

CREDIT OPINION

6 February 2020

Update

✓ Rate this Research

RATINGS

Veolia Environnement S.A.

Domicile	Paris, France
Long Term Rating	Baa1
Type	LT Issuer Rating
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.

Contacts

Celine Cherubin +33.1.5330.3366
VP-Senior Analyst
celine.cherubin@moodys.com

Neil Griffiths-Lambeth +44.20.7772.5543
Associate Managing Director
neil.griffiths-lambeth@moodys.com

Brian Caire +33.1.5330.3417
Associate Analyst
brian.caire@moodys.com

CLIENT SERVICES

Americas 1-212-553-1653

Asia Pacific 852-3551-3077

Japan 81-3-5408-4100

EMEA 44-20-7772-5454

Veolia Environnement S.A.

Update to credit analysis

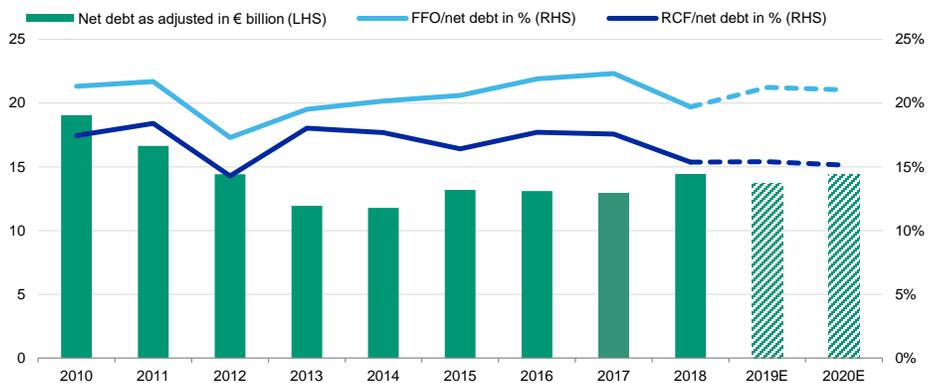
Summary

Veolia Environnement S.A.'s (Veolia) credit quality is underpinned by (1) its size and position as one of the largest groups in global environmental services, which benefit from positive structural dynamics; (2) the diversification of its revenue base by business, contract type and geography; and (3) the relatively low risk profile of its water business, which accounted for 42% of revenue over the 12 months ended 30 June 2019 and is characterised by low volume volatility. These factors are balanced by (1) Veolia's exposure to the macroeconomic cycle through its waste business, which accounted for 37% of revenue in the same period; and (2) the increasing proportion of short-term contracts with industrial clients in its revenue mix.

From a financial risk perspective, we expect the group to maintain a moderate leverage profile, with funds from operations (FFO)/net debt around 20% and retained cash flow (RCF)/net debt in the midteens in percentage terms (see Exhibit 1). This is mostly predicated on the continued success of the group's cost-saving programme. Achieved savings may fall short of the levels seen in 2018 but, since early 2019, the group has benefitted from higher price indexation in the European water business.

Exhibit 1

Financial profile is likely to remain resilient



The 2019 and 2020 estimates represent Moody's forward view, and not the view of the issuer. Sources: Veolia and Moody's Investors Service

Credit strengths

- » Scale and diversification, which support cash flow stability
- » Supportive long-term industry dynamics
- » Low-risk water activities, with a recovery of price indexation in Europe (and notably in France), which was close to inflation during the first half of 2019
- » Improving financial profile, primarily driven by the cost-saving programme

Credit challenges

- » Exposure of the waste business to the cyclical macroeconomic environment in Europe, although the correlation between volumes and industrial production is slowly reducing
- » Increasing share of the industrial sector in the company's client mix, in line with the strategy to increase the proportion of value-added services
- » Growing presence outside Western Europe, although mitigated by a balanced approach to capital deployment

Rating outlook

The stable outlook reflects our expectation that Veolia's financial profile will remain aligned with guidance for the Baa1 rating, which includes FFO/net debt of around 20%, RCF/net debt at least in the midteens in percentage terms and FFO interest cover above 4x. It also factors in our assumption that any potential deterioration in the company's business risk profile because of increased exposure to industrial clients could be offset by a further improvement in its credit metrics.

