBITDA Margin	27%	A	27% - 29%	A
b) ROA (Return on Average Assets)	8%	Ba	8% - 8.5%	Ba
<b>Factor 4 : Leverage &amp; Coverage (30%)</b>				
a) Debt / EBITDA	3.0x	Baa	2.7x - 2.9x	Baa
b) RCF / Debt	19%	Ba	19% - 21%	Baa
c) EBITDA / Interest Expense	11.1x	Baa	11x - 12x	Baa
<b>Factor 5 : Financial Policy (20%)</b>				
a) Financial Policy	A	A	A	A
<b>Rating:</b>				
a) Scorecard-Indicated Outcome		A2		A2
b) Actual Rating Assigned				A3

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

[2] As of 12/31/2019.

This represents Moody's forward view, not the view of the issuer, and unless noted in the text, does not incorporate significant acquisitions and divestitures.

Sources: Moody's Financial Metrics™ and Moody's estimates

## Ratings

Exhibit 15

Category	Moody's Rating
<b>AIR LIQUIDE S.A.</b>	
Outlook	Stable
Issuer Rating -Dom Curr	A3
Senior Unsecured -Dom Curr	A3
Commercial Paper -Dom Curr	P-2
ST Issuer Rating -Dom Curr	P-2
<b>AIR LIQUIDE FINANCE</b>	
Outlook	Stable
Bkd Senior Unsecured	A3
Bkd Commercial Paper -Dom Curr	P-2
<b>AIRGAS, INC.</b>	
Outlook	Stable
Senior Unsecured	A3
<b>AIR LIQUIDE U.S. LLC</b>	
Outlook	Stable
Bkd Commercial Paper	P-2

Source: Moody's Investors Service

## Appendix

Exhibit 16

### Peer comparison

Air Liquide S.A.

(in US millions)	Air Liquide S.A.		Linde plc			Air Products and Chemicals,		
	A3 Stable		A2 Stable			A2 Stable		
	FYE Dec-18	FYE Dec-19	FYE Dec-18	FYE Dec-19	LTM Mar-20	FYE Sep-18	FYE Sep-19	LTM Mar-20
Revenue	\$24,812	\$24,540	\$14,836	\$28,228	\$28,023	\$8,930	\$8,919	\$8,978
EBITDA	\$6,472	\$6,588	\$5,031	\$8,504	\$8,609	\$3,241	\$3,609	\$3,752
Total Debt	\$20,551	\$19,704	\$18,665	\$17,589	\$20,508	\$4,805	\$4,682	\$4,697
Cash & Cash Equiv.	\$1,872	\$1,095	\$4,466	\$2,700	\$4,014	\$2,791	\$2,249	\$2,220
EBITDA Margin	26.1%	26.8%	33.9%	30.1%	30.7%	36.3%	40.5%	41.8%
ROA - EBIT / Avg. Assets	8.0%	8.4%	5.3%	6.0%	6.3%	11.5%	12.6%	12.9%
EBITDA / Int. Exp.	9.9x	11.1x	11.8x	30.2x	30.8x	17.3x	20.3x	26.4x
Debt / EBITDA	3.3x	3.0x	3.7x	2.1x	2.4x	1.5x	1.3x	1.3x
RCF / Debt	16.3%	18.9%	13.7%	26.5%	23.5%	41.3%	44.1%	46.8%

All figures and ratios calculated using Moody's estimates and standard adjustments. FYE = Financial Year-End. LTM = Last 12 Months. Linde plc numbers in 2017 and 2018 are not representative.

Source: Moody's Financial Metrics™

Exhibit 17

### Moody's-adjusted debt breakdown

Air Liquide S.A.

(in EUR Millions)	FYE Dec-14	FYE Dec-15	FYE Dec-16	FYE Dec-17	FYE Dec-18	FYE Dec-19
<b>As Reported Debt</b>	<b>7,216.4</b>	<b>8,203.4</b>	<b>16,891.1</b>	<b>15,027.0</b>	<b>14,260.5</b>	<b>14,730.4</b>
Pensions	1,737.9	1,697.0	1,723.8	1,695.3	1,566.4	1,690.1
Operating Leases	630.4	859.6	1,173.4	1,044.0	1,097.6	0.0
Securitized Debt	23.6	146.1	335.6	458.7	1,053.1	1,133.3
<b>Moody's-Adjusted Debt</b>	<b>9,608.3</b>	<b>10,906.1</b>	<b>20,123.9</b>	<b>18,225.0</b>	<b>17,977.6</b>	<b>17,553.8</b>

All figures are calculated using Moody's estimates and standard adjustments.

Source: Moody's Financial Metrics™

Exhibit 18

### Moody's-adjusted EBITDA breakdown

Air Liquide S.A.

(in EUR Millions)	FYE Dec-14	FYE Dec-15	FYE Dec-16	FYE Dec-17	FYE Dec-18	FYE Dec-19
<b>As Reported EBITDA</b>	<b>3,892.1</b>	<b>4,100.3</b>	<b>4,672.3</b>	<b>4,766.4</b>	<b>5,047.3</b>	<b>5,703.5</b>
Pensions	-197.4	-11.4	-33.1	-6.7	-0.9	-2.2
Operating Leases	167.0	189.0	292.0	271.0	290.0	0.0
Securitized Debt	0.4	0.7	2.1	3.2	12.8	10.7
Unusual	-20.8	27.9	-203.8	231.0	135.5	173.3
Non-Standard Adjustments	-4.0	-14.3	-6.6	-5.2	-4.1	-0.7
<b>Moody's-Adjusted EBITDA</b>	<b>3,837.3</b>	<b>4,292.2</b>	<b>4,722.9</b>	<b>5,259.7</b>	<b>5,480.6</b>	<b>5,884.6</b>

All figures are calculated using Moody's estimates and standard adjustments.

Source: Moody's Financial Metrics™

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