

Air Liquide		Recommendation	Fair Value	Closing Price	Market Cap.
AI	CAC 40, France	HOLD	\$162.82	\$155.33	\$81.00bn
		June 25, 2022	June 25, 2022	June 1, 2022	June 1, 2022

1. Summary

Air Liquide's is a stable company with a robust growth and profitability outlook due to an inherently diversified industry (industrial gases). Its latest closing price of **\$155.33** is close to its intrinsic value of **\$163.67** (closing price is **5.1%** lower) and its value relative to that of its peers of **\$162** (**4.1%** lower). Current market trends indicate a mitigated sentiment towards the stock, whose value has been declining since the beginning of June by approximately **10%**. The financial soundness of the company is nonetheless recognised by investors since its share price has increased by **134%** in the last 10 years. Notwithstanding these long-term performances, we recommend a **HOLD** for AI, the short-term prospects of a **LONG** not presenting any potential added value given the accurate market pricing of the share.

2. Business overview

Air Liquide – trading under AI on Euronext – is a French company founded in 1902 that produces industrial gases (including oxygen, nitrogen, and carbon dioxide) as well as medical equipment (including breathing assistance, monitoring equipment and medical gas facilities). Air Liquide operates in France (**13%** of revenue), Europe (**26%** excl. France), the U.S. (**31%**), Asia (**21%**), Canada (**6%**) and Africa (**3%**), through its local subsidiaries and companies it acquired such as AirGas, Pharma Dom or Hydrogenics.

With a revenue of **€23.3bn** (**\$27.6bn**) in 2021, Air Liquide ranks second in the industrial gases market behind Linde (revenue of **\$30.8bn**). Air Liquide has been since its creation a major player in industrial gases and was the first company in the industry in terms of revenue before Linde merged with Praxair in 2019. It has been quoted on the French index CAC40 (now part of Euronext) since the index's inception and is a major industrial player which employs **66.4K** employees.

3. Investment thesis

3.1. Fundamentals

Air Liquide's fundamentals are strong. Revenue growth is steady and sustained, and EBITDA and net income margin allow for both investment and a generous dividend policy. Leverage is sustainable and below peers' average leverage. However, Air Liquide fares below its main competitors in several metrics (see Appendix A for a detailed comparison).

Revenue growth is strong with a **18.1%** YoY growth rate and **4%** 3-y CAGR¹, well above the GDP growth of France (**7%** YoY and **0.85%** 3-y CAGR) and the world (**6%** and **2.32%**). These figures are in line with Air Liquide's main competitors: its revenue growth is above Linde's (**13%**[**+5.1%**]² YoY and **2.9%**[**+1.1%**] 3-y CAGR) and Nippon Sanso's (**10.4%**[**+7.7%**] and **2.9%**[**+1.1%**]) and on par with Air Product's (**16.6%**[**+1.5%**] and **5%**[**-1%**]).

¹ 3-y CAGR is the compounded annual growth rate between 2019 and 2021.

² Comparisons with Air Liquide in brackets [].

Air Liquide's gross income grew by **11.2%** YoY and experienced a **2.7%** 3-y CAGR; regarding Air Liquide's EBITDA, those figures are respectively **10.8%** and **4.1%**. This is less than Linde both in terms of gross income growth (**19.1%**[-**7.9%**] YoY growth rate and **7.6%**[-**4.9%**] 3-y CAGR) and EBITDA growth (**16.5%**[-**5.7%**] and **7.7%**[-**3.6%**]). However, Air Liquide fares slightly above Air Product and Nippon considering those metrics in terms of margin. Between 2019 and 2021, Air Liquide's gross income and EBITDA margins were respectively **32.8%** and **27.7%**, which is greater than its peers' for which those metrics' averages are respectively **27.8%**[**+4%**] and **23.7%** [**+4%**].

Air Liquide's net income growth, though slightly greater than Air Product's and in line with Nippon's, is significantly lower than Linde's (**53%**[-**43.5%**] YoY and **20.5%**[-**13.9%**] 3-y CAGR). Air Liquide net income margin stands at an average of **11%** between 2019 and 2021: this is similar to Linde and significantly higher than Nippon and TechnipMC, but much lower than Air Products (**20.3%**[-**9.3%**]).