Factors that could lead to an upgrade

Upward pressure on the ratings could develop over the medium term if Veolia were to achieve RCF/net debt approaching 20% on a sustained basis. In this scenario, we would take into account management's future financial policy and use of the financial flexibility that it could develop in the medium term.

Factors that could lead to a downgrade

Negative pressure on the ratings could arise if the company's metrics were to fall short of our guidance because of weaker-than-expected operating performance or increased investments.

Key indicators

Exhibit 2

Veolia Environnement S.A.

	Dec-15	Dec-16	Dec-17	Dec-18	LTM Jun-19	Moody's 12-18 Month Forward View
(FFO + Interest Expense) / Interest Expense	5.5x	6.0x	6.0x	6.0x	6.0x	6.0x - 7.0x
FFO / Net Debt	20.6%	21.9%	22.3%	19.7%	18.5%	20% - 22%
RCF / Net Debt	16.4%	17.7%	17.6%	15.4%	14.4%	14% - 16%
FCF / Net Debt	0.3%	0.7%	-1.2%	-2.7%	-2.2%	0% - -2%

All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. The 2015, 2016, 2017, 2018 and LTM June 2019 key indicators are adjusted for IFRIC 12. FCF excludes divestments. For definitions of our most common ratio terms, please see the accompanying [User's Guide](#).

Source: Moody's Investors Service

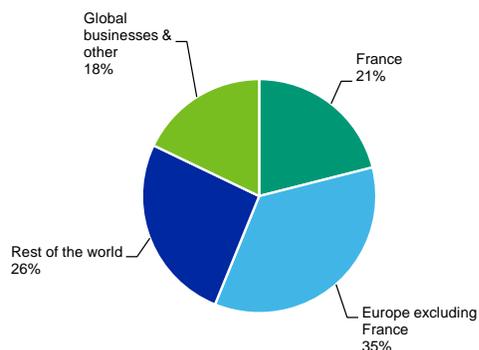
This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Profile

Headquartered in Aubervilliers, France, Veolia Environnement S.A. (Veolia) is one of the world's largest providers of environmental services, with revenue of €26.6 billion in the 12 months ended June 2019. It provides drinking water to 95 million people, wastewater treatment to 63 million people and waste management services to 43 million people. Veolia is listed on the Paris Stock Exchange, with a market capitalisation of around €15.2 billion at the beginning of February 2020.

Exhibit 3

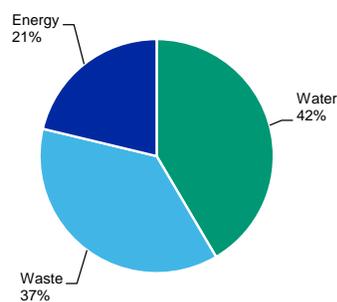
Breakdown of revenue by geography (12 months ended June 2019)



Source: Company reports

Exhibit 4

Breakdown of revenue by activity (12 months ended June 2019)



Source: Company reports

Detailed credit considerations

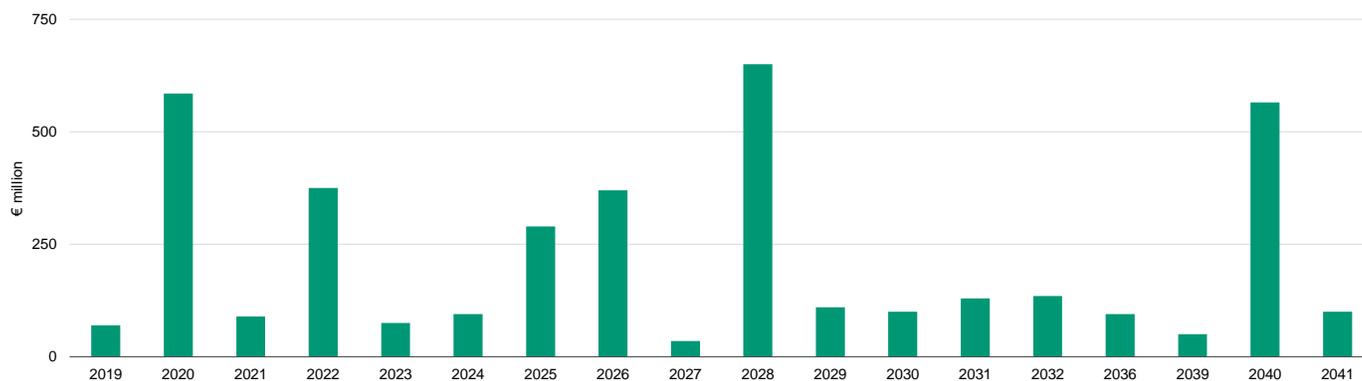
Scale and diversification support cash flow stability

