

**CREDIT OPINION**

22 May 2024

Update

Send Your Feedback

**Contacts**

Erica Gauto Flesch, +34.91.768.8308  
CFA  
VP-Senior Analyst  
erica.gautoflesch@moodys.com

Edoardo Gasparoni +44.20.3314.2277  
Sr Ratings Associate  
edoardo.gasparoni@moodys.com

Andrew Blease +33.1.5330.3372  
Associate Managing Director  
andrew.blease@moodys.com

**CLIENT SERVICES**

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

**ASTM S.p.A.**

Update following rating affirmation

**Summary**

The credit quality of [ASTM S.p.A.](#) (ASTM, Baa3 stable) is underpinned by (1) the strong fundamentals of the group's Italian motorway network, comprising essential transport links in some of the wealthiest regions of [Italy](#) (Baa3 stable); (2) the size and diversification of Ecorodovias Infraestrutura e Logística S.A. (Ecorodovias)'s motorway network, which is located in the wealthiest states of [Brazil](#) (Ba2 positive); and (3) the group's historically balanced financial policy and strong liquidity profile.

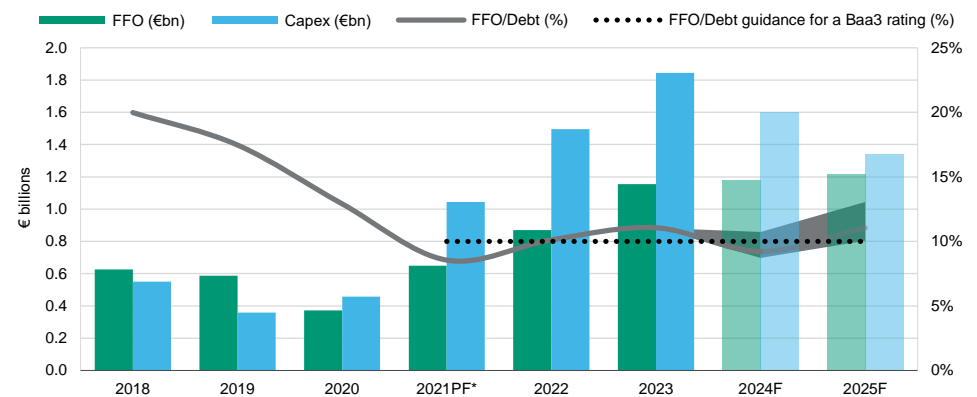
These strengths are, however, partially offset by (1) political interference in the regulatory framework in Italy; (2) the relatively large investment programme in Italy and Brazil associated with recently awarded concessions; (3) the significant increase in financial leverage over the past years; and (4) some exposure to higher risk construction and engineering activities, although their contribution to the overall group EBITDA is expected to remain limited.

On 14 May 2024, we affirmed ASTM's Baa3 rating and stable outlook. This followed the announcement of the acquisition of a 24.7% (direct and indirect) stake in Tangenziale Esterna (TE) for a total consideration of approximately €230 million, which will be entirely funded by debt and will result in the full consolidation of TE into ASTM's financial statements.

Exhibit 1

**ASTM's financial metrics are expected to remain at a level commensurate with a Baa3 rating by year-end 2025**

**Funds from operations (FFO)/debt and capital expenditure (capex) evolution**



\*2021 pro-forma metrics reflect the consolidation of Ecorodovias and SITAF for the whole year.

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Forecasts are Moody's opinion and do not represent the views of the issuer.

Source: Company, Moody's Ratings forecasts

## Credit strengths

- » Strong fundamentals of the Italian motorway network underpins a resilient cash flow profile
- » Ecorodovias' large and strategically located toll road portfolio in Brazil, with a long weighted average concession life of around 19 years
- » Historical balanced financial policy, although significant increase in debt leverage will limit the financial flexibility of the group over the coming years

## Credit challenges

- » Regulatory environment in Italy characterised by some unpredictability and political interference
- » Large investment programme associated with increased safety requirements (Italy) and recently awarded toll road concessions (Brazil)
- » Some exposure to higher risk construction and engineering activities

## Rating outlook

The stable outlook reflects our expectation that ASTM's financial metrics will improve over the coming year, such that the funds from operations (FFO)/debt ratio will be comfortably positioned above 10% and the Moody's Debt Service Coverage Ratio (DSCR) will remain above 1.3x on a consolidated basis.

## Factors that could lead to an upgrade

Given the high leverage of the group, upward pressure on ASTM's ratings is not currently anticipated. Upward pressure could build over time if (1) the company's financial profile materially improves, such that FFO/debt was at least 17% and Moody's DSCR was at least 1.4x on a sustainable basis; and (2) the group maintains a strong liquidity profile and a prudent financial policy.

## Factors that could lead to a downgrade

Downward rating pressure could develop as a result of (1) a persistent weakening in the group's financial profile such that FFO/debt would remain below 10% or Moody's DSCR would remain below 1.3x on a sustained basis; (2) a deterioration in the group's liquidity position; or (3) a growth strategy resulting in debt-funded acquisitions or significant investments in activities with a higher risk profile than motorway concessions.

## Key indicators

Exhibit 2

### ASTM S.p.A.

	Dec-19	Dec-20	Dec-21 PF*	Dec-22	Dec-23	Dec-24 (F)	Dec-25 (F)
Cash Interest Coverage	7.4x	5.8x	3.4x	2.9x	2.9x	2.6x-2.9x	2.8x-3.1x
FFO / Debt	17.3%	12.9%	8.5%	10.1%	11.1%	9%-11%	10%-12%
Moody's Debt Service Coverage Ratio	1.1x	1.1x	1.1x	1.4x	1.5x	1.5x-1.7x	1.6x-1.8x
Moody's Concession Life Coverage Ratio	1.1x	1.2x	1.3x	1.6x	1.8x	1.8x-2.1x	1.9x-2.2x

\*2021 pro-forma metrics reflect the consolidation of Ecorodovias and SITAF for the whole year.

All figures and ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Forecasts are Moody's opinion and do not represent the views of the issuer.

Source: Moody's Ratings

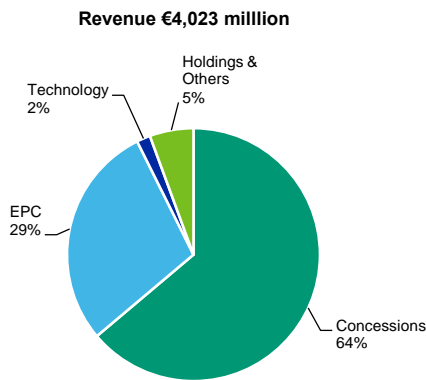
This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody.com> for the most updated credit rating action information and rating history.

**Profile**

ASTM is the second-largest toll road operator in Italy. The company's consolidated domestic network consists of almost 1,300 km of tolled motorways, representing around 23% of the national network. In Italy, ASTM also holds a stake in the Gran San Bernardo Tunnel. In addition, ASTM is the controlling shareholder of Ecorodovias, which manages close to 4,700km of toll roads through 11 concessions in Brazil.