Air Liquide's leverage is lower than that of its peers, with a D/E ratio of **0.65** (vs. **0.82** for its peers), a D/A ratio of **0.28** (vs. **0.31**) and debt/capital ratio of **0.39** (vs. **0.42**).

3.2. Technical analysis

Air Liquide's has significantly appreciated on the long term, but short-term market sentiment is rather negative considering the stock's prospects.

Air Liquide has benefited from a steady appreciation of its stock price, which increased by **134%** between October 2012 and June 2022, well above France's average real growth rate of **1.7%** over the same time period. It is also a stable company in terms of dividends and is one of the French dividend aristocrats, with an average dividend of **€2.8 (\$3)** and an average yield of **2.26%** between 2000 and 2022 (see [Appendix B](#)).

Air Liquide's sizeable and steady capital appreciation along with its stable dividend policy makes it therefore a great core stock in long-term growth portfolios, hence its popularity among retail investors, especially in France.

When examining current trends, we however notice that the 20-day moving average moved below the 90-day moving average on June 22, 2022. Such a move often indicates a negative market sentiment, albeit the stock price started to increase as of June 20, 2022, after a 14-day decrease (see [Appendix C](#)).

3.3. Growth opportunities

Air Liquide's growth opportunities are robust on the long term due to the diversified nature of its industry.

Air Liquide has strong growth opportunities due to the manifold applications industrial gases have. They are for example useful in various industries such as chemicals, welding, water treatment, pharmaceuticals, healthcare, or oxygen engines. Air Liquide is in a great position since it has a **29.4%** market share, just behind Linde's **32.9%**.

Consequently, the industrial gases market is expected to grow from **\$93.7bn** in 2021 to **\$129.1bn** in 2028, which represents a substantial **38%** increase. Should Air Liquide maintain its current market share of **29.4%** as of June 2021, it could generate **\$38bn** in 2028, compared to **\$27.6bn** in 2021 (see [Appendix D](#)).

4. Valuation

Metric	Value	Source
Revenue growth rate	3.72%	2017-2021 CAGR
COGS & Op. exp. growth rate	3.40%	2017-2021 CAGR
D&A as a % of PPE	9.91%	2017-2021 average
PP&E as a % of sales	95.97%	2017-2021 average
CA as % of sales	31.93%	2017-2021 average
CL as % of sales	35.13%	2017-2021 average
Effective tax rate	24.24%	2018-2021 average
FCFF terminal growth rate	3%	OECD world LT growth forecast
WACC	6.90%	2021 Bloomberg estimate
Cash	2,387	2021 Balance Sheet
Debt	28,219	2021 Balance Sheet

Forecasting Air Liquide's free cash flows (see [appendix H](#)) using the assumptions displayed on the upper left-hand side of this page, we obtain an intrinsic value of **\$163.67** per share. Compared to Air Liquide's trading price on June 1, 2022, of **\$155.33**, our valuation indicates that Air Liquide would trade at a **5.1%** discount (see [Appendix G](#)). Running a sensitivity analysis, the best scenario yields us share price intervals of **[543.8, 97.2]** using WACC and terminal growth rate and **[365.3, 0]** using revenue and costs growth rates (see [Appendix I](#)).

Comparing Air Liquide to its peers using the P/E, EV/EBIT, EV/EBITDA, EV/Revenue and P/B multiples and averaging Air Liquide's relative equity valuations obtained through these multiples (see [appendix E](#)), we obtain a relative value of **\$162** per share, which would indicate that Air Liquide trades at a **4.1%** discount (see [appendix G](#)).

Averaging our intrinsic and relative values per share, we obtain a fair value of **\$162.82**.

5. Investment risks

Risk of industrial hazard: Air Liquide operates with dangerous products and chemicals and performs complex transformations. This could result in major industrial accidents that would substantially affect the company's brand and generate significant litigation costs. Air Liquide currently has several hazardous sites in the EU classified as "Seveso" (meaning sites with a potential of industrial disaster) and dangerous sites around the world as well.

Negative PR exposure to medical emergency: the company provides key medical equipment, especially machines that pertain to breathing assistance (monitors, oxygen). This situation potentially exposes the company to negative PR if this equipment proves to be inadequate or faulty in case of an emergency. Such a situation occurred during the Covid-19 pandemic in France, where the bulk of respirators ordered by the French state to Air Liquide to supply ICUs were found to be unfit for the task. This scandal – albeit short-lived – adversely affected the stock price.