Veolia's credit quality is underpinned by its scale and diversification, which have contributed to leading market positions in many different geographies across its three businesses of water, environmental and energy services. The diversification of the company's revenue base by business, contract type and geography (see Exhibits 3 and 4) helps mitigate the negative effect on earnings from a deterioration in any one activity or region, and supports the relative stability of its cash flow. In addition, the granularity of its portfolio of contracts means that Veolia has limited exposure to the risk of nonrenewal of any single contract, although in 2020 the group will face a significant number of renewals compared with the historical average.

Exhibit 5

Veolia's portfolio of contracts displays limited concentration

Contract expirations of over €50 million in annual revenue



Sources: Company reports and Moody's Investors Service

Increasing share of industrial clients in revenue mix will increase cash flow volatility

Veolia's revenue is derived from a portfolio of thousands of multiyear contracts, which range from long-term concessions with low-risk counterparties in the public sector to shorter-term contracts with industrial and commercial (I&C) customers. Contracts vary by market

and can be either capital intensive, requiring the group to invest in infrastructure in exchange for the right to provide services on a long-term basis, or structured as operating and maintenance or management contracts, requiring little investment.

Public authorities accounted for 53% of Veolia's turnover in 2018 and I&C customers accounted for the remaining 47%, a proportion we expect to continue to grow gradually as the group's commercial pipeline includes a greater share of projects in the I&C sector. Veolia has identified six growth areas of increasing demand from its industrial clients to meet growing efficiency, environmental or regulatory requirements. This shift in client mix may, over time, increase Veolia's business risk profile as it entails greater reliance on shorter-term, asset-light contracts.

Supportive long-term industry dynamics, amid an increasingly competitive environment

Veolia operates in sectors that benefit from positive long-term underlying dynamics globally, although the sectors are not immune to short-term economic pressure. These positive factors include population growth, the trend towards urbanisation and industrialisation, and the implication of energy transition programmes for energy services, as well as our expectation of rising standards of living in emerging economies.

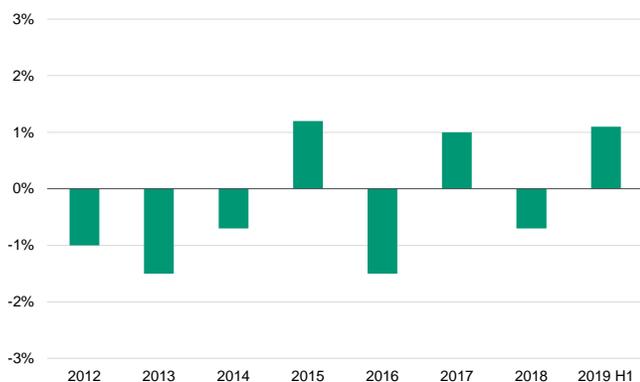
Together with public concern over the impact of climate change on scarce resources and increasingly stricter environmental regulation, these positive dynamics are leading to increased demand for (1) existing technologies for the provision of water, wastewater and waste management services; and (2) new services and technologies that, for example, facilitate water preservation, or the ongoing shift towards waste recovery.

Against this backdrop, competition is intense, especially in the lower part of the value chain. Veolia's closest competitor is [SUEZ](#) (Baa1 stable), while other competitors include new Chinese companies and both global and local specialists (for example, energy companies, equipment manufacturers, companies specialised in energy efficiency or facility management). Veolia's main competitive advantages are its scale and ability to provide a wide range of services and technologies across business lines and geographies.

