

CREDIT OPINION

7 May 2021

Update

✓ Rate this Research

RATINGS

Air Liquide S.A.

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

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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CLIENT SERVICES

Americas 1-212-553-1653

Asia Pacific 852-3551-3077

Japan 81-3-5408-4100

EMEA 44-20-7772-5454

Air Liquide S.A.

Update to credit analysis

Summary

[Air Liquide S.A.](#)'s (Air Liquide, A3 positive) rating reflects its leading position in the highly concentrated 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 also benefits from its well-spread exposure across different customers, industries and geographies, as well as solid and stable profitability levels.

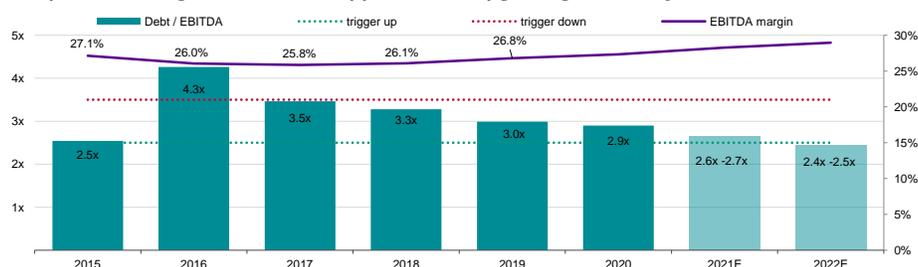
In light of its defensive characteristics, we deem Air Liquide's credit metrics to be consistent with the A3 rating category. On 05 May 2021 we changed the outlook on Air Liquide's rating to positive to reflect expected further improvements in credit metrics.

As of December 2020, Air Liquide's Moody's-adjusted gross leverage was 2.9x. Air Liquide's Moody's-adjusted EBITDA margin in 2020 had reached 27.3%, a level last achieved in 2015 before the margin dilutive Airgas acquisition. We expect a continued focus on cost containment to support EBITDA generation in addition to increasing volumes, resulting in EBITDA of around €6.1 billion in 2021. EBITDA in 2022 should further benefit from the execution of the company's investment backlog. These EBITDA levels will translate into leverage of around 2.7x in 2021 and around 2.5x in 2022.

Air Liquide's rating remains supported by a financial policy, characterized by a balanced allocation of cash and a commitment to an "A range" rating.

Exhibit 1

Air Liquide's leverage is forecast to approach our upgrade guidance by 2022



Source: 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 intensive and generous dividend policy, which constrain free cash flow (FCF) generation
- » Expectation of a moderate decline in Moody's-adjusted gross leverage

Rating outlook

The positive outlook on Air Liquide's rating reflects our expectation that the company will decrease leverage to around 2.5x and increase retained cash flow (RCF)/net debt to close to 25% in the next 12-18 month. This would represent credit metrics, which we deem to be commensurate with a higher rating. The positive outlook also reflects our expectation that the company will continue to demonstrate a balanced financial policy.

Factors that could lead to an upgrade

- » We could consider upgrading Air Liquide's rating if leverage remains below 2.5x on a sustained basis and RCF/net debt is around 25% through the cycle, while at the same time maintaining a conservative financial policy.

Factors that could lead to a downgrade

- » Although currently not anticipated given the positive outlook on the rating, we could consider downgrading, if leverage increases to above 3.5x or if EBITDA margins erode to the low 20s in percentage term, both on a sustained basis. RCF/net debt remaining below 20% would also lead to negative rating pressure.

Key indicators

Exhibit 2

Air Liquide S.A.

US Millions	Dec-15	Dec-16	Dec-17	Dec-18	Dec-19	Dec-20
Revenue	17,563	20,065	22,992	24,812	24,540	23,381
Net Property Plant and Equipment	17,927	22,400	23,420	23,194	23,653	24,432
EBITDA Margin %	27.1%	26.0%	25.8%	26.1%	26.8%	27.3%
EBIT / Avg. Assets	9.7%	7.7%	7.6%	8.0%	8.4%	7.8%
Debt / EBITDA	2.5x	4.3x	3.5x	3.3x	3.0x	2.9x
RCF / Debt	20.8%	13.4%	17.6%	16.3%	18.9%	19.9%
EBITDA / Interest Expense	11.3x	8.6x	8.9x	9.9x	11.1x	11.5x