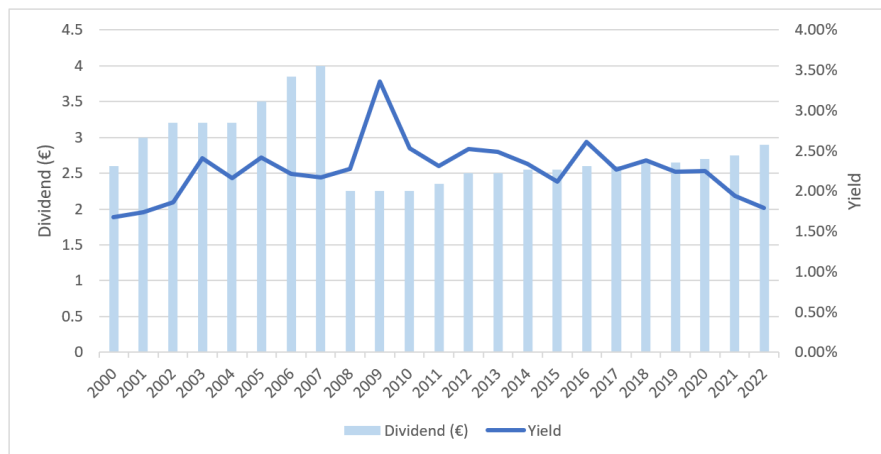
6. Appendices

A. Comparative performance table of Air Liquide against its main peers

	Air Liquide (FR)			Linde plc (GER/US)			Air Products and Chemicals, Inc (US)			Nippon Sanjo Holdings Corporation (JPN)			TechnipFMC Plc (FR/US)		
Market cap. (US\$bn) (1st June 22)	81.00			160.85			54.00			8.26			3.84		
Shares outstanding	0.52			0.51			0.22			0.43			0.45		
Share price	155.33			316.22			243.92			19.09			8.52		
	2021	2020	2019	2021	2020	2019	2021	2020	2019	2021	2020	2019	2021	2020	2019
Net Sales (US\$bn)	27.58	23.35	24.53	30.79	27.24	28.23	10.32	8.86	8.92	8.52	7.72	7.82	6.43	6.61	13.44
1-year growth	18.1%			13.0%			16.6%			10.4%			-2.6%		
3-year CAGR	4.0%			2.9%			5.0%			2.9%			-21.8%		
Gross Income (US\$bn)	8.76	7.88	8.08	8.62	7.23	6.91	3.14	3.00	2.94	3.19	2.99	3.01	0.85	0.71	2.48
Margin	31.8%	33.7%	32.9%	28.0%	26.6%	24.5%	30.4%	33.8%	33.0%	37.5%	38.8%	38.5%	13.2%	10.7%	18.5%
1-year growth	11.2%			19.1%			4.6%			6.6%			19.3%		
3-year CAGR	2.7%			7.6%			2.1%			1.9%			-30.1%		
EBITDA (US\$bn)	7.49	6.76	6.64	9.92	8.52	7.94	3.53	3.32	3.20	1.71	1.61	1.56	0.51	0.32	1.60
Margin	27.1%	28.9%	27.1%	32.2%	31.3%	28.1%	34.2%	37.5%	35.9%	20.0%	20.8%	19.9%	7.9%	4.9%	11.9%
1-year growth	10.8%			16.5%			6.4%			6.1%			57.7%		
3-year CAGR	4.1%			7.7%			3.3%			3.1%			-31.8%		
Net Income (US\$bn)	3.04	2.78	2.51	3.82	2.50	2.18	2.03	1.90	1.76	0.57	0.52	0.49	0.09	-3.55	-2.42
Margin	11.0%	11.9%	10.2%	12.4%	9.2%	7.7%	19.7%	21.5%	19.7%	6.7%	6.7%	6.3%	1.4%	-53.8%	-18.0%
1-year growth	9.5%			53.0%			6.7%			9.6%			-102.5%		
3-year CAGR	6.6%			20.5%			4.9%			5.2%			-133.1%		
Enterprise Value (US\$bn)	96.63	92.88	82.99	194.59	155.70	130.86	59.95	68.53	50.41	15.46	16.28	15.03	3.89	7.37	10.05
EV / Revenue (x)	3.5	4.0	3.4	6.3	5.7	4.6	5.8	7.7	5.7	1.8	2.1	1.9	0.6	1.1	0.7
EV / EBITDA (x)	12.9	13.7	12.5	19.6	18.3	16.5	17.0	20.6	15.7	9.1	10.1	9.7	7.7	22.9	6.3
EPS (\$US)	5.9	5.4	4.8	7.3	4.7	4.2	9.1	8.6	7.9	1.3	1.2	1.1	0.0	-7.3	-5.4