Low-risk water activities, but exposure of the waste business to cyclical macroeconomic conditions is a challenge

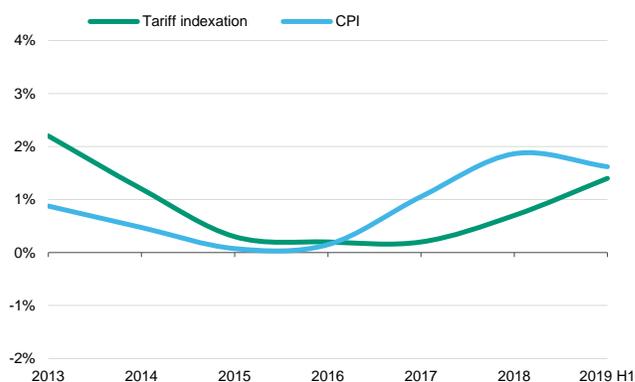
Veolia benefits from the low risk profile of its water business, which provides essential water and wastewater management services to individuals and businesses, often on behalf of local municipalities, under long-term concession agreements. Although demand for water continues to experience a slow structural decline in advanced economies, especially in Europe, because of a more resource-aware population, variations in water consumption are mainly driven by weather (see Exhibit 6). Typical contract renewal rates of around 90% in the municipal sector provide revenue visibility and stability.

Exhibit 6
Water volume in mature economies exhibits low volatility and growth...
(Annual percentage change in Veolia's water volume in France)



Source: Company reports

Exhibit 7
...while tariff indexation has been recovering since the beginning of 2017, to catch up with the inflation level
(Annual percentage change in Veolia's water tariffs in France versus Consumer Price Index)

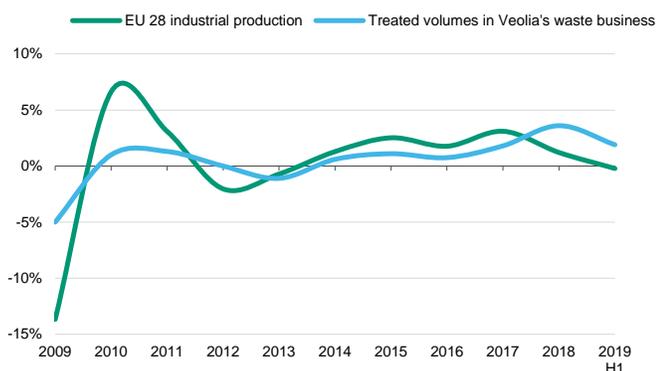


Sources: Company reports, Moody's Investors Service and INSEE

The waste management business is more exposed to the cyclical macroeconomic conditions, reflecting (1) the higher proportion of I&C customers; (2) that contract terms are often linked to collected or processed volume, which is, in turn, linked to industrial production (see Exhibit 8); and (3) the modest and residual exposure of the recycling business to paper and scrap metal prices.

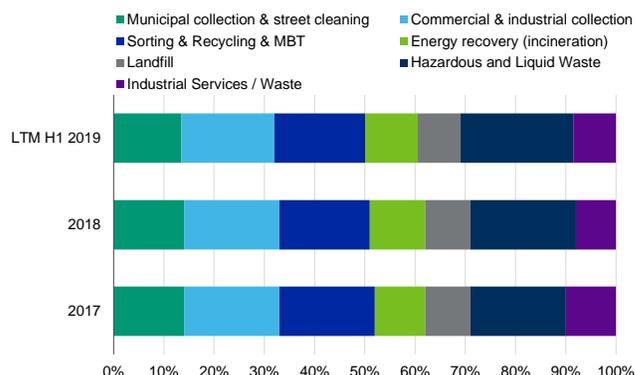
With low entry barriers in the collection and elimination of nonhazardous waste, Veolia continues to invest in higher-value-added activities. These include sorting and processing hazardous materials and energy from waste which increases the group's exposure to fluctuations in material and energy prices (see Exhibit 9), but will reduce the correlation between treated volumes and industrial production.

Exhibit 8
Veolia's waste business is exposed to the macroeconomic cycle
(Annual percentage change)



In 2010, waste volume was from industrial clients only.
Sources: Company reports and Moody's Investors Service

Exhibit 9
Shift from collection and landfill to recycling and hazardous waste treatment continues
(Waste revenue breakdown by activity)



Sources: Company reports and Moody's Investors Service

In Veolia's energy business, more than 60% of revenue (after the disposal of US assets, closed as of year-end 2019) comes from the management of district heating and cooling networks under long-term contracts. These contracts include indexation and pass-through clauses covering variations in energy prices, although these can be subject to some regulatory risk. These features underpin relatively predictable cash flow, albeit exposed to weather conditions and seasonal demand for heating and cooling. In addition to managing networks, the group acts as a subcontractor for public and private customers to manage or maintain various energy installations (including decentralised electricity generation, such as biomass), which in turn can expose it to fluctuations in energy prices.