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

Source: Moody's Financial Metrics™

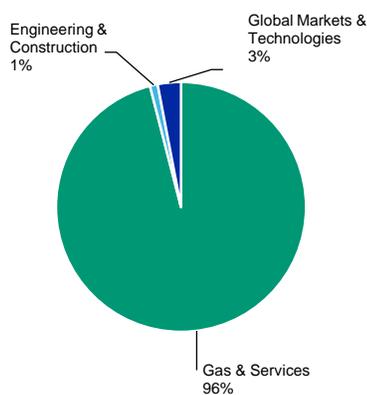
Profile

Headquartered in Paris, France, Air Liquide S.A. (Air Liquide) is a world leader in gas, technologies and services for industries and healthcare, generating €20.5 billion revenue in 2020. The company employs about 64,500 people across 78 countries. After the merger

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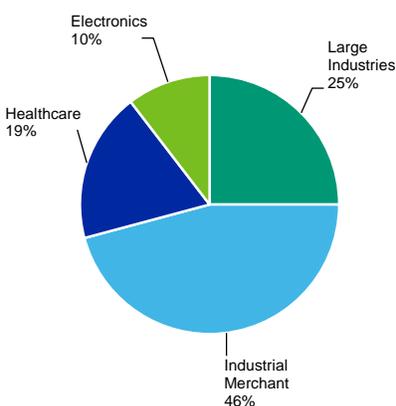
of its two main competitors, [Linde plc](#) (A2 stable) and Praxair, Air Liquide is currently the second-largest company in the industrial gas market.

Exhibit 3
Revenue split by business unit (2020)



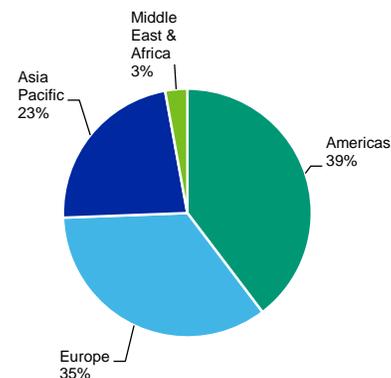
Source: Company's 2020 annual report

Exhibit 4
G&S global revenue split by business lines (2020)



Source: Company's 2020 annual report

Exhibit 5
G&S revenue split by region (2020)



Source: Company's 2020 annual report

The company divides its operations into three business units: Gas and Services (G&S), which is the main unit (96% of 2020 sales), supplying industrial gases and related services; Engineering and Construction (E&C), which designs and constructs industrial gas production units (1% 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 39% of sales, Europe 35%, 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 the end of April 2021 was about €67 billion.

Detailed credit considerations

Scale, diversification and industry characteristics support the resilient business profile

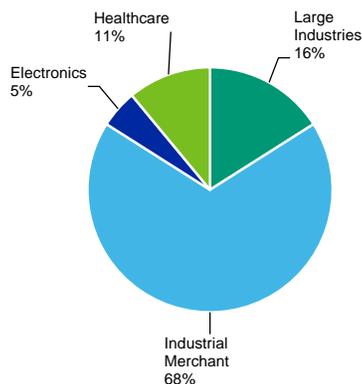
Air Liquide's resilient business profile with a diversified customer base, long-term cost indexed take-or-pay contracts in its large industries segment and its leading position in the industrial gas segment of the chemical industry are key factors supporting its rating. We expect the defensive characteristics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

Air Liquide's presence in the large industries segment, which contributed around 25% to the 2020 G&S 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

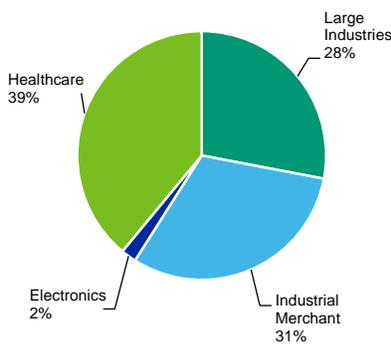
usually only takes place within a 250-km radius around the production site. The industrial merchant business will be the most affected by the ongoing pandemic. However, around 25% of revenue of the industrial merchant business is generated from rental income and another 25% from sales to industries that 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 (2020)



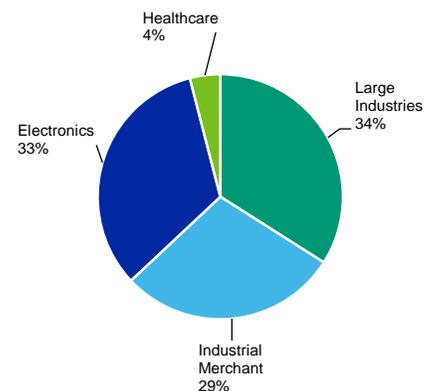
Source: Company's 2020 annual report

Exhibit 7
G&S revenue split by business line in Europe (2020)



Source: Company's 2020 annual report

Exhibit 8
G&S revenue split by business line in Asia Pacific (2020)



Source: Company's 2020 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 grown strongly over the last couple of years; in 2019, it generated revenue of €2 billion, compared with €830 million in 2003.