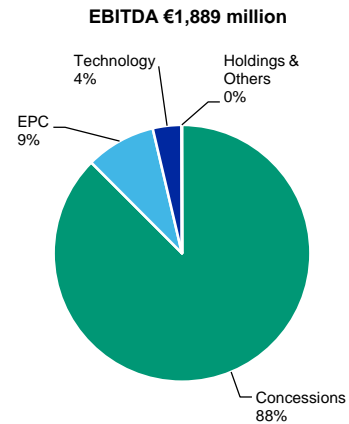
ASTM is also active in the engineering, procurement and construction (EPC) sector. Itinera is the largest subsidiary in this segment and operates in Europe, Latin America and the United States. These activities present higher business risk than toll roads, but allow the group a higher degree of business integration. Although the contribution to revenue of the EPC and technology sector was around 30% in 2023, because of its lower profitability, the actual EBITDA contribution is significantly lower, at around 13%.

Exhibit 3  
**EPC and other activities represent more than a third of total revenues...**  
 ASTM's revenue breakdown (as of December 2023)



Source: Company, Moody's Ratings

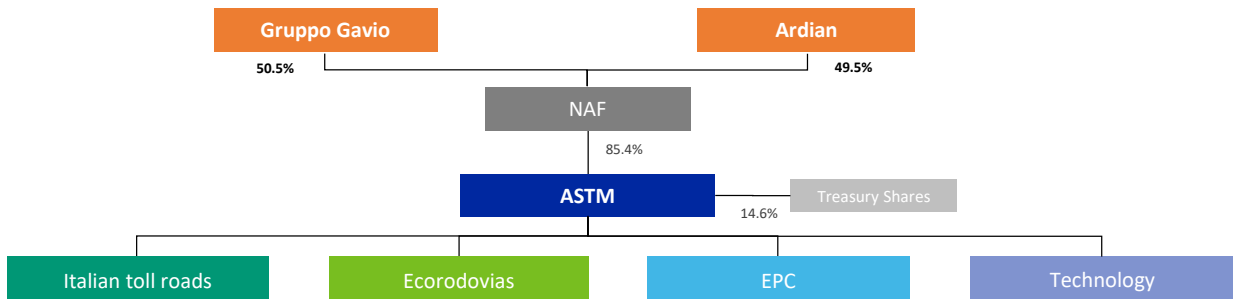
Exhibit 4  
**... but just 13% of the group's EBITDA**  
 ASTM's EBITDA breakdown (as of December 2023)



Source: Company, Moody's Ratings

Following the delisting in June 2021, Gruppo Gavio increased its stake in ASTM to 50.5%. The stake is held through the holding company Nuova Argo Finanziaria S.p.A. (NAF), of which the private equity company Ardian owns the remaining 49.5%.

Exhibit 5  
**Simplified ASTM's shareholder structure**



Source: Company

## Recent Developments

### Step-up acquisition of TE increase consolidated debt but also average concession life, with broadly neutral credit impact

On 13 May, ASTM announced that it reached an agreement to acquire 24.7% of direct and indirect stake in Tangenziale Esterna (TE), a 32km operating toll road that connects Agrate Brianza (A4) to Melegnano (A1) in the Lombardy region. This would result in the increase of ASTM direct and indirect shareholding in TE to around 74%, which will translate in the full consolidation of TE into ASTM's financial statements. Nevertheless, the final ASTM stake in TE will be subject to any current shareholder exercising their right of first refusal. ASTM is planning to fund the acquisition with around €230 million of additional debt. The closing of the transaction is expected to occur by the end of 2024, after obtaining all the necessary authorisations from regulatory and competition authorities.

We expect the acquisition of TE to have only a modest impact on ASTM's credit metrics, mostly resulting from the full consolidation of TE's approximately €900 million of project finance debt into ASTM group. The transaction will lead to a total increase in consolidated debt of around €1.1 billion, which represents nearly 10% of total ASTM's debt post-transaction. Consequently, we estimate a slight decrease of about 1% in ASTM's consolidated FFO/debt ratio, to around 9%-11% by the end of 2024. However, due to TE's long remaining concession life of nearly 42 years, the average concession life of ASTM's Italian portfolio will be extended by approximately 2.5 years, to around 12 years by the end of 2024. Therefore, we anticipate that the transaction will have a neutral impact on the DSCR or CLCR ratios for the consolidated ASTM group.

The announced acquisition represents limited business risk for the group. This is because ASTM, which currently holds a 49.1% direct and indirect stake in TE, has been actively involved in TE since the construction of the motorway started in 2012 and has a very good understanding of the asset and its underlying business dynamics. In addition, the step-up acquisition of TE is in line with ASTM's stated objective to maintain a strong presence in the motorway sector in the north of Italy.

Moreover, the transaction implies a limited disbursement for ASTM to secure the control of a high-quality asset. TE's business profile benefits from (1) the importance of the road as part of a strategic motorway network, with limited competition; (2) the economic strength of its service area; (3) a solid operating performance and track record of traffic recovery; (4) a long term concession agreement; and (5) the fully operational profile, with limited investment commitments under its concession. In addition, TE has a good liquidity profile, supported by dedicated debt service and future capex reserve accounts under the current debt structure. However, these strengths are partially offset by (1) some precedents of political interference and delays in approving TE's economic plans; (2) a leveraged financial profile; and (3) a significant refinancing risk, although Moody's expects that ASTM will take actions to refinance TE's debt well in advance of its maturity in December 2025.

## Detailed credit considerations

### Strong business profile underpinned by the size and location of the Italian network

ASTM's consolidated Italian network currently consists of around 1,300 km of operational toll roads, comprising several essential transport links. ASTM's motorways are mainly located in the north-west of Italy, connecting major cities within the area and providing access between provincial and rural areas. The fundamentals of the service area and the competitive environment are favourable, because ASTM provides essential transport services to some of Italy's most economically active regions. Road transportation is dominant in the area, as it is better suited to meet the mobility requirements of a country with a widespread population gravitating around small and medium-sized provincial centres, a fragmented commercial and industrial structure and many regions with mountainous or hilly terrain.

The traffic profile of ASTM's Italian network exhibits a generally diversified traffic base, with a mixture of commuter and leisure traffic, long-distance journeys and commercial traffic. We consider the varied user profile as a supporting feature of the company's credit positioning. In 2023, heavy goods vehicle (HV) traffic accounted for around 26% of ASTM's traffic, which is higher than its European peers. The main contributor to traffic volumes is SATAP, concessionaire for the A4 Turin-Milan and A21 Turin-Alessandria-Piacenza motorways, accounting for 34% of ASTM's consolidated traffic volumes in 2023. The second-largest contributor is SALT, concessionaire for the A12 Livorno Sestri, A11 Viareggio Lucca and A15 Fornarola La Spezia, accounting for around 21% of total traffic in 2023.

In 2020, ASTM increased its stake in Società Italiana Traforo Autostradale del Frejus S.p.A. (SITAF) to a total of 68.1%. SITAF is the owner of the concession, expiring in 2050, for the design, construction and management of the Frejus tunnel (about 13 km long) and

the connector to the tunnel, the A32 Turin-Bardonecchia motorway (73 km long). SITAF is an essential infrastructure link connecting Italy and France with a relatively stable regulatory framework.

ASTM's Italian concessions have different maturities and four of these concessions expired between 2016 and 2021 (see exhibit 6). Upon retendering, the Italian government decided to aggregate the four expired concessions under two separate tenders. While ASTM won both tenders in 2021, the award of the new 'A21-A5/A4' concession was revoked due to an alleged formal irregularity during the tender pre-qualification phase. In October 2023, after several different legal proceedings and appeals, the Council of State declared the appeal admissible, but ultimately rejected it on the merit, confirming the exclusion of ASTM's subsidiary from the tender. We expect that ASTM will handover A21 and A5/A4 concessions during 2025 to the new operator Consorzio Stabile SIS S.c.p.A. Importantly, the awarding of the 'A12-A10' tender is not affected by the above situation, and the handover process to Società di Progetto Concessioni del Tirreno S.p.A. (CdT, a new ASTM's subsidiary) is likely to be finalised in the first half of this year. The new CdT A12-A10 concession will have a 11.5 years tenor from the takeover date.