Growing presence outside Europe, mitigated by a balanced approach to capital deployment

We expect growth to be driven primarily by organic investments, although opportunistic transactions will likely also shape development of the group. For example, in January 2019, Veolia finalised the €340 million sale of its remaining 30% stake in Transdev, an international transport operator, marking its exit from the transport sector. In late December 2019, Veolia sold off its US district energy business for an enterprise value (EV) of \$1.25 billion. This business, which generated around \$90 million of EBITDA in 2018, was a mature and capital-intensive activity that was no longer in line with the group's strategic focus on profitable and consistent growth. At the same time, the group reinforced its presence in hazardous waste, with the acquisition of an operating plant in the US for \$250 million. This niche benefits from high profitability given the specialist nature of hazardous waste treatment and consequently high barriers to entry.

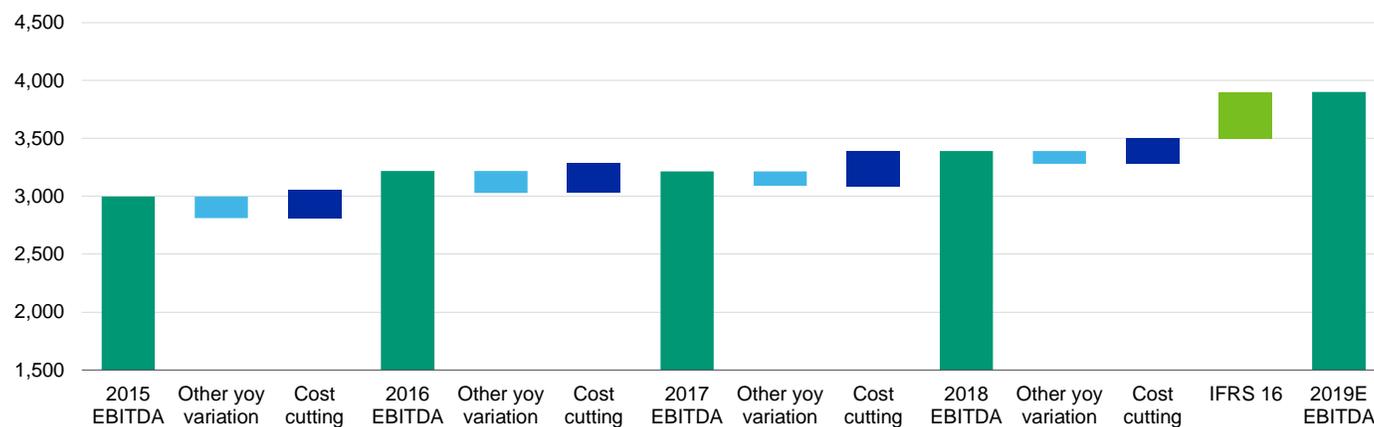
Veolia's strategy to shift progressively from mature economies to growth markets outside Europe implies incremental risks. This was illustrated by the unilateral termination in 2018 of Veolia's water and energy contract in Gabon. Arbitration with the International Centre for Settlement of Investment Disputes, Veolia and the [Government of Gabon](#) (Caa1 positive), concluded in February 2019, resulted in Veolia being awarded compensation of €45 million. We expect the group to maintain its cautious approach towards capital deployment to limit the scale of the investment it takes on in any individual country.

Cost-reduction programme supports operating profitability

Given our expectation of a broadly stable net debt and neutral free cash flow (FCF) excluding divestments, Veolia's ability to maintain its leverage (FFO/net debt) largely unchanged comes from increasing operating cash flow. The group's profitability is mostly predicated on the continued successful execution of its cost-saving programme, which has, in earlier years, more than offset pressure from weak price indexation and subdued industrial production in Europe (see Exhibit 10). Delivery of this programme was the main driver behind the 5.4% EBITDA growth (at constant foreign exchange) reported in H1 2019 compared with H1 2018.

Exhibit 10

EBITDA growth continues to be driven by cost savings (in € million)



EBITDA excluding IFRIC 12 impact.

Sources: Company reports and Moody's Investors Service

The group reported revenue of €25.9 billion in 2018 (+6.5% at a constant exchange rate) and EBITDA of €3,392 million (+7.3% at a constant exchange rate). Adjusted net debt increased by around 12% to €14.5 billion as of year-end 2018, mainly because of the redemption of its €1.5 billion deeply subordinated perpetual securities and the delay in closing the Transdev sale. As a result, the company's FFO/net debt weakened a little to 19.7%, but nevertheless remained consistent with our guidance for the rating.