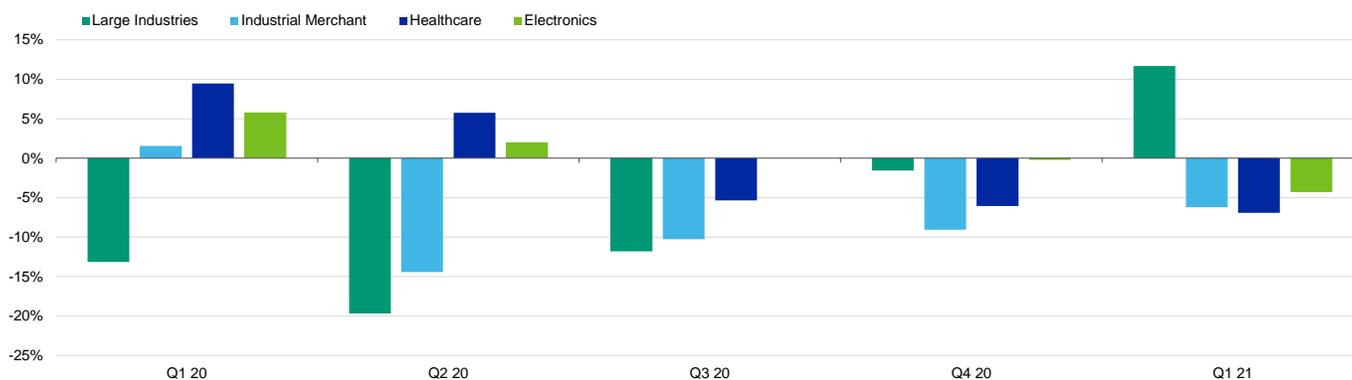
While contributing only a combined 4% of the company's total revenue, the E&C and GM&T business units are strategically important for Air Liquide. E&C provides crucial engineering support to internal gas projects. Building gas units for third-party customers can also lead to supply contracts for large 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.

Robust performance during 2020 despite pandemic, recovery in H2 20 accelerated in Q1 21

Air Liquide's performance was robust in 2020. The subdivisions of Air Liquide's G&S business have been affected in varying degrees. Comparable revenue in large industries only declined 0.1%, while the revenue of the industrial merchant business declined more than 6% on a comparable basis. The electronics business continued to post solid growth rates of around 4% despite the pandemic and comparable revenue in the company's healthcare business increased 8.5%.

Exhibit 9

Air Liquide's sales have swiftly recovered from pandemic trough levels in Q2-20. Comparable sales growth of Gas & Services business segments on a quarter-on-quarter basis



Source: Company information

Group revenues started to recover since the third quarter of 2020, with the positive trend accelerating in Q1 2021. During Q1 2021, the company reported sales in all regions except for the Americas above the level of Q2 2020. Air Liquide's business in the Americas was hurt by the winter storms during the quarter. An improving macroeconomic environment in 2021 will support recovery in the more economically sensitive industrial merchant and packaged gas businesses, especially in end markets such as chemicals, refining and metals.

A continued focus on cost discipline has supported a relatively stable Moody's-adjusted EBITDA generation which fell to around €5.6 billion in 2020 from around €5.87 billion in the previous year. This development of EBITDA represents an increase in Moody's-adjusted EBITDA margin to 27.3% from 26.8% in the previous year.