Meanwhile, in line with the Italian legislation, the group continues to operate all the expired concessions and is entitled to receive a terminal value (equal to the unamortized value of the investments) once the assets will be returned to the grantor.

Exhibit 6

#### Overview of ASTM's Italian concessions As of December 2023

Concessions	Stake	Extension (Km)	EBITDA (2023, € mln)	Maturity	Estimated gross terminal value (€ mln)	Location
SATAP A4	99.9%	130	237	2026	1090	Piedmont / Lombardy
SATAP A21	99.9%	168	117	2017	370	Piedmont
SALT A12	95.2%	155	109	2019	622	Liguria
SALT A15	95.2%	101	62	2031	-	Emilia - Romagna
ADF A10	73.0%	113	103	2021	551	Liguria
ADF A6	73.0%	131	38	2038	-	Piedmont
SAV A5	71.3%	60	43	2032	-	Valle d'Aosta
AT-CN A33	65.0%	56	24	2031	560	Piedmont
AP A21	51.0%	100	36	2043	-	Lombardy
ATIVA (A5/A4)	72.3%	156	71	2016	332	Piedmont
SITAF	68.1%	94	144	2050	-	Piedmont
<b>Total</b>		<b>1,264</b>	<b>983</b>			
TE	74.0%	32	56	2065	-	Lombardy

EBITDA as reported by the company (under IFRS).

Expired concessions SATAP A21, SALT A12, ADF A10 and ATIVA (A5/A4) are currently managed in prorogatio. A10 and A12 are due to be transferred to the group's company Concessioni del Tirreno during 2024.

Terminal value reflects the expected amounts at handover date and includes the expected investment plans, cross financing agreement for AT-CN A33/SATAP A4 and the tenders for A21-A5/A4 and A12-A10. As of December 2023, the amount of regulatory risk provisions for expired concessions amounted to €842.9 million.

Source: Company, Moody's Ratings

#### Ecorodovias' large toll road portfolio located in strong service areas of Brazil

Ecorodovias is one of Brazil's largest infrastructure groups focused on motorway concessions. As of December 2023, Ecorodovias' portfolio includes 11 concessions, covering 4,700 kilometers of toll roads located in the Southeast, Midwest and Northeast of Brazil. Ecorodovias also operates and maintains a port company located in the port of Santos, Ecoporto<sup>1</sup>.

Ecorodovias benefits from large and strategically located concessions, representing a high-quality asset base in Brazil. The group's assets are positioned at the main channels for the transportation of exports and import of goods and close to the main ports of the country. The group has a significant presence in the most important commercial centers of Brazil and benefits from a diversified user base, as is typical for large networks. Two of its main concessions, Ecovias and Ecopistas, provide essential transport services in the state of São Paulo, which is one of the largest and wealthiest states in the country. Ecovias is also a direct link to the port of Santos, the largest port in Latin America.

The combined traffic profile of its toll roads is relatively balanced, with around 59% in freight traffic and 41% in leisure and commuter traffic in 2023 (56% and 44% in 2022, expressed in equivalent vehicles). The increase in freight traffic share from 2022

to 2023 is attributable to the ramp-up of Ecovias de Araguaia and EcoNoroeste. These concessions have a share of HV traffic that significantly above the average of the rest of the concessions (81% and 68% respectively). This is primarily because their operations are predominantly situated in expansive agricultural regions that are significant contributors to agricultural exports in the country.

The EBITDA-weighted average concession life of Ecorodovias' portfolio was around 18 years as of December 2023, with maturities ranging from 2026 to 2056, which support the long-term cash flow profile and credit metrics of the group.

In August 2023, Ecorodovias started a "friendly devolution" process to either transfer back to the government the Eco101 concession or to renegotiate the terms. As of May 2024, the process is still ongoing with the company signing another 120 days term extension in February. The framework is designed to facilitate a bona fide solution to stressed concessions. We understand that the intention of the company is to renegotiate the terms of the concession and maintain operations, but it is exploring the devolution in case the preferred option is not achievable.

Exhibit 7

### Overview of Ecorodovias' concessions As of December 2023

Concessions	Extension (Km)	EBITDA* (2023, BRL mln)	Maturity	Location	Type of concession	Regulator
Ecovias	177	1,133.6	2034	São Paulo	State	ARTESP
Ecopistas	144	309.7	2039	São Paulo	State	ARTESP
Ecosul	457	393.0	2026	Rio Grande do Sul	Federal	ANTT
Eco101	479	92.9	2038	Espirito Santo	Federal	ANTT
Ecoponte	29	115.1	2045	Rio de Janeiro	Federal	ANTT
Eco135	364	260.7	2048	Minas Gerais	State	SETOP
Eco050	437	241.0	2044	Minas Gerais / Goiás	Federal	ANTT
Ecovias do Cerrado	437	106.6	2050	Minas Gerais / Goiás	Federal	ANTT
Ecovias do Araguaia	851	349.2	2056	Tocantins / Goiás	Federal	ANTT
EcoRioMinas	727	382.4	2052	Rio de Janeiro / Minas Gerais	Federal	ANTT
EcoNoroeste	601	357.8	2053	São Paulo	State	ARTESP
<b>Total</b>	<b>4,703</b>	<b>3,742</b>				

\*EBITDA as reported by the company, excluding construction revenue and cost, provision for maintenance.

EcoRioMinas and Ecovias do Araguaia started operation in September 2022 and October 2022 respectively, EcoNoroeste in May 2023.

Source: Company, Moody's Ratings

In 2016, ASTM acquired the co-control stake of around 42% in Ecorodovias and over the years the group increased its stake through a series of transactions. In 2020, the group agreed with Primav Construções (the other main shareholder of Ecorodovias) to dissolve the co-control structure and to capitalise Ecorodovias. Following the completion of the transaction in June 2021, ASTM holds 51.9% of the Brazilian group and started to consolidate Ecorodovias in its financial accounts from the last quarter of 2021. Overall, Ecorodovias increase the diversification of the group, because economic cycles in Brazil and Italy are broadly uncorrelated. We estimate that the contribution from Ecorodovias to the consolidated EBITDA of the group will be around 30%-35% over the next 2-3 years.