Veolia delivered continued positive momentum over the first nine months of 2019, with EBITDA rising 5.4% (at constant exchange rate and including the impact of IFRS 16) versus the first nine months of 2018 to €2,894 million because of solid revenue growth and cost savings of €185 million, ahead of schedule. On that basis, the group reiterated its guidance for 2019, including EBITDA growth to €3.5 billion-€3.6 billion (or €3.9 billion-€4.0 billion including IFRS 16) based on (1) expected revenue growth, driven by new contracts and a stronger outlook for industrial production; and (2) its target of at least €220 million of cumulative gross cost savings compared with an aggregate of around €800 million between 2016 and 2018. We estimate this performance should underpin the group's credit metrics in the medium term, including FFO/net debt close to 20% in 2019.

At the end of February 2020, Veolia will unveil its new four-year strategic plan, which will focus on, inter alia, growth acceleration (including medium-sized acquisitions) and higher profitability, notably supported by additional cost cutting, while reducing the group's presence in mature and highly competitive activities.

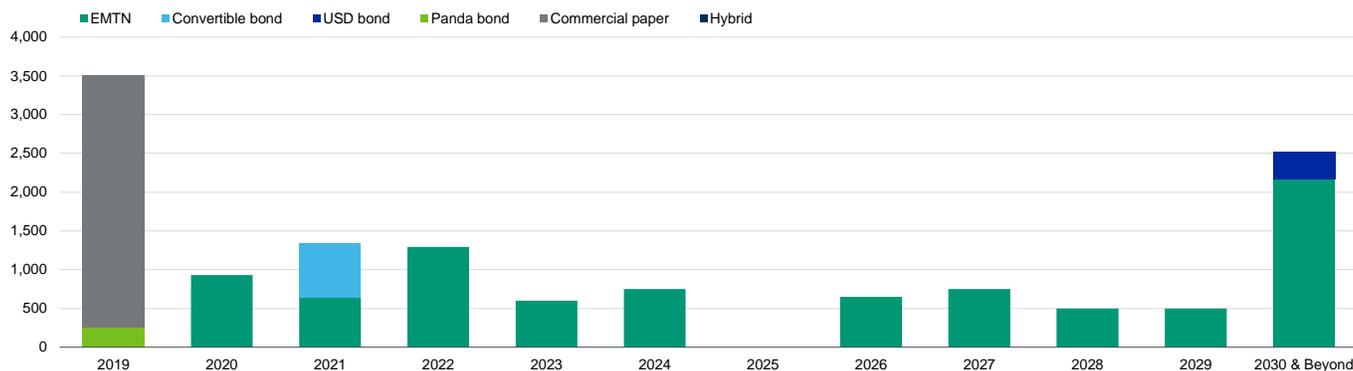
Liquidity analysis

Veolia's liquidity is sound. We expect the group to be broadly FCF neutral after dividend payments over the next 12 months. Funding needs as of the end of June 2019 mostly comprised €4.33 billion of current liabilities. Short-term liabilities include €3,441 million of commercial paper outstandings, reflecting the group's ability to arbitrage borrowing rates in the current market conditions. These funding needs were covered by (1) €3.4 billion of cash and cash equivalents (excluding restricted cash) on balance sheet, and (2) undrawn credit lines of €4.0 billion in aggregate as of the end of June 2019. These credit lines mainly consist of (1) a syndicated facility

of €3 billion maturing in 2022, and (2) undrawn bilateral facilities of €925 million maturing between 2020 and 2022. These facilities contain no triggers, covenants, material adverse changes or general restrictions. The average bond issue maturity was 7.5 years as of 31 December 2018.

Exhibit 11

Veolia's debt maturity profile as of the end of June 2019 (in € million)



Source: Veolia and Moody's Investors Service

Rating methodology and scorecard factors

The primary methodology used in rating Veolia was our [Environmental Services and Waste Management Companies](#) rating methodology, published in April 2018. The assigned Baa1 rating is one notch higher than the scorecard-indicated outcome of Baa2, which reflects (1) the very broad diversification of its revenue base by sector and geography; and (2) the low risk profile of its concession-based water business, including its leading position in France, which accounted for 42% of revenue in the 12 months ended 30 June 2019. The Baa1 rating also takes account of the group's moderate leverage when assessed on a net debt basis, taking into account its substantial cash holdings.