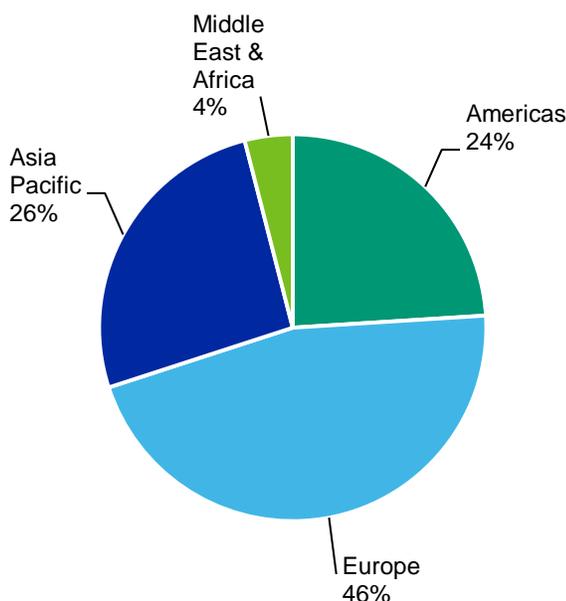
This margin development is, to some degree, a reflection of cost containment initiated in response to the pandemic, but more important, also a reflection of an ongoing focus on cost efficiency. The company estimates that around three-fourths of the 2020 margin improvement is attributable to cost savings initiative initiated prior to the pandemic.

Airgas acquisition contributed to broader geographic diversification, with Air Liquide maintaining focus on cost management

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 are clear market leaders in the industrial gas market, with revenue of \$23.3 billion and \$27.2 billion in 2020, 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 10

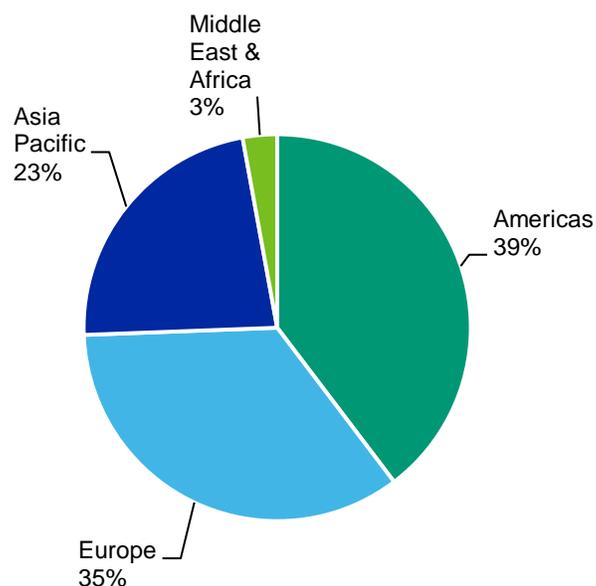
G&S revenue split by region (2015)



Source: Company's 2015 annual report

Exhibit 11

G&S group revenue split by region (2020)



Source: Company's 2020 annual report

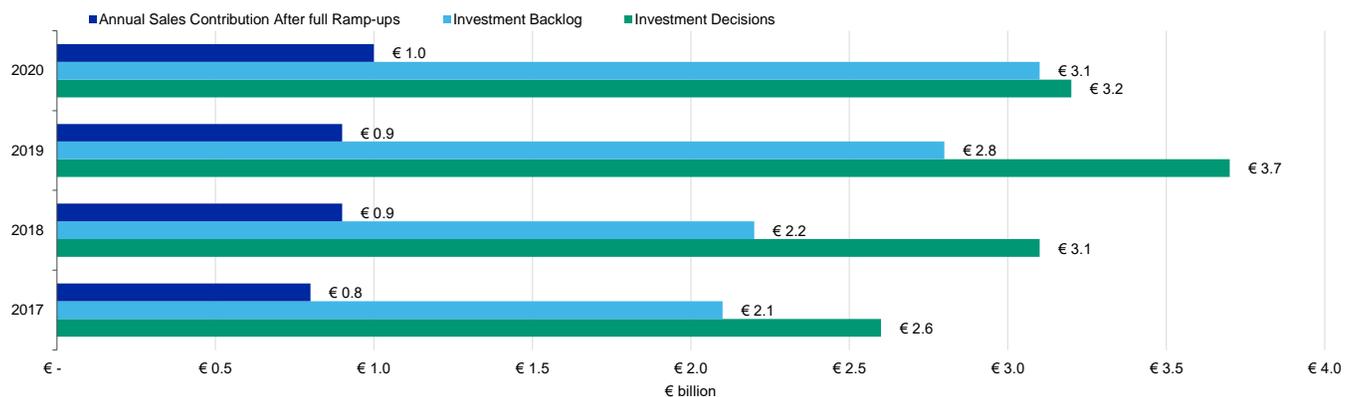
At the beginning of 2019, Air Liquide achieved \$300 million in synergies from the Airgas acquisition, a year earlier than initially planned. In 2020, Air Liquide's Moody's-adjusted EBITDA margin was 27.3% compared with 27.1% in 2015 before the Airgas acquisition. Despite the margin-dilutive effect of the acquisition (Airgas' EBITDA margin was around 21% before the acquisition), Air Liquide has managed to maintain its adjusted EBITDA margin in excess of 25%, which supports the current rating positioning. However, Air Liquide's profitability level remains weaker than Linde's, which has a comparable business profile. Hence, we would expect Air Liquide to remain focused on gradually improving its profitability. 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 and delivered these cost savings. In Q1 2021, the company announced that it had achieved €95 million of efficiencies of its €400 million target for 2021, which evidences a continued focus on cost containment.

