CNMC COMISIÓN NACIONAL DE LOS MERCADOS Y LA COMPETENCIA

SUMMARY OF THE CNMC ASSESSMENT REPORT ON AENA'S PROPOSAL FOR THE REGULATORY FRAMEWORK OF AIRPORT CHARGES IN SPAIN FOR THE 2022-2026 PERIOD[1]

I. CNMC COMPETENCE TO ISSUE THE REPORT ON THE DORA

The regulatory framework for the charges that Aena is entitled to levy for the provision of basic airport services[2] is set out in Law 18/2014, of October 15, on urgent measures for growth, competitiveness, and efficiency ("Law 18/2014") and in Law 21/2003, of July 7, on Air Traffic Security. Together with other defining elements of the charges that are predetermined in those regulations[3], Law 18/2014 provides for the approval by the Council of Ministers of a Regulation Document for Aena's Airports (DORA) that constitutes a stable framework for these charges for a five-year period and is aimed at ensuring the sufficiency of revenue based on the calculation of efficient costs for the provision of airport services.

The CNMC's role in the process of approval of the DORA is set out in articles 20.5 and 25.3 of Law 18/2014, according to which the CNMC is responsible for issuing a mandatory, but non-binding, report on the DORA and its modifications[4]. In particular, the CNMC must report on:

> b) Detailed traffic forecasts by airport for each year of the five-year DORA period.
>
> d) Service quality standards, implemented through a certain number of indicators, for each airport and for each year of the five-year period.

[1] This document is an unofficial and summarised version in English of the agreement of 16 June 2021, which approves the report provided for in article 25.3 of Law 18/2014, of 15 October, approving urgent measures for growth, competitiveness, and efficiency in relation to the 2022-2026 airport regulation document (STP / DTSP / 013/21).

[2] These considerations that Aena is entitled to receive for basic airport services have the legal nature of public patrimonial benefit (PPP) and are configured as a common tariff system that encompasses the airport network of this manager. This means that the same rates are applied for each airport service provided at the airports belonging to the same group, distinguishing the groups of airports based on the annual passenger traffic managed in each of them.

[3] Law 18/2014 establishes the separation of costs and revenue between regulated and commercial activities (dual till) and the methodologies to calculate the maximum revenue per passenger (IMAP in Spanish), to apply the annual adjustment for the price increase and to calculate annual maximum adjusted revenue (IMAAJ in Spanish). Likewise, it establishes as an efficiency condition for the 2015-2025 period the impossibility of increasing the IMAP and IMAAJ above 0% per year, the impossibility of transferring the accumulated deficit during DORA I to DORA II, the impossibility of exceeding the threshold maximum average annual investment for the period of 450 million euros except for assessed cases and a cost limit per ATU (air traffic unit) that is set at the 2014 level until 2025.

[4] On 29 March, the DGAC requested a report on the DORA by the CNMC. The CNMC has two months to issue that report.

f) The investments planned in the five-year period consistent with the rest of the DORA content to meet the infrastructure capacity and service quality standards, including, among other data, that the annual value of the investments planned in the five-year period is the value included in the Regulated Asset Base ("RAB") for each year.

g) The annual operating expenses and cost of capital used to calculate the Maximum Annual Revenue per Passenger ("IMAP").

h) The values of the IMAP for each year of the five-year period.

i) The values that allow to establish the annual incentives or penalties for the quality of the service provided and the penalties for delay in executing the planned investments, applicable to determine the annual maximum adjusted revenue ("IMAAJ") corresponding to each year.

j) The costs for each basic airport service and the contribution of the costs that are recovered with each tariff to determine the IMAP.

In addition to the foregoing, article 10 of Law 3/2013, of 4 June, creating the CNMC attributes to it, in addition to the task of issuing a report on the DORA, the task of overseeing compliance of the transparency and consultation procedure conducted by Aena with the requirements set out in Law 18/2014.

DORA II, which will be applied to Aena's airport tariffs as of 2022 for the 2022-2026 period, must be approved by 30 September 2021. This DORA must be reported on by the CNMC before its approval. The DORA is then approved by resolution of the Council of Ministers acting upon a proposal of the Ministry of Transport, Mobility and Urban Agenda ("MITMA") and after a prior report of the Government Executive Committee for Economic Affairs ("CDGAE").

Therefore, this report is issued at the request of the General Directorate of Civil Aviation ("DGAC") in compliance with article 25.3 of Law 18/2014, and in exercise of the powers attributed to the CNMC in Article 20.5 of the same Law.

II. REGULATORY FRAMEWORK FOR AIRPORT CHARGES

Law 18/2014 has designed a mechanism to economically regulate airport tariffs in which, through DORA, a stable framework for airport charges is set in five-year periods that ensures sufficient revenue based on the calculation of efficient costs to provide airport services. Hence, DORA must set the IMAP that, prospectively for the entire period, will cover Aena's expected costs. The risk from traffic forecasts, as well as cost deviations, except for exceptions based on specific grounds, is assigned to the airport manager.

In relation to tariffs, Annex VIII of Law 18/2014 establishes that the average annual revenue per passenger that Aena can obtain from Public Patrimonial Benefits (PPPs) will be capped in each of the five years of the DORA. This cap, called the

IMAP in Spanish, will be determined for year t, by means of a variation percentage with respect to the IMAP of the previous year (t-1) according to the following formula:

$$IMAP_t = IMAP_{t-1}\left(1 + \frac{P_{t-1} + X}{100}\right)$$

Therefore, the rates are updated annually through an X increase (the same for the entire DORA period) and a price update index (P index):

- The objective of the **P index** is to recognise the impact that the annual variations of the price of inputs that affect the airport manager activity but are outside its control, will have over the airport manager's costs base. In accordance with Law 18/2014, the value of the P index will not be specified in the DORA, but its amount will be determined annually by the CNMC during the process for setting the charges for the following year.[5]

- The **X component** corresponds to the increase in airport charges needed to match the flow of costs acknowledged to Aena and of the revenue, which is determined by the charge for each year and the expected traffic.

That is, the estimation of the value X must ensure that:

$$\sum_{1}^{5} \frac{IMAP_0(1+X)^t Q_t}{\left(1 + \frac{WACC_{PT}}{100}\right)^t} = \sum_{1}^{5} \frac{IRR_t}{\left(1 + \frac{WACC_{PT}}{100}\right)^t}$$

Whereas:

- **IMAP $_0$**: Maximum annual revenue per passenger corresponding to year 0.
- **t**: the values of years 1 to 5 of the regulatory period.
- **Q $_t$**: the number of passengers expected for year t.
- **IRR $_t$**: the regulated revenue required for year t.
- **WACC$_{PT}$**: Is the pre-tax weighted average cost of capital for the five-year period, measured in percentage points, which acts as a discount rate for the annual income and costs flows.

Regarding cost recovery, this is articulated through the regulated revenue required for the five-year period ("IRR"), which is determined as the sum of the expected values of the operating expenses and of the cost of capital.

[5]This index is subject to Royal Decree 162/2019, of 22 March, implementing the airport charge update index. (Index P) applicable to Aena SME S.A. and amending Royal Decree 55/2017, of 3 February, which implements Law 2/2015, of 30 March, on deindexation of the Spanish economy.

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Considering the regulatory and tariff framework described above, hereunder a summary will follow, firstly on the position of the parties and the main conclusions reached by the Commission in relation to the supervision carried out on the consultation procedure, and secondly, on the conclusions related to the different economic parameters that make up the calculation of the IMAP and the final airport charge variation reflected in the X component.

III. TRANSPARENCY AND CONSULTATION PROCEDURE CONDUCTED BY AENA

The transparency and consultation procedure established by Law 18/2014 has taken place between Aena and the associations[6] of airport users. Representatives of the DGAC, Air Safety Agency ("AESA") and the CNMC have also attended as observers of the process.

Consultations lasted more than two months, from 22 December 2020 to 2 March 2021, and were organised in 8 meetings, 3 of which were plenary sessions and 5 specific working groups aimed at discussing the economic and technical aspects of the DORA proposal in detail.

As expected, the DORA II consultations were influenced by the effects of the COVID-19 pandemic, due to its health, operational and economic consequences on national and international air traffic, and by the uncertainties posed by the possible economic recovery scenarios. This made it all the more difficult to prepare 5-year traffic forecasts, which in turn affects the ability to make forecasts on the rest of the parameters that must be set in the DORA. The key issues discussed and the parties' position are summarised below:

1. DORA proposal from Aena

The final proposal made by Aena after the consultations for each of the variables on which, according to Law 18/2014, the Commission must issue a mandatory assessment report to the DGAC, is provided below.

2. Traffic forecasts

The air traffic forecast prepared by Aena for the regulatory period is based on the combination of two methods: the top-down (macroeconomic model) and the bottom-up (route analysis) approach for the short term.

[6]Spanish Association of Airline Companies (AECA), Association of Aircraft Owners Pilots (AOPA), Airline Association (ALA), Committee for Operating Airlines (AOC) Spain, International Air Transport Association (IATA), Association of Assistance Services Companies on the ground at Airports (ASEATA), Real Aeroclub de España (RACE) and the airlines Easyjet, Jet2.com, Norwegian, Wamos Air, Condor, Ryanair and Vueling. The associations Airlines International Representation in Europe (AIRE), Airlines for Europe (A4E) and the Royal Spanish Aeronautical Federation (RFAE) were also summoned, although they did not attend the consultation process.

Taking into account the results of the models, Aena's DORA proposal considers an average annual growth forecast of total passenger traffic for the 2022-2026 period of 15.2% l, meaning that the number of total passengers the network would manage in 2026 (the last year of the five-year period) would be approximately 279 million.

- Investment plan

Aena's investment plan for the 2022-2026 period includes a regulated investment volume of 2,250 million euros. This represents an average annual investment for the regulated activity of 450 million euros, which does not exceed the maximum limit of 450 million per year established by the Law 18/2014.

- Service quality standards

To evaluate the quality offered in the provision of airport services, in DORA II Aena has defined 22 indicators, classified according to the following 6 main types: satisfaction perceived by passengers, waiting times at passenger processing points, availability of ground support equipment, availability of air side equipment and other key areas, and environmental. Subsequently, from this set of indicators, Aena has selected 10 to include in the system of incentives and penalties that will affect the determination of the IMAAJ given their strategic importance.