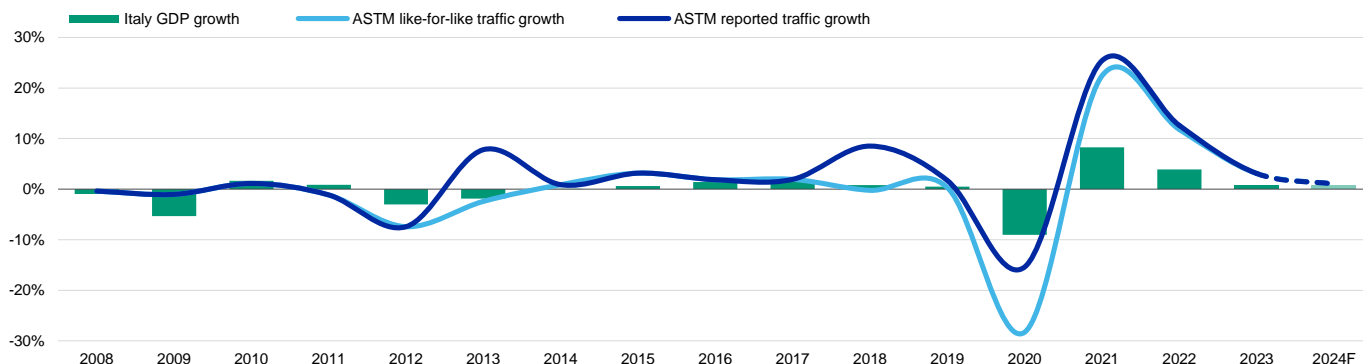
### Solid traffic growth on the Italian network in 2023, but softening in economic conditions will decelerate traffic growth in 2024

Before the coronavirus outbreak, ASTM had exhibited a relatively stable traffic profile. In the five years to the end 2019, traffic in ASTM's network increased on average by 1.4% per annum on a like-for-like basis<sup>2</sup>

Exhibit 8

**Traffic growth in ASTM's Italian network is likely to decelerate given weakening macroeconomic conditions**

Year-over-year total traffic change vs. Italian GDP growth



Like-for-like traffic excludes traffic growth related to new concessions and significant perimeter changes.

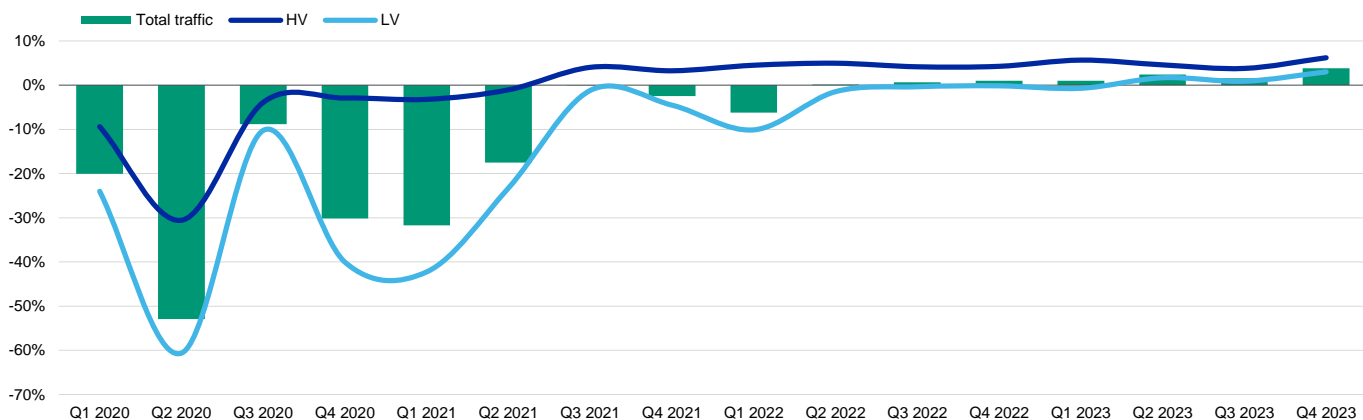
Source: Company, Moody's Ratings

However, in 2020 traffic was significantly affected by travel restrictions and lock-down measures and volumes across ASTM's Italian network dropped by more than 28% on a like-for-like basis. In 2021, traffic continued to be constrained and remained around 11% below 2019 levels. During 2022, the absence of travel restrictions resulted in a continued and more consistent recovery in volumes, which translated in like-for-like traffic levels just around 1.5% below pre-pandemic. The growth path continued in 2023, with traffic increasing by around 3.1% versus 2022.

Exhibit 9

**Traffic performance on ASTM's Italian network has exhibited strong recovery since mid 2021**

Like-for-like traffic changes from 2019 levels since the beginning of 2020



Like-for-like growth rates are calculated as if ATIVA and SITAF were consolidated from 1 January 2019.

Source: Company, Moody's Ratings forecasts

In 2020 and 2021, HV traffic was less affected by lockdown measures than light vehicle (LV) traffic, providing some support to revenue given the higher toll. While HV traffic levels remained above pre-pandemic since Q3 2021, LV traffic did not fully recover until Q2 2023. In 2023, LV growth outpaced HV growth, with around 4.0% and around 0.5% increase, respectively, versus 2022.

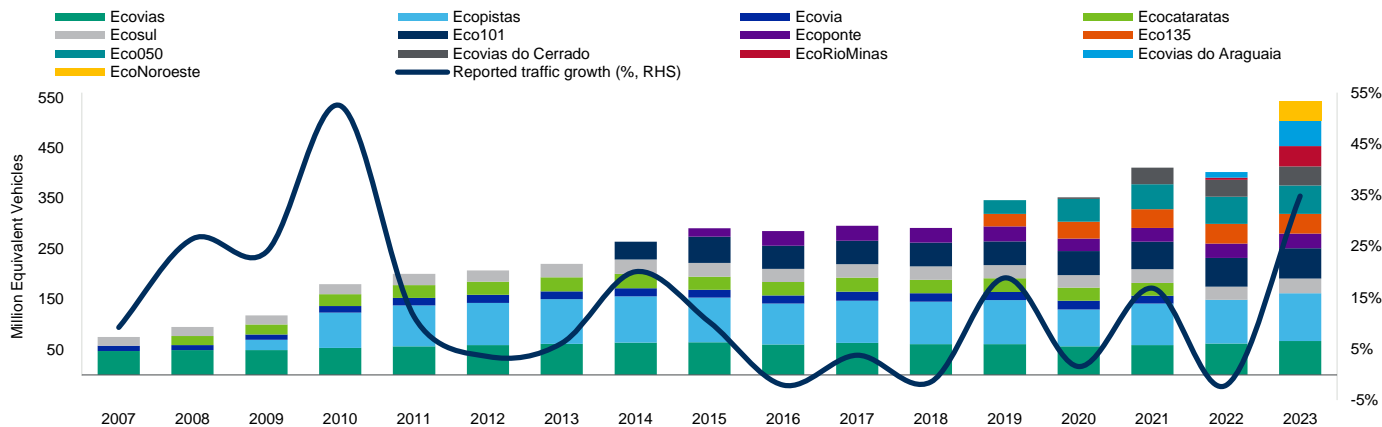
In 2024, we expect total traffic growth will slowdown to around 1% when compared to 2023. We expect a subdued macroeconomic environment, which will lead to a modest [GDP growth in Italy](#) of about 0.8% in 2024 and around 1% in 2025. High interest rates and cost of living pressures will continue to dampen consumer and business confidence, limiting further growth of both LV and HV traffic (for additional details please see [Toll Roads – Europe: 2024 Outlook - Stable driven by modest tariff increases and slowing traffic growth](#)).

**Strong performance in 2023 on the existing Ecorodovias' network, outlook boosted by new concessions**

Aligned with the group's strategy to expand its presence in the toll road business and extend the remaining life of its portfolio, Ecorodovias has been actively adding new assets into its portfolio. Traffic volumes have been growing with new concessions, more recently with the start of operations of Ecovias do Araguaia, EcoRioMinas (end of 2022) and EcoNoroeste (2023). On a like-for-like basis, traffic performance has closely followed the GDP growth in Brazil. This is driven by the high proportion of HV traffic in Ecorodovias' network and the fact that HV traffic is mainly driven by the agriculture business, a principal contributor of Brazilian exports.