Execution of high investment backlog will burden FCF in 2021 & 2022, leverage is forecast to approach 2.5x in 2022

In 2020, Air Liquide committed to around €3.2 billion of investments (€3.7 billion in 2019), which typically are spread over two to three years. As a result of some delays in project execution because of the pandemic, the company's investment backlog has increased to €3.1 billion from €2.8 billion despite a lower order intake during 2020.

Exhibit 12

Continued high level of investments provides good visibility into revenue growth



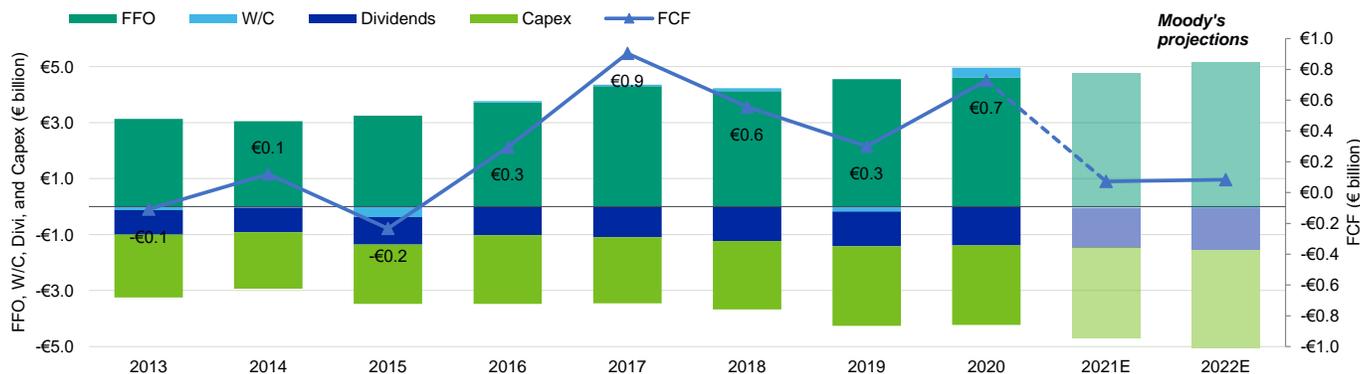
Source: Company's 2017, 2018, 2019 and 2020 full-year result presentations

Given the company's fairly high investment backlog we expect that capital expenditure including maintenance capital spending in 2021 will be around €3.1 billion and remain high in 2022. Hence, we forecast FCF generation to be in the moderately negative to moderately positive in 2021. However, in the context of a relatively high cash balance as of the end of 2020 of around €1.8 billion, we believe that this high level of capital spending can be accommodated from internal sources without increasing gross debt.

Air Liquide expects that its current investment backlog after its full ramp up will contribute around €1 billion of revenue and €250 million already during 2021. 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. Notably the composition of Air Liquide's investment backlog has shifted towards projects related to energy transition and the electronics industry.

Exhibit 13

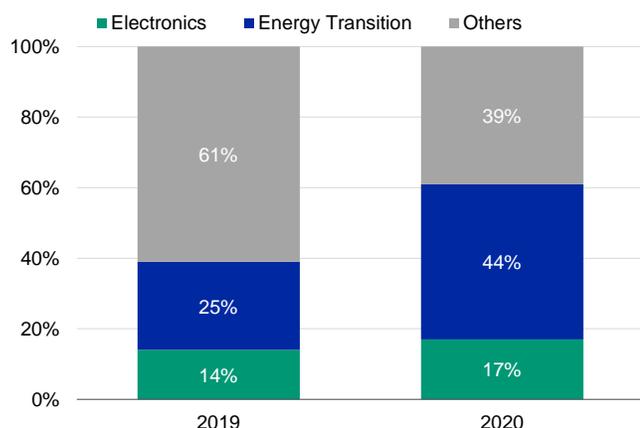
Air Liquide's Moody's-adjusted FCF is expected to remain around break even levels in the next two years