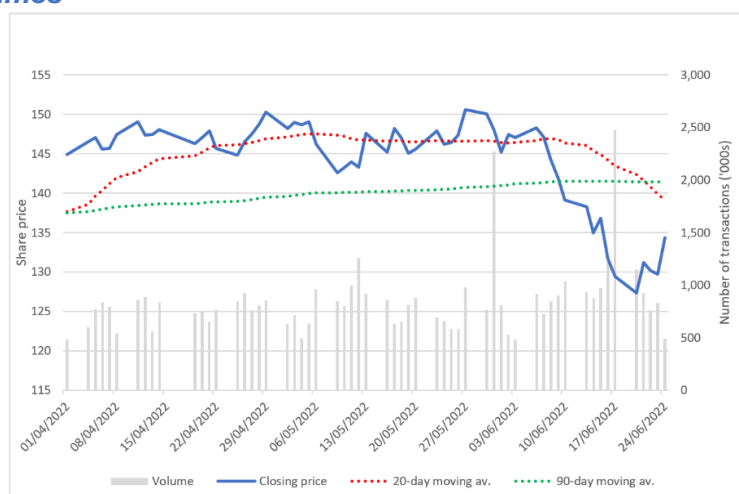
Data source: FactSet

B. Air Liquide's stock price (left) and dividend history and yield (right)



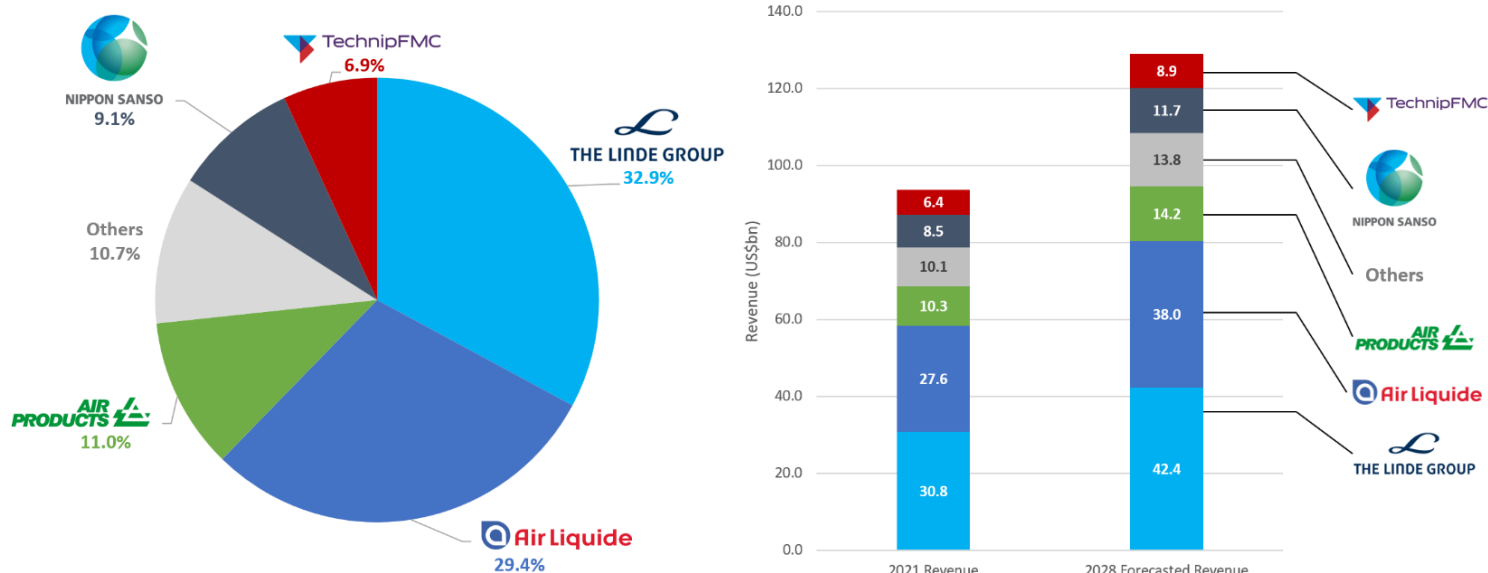
Data source: Boursorama (left) and investing.com (right).