Exhibit 10

**Strong traffic growth in 2023 driven by the three new concessions**



Equivalent paying vehicle is a basic unit of reference in toll collection statistics in Brazil. LVs, such as automobiles, correspond to an equivalent vehicle unit. HVs, such as trucks and buses, are converted to equivalent vehicles by a multiplier applied to the number of axles per vehicle, as established in the terms of each concession agreement.

Source: Company, Moody's Ratings

In 2020, traffic performance on Ecorodovias' motorway network was less impacted by the coronavirus pandemic because the Brazilian government did not impose travel bans or severe restrictions. Hence, total traffic in 2020 decreased by 8.2% on a like-for-like basis. In 2021, total traffic in Ecorodovia's network was just 0.1% lower than pre-pandemic levels. LV traffic was still 7.2% below 2019 while HV performance continued to be very resilient, with like-for-like growth at 9.6% above 2019. In 2022, traffic increased on a like-for-like basis by 4.7% compared to 2021, with LV and HV reporting respectively a 5.8% and 3.8% increase.

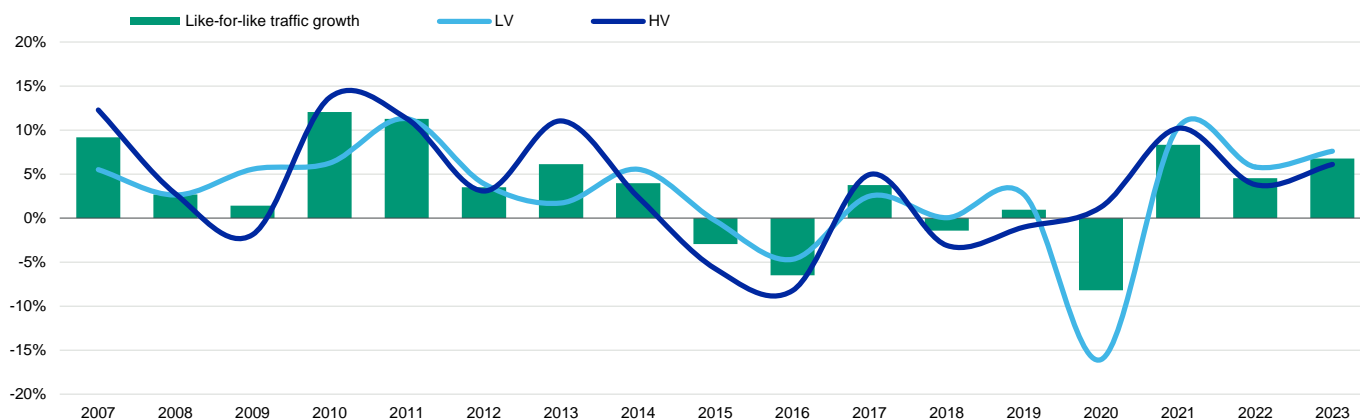
The growth trend continued in 2023, with a 6.8% like-for-like traffic growth compared to prior year, driven by a 7.6% LV traffic increase and a 6.1% HV traffic increase. The growth was driven by the performance of soybean and corn exports, the increase in services activity and favourable weather conditions. The growth in reported traffic, including the network expansion with the start of operations and toll collection by EcoRioMinas, Ecovias do Araguaia and EcoNoroeste, was close to 35%.



Exhibit 11

**Traffic increase substantially over the last two years in Brazil**

Like-for-like annual traffic changes



Like-for-like traffic excludes traffic growth related to new concessions and significant perimeter changes.

Source: Company, Moody's Ratings

In 2024, we expect traffic on Ecorodovias network to continue to increase on a reported basis due to the ramp-up operations of the new concessions, on a like-for-like basis we expect traffic to grow by around 2%-3%.

**History of political interference and delays impacting toll increases in Italy**

The tariff formula applicable to ASTM's Italian concessions is included in each individual concession contract. While the regulatory framework incorporates well-established concepts, ASTM has historically been subject to regulatory uncertainties and delays in the approval of the economic and financial plans (EFP) and in the corresponding tariff adjustments.

In June 2019, the Italian Transport Authority (ART) sanctioned a new tariff framework applicable to all new and existing toll roads concessions, which incorporates a cost recovery plus capital remuneration principle, with applied tolls reflecting a regulated rate of return on new investments and existing asset base (RAB). Traffic risk, i.e. the difference between the planned traffic curve on which tariffs are calculated and the actual traffic level, is entirely borne by the concessionaire during each five-year tariff period. While this framework is in broad continuity with the model already included in ASTM's concessions there are some inputs, such as the efficiency factor, that needs to be agreed with the grantor (Ministero Infrastrutture e Trasporti, MIT) before the approval of the EFP.

Exhibit 12

**Historical evolution of toll increases**

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
SATAP A4	1.50%	6.50%	4.60%	8.34%	0% increase in 2019-2022 as per approved EFP			4.30%	2.30%	
SATAP A21	1.50%	0.00%	0.85%	1.67%	Concession expired in 2017					
SALT A12 (CDT from 2024)	1.50%	0.00%	0.00%	2.10%	0.00%	Concession expired in 2019				
SALT A15	1.50%	0.00%	0.24%	0.00%	1.86%	0.00%	0.00%	0.00%	0.00%	2.30%
ADF A10 (CDT from 2024)	1.50%	0.00%	0.00%	0.98%	0.71%	0.00%	0.00%	Concession expired in 2021		
ADF A6	1.50%	0.00%	2.46%	2.79%	2.22%	0.00%	0.00%	0.00%	0.00%	2.30%
SAV A5	1.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.30%
AT-CN A33	0.00%	0.00%	0.00%	0.00%	0% increase in 2019-2022 as per approved EFP			4.30%	2.30%	
AP A21					0.10%	4.88%	3.20%	5.85%	9.16%	2.30%
ATIVA	Concession expired in 2016									
SITAF A32							0.00%	0.00%	0.00%	2.30%
SITAF T4							0.63%	2.87%	7.36%	5.10%
<b>Weighted avg toll increase</b>	<b>1.5%</b>	<b>1.5%</b>	<b>1.4%</b>	<b>3.0%</b>	<b>0.4%</b>	<b>0.3%</b>	<b>0.2%</b>	<b>0.5%</b>	<b>1.9%</b>	<b>1.5%</b>

Expired concessions are currently under interim management.

For AT-CN A33 concession no toll increases were due before 2019 given the cross-financing agreement was under discussion. For SAV A5 no toll increases were included in its previous EFP, which expired in 2020, and the company was not able to increase tariffs after the change in framework. For SALT A12 concession, the due toll increase in 2019 of around 6.1% was

converted into terminal value (€6.5 million). AP A21 was consolidated in 2018, hence previous tariff increases are not applicable. Similarly, ATIVA and SITAF (A32 and T4) concessions were consolidated since 2020 and 2021 respectively. A10 and A12 are due to be transferred to Concessioni del Tirreno (CdT) during 2024.

Source: Company, Moody's Ratings

Some of the toll roads operated by ASTM experienced a period of tariff freezes between 2020 and 2023, which was largely a consequence of the new regulatory framework and related delays in the approval of new EFPs. At the moment, the EFPs submitted by SALT A15, ADF A6, SAV A5, SITAF A32 have not yet been formally approved by the grantor. Regardless of the current status of the EFPs, most ASTM's concessions received a 2.3% annual toll increases at the start of this year. Notably, uncertainty remains around the level of toll increases that ASTM's concessions will ultimately be entitled to under the current regulatory framework.