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

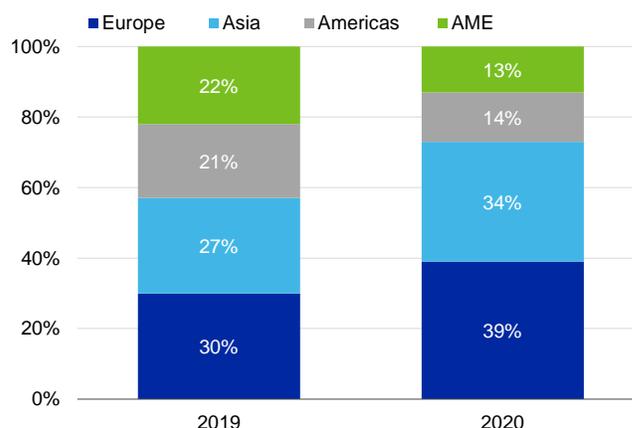
In addition to contributions from the investment backlog, Air Liquide's EBITDA generation in 2021 will be supported by an improving macro environment as well as a continued focus on cost savings. Hence, we forecast that Air Liquide's leverage will decrease toward 2.7x in 2021 followed by further deleveraging to 2.5x in 2022. If this deleveraging trajectory materializes, this would be in line with our expectation for an A2 rating.

Exhibit 14

Increasing share of investment backlog related to energy transition

Source: Company information

Exhibit 15

Investment backlog shifts toward Europe and Asia

Source: Company information

ESG considerations

Air Liquide is exposed to Environmental risks typical for a company in the specialty chemical industry, typically industrial gas firms have lower direct environmental risks related to manufacturing process. Some of Air Liquide end-markets such as mining, chemicals, steel fabrication and refining face higher environmental risks.

The company has communicated CO₂ reduction targets. In a first step the company plans to reduce CO₂ emissions (measured in kg CO₂/€ EBITDA) compared to 2015 by 30% by 2025. The company also aims to decrease scope 1 & scope 2 CO₂eq emissions by 33% from 2020 levels by 2035 and targets to be carbon neutral by 2050.

The company is also aiming at tripling its hydrogen sales to around €6 billion before 2035 from currently around €2 billion. The company estimates capex related to this initiative to be around €8 billion in the same time frame.

Liquidity analysis

Air Liquide's liquidity profile is strong. As of 31 December 2020, the company had around €1.8 billion of cash and cash equivalents on its balance sheet. Furthermore, the company has access to an undrawn €2.5 billion syndicated revolving credit facility and €1.1 billion of other credit lines. In combination with expected adjusted funds from operations (FFO) generation of around €4.7 billion in 2021, these sources should be more than sufficient to cover capital expenses estimated to be around €3.1 billion and cash outflow related to the acquisition of air separation units from [Sasol Limited](#) (Ba2 negative), debt maturities, dividend payments and working capital swings.

Rating methodology and scorecard

Air Liquide's scorecard-indicated outcome is A3 in line with the current rating the forward view scorecard indicated outcome is A2 one notch above the actual rating assigned. The rating assigned places a higher emphasis on the company's credit metrics, also compared with direct peers, while the expectation of improving credit metrics is reflected in our positive outlook on the rating.

Exhibit 16

Scorecard factors for Air Liquide S.A.

Air Liquide S.A. Chemical Industry Scorecard [1][2]			Current FY 12/31/2020		Moody's 12-18 Month Forward View As of 4/12/2021 [3]	
Factor	Measure	Score	Measure	Score	Measure	Score
Factor 1 : Scale (15%)						
a) Revenue (USD Billion)	\$23.4	A	\$25 - \$26	A		
b) PP&E (net) (USD Billion)	\$24.4	Aa	\$25	Aa		
Factor 2 : Business Profile (25%)						
a) Business Profile	Aa	Aa	Aa	Aa		
Factor 3 : Profitability (10%)						
a) EBITDA Margin	27.3%	A	28% - 30%	A		
b) ROA (Return on Average Assets)	7.8%	Ba	8.7% - 9.4%	Ba		
Factor 4 : Leverage & Coverage (30%)						
a) Debt / EBITDA	2.9x	Baa	2.5x - 2.6x	Baa		
b) RCF / Debt	19.9%	Ba	21% - 23%	Baa		
c) EBITDA / Interest Expense	11.5x	Baa	13x - 14x	Baa		
Factor 5 : Financial Policy (20%)						
a) Financial Policy	A	A	A	A		
Rating:						
a) Scorecard-Indicated Outcome		A3		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 12/31/2020.