C. Air Liquide's stock price, 20-day and 90-day stock price moving averages, and transaction volumes



Data source: Boursorama

D. Air Liquide's and peers' market shares (left) and current and forecasted revenue assuming constant market shares between 2021 and 2028 (right)



Data source: Statista for market estimation and forecast, FactSet for 2021 revenue

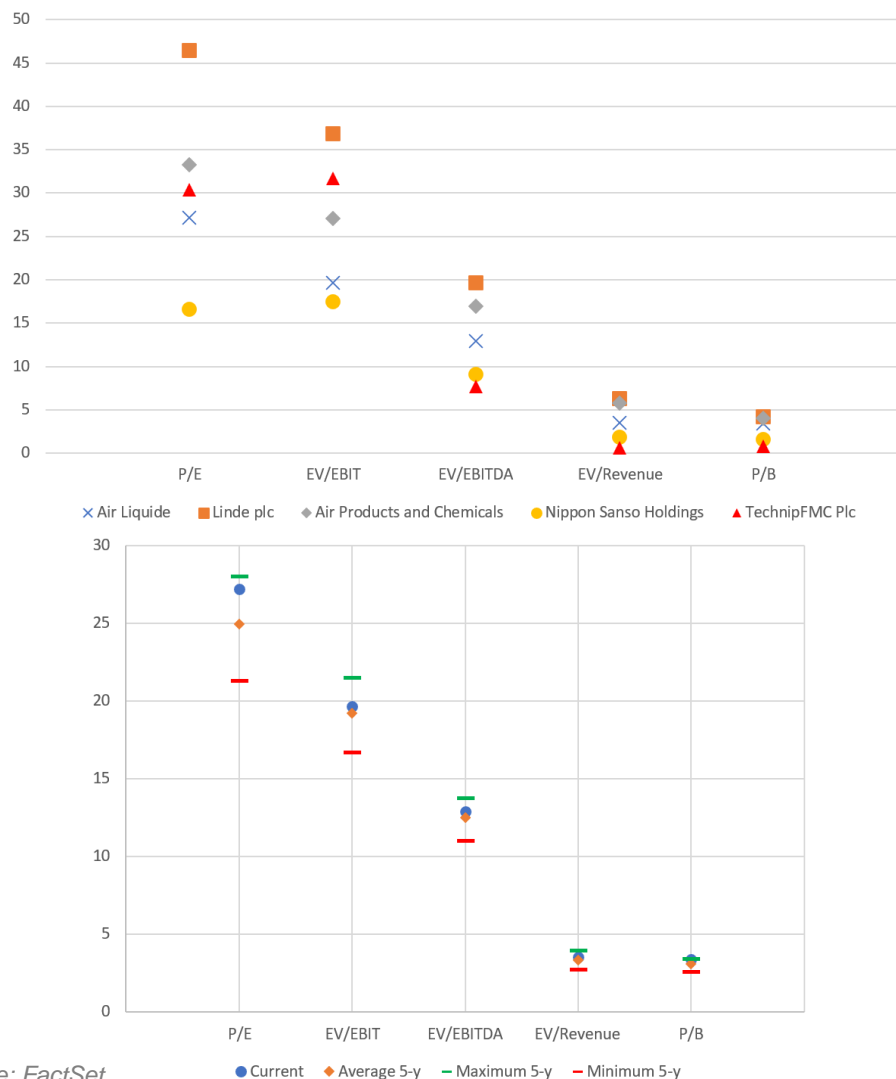
E. Air Liquide's and peers' main multiples (top) and Air Liquide's relative equity valuations computed using peers' averages of each multiple (bottom)

Multiple	Air Liquide	Linde plc	Air Products	Nippon Sanso	TechnipFMC	Peers av.
P/E	27.2	46.5	33.2	16.6	30.4	31.7
EV/EBIT	19.6	36.8	27.1	17.5	31.7	28.3
EV/EBIDTA	12.9	19.6	17.0	9.1	7.7	13.3
EV/Revenue	3.5	6.3	5.8	1.8	0.6	3.6
P/B	3.4	4.2	4.0	1.6	0.8	2.6