The incentive system consists of a reference level, a neutral band around this reference level in which there is no incentive or penalty, and maximum levels that define the values to be used to calculate the level of compliance.

The penalty and bonus for each indicator will be calculated proportionally between the result obtained and the distance between the neutral band and the lower / upper limit, with a maximum range of incentives or penalties for quality of service provided applied to the network of Aena as a whole of +/- 2%.

- Operating expenses and cost of capital

The main cost categories incorporated by Aena in its proposal correspond to supplies related to the services commissioned to ENAIRE, AEMET and the Air Force, staff costs, energy, maintenance, security, cleaning, Reduce Mobility Passenger (PMR) services and depreciation and amortisation. Operating expenses correspond to the costs of providing PPPs.

As indicated by Aena, and in accordance with Annex VIII of Law 18/2014, the expenses have been projected in real terms, i.e. excluding the price effect, and, therefore, without considering any update associated with its variations. Any update will be recognised annually through the P component determined and included in the IMAAJ for each year during the annual consultation.

Finally, for the years 2022 and 2023 it is worth mentioning that Aena's proposal does not comply with the cap of the cost/ ATU ratio established in Law 18/2014 of 2.71 euros, which was the value registered in 2014.

Regarding cost of capital, Aena's proposal is the result of applying the $WACC_{PT}$ (CMPC, in Spanish) to the estimated average RAB for each year of the five-year period. The value of the $WACC_{PT}$ considered, calculated according to the Capital Asset Pricing Model (CAPM), amounts to 7.68% for the entire DORA period, obtained as a result of applying the following formula:

$$WACC_{PT} = \left(\frac{E * K_e + D * K_d * (1 - T)}{(E + D) * (1 - T)}\right) * 100 = 7{,}68\ \%$$

Whereas:

- ***WACC$_{PT}$***: pre-tax weighted average cost of capital.
- ***E***: market capitalisation or equity market value.
- ***K$_e$***: cost of equity.
- ***D***: value of debt.
- ***K$_d$***: cost of debt.
- ***T***: nominal income tax rate.

- Calculation of the IMAP for the 2022-2026 period

As established in the legal framework for airport charges, in order to set the amounts of the charges for the basic airport services, the X component needs to be calculated. This component ensures that over the entire regulatory period the sum of the present values of the maximum revenue allowed (the result of the IMAP times the number of expected passengers) is equal to the sum of present values of the expected costs.

The variables described above determine Aena's airport charges proposal for the DORA and are shown in the following table, together with the value of the X component resulting from that calculation:

Table 1. Variables of Aena's airport charge proposal in the DORA

	2021	2022	2023	2024	2025	2026
Operating expenses (*) (million euros)		1,803.9	1,876.6	1,958.4	2,028.6	2,040.8
Government grants		-26.1	-24.4	-23.1	-21.2	-18.2
Income from the sale of electricity from photovoltaic plants		0	0	0	-5.6	-23.3
Work performed by the company for its assets		-4.3	-4.7	-4.9	-5.0	-5.2
Costs of capital		757.2	748.3	740.0	731.5	724.9
Average RAB		9,858.9	9,744.0	9,635.2	9,525.3	9,438.8
$WACC_{PT}$				**7.68%**		
IRR_t (million euros)		2,530.7	2,595.8	2,670.4	2,728.4	2,719.1
IRRa (million euros)	68.3					

Q_t (passengers) (million)		184.6	229.5	255.0	269.8	279.1
X component				**3.29%**		
$IMAP_t$ (euros / passenger)	9.89	10.22	10.55	10.90	11.26	11.63

(*) No exceptional expenses related to COVID-19 have been projected for the period 2022-2026
Source: Aena.

As established by the regulatory framework, the calculation of the tariff takes into account the compensation for lower investment made in the previous five-year period (IRR_a), amounting to 68.3 million euros as the difference between the present value of the cost of capital actually incurred and the cost of capital recognised.

Law 18/2014 limits the tariff variation to 0% until 2025, unless the unpredictable evolution of costs outside the operator's control could not be offset with efficiency measures without jeopardising the standards set forth in the DORA. Based on the foregoing, the airport manager details that after the approval of Law 18/2014, the following regulatory costs related to the security service have occurred:

Table 2. Costs arising from regulatory requirements (million euros) (table 4 of the report)

	2022	2023	2024	2025	2026
Cabin baggage inspection	24.7	29.5	36.9	39.7	40.7
Hold baggage inspection	0	0	1.1	7.9	10.9
EU border control	2.8	3.6	3.9	4.2	4.4
Total regulatory costs	**27.6**	**33.1**	**41.9**	**51.8**	**56.0**

Source: Aena.

Aena considers that such unforeseen costs should be recognised by the Regulator, entailing 0.52 points of the airport charge. Considering the above and the limitation established by the Law, the trend of the IMAP of Aena's DORA proposal for the period 2022-2026 is as follows:

Table 3. IMAP (2022-2026)

	2022	2023	2024	2025	2026
$IMAP_t$	9.94	9.99	10.05	10.10	10.43
Rate variation (X)	0.52%	0.52%	0.52%	0.52%	3.29%

Source: Aena.

According to the above, the IMAP cap until 2025 would generate a deficit in the regulatory period amounting to 796.8 million euros[7]. The IRR for the period amount to 10,635.4 million euros (excluding the 68.3 million euros of the IRR_y) while the

[7]To recover this deficit, Aena considers that the provisions of the sixth transitory provision of Law 18/2014 should be followed. According to them when the DORA defines IMAP values for the years 2014 to 2025 and the application of the methodology for the calculation of the same leads to an annual increase of more than 0%, 0% would be applied to the maximum annual increase of both the IMAP and the IMAAJ.

present value of expected revenue with the proposed IMAP amounts to 9,770.4 million euros.

The 2022 IMAP (9.94 euros per passenger) is obtained by applying 0.52% to the 2021 IMAP; i.e. 9.89 euros per passenger.

3. Position of the airport users' associations during consultations

The majority of the airport users' representative associations[8], after meetings held during the consultations in both the technical and economic groups, has drawn up a tariff proposal alternative to Aena's. The associations consider that according to the regulatory model and the legal framework in force, the value of the X component of the airport charges update formula under Law 18/2014 should be -3.38%, which would be equivalent to a reduction in charges of 3.38% each year of the five-year period.

This proposal is based on the following discrepancies with respect to the variables used by Aena in the proposal set forth in the previous section:

- OPEX/ATU ratio: The ratios proposed by Aena should be adjusted as indicated in the table below, given that as traffic levels return to 2019 levels, the same level of efficiency reached then by Aena should be required.

Table 4. OPEX/ TU ratio (2022-2026) (euros per ATU)

	2022	2023	2024	2025	2026
OPEX / ATU	2.71	2.40	2.40	2.40	2.34

Source: CNMC based on the associations' proposal.

- Cost of capital: the $WACC_{PT}$ must be adjusted at a rate of 6.15%, resulting from an average scenario collected in the report by the independent consultant engaged by the associations. The main differences between this cost of capital proposal and that of Aena are fundamentally found in the valuation made on two cost parameters, the risk-free rate, and the beta.

- Traffic forecasts: the traffic forecast made by Aena should be adjusted upwards based on the estimates made by IATA and Oxford Economics. The volume of passengers considered by the airport user associations for the last year of the regulatory period (2026) is 318.6 million passengers.

4. CNMC conclusions on the transparency and consultation process

In view of the development of the consultations held between Aena and the associations representing the airlines that use its airports, this Commission has verified that Aena has complied with the provisions of Law 18/2014 in relation to the consultation procedure prior to the approval of its DORA proposal. In the different

[8]ALA and IATA.

meetings, the main discrepancies between the airport manager and the airlines have been highlighted, whereas in the document submitted to the CNMC, Aena defends the reasons why it has not considered the user associations' points of view.

IV. CNMC ASSESSMENT OF AENA'S DORA PROPOSAL

The following is a summary of the CNMC's assessment of each of the variables that make up the IMAP calculation and which will therefore result in the rate adjustment to be applied during the regulatory period 2022-2026.

1. Traffic forecasts for the regulatory period (2022-2026)

As previously mentioned, Aena's traffic forecast combines two methods: the top-down (macroeconomic model) and the bottom-up (analysis of routes and airports).

Using the top-down method, Aena has econometric models with which it makes forecasts of both international and national traffic, also distinguishing the short, medium, and long term.

- *Short-term model*

In the short term and as a consequence of the current situation generated by COVID-19, Aena has focused its analysis on the bottom-up method together with the information published by the different aeronautical organisations, leaving in second place the top-down method based on quantitative time series models.

- *Medium- and long-term model*

In the medium and long term, the traffic forecast conducted using the top-down method is based on multivariate econometric models, where the main explanatory variables are GDP and the population of the different regions and countries.

The top-down method is complemented by the bottom-up method, along with an analysis of risks, uncertainties and factors that can also affect air traffic.

The forecast of the number of operations is made based on the passenger forecast.

Regarding the transportation of goods, given that it is only significant in 7 airports of the total network where volumes transported exceed 10 million kilograms, Aena has prepared a specific forecast for each airport.

1. Model results and Aena's forecast for the 2022-2026 regulatory period

According to Aena's forecasts, national and international traffic will recover during DORA II.

Table 5. Traffic forecast by Aena in the 2020-2026 period (million passengers)

	Traffic (2020-2026)						
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Traffic	75.8	137.0	184.6	229.5	255.0	269.8	279.1
Increase	-72.3%	80.7%	34.7%	24.3%	11.1%	5.8%	3.4%

Source: CNMC based on Aena data.

International traffic is expected to have returned to pre-pandemic levels by 2026, while domestic traffic should continue to set below those levels.