Overall, the precedents of political interference on tariff adjustments impact our assessment of the concession and regulatory framework in Italy compared with some other European jurisdictions (for additional details please see [Italian Toll Roads: Higher investment costs and regulatory uncertainty hampering progress](#), published in May 2024).

### Sizeable investment programme in Italy and Brazil

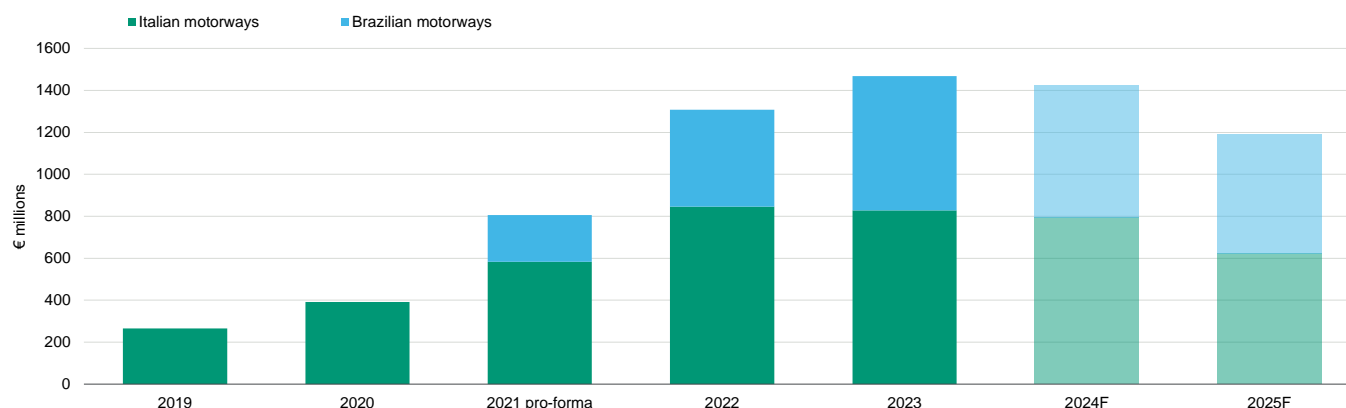
ASTM's Italian motorway has a sizeable capital expenditure programme. The company's latest investment plan assumes on average around €570 million of annual capex during 2024-2027 in comparison with an average €300 million executed between 2015-2019. Investments are mostly directed towards the completion of the AT-CN A33 stretch and improvements on ADF A6, SALT A15, as well as the investment plan of A10 and A12 moving to Concessioni del Tirreno. Higher capex further reflects the impact of high inflation on the price of raw materials, as well as the recent introduction of new technical guidelines from the authorities which led to additional safety investments for the whole sector.

ASTM has historically maintained a large cash position on balance sheet, partly due to the pre-funding strategy of its capex plan, but also reflecting good cash flow generation and a balanced financial policy. We expect ASTM to exhibit negative free cash flow in 2024 and 2025, even if current cash balances of the group will support the planned interventions on the Italian motorways.

The investment programme of Ecorodovias for the period 2024-2027 is likely to amount to around BRL15 billion (equivalent to €2.7 billion). Investments are mainly driven by committed interventions on the recently awarded concessions (Ecovias do Cerrado, EcoRioMinas, Ecovias do Araguaia, EcoNoroeste). In addition, Eco135 and Eco050, which started operations in 2019, still require somewhat large mandatory investments. We expect that Ecorodovias to finance its investment programme on a standalone basis, through cash flow generation, but also through access to the local capital markets. More broadly, the sizeable capex plan for the Brazilian motorways will limit the ability of Ecorodovias to reduce its financial leverage over the coming years.

Exhibit 13

### ASTM's investment is likely to remain sizeable because of higher safety requirements (Italy) and recently acquired concessions (Brazil)



Source: Company, Moody's Ratings

### Significant increase in leverage over the last years

Over the last three years, ASTM has considerably increase its financial leverage. In 2021, the total amount of gross adjusted debt of the ASTM group rose by €4.5 billion, driven by (1) the additional debt following the consolidation of Ecorovodias; (2) the consolidation of SITAF and its liabilities related to the Fondo Centrale di Garanzia; and (3) the delisting of ASTM.

Debt levels continued to rise in 2022 and 2023, amounting to €10.4 billion as of December 2023, mainly due to financing the capital investment program. Despite this, financial metrics improved in 2023 compared to 2022 as a result of (1) continuous growth in traffic; (2) the ramp-up of some Brazilian assets; and (3) improved profitability of the EPC segment. These factors lead to a stronger Funds From Operations (FFO) and lower financial leverage. The FFO/debt ratio increased to 11.1% from 10.1% in the previous year.

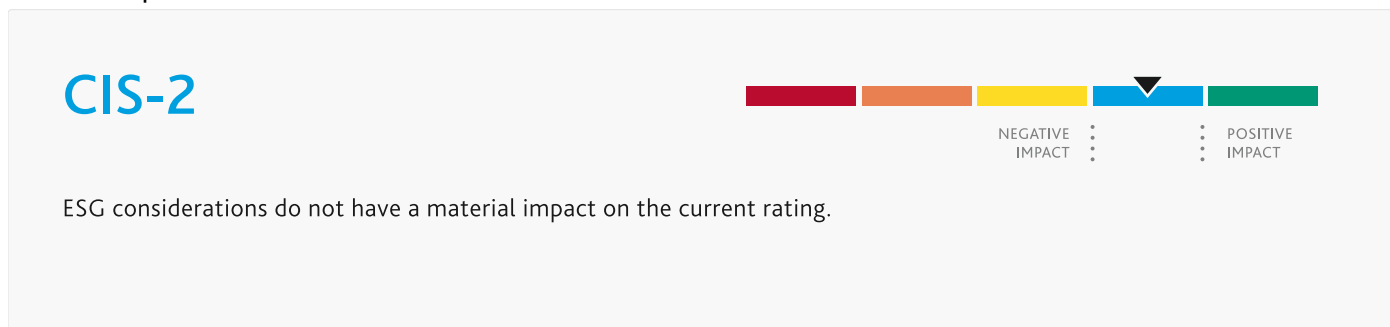
We anticipate that debt levels will continue to rise in 2024, driven by (1) ASTM's investment program, which will likely necessitate an additional €1 billion of new funding, and (2) the acquisition of TE and subsequent full consolidation into the group's perimeter, resulting in a gross debt increase of approximately €1.1 billion (as previously explained). Consequently, we expect that ASTM's FFO/debt ratio will hover around 9%-11% in 2024 and slightly improve to about 10%-12% in 2025. However, we predict that Moody's DSCR will improve to 1.6x-1.7x in 2024 and 1.6x-1.8x in 2025, supported by the increase in average concession life due to the roll-over of the 'A10-A12' concession, the consolidation of TE, and the continuous ramp-up of new concessions in Brazil.