	US\$m		US\$m		US\$m		US\$m
	Air Liquide	Peers av.	Product	Debt	Cash		Equity value
Earnings	3,040	31.7	96,281	-	-		96,281
EBIT	4,917	28.3	139,005	(28,219)	2,387		113,173
EBITDA	7,485	13.3	99,734	(28,219)	2,387		73,902
Revenue	27,581	3.6	100,310	(28,219)	2,387		74,478
Book	24,398	2.6	64,522	-	-		64,522

Data source: FactSet

F. Air Liquide's and peers' main multiples (top) and Air Liquide's historical multiples (bottom)



Data source: FactSet

G. Air Liquide's intrinsic valuation (left) and relative valuation (right)

Metric	Value	Source	Metric	Value
TV	133,891	2032 FCF * (1 + g) / (WACC - g)	Equity value average	84,471.0 US\$mn
Discounted TV	68,703	TV discounted to 2021	Number of shares outstanding	521.5 000s
Sum of FCFF	42,476	2022-2032 FCFF	Relative valuation share price	162.0 US\$
Enterprise Value	111,179	DTV + Sum of FCFF	Actual share price	155.3 US\$
Enterprise Value	111,179	DTV + Sum of FCFF	Premium (discount)	(4.11) %
Debt	(28,219)	2021 Balance Sheet		
Cash	2,387	2021 Balance Sheet		
Equity	85,347	EV - Debt + Cash		
No. shares O/S	521.47	FactSet		
Intrinsic share value	163.67	Equity / No. shares OS		
Actual share price	155.33	FactSet		
Premium (discount)	(5.09) %			