Table 6. National and international traffic expected by Aena in the 2020-2026 period (millions of passengers)

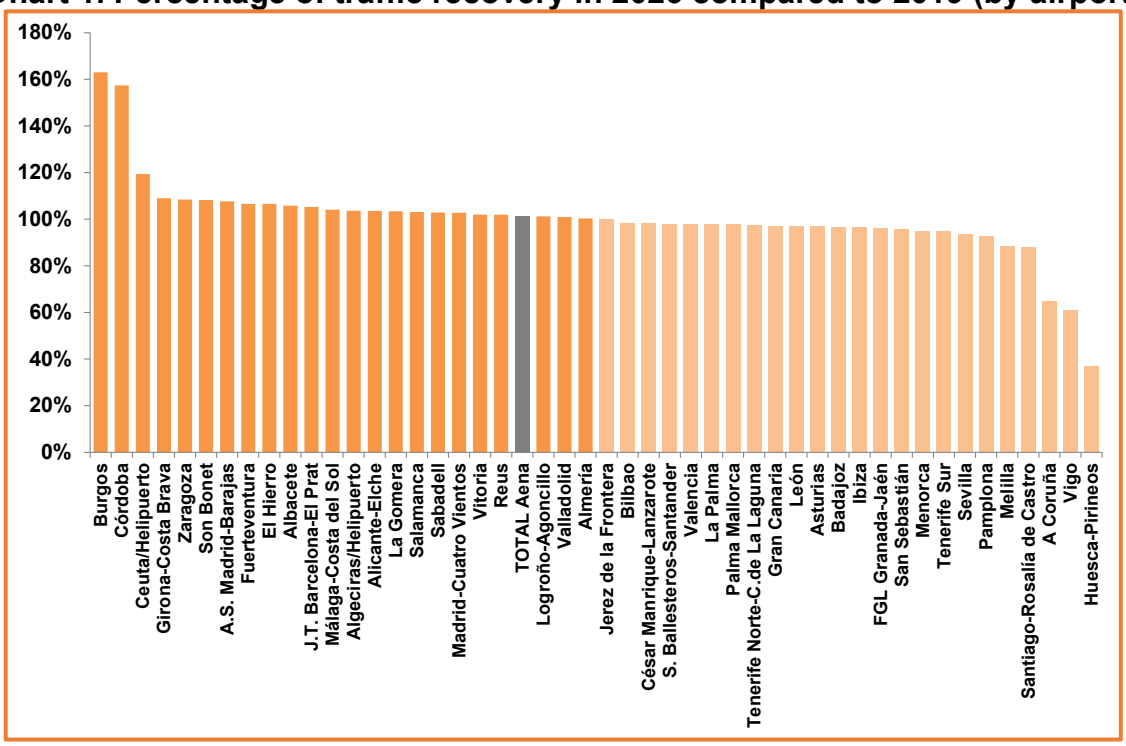
	Traffic (2020-2026)						
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
National	33.73	57.07	63.39	69.92	74.97	78.66	80.79
Annual increase	-60.6%	69.2%	11.1%	10.3%	7.2%	4.9%	2.7%
International	41.91	79.30	120.53	158.83	179.28	190.39	197.49
Annual increase	-77.8%	89.2%	52.0%	31.8%	12.9%	6.2%	3.7%

Source: CNMC based on Aena data.

This trend means that the weight of international traffic on total traffic will be similar to levels prior to the health crisis, in which international traffic represented around 70% of the total traffic volume managed in the airports in Aena's network.

Aena expects the bulk of traffic growth to take place in the largest airports within the network. Thus, the largest increases will be recorded at the airports of Madrid, Barcelona, Malaga, and Palma de Mallorca, which will account for more than 60% of traffic captured during the period.

Chart 1. Percentage of traffic recovery in 2026 compared to 2019 (by airport)



Source: Own elaboration with data from Aena.

2. *Assessment of the model and variables considered by Aena*

Once the air traffic prediction model applied by Aena has been described, as well as the results included in the DORA II proposal, the Commission will proceed with its analysis and assessment in accordance with the aforementioned article 20.5 of Law 18/2014.

Methodology and specification of econometric models

The first element to consider before establishing the reasonableness of Aena's proposal is the methodology and specification of the model used, evaluating the variables that explain traffic evolution.

This section will analyse the top-down method based on multivariate models (medium and long term), in which the explanatory variables are GDP and the population of different regions and countries, and ARIMA type univariate models for the short term.

Aena's methodological approach is complemented by the bottom-up method which includes an analysis of risks, uncertainties and factors that can also affect air traffic both in the short, medium, and long term and which will be analysed at a later stage.

- *Short term*

In the short term, Aena highlights that as a consequence of the current situation generated by COVID-19, the ARIMA models are not the most suitable for predicting traffic behaviour.

In this regard, it should be mentioned that the Commission has conducted an analysis of traffic in the short term with these models and confirms the difficulty expressed by Aena in obtaining solid estimates given the reduced regularity shown by the observations in the recent past.

- *Medium and long term*

In the medium and long term, the models used by Aena are multivariate models.

The usual explanatory variables of traffic behaviour include variables that consider both external factors (population, GDP, intermodal competition, tourism) and internal factors (ticket prices, quality of service, fuel prices, etc.). The methodology applied by Aena in DORA II does not differ from that used in DORA I, with its own caveats related to the estimation particularities and the appropriate adjustments to the current context. Therefore, as indicated by this Commission in the report to DORA I, it is considered that the variables included in the models are among those usually used by different international organizations and institutions and, as a consequence, are adequate.

Aena's estimate runs a different econometric model for each of the 14 largest airports in the network, grouping the rest into a single estimate. In all cases, a different estimate is made for national traffic and international traffic.

Aena's adjustments and final forecast

In the medium- and long-term estimates, Aena uses two types of adjustments:

- A general adjustment that has been applied to all econometric models by airport, consisting of taking the lower level of the confidence interval at 50% and that Aena justifies, for caution purposes, with the short- and medium-term trend of air traffic according to the factors analysed. This adjustment is complemented by a recovery from the pandemic with an incomplete V shape since it indicates that there is a consensus among the main economic and reference organisations in the airline sector that the initial drastic fall will be accompanied by a smooth and gradual recovery towards the pre-crisis trend.

- A specific adjustment in certain airports in which factors such as the establishment by airlines of air bases at certain airports (positive impact), the discount for inter-island flights and connecting with the peninsula (positive impact) or liberalisation of rail transport in Spain (negative impact).

Regarding the general adjustment, the Commission considers that the choice of the lower level of the confidence interval at 50% is reasonable and cautious in the current context affected by greater uncertainty caused by the health and economic crisis.

Despite the fact that the functional form of the incomplete V-shaped recovery is considered suitable, and in fact there is consensus in this regard among the main international organisations that have made forecasts for Spain, there is also some agreement between these same organisations that the levels prior to the pandemic will be recovered before Aena's proposal (2026).

Finally, and in relation to the specific adjustments, it is considered that their motivation is adequate as they are not included in the estimated econometric models.[9]. However, the Commission considers that there is a certain lack of traceability in the way in which these adjustments are quantified[10], mainly in the case of the medium and long term, which allows certain discretion to the analyst who performs them, a question that can be justified in part by the difficulty of estimating them.

3. Assessment of the trend of traffic envisaged in the DORA proposal

- *Short-term forecasts*

Shorter-term forecasting is usually a simpler forecasting exercise with less probability of error given that the information used has a higher level of certainty, since, for example, schedules and airline occupancy levels are considered in the short term. However, currently this information, as a consequence of the different travel restrictions in place and the variable evolution of the pandemic, implies a continuous re-planning effort that makes this task difficult.

It should be noted that, although the 2021 traffic level is not included in the DORA II regulatory period that begins in 2022, it will serve as a lower limit of traffic recovery and, therefore, the higher this level, the stronger the recovery will be for the following year.

Meanwhile, airlines have recently made public[11] that they expect to recover 58% of flights this summer, so with occupancy levels such as those estimated by Aena for 2021, traffic at the end of the year would be between 94 and 114 million passengers[12]. Likewise, and making this calculation with the latest forecasts published by Eurocontrol, traffic would be between 80 and 118 million passengers.

[9]Variables such as trade wars or economic crises are considered to be reflected in GDP estimates.

[10]This conclusion was already made manifest by this Commission in its DORA I report.

[11]Airlines expect to recover 58% of flights this summer. Cinco Días (26 April 2021) https://cincodias.elpais.com/cincodias/2021/04/26/companias/1619428290_393287.html

[12]Conducted with a 10% variation on the load factor value estimated by Aena.

It should be noted that the estimate made by the Commission with its own models is also within this interval, which is explained below.

- *Medium- and long-term forecasts*

In the medium and long term, and as long as the current uncertainties are clarified, it is difficult to make consistent estimates. However, once the current impact and travel restrictions disappear, it is expected that the trend of traffic will be dictated again by economic activity.

The variable commonly used to analyse economic activity is GDP. Regarding its relationship with traffic, there is a certain consensus that this elasticity, under non-exceptional conditions, and as indicated in the report of the Commission on DORA I, is greater than 1.[13].

Therefore, considering the above, and taking an elasticity equal to 1 as a reference, a possible scenario would be one in which traffic in Spain grows at the same rate as GDP, considering that it is a mature market.

- *Estimates made by other institutions and agents*

Finally, it is important to put into context the growth estimates made by Aena in DORA II with those made by other institutions and agents in the airline industry. The estimates shown below include those made periodically by Eurocontrol and IATA.

Eurocontrol forecasts

This organisation's forecasts are one of the usual references in the sector to analyse trends on a European level. In its forecasts made in November 2020.[14] there were three headline scenarios: (1) vaccine made widely available for travellers (or end of pandemic) by summer 2021, (2) vaccine made widely available for travellers (or end of pandemic) by summer 2022, and (3) vaccine not effective, with lingering infection and low passenger confidence. With these scenarios, they predicted traffic only returning to pre-health crisis levels by 2024, 2026 and 2029, respectively.

Recently, in May 2021.[15] , this organisation published an update of the previous forecasts according to which, in the event of scenario (2), the recovery is anticipated in year 2025, maintaining the recovery periods of the other two scenarios. In addition to the above, Eurocontrol currently foresees a reduction in estimated traffic for 2021 and a better performance in the following years.