Exhibit 12

Rating factors

Veolia Environnement S.A.

Methodology: Waste Management published on 30 Jun 2019 [1][2]	Current LTM (Jun-19)		Moody's Forward View Next 12-18 months (as of Jan-20) [3]	
	Measure	Score	Measure	Score
Factor 1: BUSINESS PROFILE (15%)				
a) Business Profile	Aa	Aa	Aa	Aa
Factor 2: SCALE (20%)				
a) Revenue (USD Billions)	\$30.59	Aa	Aa	Aa
Factor 3: PROFITABILITY AND EFFICIENCY (10%)				
a) EBIT Margin %	5.41%	Ba	5% - 6%	Ba
Factor 4: LEVERAGE AND COVERAGE (40%)				
a) FFO / Debt	13.77%	B	15% - 17%	Ba
b) Debt / EBITDA	5.45x	B	4.7x - 5.2x	B
c) EBIT / Interest Expense	2.64x	Ba	2x - 3x	Ba / Baa
Factor 5: FINANCIAL POLICY (15%)				
a) Financial Policy	Baa	Baa	Baa	Baa
Rating Outcome:				
a) Scorecard-Indicated Outcome		Baa2		Baa1 / Baa2
b) Actual Rating Assigned				Baa1

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. [2] As of 06/30/2019. [3] This represents Moody's forward view and not the view of the issuer.

Sources: Moody's Investors Service and Moody's Financial Metrics™

Appendix

Exhibit 13

Select historical Moody's-adjusted financial data Veolia Environnement S.A.

(in EUR million)	FYE Dec-13	FYE Dec-14	FYE Dec-15	FYE Dec-16	FYE Dec-17	FYE Dec-18
INCOME STATEMENT						
Revenue	23,022	24,011	25,138	24,388	24,978	26,046
EBITDA	3,136	3,749	3,572	3,590	3,528	3,626
EBIT	1,060	1,718	1,408	1,416	1,314	1,364
Interest Expense	733	662	609	577	574	569
BALANCE SHEET						
Cash & Cash Equivalents	4,125	2,963	3,922	5,314	6,146	4,414
Total Debt	16,062	14,744	17,112	18,404	19,075	18,865
Total Liabilities	30,560	28,933	31,585	32,938	33,576	33,866
CASH FLOW						
Funds from Operations (FFO)	2,328	2,376	2,713	2,871	2,886	2,846
Dividends	175	294	548	556	614	625
Retained Cash Flow (RCF)	2,153	2,083	2,165	2,315	2,271	2,220
Cash Flow From Operations (CFO)	2,201	2,412	2,828	2,919	2,890	2,726
Free Cash Flow (FCF)	(248)	(150)	45	93	(150)	(389)
PROFITABILITY						
Change in Sales (YoY)	-1.7%	4.3%	4.7%	-3.0%	2.4%	4.3%
EBITDA margin %	13.6%	15.6%	14.2%	14.7%	14.1%	13.9%
EBIT margin %	4.6%	7.2%	5.6%	5.8%	5.3%	5.2%
INTEREST COVERAGE						
EBITDA / Interest Expense	4.3x	5.7x	5.9x	6.2x	6.1x	6.4x
(FFO + Interest Expense) / Interest Expense	4.2x	4.6x	5.5x	6.0x	6.0x	6.0x
LEVERAGE AND CASH FLOW						
Debt / EBITDA	5.1x	3.9x	4.8x	5.1x	5.4x	5.2x
Net Debt / EBITDA	3.8x	3.1x	3.7x	3.6x	3.7x	4.0x
FFO / Net Debt	19.5%	20.2%	20.6%	21.9%	22.3%	19.7%
RCF / Net Debt	18.0%	17.7%	16.4%	17.7%	17.6%	15.4%
CFO / Net Debt	18.4%	20.5%	21.4%	22.3%	22.4%	18.9%
FCF / Net Debt	-2.1%	-1.3%	0.3%	0.7%	-1.2%	-2.7%