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.

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

Ratings

Exhibit 17

Category	Moody's Rating
AIR LIQUIDE S.A.	
Outlook	Positive
Issuer Rating -Dom Curr	A3
Senior Unsecured -Dom Curr	A3
Commercial Paper -Dom Curr	P-2
ST Issuer Rating -Dom Curr	P-2
AIR LIQUIDE FINANCE	
Outlook	Positive
Bkd Senior Unsecured	A3
Bkd Commercial Paper -Dom Curr	P-2
AIR LIQUIDE U.S. LLC	
Outlook	Positive
Bkd Commercial Paper	P-2

Source: Moody's Investors Service

Appendix

Exhibit 18

Peer comparison

Air Liquide S.A.

(in USD million)	Air Liquide S.A. A3 Stable			Linde plc A2 Stable			Air Products and Chemicals, Inc. A2 Stable		
	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	LTM
	Dec-18	Dec-19	Dec-20	Dec-18	Dec-19	Dec-20	Sep-19	Sep-20	Dec-20
Revenue	24,812	24,540	23,381	14,836	28,228	27,243	8,919	8,856	8,977
EBITDA	6,472	6,571	6,389	5,030	8,504	8,898	3,609	3,691	3,715
Total Debt	20,551	19,704	19,835	18,652	17,576	20,048	4,317	9,256	9,038
Cash & Cash Equivalents	1,872	1,095	2,087	4,466	2,700	3,754	2,249	5,253	5,788
EBITDA margin %	26.1%	26.8%	27.3%	33.9%	30.1%	32.7%	40.5%	41.7%	41.4%
ROA - EBIT / Average Assets	8.0%	8.4%	7.8%	5.3%	6.0%	6.7%	12.7%	11.0%	10.6%
EBITDA / Interest Expense	9.9x	11.1x	11.5x	11.8x	30.3x	30.1x	21.6x	24.4x	22.2x
Debt / EBITDA	3.3x	3.0x	2.9x	3.7x	2.1x	2.3x	1.2x	2.5x	2.4x
RCF / Debt	16.3%	18.9%	19.9%	13.7%	26.5%	28.3%	48.1%	24.4%	25.1%

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 19

Moody's-adjusted debt breakdown

Air Liquide S.A.

(in EUR Millions)	FYE Dec-15	FYE Dec-16	FYE Dec-17	FYE Dec-18	FYE Dec-19	FYE Dec-20
As Reported Debt	8,203.4	16,891.1	15,027.0	14,260.5	14,730.4	13,588.3
Pensions	1,697.0	1,723.8	1,695.3	1,566.4	1,690.1	1,560.1
Operating Leases	859.6	1,173.4	1,044.0	1,097.6	0.0	0.0
Securitizations	146.1	335.6	458.7	1,053.1	1,133.3	1,062.3
Moody's-Adjusted Debt	10,906.1	20,123.9	18,225.0	17,977.6	17,553.8	16,210.7

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

Source: Moody's Financial Metrics™

Exhibit 20

Moody's-adjusted EBITDA breakdown

Air Liquide S.A.

(in EUR Millions)	FYE Dec-15	FYE Dec-16	FYE Dec-17	FYE Dec-18	FYE Dec-19	FYE Dec-20
As Reported EBITDA	4,100.3	4,672.3	4,766.4	5,047.3	5,703.5	6,083.5
Pensions	-11.4	-33.1	-6.7	-0.9	-2.2	-481.2
Operating Leases	189.0	292.0	271.0	290.0	0.0	-4.8
Securitizations	0.7	2.1	3.2	12.8	10.7	0.0
Unusual	27.9	-203.8	231.0	135.5	173.3	0.0
Non-Standard Adjustments	-14.3	-6.6	-5.2	-4.1	-0.7	0.0
Moody's-Adjusted EBITDA	4,292.2	4,722.9	5,259.7	5,480.6	5,884.6	5,597.5

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

Source: Moody's Financial Metrics™

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