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[13]Thus, for example, ACI estimates that the elasticity would be around 1 for mature markets and 2.5 for emerging markets, the median being 1.5. Likewise, the Eurocontrol traffic models estimate elasticities that are clearly above 1, reaching values close to 3. Finally, reports such as those from Airbus or Boeing place them at around 2 for Europe.

[14]https://www.eurocontrol.int/publication/eurocontrol-five-year-forecast-2020-2024.

[15]https://www.eurocontrol.int/publication/eurocontrol-forecast-update-2021-2024.

Comparing Aena's estimate to Eurocontrol's, the biggest discrepancies are in years 2021 and 2022.

In 2021 the difference stems from the fact that Eurocontrol has recently updated its forecast using actual data of the first four months of the current year. However, and in the most optimistic scenario (scenario 1), Eurocontrol continues to consider that Aena's forecast for 2021 could be met.

In 2022, however, Eurocontrol's forecast would exceed Aena's in any scenario. Finally, and for the rest of the years, there are no significant differences between the two forecasts.

Table 7. Forecast of annual travel increases by Eurocontrol and Aena

		DORA II				
	2021	**2022**	**2023**	**2024**	**2025**	**2026**
Aena	30.7%	22.2%	17.9%	9.3%	4.5%	2.2%
Eurocontrol Scenario 1	31.1%	65.9%	16.5%	10.2%	-	-
Eurocontrol Scenario 2	11.3%	61.5%	17.6%	14.3%	-	-
Eurocontrol Scenario 3	-10.8%	51.5%	13.8%	13.2%	-	-

Source: CNMC based on Eurocontrol and Aena data.

With the information currently available on the evolution of the pandemic, it could be considered that we are in the middle between Eurocontrol's scenario 1 and 2. Thus, it can be concluded that the recovery estimated by Aena is more similar to Eurocontrol's scenario 2.

IATA forecasts

IATA's forecasts, which were also discussed during the consultations, are other estimates of interest in the sector given this organisation's experience in this type of demand analysis.

IATA estimates are based on the following assumptions: (i) strong rebound in GDP in the main departure markets, (ii) widespread vaccination within Europe and (iii) evidence of accumulated demand. The estimates are updated to October 2020 and in this case, they are calculated in terms of passengers.

Table 8. Annual increases in IATA and Aena passengers

		DORA II				
	2021	**2022**	**2023**	**2024**	**2025**	**2026**
IATA (*)	105.7%	60.1%	23.8%	10.9%	5.4%	3.1%
Aena	78.4%	34.7%	24.3%	11.1%	5.8%	3.4%

(*) Increases over the total of 64.8 million passengers in 2020 estimated by IATA
Source: CNMC based on IATA and AENA data.

With the exception of year 2020 (which is not shown in the previous table and in which IATA estimated lower traffic), IATA expects traffic to be higher than Aena estimates in all periods and expects a much higher recovery than estimated by the end of DORA.

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- *Assessment of estimates*

As seen in the previous section, the traffic recovery scenario shown by Aena for DORA is more conservative than those submitted by IATA and Eurocontrol (scenario 1). Therefore, Aena implicitly assumes that the recovery will begin at a later time than that estimated by the two previous organisations.

The significant decrease in traffic in 2020 is not due exclusively to lower economic activity, so once the travel restrictions are lifted, a strong rebound in demand is foreseeable, which would also be reinforced by a demand in line with IATA's predictions.

Therefore, the first point of interest is to know the scale of the rebound and the second is to know when will it occur. Once this rebound occurs, and the levels prior to the health crisis are reached, the rest of the DORA period could be assumed to correspond to a stabilisation period in which the increases would be more moderate. As of this stabilisation, the most widely accepted assumption is that traffic performance will once again be determined by the economic situation.

Regarding the economic situation and trends in GDP, there is a certain consensus that Spanish GDP will return to pre-pandemic levels in 2022. Thus, with a GDP contraction of 10.8% in 2020, all the estimates from different organisations confirm this recovery in 2022.

Table 9. Evolution of Spanish GDP

	2021	2022	2023	2024	2025	2026
European Commission (May-21)	5.90%	6.80%	-	-	-	-
MINECO (April-21)	6.50%	7.00%	3.50%	2.10%	-	-
AIREF (April-21)	6.60%	-	-	-	-	-
IMF (April-21)	6.40%	4.70%	2.80%	2.40%	1.40%	1.40%
Banco de España (March-21)	6.00%	5.30%	1.70%	-	-	-
OECD (March-21)	5.70%	4.80%	-	-	-	-
Oxford Economics (Aena)	-	4.18%	3.26%	2.74%	2.14%	1.39%

Source: CNMC based on data from various sources.

Likewise, favourable economic trends in the main outbound traffic source countries will contribute to the recovery of Aena's international traffic[16].

[16]It is worth mentioning that in the case of the United Kingdom, analysts continue to highlight the uncertainties and effects of Brexit on traffic in the European Union and in particular in Spain, given its high relative weight.

Table 10. Variation in GDP main international sources

	European Commission (May-21)		IMF (Apr-21)		OECD (Mar-21)	
	2021	2022	2021	2022	2021	2022
Germany	3.40%	4.10%	3.6%	3.4%	3.0%	3.7%
France	5.70%	4.20%	5.8%	4.2%	5.9%	3.8%
Italy	4.20%	4.40%	4.2%	3.6%	4.1%	4.0%
UK	5.00%	5.30%	5.3%	5.1%	5.1%	4.7%
Euro Area	4.30%	4.40%	4.4%	3.8%	3.9%	3.8%
Worldwide	4.20%	4.40%	6.0%	4.4%	5.6%	4.0%

Source: OECD, European Commission, and IMF data.

As defended by the Commission in its report on DORA I and subsequently verified during its development, the traffic elasticity in relation to the GDP has been higher than 1, so as it has been considered on other occasions, calculating a unit elasticity gives us estimates on how DORA II will end.

As mentioned above, Aena's forecast considers that national traffic will not recover before 2026. Now, assuming an elasticity equal to 1 and the Oxford Economics GDP growth estimate, which are the hypotheses used by Aena in its forecast, this traffic in 2026 would be 8.4% higher than the 2019 level.0>

Similarly, performing the same analysis for international traffic and with the GDP estimates for Europe[17] , we can see that the traffic estimated by Aena is lower than the traffic obtained with the mentioned evolution of GDP and unit elasticity (8.8%).0>

It should be noted that the same analysis has been conducted with the IMF's GDP estimates and the results are similar, obtaining growth that is 7.6% higher than that of Aena for domestic traffic and 10.1% higher for international traffic.

These analyses allow us to conclude that Aena's estimate for traffic in 2026 could be considered conservative, while the forecast made by IATA would be optimistic[18], bearing in mind in all cases that, although it is true that there is a certain consensus on the recovery of GDP in the first years of the period as a result of the stimulus generated by the NextGeneration EU aid package, it is difficult to adjust the GDP estimates for a longer period.

Another issue to consider is the distribution of traffic recovery during the period covered by DORA II and which will be analysed at a later stage.

Finally, it should be noted that the IATA recovery scenarios in which the previous traffic levels are reached between 2023 and 2024 are, at the time of drafting this

[17]European traffic accounts for 85% of international traffic on the Aena network. In any case, and using world GDP, the increase in traffic would be 20% higher than that estimated by Aena.

[18]IATA has forecast total traffic levels in 2026 (national and international) of 16.3% higher than the 2019 levels.

report, too optimistic and highly dependent on the degree of immunisation and current mobility restrictions. However, it is considered that this recovery will be significant when it occurs, coinciding, in this respect, with the analysis conducted by IATA. The factors that support this significant recovery hypothesis are the accumulated demand and the elevated level of household savings during this period.

4. Analysis of this Commission (own models)

The Commission has developed two multivariate models that differentiate between national traffic and international traffic. In econometric modelling, an artificial variable has been used that, in 2020, captures the extraordinary effect of the shock generated by COVID-19 during that year.

These models have estimated a reduction effect in 2020 traffic due to the travel restrictions resulting from the pandemic of 29.4% in domestic traffic and 64.8% in international traffic. The reduction in total traffic in 2020 was 60.5% and -77.8% respectively.

The estimation has been made with two scenarios. In the most optimistic scenario, it has been proposed that the first full year in which no restrictions will apply, will be 2023. We would like to point out that this does not imply that the model assumes that the restrictions cannot be eliminated in 2022, but that the first year in which it would operate without restrictions from the beginning of the year would be 2023. In a second, less optimistic scenario, this time horizon would shift to 2024.

The model considers that once the restrictions are eliminated, there will be an additional factor that will enhance the increase in traffic regardless of the economic recovery and that additional factor as a consequence of the accumulated demand. In either scenario, once traffic recovers to previous levels (2019), moderate increases are expected until 2026.

In order to estimate the years 2022 and 2023, a recovery of the estimated effect of the 2020 restrictions has been proposed, with a V shape similar to that used by the Aena model.

In addition to the model described above, the Commission has made another estimate based on the traffic forecast information provided by the main airlines operating in Spain during the consultations. Based on this information, the traffic for the new regulatory period has been estimated based on the airlines' respective market shares. The result of this exercise is that the total recovery of traffic would occur in 2025 and by 2024 it would be at levels remarkably close to recovery.

Final assessment of traffic forecast included in DORA's proposal

In view of the analysis presented in the previous sections, the Commission considers that the method and estimation models used by Aena to make its forecasts are adequate, with the limitations indicated above.

However, when they are actually implemented, they deliver, as described above, conservative traffic estimates both for the final volume of passengers to be managed in 2026 and in determining the time in which the recovery of traffic levels prior to the pandemic will occur, that is, the levels reached in 2019.

The following table details the years in which both Aena and other agencies, agents and the CNMC itself estimate that the traffic levels managed prior to the COVID-19 impact, will be recovered.

Table 11. Pre-crisis levels recovery year (2019)

Aena	2026
Eurocontrol Vaccine 2021	2024
Eurocontrol Vaccine 2022	2025
IATA	2023-2024
CNMC (airline forecasts)	2025
CNMC (own models)	2024-2025

Source: CNMC.