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

Source: Moody's Investors Service

Exhibit 14

Peer comparison

(in EUR million)	Veolia Environnement S.A. Baa1 Stable			SUEZ A3 Negative			Hera S.p.A. Baa2 Stable			ACEA S.p.A. Baa2 Stable		
	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	
	Dec-16	Dec-17	Dec-18	Dec-16	Dec-17	Dec-18	Dec-16	Dec-17	Dec-18	Dec-16	Dec-17	Dec-18
Revenue	24,388	24,978	26,046	15,322	15,783	17,331	5,131	5,612	6,134	2,709	2,670	2,837
EBITDA	3,590	3,528	3,626	2,809	2,648	2,991	815	860	920	816	733	860
Total Debt	18,404	19,075	18,865	13,890	15,078	15,802	3,230	3,312	3,438	3,101	3,527	3,943
Cash & Cash Equivalents	5,314	6,146	4,414	2,968	3,259	3,438	352	451	536	666	681	1,068
EBIT margin %	5.8%	5.3%	5.2%	6.8%	5.3%	6.2%	8.9%	8.6%	8.5%	19.8%	15.1%	17.0%
EBIT / Interest Expense	2.5x	2.3x	2.4x	2.2x	1.8x	2.0x	4.1x	4.7x	5.0x	5.7x	4.7x	5.2x
Debt / EBITDA	5.1x	5.4x	5.2x	4.9x	5.7x	5.3x	4.0x	3.8x	3.7x	3.8x	4.8x	4.6x
FFO / Net Debt	21.9%	22.3%	19.7%	20.6%	18.8%	19.2%	20.5%	21.7%	23.4%	26.3%	23.5%	22.4%
RCF / Net Debt	17.7%	17.6%	15.4%	15.2%	14.0%	13.8%	15.4%	16.8%	18.2%	21.8%	18.7%	17.7%

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

Source: Moody's Investors Service

Exhibit 15

Adjusted debt breakdown

Veolia Environnement S.A.

(in EUR million)	FYE	FYE	FYE	FYE	FYE	FYE
	Dec-13	Dec-14	Dec-15	Dec-16	Dec-17	Dec-18
As Reported Total Debt	12,901.1	11,544.0	12,341.0	13,350.5	14,273.3	14,493.7
Pensions	603.4	679.8	701.4	796.5	657.2	644.2
Operating Leases	1,445.1	1,435.8	1,338.6	1,471.8	1,465.3	1,431.9
Hybrid Securities	739.9	756.8	772.5	733.6	725.4	0.0
Securitization	185.0	221.0	332.5	512.1	567.6	788.9
Non-Standard Public Adjustments	187.0	106.6	1,625.9	1,539.3	1,385.7	1,506.6
Moody's Adjusted Total Debt	16,061.5	14,744.0	17,111.9	18,403.8	19,074.5	18,865.3

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

Source: Moody's Investors Service

Exhibit 16

Adjusted EBITDA breakdown

Veolia Environnement S.A.

(in EUR million)	FYE	FYE	FYE	FYE	FYE	FYE
	Dec-13	Dec-14	Dec-15	Dec-16	Dec-17	Dec-18
As Reported EBITDA	2,248.2	2,936.7	2,699.3	2,648.3	2,660.6	2,748.1
Pensions	20.3	15.0	9.2	26.8	(15.6)	7.4
Leases	481.7	478.6	446.2	471.4	472.2	477.3
Securitization	7.1	6.8	9.9	15.1	17.7	30.6
Non-Standard Public Adjustments	420.2	356.8	446.9	469.7	428.0	393.2
Interest Expense - Discounting	(41.7)	(45.3)	(39.0)	(41.7)	(35.4)	(30.4)
Moody's Adjusted EBITDA	3,135.8	3,748.6	3,572.5	3,589.6	3,527.5	3,626.2

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

Source: Moody's Investors Service

Moody's related publications

Rating Action:

» [Moody's affirms Veolia's Baa1/P-2 ratings; outlook stable, 12 October 2018](#)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Ratings

Exhibit 17

<u>Category</u>	<u>Moody's Rating</u>
VEOLIA ENVIRONNEMENT S.A.	
Outlook	Stable
Issuer Rating	Baa1
Senior Unsecured	Baa1
Commercial Paper	P-2

Source: Moody's Investors Service

© 2020 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND/OR ITS CREDIT RATINGS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S INVESTORS SERVICE DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S INVESTORS SERVICE CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$2,700,000. MCO and Moody's investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454