### ESG considerations

#### ASTM S.p.A.'s ESG credit impact score is CIS-2

Exhibit 14

#### ESG credit impact score

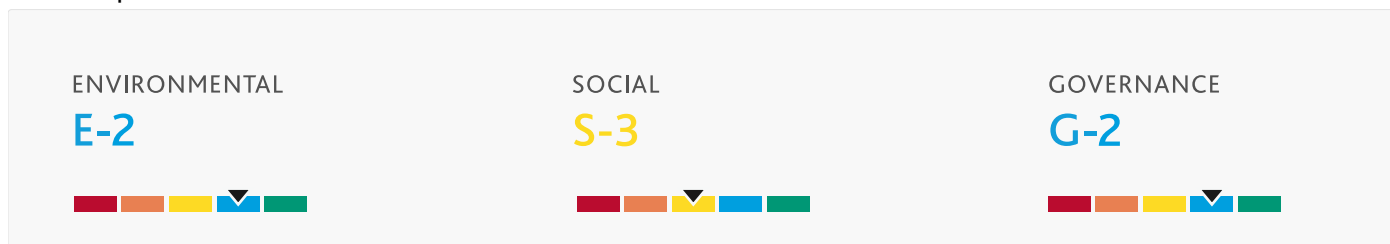


Source: Moody's Ratings

ASTM's **CIS-2** indicates that ESG attributes are not material for the current rating. The company's score reflects low environmental and governance risks and moderately negative social risks.

Exhibit 15

#### ESG issuer profile scores



Source: Moody's Ratings

### Environmental

ASTM's **E-2** score reflects that the toll road sector generally faces limited credit impact from environmental risks. ASTM's exposure to the consequences of extreme weather events, such as hurricanes or floods, is not significant. This is mitigated by the company's

geographical diversification across Italy and Brazil, along with the large size of its managed assets. Whilst the effect of car use on air pollution is gaining increasing attention and could result in restrictions on traffic and car purchases in selected areas, we view traffic volumes as more fundamentally linked to macroeconomic trends, business sentiment, population growth and personal mobility requirements. In addition, the increasing use of electric or hybrid cars acts as a further mitigant, although this may result in increasing investment requirements by toll road operators in additional facilities, such as charging stations.

### Social

ASTM's **S-3** score reflects its exposure to the risk that public concern over social or affordability issues, particularly in Italy, could lead to adverse regulatory or political intervention. The Italian toll road sector has historically been subject to political interference and in line with other operators, ASTM has been subject to regulatory uncertainties and delays in the approval of the due tariff increases. Customer relations and affordability risks are balanced by neutral to low risks to health and safety, human capital and responsible production.

### Governance

ASTM's **G-2** score reflects limited exposure to governance risk. This is supported by neutral-to-low scores on financial strategy and risk management, management credibility and track record, organizational structure and compliance and reporting. Following its delisting in June 2021, ASTM is owned by Gruppo Gavio (50.5%) and the private equity company Ardian (49.5%). While private ownership could increase risk tolerance and translates in moderately negative board structure and policy risks, ASTM's shareholders have historically implemented a balanced financial policy.

ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moodys.com. In order to view the latest scores, please click [here](#) to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

### Liquidity Analysis

As of December 2023, ASTM's Italian business liquidity position was strong, supported by around €1.2 billion of cash and cash equivalents. In addition, the company maintains a €500 million back-up facility, majority of which expires in 2028; and a €350 million backstop facility, which was contracted for one year in July 2023 and contains an optional six months extension at the company's discretion. Remaining debt maturities in 2024 and 2025 are modest. Therefore, we estimate that liquidity availability and internal cash flow generation of ASTM's Italian business should be sufficient to cover all its cash requirements, including investments and debt repayments, for at least the next 12-18 months.

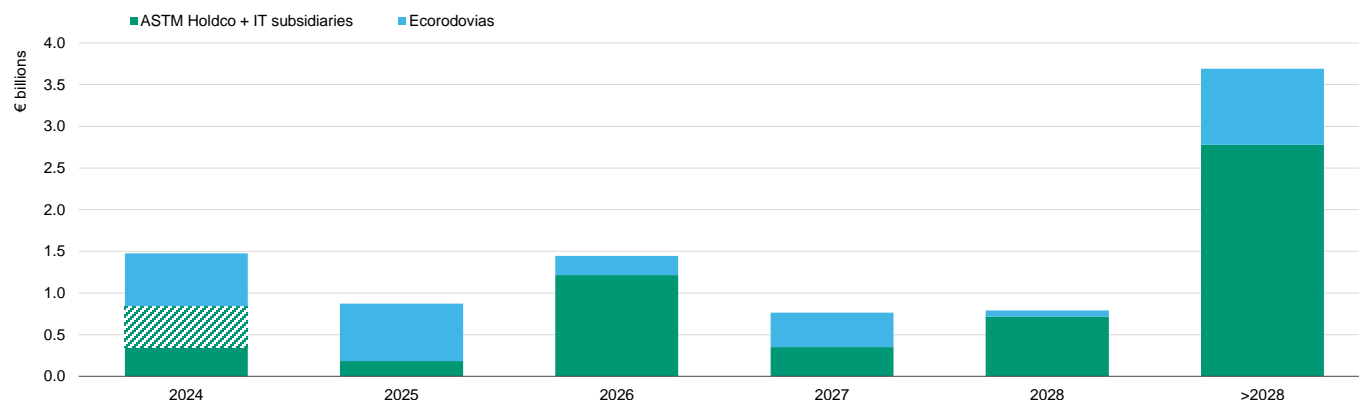
Ecorodovias has an adequate liquidity profile on standalone basis. Over the last year, the group has been successful in extending its maturity profile and improving its liquidity. As of December 2023, the Brazilian group had around BRL4.6 billion of cash. We estimate that Ecorodovias will require additional financing over the next 12-18 months to cover its capital investment requirements and debt repayments. We expect the company to continue to access the debt markets to meet its financing needs in view of the increasing capital spending for the new concessions.

As of December 2023, ASTM's debt was almost equally split between fixed and variable rate. Excluding Ecorodovias, which bears entirely floating or index-linked debt, around 74% of ASTM's debt was fixed rate.

Exhibit 16

**ASTM group's debt maturity profile**

As of December 2023



In February 2024, ASTM repaid a €500 million maturing bond.

Source: Company, Moody's Ratings

Overall, we consider ASTM's liquidity as a credit positive feature, which supports the current credit profile. In addition, we expect that ASTM will maintain a prudent financial policy, in line with its track record.

### Structural Considerations

Prior to the update of the EMTN programme in November 2021, ASTM had the option to issue either secured or unsecured notes. At the moment, 26% of the notes under the programme are secured. Secured notes benefit from a first-ranking security interest over the intercompany loans that was used by ASTM to downstream the proceeds of the secured notes to its operating subsidiaries. Also, secured lenders are part of an intercreditor agreement, applying in case of a default and assuring that the proceeds arising from the enforcement of each pledged intercompany loan is shared pro rata and pari passu among all the holders of secured notes and the other classes of secured creditors of ASTM.

We believe that the secured notes issued under ASTM's EMTN program effectively rank pari passu with creditors at the operating subsidiaries level. As a result, we maintain a Baa3 rating on ASTM's EMTN senior secured notes, which is in line with our assessment of the group's consolidated credit strength. We equalised senior unsecured ratings at the Baa3 level, reflecting the progressive concentration of the group's funding at the holding company level, with a consequent reduction of the proportion of external debt located at operating companies. We expect the group to maintain the trend of debt concentration for its Italian operations at the holding company level.

ASTM's EMTN programme includes the option of converting the secured notes into unsecured notes when the ratio of holding company debt-to-consolidated debt reaches at least 85%.