Based on the foregoing, it can be concluded that there is agreement between the different agents and organisations, together with this Commission, that the recovery will occur sooner than Aena indicates.

Meanwhile, regarding the level of traffic that will be reached by the end of the DORA, the Commission also considers Aena's estimate to be conservative.

Table 12. Increase in DORA 2026 traffic compared to 2019 levels

Aena	1.8%
IATA	16.3%
CNMC (airline forecasts)	2.9%
CNMC (own models)	6.9% -7.9%

Source: CNMC.

As indicated on many occasions, the forecast for such an extended period of time is an exercise of great complexity and even more so in a scenario as changing and subject to as many uncertainties as the current one. In addition, and as described in the previous section, there are a series of risks associated with traffic, the effects of which are difficult to quantify. However, if they occurred, they could have a relevant impact on the traffic figures registered in each of the years of the new regulatory period.

It should also be pointed out that in the current context there is a greater degree of uncertainty associated with the first years of the new regulatory period and, in particular at the time when recovery consolidates at levels prior to 2020.

In conclusion and bearing in mind the analysis conducted on the traffic forecast included in Aena's proposal for the DORA regulatory period (2022-2026), the Commission considers that the Directorate General of Civil Aviation should consider, based on the most up-to-date information available at the time of the

DORA approval, whether to anticipate the recovery scenario established by Aena in 2026.

Furthermore, and considering the estimates made by other organisations and the CNMC itself, it would be advisable to adjust the final traffic volume in 2026 within a range that would place the increase over 2019 traffic at a percentage between the 2.9% estimated by this Commission from the forecast data provided by the airlines during the consultation procedure, and 6.9% of the most conservative scenario estimated from our own models.

This adjustment, which continues to be conservative based on the results obtained by other international organisations and CNMC's estimations from its own models, is considered reasonable in the current context where, as explained in detail before, there are great uncertainties about the evolution of the models' explanatory variables (GDP), about the time when the impact generated by the pandemic will be overcome and about the lack of knowledge on the impact that non-quantifiable risks may generate over the next few years.

2. Investments planned in the five-year period

Aena's regulated investments in the DORA period reach 2,250 million euros. The average annual investment according to the DORA will be 450 million euros, so the limit of 450 million euros on an annual average established in point 2 of the sixth transitional provision of Law 18/2014 is not exceeded.

Table 13. Regulated investment DORA period (million euros)

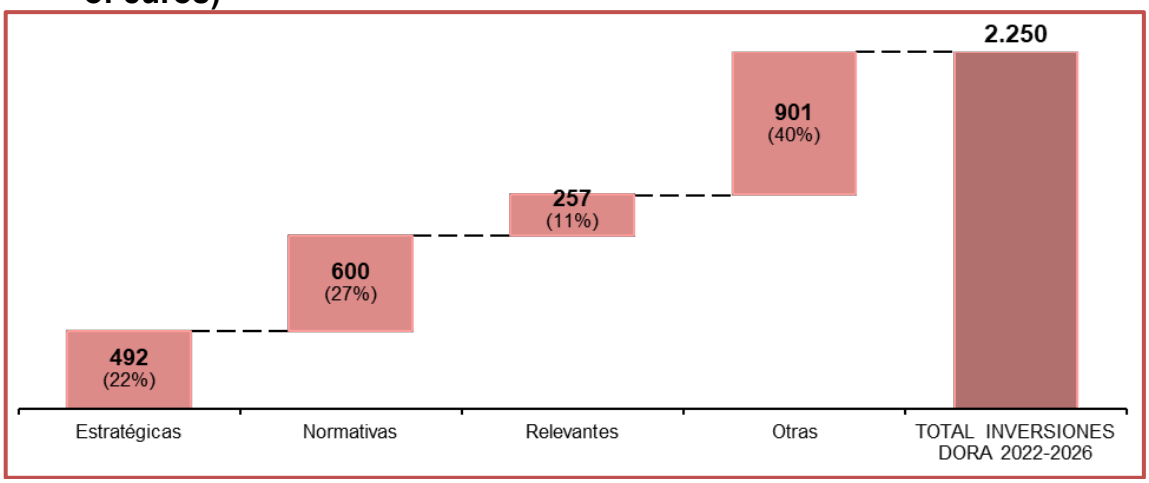
	2022	2023	2024	2025	2026	Total	Average
Investment	448.5	459.8	447.9	437.5	456.3	2,250	450

Source. Aena.

As illustrated in the following table, of the 2,250 million euros expected to be invested in the period, 49% of the investment is divided between regulatory and strategic investments[19], therefore the investment not subject to these commitments amounts to approximately 231 million euros per year.

[19]Regulatory investments refer to those that for regulatory reasons must be made in the period, while strategic investments are those necessary to comply with the quality and capacity indicators of the airport infrastructures and their delay will be subject to penalties.

Chart 2 on the Report. Regulated investments by type 2022-2026 (millions of euros)



Source. Aena.

Regarding strategic investments, the non-compliance of which is subject to penalties according to the DORA, are shown below:

Table 14 of the Report. Strategic investments DORA period

	End date
Expansion of T1 and new T1S Barcelona-El Prat airport	2030
Expansion of the Barcelona-El Prat airport airfield	2029
Expansion of T4 and the T4S Madrid-Barajas airport	2029
Renewable energies, sustainability, and photovoltaic plan for the airport network	2027

Source: Elaborated with Aena data.

As shown in the table above, the main investments in airport capacity during this second DORA are focused on the Madrid and Barcelona airports. To this extent, it is worth mentioning that the total investment planned until 2030 for the two Barcelona airport projects is 1,704 million euros, while for the Madrid airport the total investment estimated for the expansion of the T4 and T4S is 1,464 million euros. Notwithstanding the foregoing and considering the exceptional circumstances caused in air traffic by COVID-19 and the limits set by Law 18/2014, the investment to be undertaken under this DORA regarding the mentioned capacity extensions, represents only 10 % of the total planned investment[20] .

Taking into account the planned traffic in the DORA and the annual limit of 450 million euros established in Law 18/2014, this Commission considers that the investments planned by Aena for the 2022-2026 regulatory period are adequate, prioritising the actions necessary for the provision of basic airport services, with emphasis on the investments required to comply with the regulation commitments

[20]Thus, it is worth mentioning that regarding the T1 extension and the new T1S, and the extension of the Barcelona airport airfields, only 200 million euros will be executed during the regulatory period and 129.1 million euros will be executed for the Madrid airport T4 and T4S extension.

on physical and operational security as well as those related to the maintenance and renovation of basic airport assets.

3. Quality standards

Aena's DORA proposal establishes a total of 22 indicators (compared to 16 for the first regulatory period), and in order to encourage quality, Aena has selected 11 that, due to their importance or strategic interest, are subject to the incentive/penalty system, the value of which, after the annual measurement, is part of the IMAAJ calculation through parameter B. The indicators are ordered by type and are shown in the following table:

Table 1. DORA proposal quality indicators

Area	Indicator	Incentive/ penalty
SPAX: Passenger satisfaction	SPAX-01: Overall passenger satisfaction	
	SPAX-02: Passenger satisfaction with cleanliness in the airport	√
	SPAX-03: Passenger satisfaction with guidance at the airport	√
	SPAX-04: Passenger satisfaction with the security process	
	SPAX-05: Passenger satisfaction with comfort in boarding areas	√
	SPAX-06: Satisfaction of passengers with reduced mobility (PRM) with accessibility at the airport	√
TEPP: Waiting time at passenger processing points	TEPP-01: Waiting time in security control for passengers	√
	TEPP-02: Waiting time until delivery of the last baggage item	√
DEET: Availability of equipment/facilities in the terminal building	DEET-01: Availability of electromechanical equipment, baggage carousels and Baggage Handling Systems (BHS)	√
	DEET-02: Availability of Automated Baggage Handling System (ABHS)	
	DEET-03: Availability of automated people mover system (APM) between terminals	
DELA: Availability of airside equipment/facilities	DELA-01: Availability of parking places	√
	DELA-02: Availability of passenger boarding bridges	√
	DELA-03: Availability and continuity of Communications, Navigation and Surveillance (CNS) services and Air Transit Service (ATS) systems	√
OTAC: Other key areas	OTAC-01: Response time to complaints about airport management	√
	OTAC-02: Additional time on runways	
MAMB: Environmental	MAMB-01: Absolute CO_2 emissions	
	MAMB-02: Primary energy	
	MAMB-03: Renewable energy	
	MAMB-04: Water consumed	
	MAMB-05: Acoustic insulation plans	
	MAMB-06: Non-hazardous waste recovered	

Source: CNMC based on Aena data.

Broadly speaking, the Commission considers the quality indicators to be adequate despite the improvements and modifications described in the report. However,

based on the experience gained from DORA I, which showed targets were met consistently, the proposal includes updated neutral bands for incentives and penalties for certain indicators to introduce incentives for enhancing the airport managing body's performance. Similarly, the proposal includes the possibility of updating certain target values.

Moreover, given the exceptional situation in the sector caused by the COVID-19 pandemic, which most likely will last for several years of DORA II, the Commission believes it would make sense to delay the incentive scheme until traffic levels and the traffic mix return to pre-pandemic levels.

4. Operating expenses

1. *Trend in operating expenses*

Operating expenses related to PPPs totalled 1,837.7 million euros in 2019 and 1,609.7 million in 2020[21], a 12.4% fall caused mainly by the impact of COVID-19 on air traffic. Looking ahead to 2021, the airport manager forecasts growth of 6.4% to 1,712.2 million euros. Actual costs in 2020 and forecast costs for 2021 are both below the levels approved in DORA I; the pandemic rendered those forecasts outdated.

Analysing accounting profit or loss in 2019 and 2020 by item, supplies decreased in 2020 by 9.6% to 153.8 million euros because of lower air traffic, while staff costs increased by 1.7% to 351.6 million euros, driven mainly by salary increases and new hires.

Other operating expenses fell sharply, by 30.5% from 733.3 million euros in 2019 to 509.7 million euros in 2020, due to the reduction in traffic caused by the pandemic and the cost-containment plans put in place by the airport manager as a result. The sharpest decreases within this item were in security, maintenance, PRM service, electricity and cleaning.