Data source: own calculations

H. Air Liquide's current (2017-2021) and forecasted (2022-2032) free cash flows to the firm

US\$m (ex. %)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Revenue	22,989	24,817	24,539	23,389	27,600	28,627	29,693	30,799	31,945	33,135	34,369	35,648	36,976	38,352	39,780	41,261
YoY growth	14.5%	7.9%	-1.1%	-4.7%	18.0%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%	3.7%
COGS & Op.expenses	(19,189)	(20,757)	(20,278)	(19,062)	(22,679)	(23,450)	(24,247)	(25,071)	(25,923)	(26,804)	(27,715)	(28,657)	(29,631)	(30,638)	(31,679)	(32,756)
YoY growth	14.7%	8.2%	-2.3%	-6.0%	19.0%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
Operating income	3,800	4,059	4,262	4,327	4,921	5,178	5,446	5,728	6,023	6,331	6,654	6,992	7,345	7,715	8,101	8,506
YoY growth	13.5%	6.8%	5.0%	1.5%	13.7%	5.2%	5.2%	5.2%	5.1%	5.1%	5.1%	5.1%	5.1%	5.0%	5.0%	5.0%
EBIT margin	16.5%	16.4%	17.4%	18.5%	17.8%	18.1%	18.3%	18.6%	18.9%	19.1%	19.4%	19.6%	19.9%	20.1%	20.4%	20.6%
D&A	2,009	2,086	2,393	2,448	2,578	2,724	2,825	2,930	3,039	3,152	3,270	3,392	3,518	3,649	3,785	3,926
% of average PP&E	9.2%	9.4%	10.5%	10.2%	10.3%	9.9%	9.9%	9.9%	9.9%	9.9%	9.9%	9.9%	9.9%	9.9%	9.9%	9.9%
EBIDTA	5,809	6,145	6,655	6,775	7,499	7,901	8,271	8,658	9,062	9,484	9,924	10,383	10,863	11,363	11,886	12,432
Current assets	8,405	7,745	6,701	7,783	8,643	9,142	9,482	9,835	10,201	10,581	10,975	11,384	11,807	12,247	12,703	13,176
% of sales	36.6%	31.2%	27.3%	33.3%	31.3%	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%	31.9%
Current liabilities	(8,589)	(8,507)	(7,643)	(8,894)	(9,615)	(10,057)	(10,431)	(10,820)	(11,223)	(11,641)	(12,074)	(12,523)	(12,990)	(13,473)	(13,975)	(14,495)
% of sales	37.4%	34.3%	31.1%	38.0%	34.8%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%
Net Working Capital	(185)	(762)	(942)	(1,111)	(972)	(915)	(949)	(985)	(1,021)	(1,059)	(1,099)	(1,140)	(1,182)	(1,226)	(1,272)	(1,319)
EBIT	3,800	4,059	4,262	4,327	4,921	5,178	5,446	5,728	6,023	6,331	6,654	6,992	7,345	7,715	8,101	8,506
Effective tax rate	8.2%	24.9%	25.5%	21.1%	25.4%	24.2%	24.2%	24.2%	24.2%	24.2%	24.2%	24.2%	24.2%	24.2%	24.2%	24.2%
Theoretical tax	311	1,011	1,089	914	1,250	1,255	1,320	1,389	1,460	1,535	1,613	1,695	1,781	1,870	1,964	2,062
PPE	22,272	22,043	23,713	24,454	25,654	27,473	28,496	29,557	30,658	31,799	32,983	34,211	35,485	36,806	38,177	39,598
% of sales	96.9%	88.8%	96.6%	104.6%	93.0%	96.0%	96.0%	96.0%	96.0%	96.0%	96.0%	96.0%	96.0%	96.0%	96.0%	96.0%
D&A	2,009	2,086	2,393	2,448	2,578	2,724	2,825	2,930	3,039	3,152	3,270	3,392	3,518	3,649	3,785	3,926
Change in PP&E	1,056	(229)	1,670	740	1,201	1,819	1,023	1,061	1,101	1,141	1,184	1,228	1,274	1,321	1,370	1,421
CAPEX	3,064	1,857	4,063	3,189	3,779	4,542	3,848	3,991	4,140	4,294	4,454	4,620	4,792	4,970	5,155	5,347
Operating income	3,800	4,059	4,262	4,327	4,921	5,178	5,446	5,728	6,023	6,331	6,654	6,992	7,345	7,715	8,101	8,506
D&A	2,009	2,086	2,393	2,448	2,578	2,724	2,825	2,930	3,039	3,152	3,270	3,392	3,518	3,649	3,785	3,926
Change in NWC	857	578	180	169	(139)	(57)	34	35	37	38	39	41	42	44	46	47
Theoretical tax	(311)	(1,011)	(1,089)	(914)	(1,250)	(1,255)	(1,320)	(1,389)	(1,460)	(1,535)	(1,613)	(1,695)	(1,781)	(1,870)	(1,964)	(2,062)
CAPEX	(3,064)	(1,857)	(4,063)	(3,189)	(3,779)	(4,542)	(3,848)	(3,991)	(4,140)	(4,294)	(4,454)	(4,620)	(4,792)	(4,970)	(5,155)	(5,347)
FCFF	3,290	3,855	1,683	2,841	2,331	2,047	3,137	3,314	3,499	3,693	3,896	4,109	4,333	4,567	4,813	5,070

Data source: Bloomberg

I. Sensitivity analysis of Air Liquide's intrinsic value per share

Terminal Growth Rate (row) / WACC							
	3.9%	3.6%	3.3%	3.0%	2.7%	2.4%	2.1%
5.1%	543.8	440.2	371.2	321.9	284.9	256.1	233.1
5.7%	354.3	307.4	272.3	245.0	223.1	205.2	190.3
6.3%	260.4	234.4	213.6	196.6	182.5	170.5	160.2
6.9%	204.7	188.5	175.1	163.7	153.9	145.4	138.0
7.5%	168.1	157.2	147.9	139.9	132.8	126.6	121.1
8.1%	142.3	134.6	127.9	122.0	116.8	112.1	107.8
8.7%	123.3	117.7	112.7	108.2	104.2	100.5	97.2

COGS & Op. Exp. Growth Rate (row) / Revenue Growth Rate							
	2.2%	2.6%	3.0%	3.4%	3.8%	4.2%	4.6%
4.6%	365.3	330.2	293.9	256.2	217.1	176.7	134.8
4.3%	333.8	298.7	262.3	224.6	185.6	145.1	103.3
4.0%	303.0	267.8	231.5	193.8	154.8	114.3	72.4
3.7%	272.8	237.7	201.3	163.7	124.6	84.2	42.3
3.4%	243.4	208.3	171.9	134.2	95.2	54.8	12.9
3.1%	214.6	179.5	143.2	105.5	66.4	26.0	0.0
2.8%	186.5	151.4	115.1	77.4	38.3	0.0	0.0

Data source: own calculations