## Rating Methodology and Scorecard Factors

ASTM's rating reflects our assessment of the group's overall risk business profile and financial performance, in line with our rating methodology for Privately Managed Toll Roads.

Exhibit 17

### Rating Methodology Scorecard

ASTM S.p.A.

Privately Managed Toll Roads Industry [1]	Current FY Dec-23 [2]		Moody's Dec 2025 Forward View As of May 2024 [3]	
	Measure	Score	Measure	Score
<b>Factor 1 : Asset Type and Service Area (25%)</b>				
a) Asset Type	A	A		Aa
b) Competing Routes	Aa	Aa		Aa
c) Economic Resilience of Service Area	A	A		A
<b>Factor 2 : Traffic Profile and Performance Trends (15%)</b>				
a) Traffic Profile	A	A		A
b) Track Record and Stability of Tolled Traffic	Baa	Baa		Baa
<b>Factor 3 : Concession and Regulatory Framework (10%)</b>				
a) Ability and Willingness to Increase Tariffs	Ba	Ba		Ba
b) Protection Provided by the Concession and Regulatory Framework	Ba	Ba		Ba
<b>Factor 4 : Coverage and Leverage (40%)</b>				
a) Cash Interest Coverage	2.9x	Baa	2.8x - 3.1x	Baa
b) FFO / Debt	11.1%	Baa	10% - 12%	Baa
c) Moody's Debt Service Coverage Ratio	1.5x	Ba	1.6x - 1.8x	Ba
d) Concession Life Coverage Ratio	1.8x	Ba	1.9x - 2.2x	Ba
<b>Factor 5 : Financial Policy (10%)</b>				
a) Financial Policy	Baa	Baa		Baa
<b>Rating:</b>				
Indicated Outcome before Notching Adjustments		Baa3		Baa2
Notching Adjustments		0		0
a) Scorecard-Indicated Outcome		Baa3		Baa2
<b>b) Actual Rating Assigned</b>				<b>Baa3</b>

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations [2] As of December 2023. [3] Forward-looking quantitative factor metrics are based on our views for the year 2025. This represents Moody's forward view, not the view of the issuer  
Source: Moody's Financial Metrics and Moody's Ratings forecasts

## Ratings

Exhibit 18

Category	Moody's Rating
ASTM S.P.A.	
Outlook	Stable
Senior Secured -Dom Curr	Baa3
Senior Unsecured -Dom Curr	Baa3

Source: Moody's Ratings

## Appendices

Exhibit 19

### Peer Comparison Table

(in EUR million)	ASTM S.p.A. Baa3 Stable			SANEF S.A. Baa2 Stable			Brisa Concessao Rodoviaria S.A. A3 Stable			Autostrade per l'Italia S.p.A. Baa3 Stable		
	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	FYE	
	Dec-21	Dec-22	Dec-23	Dec-21	Dec-22	Dec-23	Dec-21	Dec-22	Dec-23	Dec-21	Dec-22	Dec-23
Revenue	3,062	4,499	5,452	1,868	2,014	2,090	573	665	779	4,404	4,625	5,293
EBITDA	641	1,131	1,689	1,167	1,338	1,393	411	509	583	2,142	2,492	2,407
EBITDA margin %	20.9%	25.1%	31.0%	62.4%	66.4%	66.6%	71.7%	76.6%	74.9%	48.6%	53.9%	45.5%
Funds from Operations (FFO)	462	871	1,155	847	1,008	1,073	295	354	415	986	1,251	1,720
Total Debt	7,907	8,606	10,444	2,157	1,966	1,637	1,757	1,590	1,394	10,685	11,389	12,008
FFO Interest Coverage	4.1x	2.9x	2.9x	9.6x	22.3x	55.6x	8.1x	8.5x	9.1x	3.8x	4.5x	4.9x
FFO / Debt	5.8%	10.1%	11.1%	39.3%	51.3%	65.5%	16.8%	22.3%	29.8%	9.2%	11.0%	14.3%
FFO / Net Debt	7.0%	12.0%	13.4%	46.6%	58.7%	76.7%	18.9%	24.6%	32.1%	11.2%	13.8%	17.5%
RCF / Capex	0.7x	0.6x	0.6x	1.3x	1.5x	2.3x	5.3x	5.0x	9.3x	0.9x	0.5x	0.2x
RCF / Net Debt	6.9%	11.9%	12.9%	16.3%	19.9%	32.8%	7.5%	10.3%	13.6%	11.1%	5.5%	3.3%

[1] All metrics are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. [2] SANEF metrics refer to HIT consolidated group.

Source: Company, Moody's Ratings

Exhibit 20

### ASTM's adjusted debt breakdown

(in EUR million)	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22	FYE Dec-23
<b>As Reported Total Debt</b>	3,076	2,803	7,753	8,565	10,404
Pensions	44	42	46	41	40
Non-Standard Public Adjustments	264	244	109	0	0
<b>Moody's Adjusted Total Debt</b>	<b>3,385</b>	<b>3,089</b>	<b>7,907</b>	<b>8,606</b>	<b>10,444</b>

All metrics are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. Non-Standard Public Adjustments mainly refer to the reclassification to debt of financial liabilities reflected as other liabilities in ASTM's accounts.

Source: Moody's Financial Metrics

Exhibit 21

### ASTM's adjusted EBITDA breakdown

(in EUR million)	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22	FYE Dec-23
<b>As Reported EBITDA</b>	659	462	643	1,130	1,692
Pensions	(3)	(2)	(2)	1	(3)
<b>Moody's Adjusted EBITDA</b>	<b>656</b>	<b>461</b>	<b>595</b>	<b>1,131</b>	<b>1,689</b>

All metrics are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations. In accordance with Moody's definitions, EBITDA does not incorporate any provisions.

Source: Moody's Financial Metrics

Exhibit 22

### ASTM's adjusted FFO breakdown

(in EUR million)	FYE Dec-19	FYE Dec-20	FYE Dec-21	FYE Dec-22	FYE Dec-23
<b>As Reported Funds from Operations (FFO)</b>	564	373	462	871	1,155
Non-Standard Public Adjustments	22	26	0	0	0
<b>Moody's Adjusted Funds from Operations (FFO)</b>	<b>586</b>	<b>398</b>	<b>462</b>	<b>871</b>	<b>1,155</b>

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

Source: Moody's Financial Metrics

## Endnotes

- [1](#) Ecoporto concession was due to expire at the end of 2023. However, the company is discussing the renewal with the Santos Port Authority (APS), which [granted a 180-day extension](#) to the concession until June 2024 to guarantee operational continuity during the renewal negotiations
- [2](#) If considering the start of Autovia Padana concession in 2018, traffic grew by 3.4% per annum between 2015-2019.



© 2024 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 CREDIT RATINGS AFFILIATES ARE THEIR 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 OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S 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 APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S 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 MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS 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 MATERIALS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS 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 OR OTHERWISE MAKES AVAILABLE ITS MATERIALS 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 MATERIALS 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 MATERIALS 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. FOR CLARITY, NO INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS 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 credit rating process or in preparing its Materials.

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. 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, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at [www.moody's.com](http://www.moody's.com) under the heading "Investor Relations — Corporate Governance — Charter Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V., I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., and Moody's Local PA Clasificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

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 India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges.

Additional terms with respect to Second Party Opinions (as defined in Moody's Investors Service Rating Symbols and Definitions): Please note that a Second Party Opinion ("SPO") is not a "credit rating". The issuance of SPOs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to satisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

CLIENT SERVICES

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