Lastly, the depreciation and amortisation entries increased by 0.9% in 2020 to 587.5 million euros, while impairments and gains/(losses) on disposals and other results increased by 11.9%, from 6.3 million euros to 7.0 million euros.

2. *Assessment of operating expenses forecasts*

The airport manager forecasts a 13.1% increase in operating expenses during the period covered by the DORA (2022-2026), to 2,040.8 million euros in 2026. This is 11.1% higher than in 2019, the last year not affected by the pandemic. Comparisons are made with 2019, since passenger traffic that year is similar to the level Aena envisages for 2026, when airport traffic is expected to have returned to pre-health crisis levels.

[21] Excludes 49.2 million euros of COVID-19-related health expenditure.

The following table sets out trends in the various items.

Table 2. Operating expenses of Aena (million euros)

	Year-end	Year-end(1)	% Chg.	Forecast(2)	DORA proposal				
	2019	2020		2021	2022	2023	2024	2025	2026
Supplies	170.2	153.8	-9.6%	163.4	167.0	167.8	168.2	168.4	168.6
Staff costs	345.6	351.6	1.7%	351.5	362.9	382.6	390.6	417.3	426.8
Other operating expenses	733.3	509.7	-30.5%	605.7	684.9	739.6	825.4	878.9	913.0
Depreciation and amortisation	582.2	587.5	0.9%	586.9	584.5	582	569.6	559.4	527.7
Impairments and gains/(losses) on disposals and other	6.3	7.0	11.9%	4.7	4.6	4.6	4.7	4.7	4.7
Operating expenses (PPP)	**1837.7**	**1609.7**	**-12.4%**	**1712.2**	**1803.9**	**1876.6**	**1958.5**	**2028.7**	**2040.8**
Increase in operating expenses (PPP)				**6.4%**	**5.4%**	**4.0%**	**4.4%**	**3.6%**	**0.6%**

Source: CNMC based on Aena data. (1): excludes COVID-19-related expenses. (2): Aena forecast factoring in the impact of COVID-19, which does not coincide with the forecast included in DORA I.

Aena's proposal provides a detailed description of, and assumptions regarding trends in, the main operating expense items. It highlights the trend in staff costs and other operating expenses given the quantitative importance and the manager's ability to affect them.

Following is an analysis of each of the main expense items with a view to making the appropriate considerations regarding their adjustment to traffic levels and efficiency in the context of the new multi-year regulatory period. DORA forecasts are for real costs; i.e. excluding the effect of prices that may be recognised annually in determining the P index.

- Supplies:

Aena notes that the cost of supplies includes agreements with ENAIRE airports, other suppliers and Spain's air force to provide air traffic control services[22], and the cost of meteorological services provided by AEMET. ENAIRE is Aena's largest supplier, accounting for 75% of total supplies. The contract is up for renewal in 2022 and no increases in scope are expected. Forecast growth in supplies during the regulatory period is less than 1%.

- Staff costs:

[22] Provision of air traffic control services at air bases open for civil use.

Staff costs are forecast to reach 426.8 million euros in 2026, up 17.6% from 2022 and 23.5% from 2019. The Commission considers that for Aena to adapt to traffic levels (in 2019 and 2026) efficiently, so must staff costs. Therefore, they should include only increases in scope, but no unjustified increases and price increases which, in any case, would be recognised annually in the P index.

Aena notes in the information it provided that the sharp growth in staff costs was the result of applying remuneration components included in the collective bargaining agreement and future hires in certain areas, e.g. operational and airport security, quality and compliance, and innovation and digital transformation. The CNMC considers that hiring and training up to 450 new employees, according to Aena, represent increases in scope due to the undertaking of new activities and the need to providing them in the best possible way. However, cost increases from salary reviews, measures in the collective bargaining agreement, variable remuneration and other are considered increases in price, which should be assessed when estimating the L[23] component of the P index.

Accordingly, the trend in adjusted staff costs by the Commission (i.e. after making efficiency adjustments for traffic levels and factoring in the items for the increase in scope considered previously) is as follows:

Table 3. Proposed staff costs (million euros)

	Staff costs				
	2022	**2023**	**2024**	**2025**	**2026**
Aena proposal	362.9	382.6	390.6	417.3	426.8
CNMC proposal	347.0	350.1	351.2	364.7	370.4
Difference	-15.9	-32.5	-39.4	-52.6	-56.4

Source: CNMC.

- Other operating expenses:

The forecast for other operating expenses is for a 33.3% growth over the regulatory period, from 684.9 million in 2022 to 913.0 million euros in 2026, an increase of 24.5% from 2019.

Performance of other operating expenses is assessed on an item-by-item basis considering the pandemic's effect on traffic and the gradual recovery in traffic so that by 2026, with similar traffic levels, we expect to see similar costs plus the related increases in the scope of services outsourced to third-party service providers.

Maintenance expenses are set to increase by 30%, from 163.7 million euros to 213.0 million euros over the regulatory period and by 26% from 2019. Aena

[23] According to Royal Decree 162/2019, of 22 March, which regulates the index for updating Aena S.M.E., S.A.'s airport charges (the 'P index'), the L component is a specific index that reflects the annual percentage change in remuneration of public sector service employees established in Spain's General State Budget Act (LPGE in Spanish).

attributes the increase to several factors, e.g. the old age of the infrastructure of some airport facilities require greater corrective actions (e.g. airfield pavement), and the new safety and regulatory requirements. Safety equipment must meet new regulatory requirements, such as the replacement of STD.2 with new STD.3 automated security equipment. For IT maintenance, digital transformation, cybersecurity and innovation plans will be rolled out. These factors, in addition to fixed assets, are the main drivers of the forecast increase in maintenance expenses.

Expenditure on cleaning and baggage carts during the regulatory period are forecast to increase by 48% from 52.4 million euros in 2022 to 77.7 million euros in 2026 and by 30% from 2019 to 2026. The airport manager attributes this increase to higher passenger volume and the provision of additional cleaning services, which expands the scope and, accordingly, the cost of the services. These additional cleaning services are one-off services related to the pandemic, which the manager expects to convert into overheads from 2024 due to potential requirements of passengers.

In relation to the increase in the scope of cleaning services driven by hypothetical demands from new passengers as from 2024, the Commission considers that Aena is making assumptions about future passenger preferences that are not sufficiently substantiated. Therefore, in its opinion the scope increase should not be attributed to basic airport services since the additional services are neither necessary nor required to comply with the required quality standards in the DORA. Furthermore, since increases in the price of the service should be reflected in the A component[24] of the P index, the Commission concludes that cleaning costs in 2026 should be in line with 2019 levels plus the enhancements to service quality specified by the airport manager.

The trend in the adjusted cost applying these considerations is set out below:

Table 4. Proposal for cleaning and baggage cart collection expenses (million euros)

	Cleaning and baggage cart collection expenses				
	2022	**2023**	**2024**	**2025**	**2026**
Aena proposal	52.4	61.4	72.7	75.8	77.7
CNMC proposal	47.8	53.6	57.9	58.9	60.1
Difference	-4.6	-7.8	-14.8	-16.9	-17.6

Source: CNMC.

Security costs are forecast to increase by 51%, from 78 million euros to 230.5 million euros at the end of the regulatory period in 2026; i.e. 36% higher than in 2019. Aena says this forecast is predicated on the inclusion of scope changes related to the use of new technologies. Specifically, the largest change relates to use of the new

[24] The A component is a specific index that reflects the change in price of cleaning and baggage cart collection services under Royal Decree 162/2019, of 22 March, which regulates the index for updating Aena S.M.E., S.A.'s airport charges (the 'P index').

automated baggage handling equipment at security checkpoints, which requires an increase in the number of operators per security checkpoint from six to nine.

However, the increase proposed by Aena is greater than the increase arising for this scope. Therefore, the Commission considers that it is not justified by the trend in traffic. Adjusted security costs factoring in these considerations are as shown below:

Table 5. Proposal for security costs (million euros)

	Security costs				
	2022	**2023**	**2024**	**2025**	**2026**
Aena proposal	152.5	173.4	197.2	212.9	230.5
CNMC proposal	134.6	150.8	174.6	174.7	182.8
Difference	-17.9	-22.6	-22.6	-38.2	-47.7

Source: CNMC.

The cost of PRM services is forecast to increase by 47% or 21.3 million euros from 2022 to 66.5 million euros in 2026, and by 9% compared to 2019. Aena justifies this increase not only by the recovery in traffic, but also on the implementation of a number of quality and IT-related enhancements.

The proposal for operating and labour-intensive services is for an increase of 55% or 42.4 million euros during the 2022-2026 regulatory period to 118.9 million euros, marking a 59% increase from 2019. Growth for the remaining operating expenses is projected at 15% during the regulatory period and 10% relative to 2019. These items include a set of heterogeneous costs, e.g. public information service, inter-terminal transport, operation of walkways, taxi ranks, passport control support and technical assistance.

The sharpest increase is in technical assistance costs, the largest amounts of which relate to: assistance of control and monitoring services, such as PRM, cleaning, maintenance and handling, assistance to ensure that the services are provided correctly and to assess any required adaptations, assistance implementing Compliance Monitoring -Commission Regulation (EU) No 139/2014[25] that requires the airport manager to have a method for determining compliance with the relevant requirements of that regulation- and technical assistance for the company's organisation-wide digital transformation activities.

Lastly, the remaining other operating expense items, such as taxes other than income tax and changes in provisions, remain largely stable in the proposal, while electricity costs move in line with forecast traffic and even decrease as a result of Aena's sustainability and energy efficiency plans.

[25] Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council.

Depreciation and amortisation charges are forecast to trend down through 2026, with a 9.7% reduction over the regulatory period, in line with the investment-containment initiatives implemented in recent years.

In summary, the Commission proposes recalculating the airport manager's cost forecasts for the 2022-2026 regulatory period for the following items:

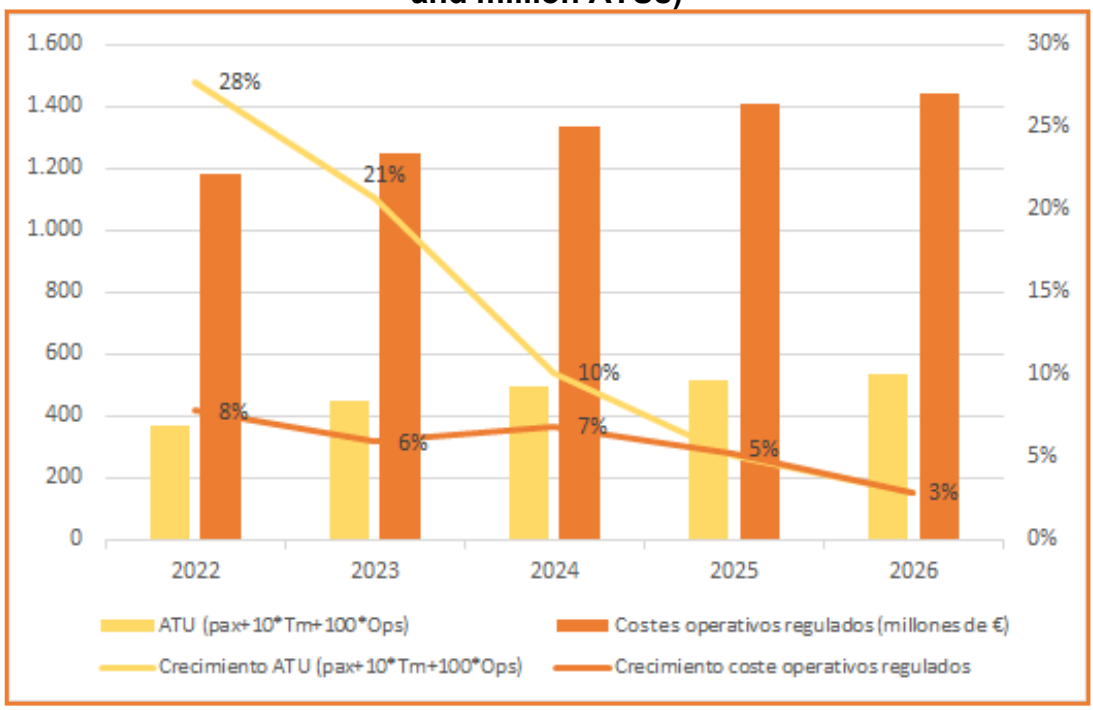
- Staff costs
- Other operating expenses - Cleaning
- Other operating expenses - Security

a. Assessment of operating expense forecasts relative to traffic

To assess efficiency in the operating costs projection, the Commissions considers it crucial to assess whether the forecast changes are consistent with forecast traffic.

As illustrated in the chart below, there is a positive correlation between regulated costs and traffic, as measured by a synthetic indicator; such as ATU. According to Aena forecasts, growth in ATU will outstrip costs growth in 2022-2024, the first three years of the regulatory period, reflecting the recovery of the traffic. In 2025 and 2026, once traffic is back to pre-pandemic levels, ATU and costs should show similar growth rates. This bears out the relationship between traffic and operating expenses once traffic stabilises at levels achieved before the health crisis.

Chart 1. Trends and growth rates of regulated costs and ATU (million euros and million ATUs)



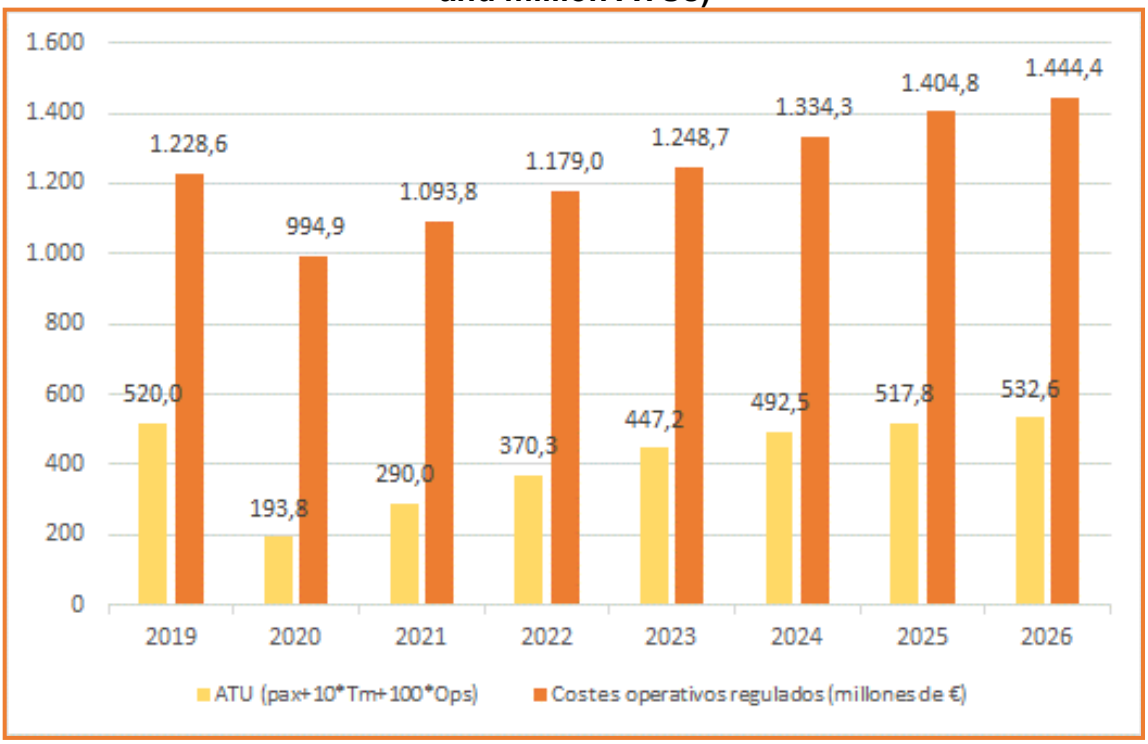
Source: CNMC based on Aena data.

As shown in the preceding chart, forecasts for 2022-2026 show growth in operating expenses lagging behind traffic growth. However, the analysis of prior years' costs

must be completed considering changes in the previous relationship between costs and traffic, during and after the effects caused by COVID-19.

The following charts shows the trend in regulated operating costs from 2019, including actual expenses in 2019 and 2020, forecast expenses in 2021 (including the impact of COVID-19) and forecast expenses in the regulatory period from 2022 to 2026:

Chart 2. Regulated costs trend and ATUs from 2019 and 2026 (million euros and million ATUs)



Source: CNMC based on Aena data. Actual figures for 2019 and 2020, forecasts for 2021 and DORA proposal for 2022-2026.

As can be seen, in 2019, the last year unaffected by the pandemic, Aena bore a cost of 1,288.6 million euros for an ATU of 520 million. In 2020, air traffic collapsed and ATU plunged to 193.8 million euros, but costs decreased by a lesser extent. Aena expects traffic to begin rebounding from 2021 and fully recover by 2025 or 2026. In 2025, with an ATU of 517.8 million (compared to 520 million in 2019) it forecasts operating expenses of 1,404.8 million euros (compared to 1,228.6 million in 2019), and in 2026, expenses of 1,444.4 million euros with an ATU of 532.6 million.

According to these forecasts, costs will rise considerably faster than traffic, measured by ATU, in the second regulatory period compared to the airport manager's costs before the pandemic.

The largest increases are in staff costs and other operating expenses, as disclosed in the following table:

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Table 6. Staff costs and other operating expenses compared to growth in ATU (million euros)

	2019	2022	2023	2024	2025	2026	% growth	
	Year-end	DORA proposal					2019-2026	2022-2026
Staff costs	345.6	362.9	382.6	390.6	417.3	426.8	23.5%	17.6%
% CAGR		3%	5%	2%	7%	2%		
Other operating expenses	733.3	684.9	739.6	825.4	878.9	913.0	24.5%	33.3%
% CAGR		13%	8%	12%	6%	4%		
Maintenance	*168.6*	*163.7*	*171.0*	*195.6*	*206.5*	*213.0*	*26.3%*	*30.1%*
Cleaning and baggage carts	*59.8*	*52.4*	*61.4*	*72.7*	*75.8*	*77.7*	*29.9%*	*48.3%*
Security	*168.9*	*152.5*	*173.4*	*197.2*	*212.9*	*230.5*	*36.5%*	*51.1%*
Taxes other than income tax	*107.4*	*109.7*	*109.8*	*110.0*	*110.0*	*109.9*	*2.3%*	*0.2%*
PRM	*61.1*	*45.2*	*53.8*	*59.8*	*66.2*	*66.5*	*8.8%*	*47.1%*
Operating and labour-intensive support services	*75.0*	*76.5*	*82.8*	*98.4*	*113.5*	*118.9*	*58.5%*	*55.4%*
Electricity	*54.1*	*42.1*	*44.2*	*46.4*	*47.7*	*48.8*	*-9.8%*	*15.9%*
Other	*38.5*	*42.7*	*43.3*	*45.3*	*46.3*	*47.8*	*24.2%*	*11.9%*
ATU	520.0	370.3	447.2	492.5	517.8	532.6	*2.4%*	*43.8%*
% CAGR		28%	21%	10%	5%	3%		

Source: CNMC based on Aena data.

The items with largest weight are staff costs, maintenance, security, and operating and labour-intensive support services, analysed previously. Of these, the Commission questions Aena's forecasts for staff, cleaning, baggage carts and security costs. Maintenance expenses and operating and labour-intensive support services are also expected to rise sharply, but the Commission considers this is justified by the higher expenditure required for operation and maintenance of the assets and the larger number of tasks and increased scope contracted to provide operating and labour-intensive services.

In 2025 and 2026, with traffic back to 2019 levels, Aena predicts significant cost increases. While ATU to 2026 looks set to increase by 2.4%, staff costs are forecast to increase by 23.5% and other operating expenses by 24.5% relative to 2019.

Based on the preceding analysis, the Commission considers that forecasts for operating expenses for the DORA period used to calculate the regulated cost/ATU ratio are not commensurate with the expected growth in traffic.

Lastly, regarding the forecast for operating expenses, the Commission assesses whether they comply with the efficiency standards outlined in Law 18/2014.

b. Compliance with the regulated cost/air traffic unit (ATU) ratio

The sixth transitional provision of Law 18/2014, of 15 October, stipulates that: "*Until 2025, the regulated costs (excluding depreciation and amortisation and costs of capital) divided by air traffic units (ATU) ratio defined in annex VIII of this Law may not exceed the value of this ratio recorded in 2014.*"

Therefore, the 2014 regulated costs/ATU ratio of 2.71 euros/ATU is the reference value for the DORA period.

Aena's proposal considers total operating costs excluding depreciation and amortisation and costs of capital. It also excludes the provision for credit losses and risks, since these are purely accounting expenses beyond Aena's control and are determined by the airlines' economic situation at any given time, requiring Aena to recognise the risk of collection for services provided. Aena also excludes costs arising from new security regulations in place since March 2015 as, according to Aena, the ratio for 2014 does not factor in the expense required for screening cabin baggage to comply with European legislation since March 2015, which distorts the change in expenditure between 2014 and the rest of the periods.

The table below shows the regulated costs/ATU ratio calculated by Aena for the DORA:

Table 7. Costs, ATU and costs per ATU in the DORA

(million euros)	2022	2023	2024	2025	2026
Supplies	167.0	167.8	168.2	168.4	168.6
Staff costs	362.9	382.6	390.6	417.3	426.8
Other operating expenses	684.9	739.6	825.4	878.9	913.0
- Provisions for credit losses and risks	-8.2	-8.2	-8	-8	-8
- New security regulations	-27.6	-33.1	-41.9	-51.8	-56
Regulated operating costs	**1179.0**	**1248.7**	**1334.3**	**1404.8**	**1444.4**
Cost per ATU (euros/ATU)	3.18	2.79	2.71	2.71	2.71
ATU (pax + 10*Tm + 100*ops)	**370.3**	**447.2**	**492.5**	**517.8**	**532.6**

Source: CNMC based on Aena data.

According to the figures shown in the preceding table, Aena's proposal for the 2022-2026 period does not comply with the cost efficiency requirements set in the sixth transitional provision of Law 18/2014 in 2022 and 2023. The breach is due to two reasons: 1) the plunge in traffic caused by the pandemic, with levels unlikely to fully recover until the end of the regulatory period; and 2) certain cost items do not decrease to the same extent as traffic.

Lastly, assessing Aena's calculation, the Commission considers it reasonable to strip out the provision for credit losses and risks, since these are accounting expenses that cannot be offset by reducing other necessary expenditures. It does, however, consider that costs arising from security standards should not be excluded. The distortion noted by Aena may arise at any time between one period and another and between different regulated cost items, i.e. cost fluctuations should not be considered distortions requiring elimination from the calculation of the ratio. The Commission considers that the costs arising from security standards are part of the regulated costs under Law 18/2014 and their elimination is not justified by the reasons of discontinuity alleged by Aena.

Therefore, to comply with the regulated cost/ATU ratio requirement for 2022 and 2023, the amount of costs recognised by the manager must be adjusted as shown in the following table:

Table 8. Adjustment for compliance with the cost/ATU ratio (million euros)

	Operating expenses				
	2022	**2023**	**2024**	**2025**	**2026**
Adjustment proposed by the CNMC	-164.5	-7.0	0.0	0.0	0.0

Source: CNMC.

The adjustment for 2022 and 2023 factors in the adjustments to staff costs, cleaning and security proposed by the Commission.

5. Cost of capital

Cost of capital is a key determinant of the total costs recognised by Aena as airport infrastructure manager. Therefore, it is still a core topic of debate in the consultations.

1. Position of the parties in the consultations

The debate on the cost of capital in DORA II revolved around the methodology approach proposed by the CNMC in DORA I. In some components of the calculation, Aena's proposal assumes the approach used by the CNMC, whereas in others it deviates from it and proposes an alternative methodology.

Specifically, the main changes in Aena's proposal relative to the approach proposed by the CNMC for DORA I are as follows:

- In calculating the market risk premium, Aena proposes using the total market return approach, i.e. considering the risk-free rate plus the market risk premium, rather than estimating each component separately. Aena considers that there is an inverse relationship between the risk-free rate and the risk premium, whereby when the risk-free rate decreases, the risk premium increases, so the total market return (risk-free rate and risk premium) is unchanged.

- For the risk-free rate, Aena proposes applying an upward adjustment of 1 percentage point (pp) in light of the quantitative easing ("QE") policy followed by the European Central Bank (the "ECB").

On this basis, the nominal pre-tax cost of capital proposed by Aena is 7.68%.

The representatives of airport users' associations, meanwhile, have steered the debate towards criticism of certain parameters proposed by Aena and put forward certain amendments to CNMC's approach. The key topics can be summarised as follows:

- Calculation of the market risk premium: they disagree with Aena's approach as to how the market risk premium offsets the reduction in the risk-free rate to maintain the total market return. They provided as evidence recent decisions such as the case of Heathrow airport, which showed decreases in both the risk-free rate and total market return.

- Regarding the 1pp increase in the risk-free rate of return driven by the QE policy, they consider that its application is not warranted since the policy has become structural rather than temporary, as originally put forward.

- They also consider changes in the correlations of the betas and in frequency used (daily rather than weekly), which would narrow the range of betas compared to Aena's proposal.

The airport users' associations propose a nominal pre-tax cost of capital within a 5.8-6.5% range, with the middle point of the range of 6.15% as the final value for the estimate.

2. CNMC approach

The Commission's approach to cost of capital in the airport sector under the framework of DORA II will be underpinned by the following elements: i) proposals made by participants in the consultations; ii) implementation of best practices at European working group level in the area of airports; iii) consistency across CNMC regulated sectors, paying particular attention to the recent common vision in EU electronic communications markets by the European Commission; and iv) consideration of the specific features of Spain's regulatory framework for airports.

Based on these criteria, following is an analysis of each parameter justified by Aena in its DORA II cost of capital proposal.

Cost of debt

Aena proposes calculating cost of debt based on the average interest rate on Aena's borrowings in the 2022-2026 period. This rate is 1.06%.

As in DORA I, the Commission considers the alternative proposed by Aena to be the most appropriate for estimating cost of debt.

Moreover, the estimation of this parameter did not give rise to any discrepancies between the parties during the consultations.

Cost of equity

Aena proposes estimating cost of equity using the capital asset pricing model ("CAPM"), with the following approach to estimating each parameter.

CAPM

$$R_i = R_f + \beta_l P_{rm}$$

Where:

- Ri: Expected return on assets
- Rf: Risk-free rate.
- βl: Levered beta.
- Prm: Market risk premium.

Risk-free rate (R_f)

Aena proposes calculating the risk-free rate as the yield of Spanish 10-year government bonds at the midpoint of DORA 2022-2026 estimated using the current forward yield curve. According to Aena, the value of the midpoint of this curve for the period is 0.75%.

Because of the QE policy implemented by the ECB in recent years, Aena believes the risk-free rate should be increased by 1 percentage point.

Therefore, Aena proposes a risk-free rate of 1.75%.

In DORA I, the Commission considered that since the regulatory period was five years, an element should be included that not only represented the current market value of the risk-free rate, but also potential changes therein during the regulatory period. It considered this issue, coupled with the DORA's incentive-based regulatory model, to differ from other regulated sectors, where either the period for discounting cost of capital is annual or where the economic regulatory model differs from incentive-based regulatory models.

Thus, in the DORA I report, a detailed explanation was provided on how the implied yield curve locks in an interest rate over a specified period; i.e. it could be considered a hedged item for the risk-free rate. Implicit yields would be similar to entering into a forward rate agreement on Spanish bonds at different maturities.

However, as a hedging instrument, these implied yields show an overprice, and an ex post analysis indicates that, in general, *ex post* registered rates were lower than those calculated *ex ante* using forward or implied yields. Accordingly, this curve generally shows an upward shift, reflecting *inter alia* the cost of insurance against default.

The Commission highlighted this situation in its DORA I report[26].

[26] As analysed in that report, spot rates exceeded forward rates only during the 2008 financial crisis and unforeseen debt crisis.

Specifically, the solution put forward by the CNMC in DORA I was to weight the value of the implicit yield of the 10-year bond in five years by the spot value of the risk-free rate; i.e. the average of the two values used to calculate cost of capital[27].

As regards ECB's QE policy and Aena's upward adjustment to the implied yield of 1pp, whereas this type of adjustment was justified when the policy was considered to be temporary and transitional, this is no longer the case. The ECB[28] itself has confirmed the structural nature of this policy with its decisions, more so in the wake of the economic crisis affecting the euro area caused by the COVID-19 pandemic.

Moreover, the European Commission Notice said that an adjustment for central bank QE programmes is no longer necessary and should be eliminated in future calculations of cost of capital of Member States[29].

User associations share a position regarding the QE adjustment that it should not be used for the same reasons explained above and in line with the European Commission's stance on electronic communications and the recent decision by the Dutch supervisory authority, the ACM[30].

Based on this analysis, the Commission considers that:

- The arguments explained justify maintaining the methodology proposed by the Commission in DORA I for the risk-free rate, i.e. calculating the rate as the 6-month average spot rate and the implicit yield of Spanish 10-year bonds.

- Therefore, the risk-free rate determined by the Commission for application during the 2022-2026 regulatory period is 0.58%.

Beta

This parameter includes two betas: the asset beta, which excludes the capital structure, and the levered beta, which includes the company's financial structure (debt to equity).

Asset beta (β_u)

[27] See CNMC report on DORA I (STP/DTSP/180/16) for a more detailed explanation.

[28] The ECB launched the public sector purchase programme (PSPP) in March 2015.

[29] The Notice set a transitional period for adjusting national methodologies appropriately until July 2021.

[30] Authority for Consumers and Markets.

Aena proposes calculating the asset beta based on the betas of the following European peers: AdP (Aéroports de Paris), Fraport AG (Frankfurt Airport Services Worldwide), Flughafen Wien AG, Flughafen Zürich AG.

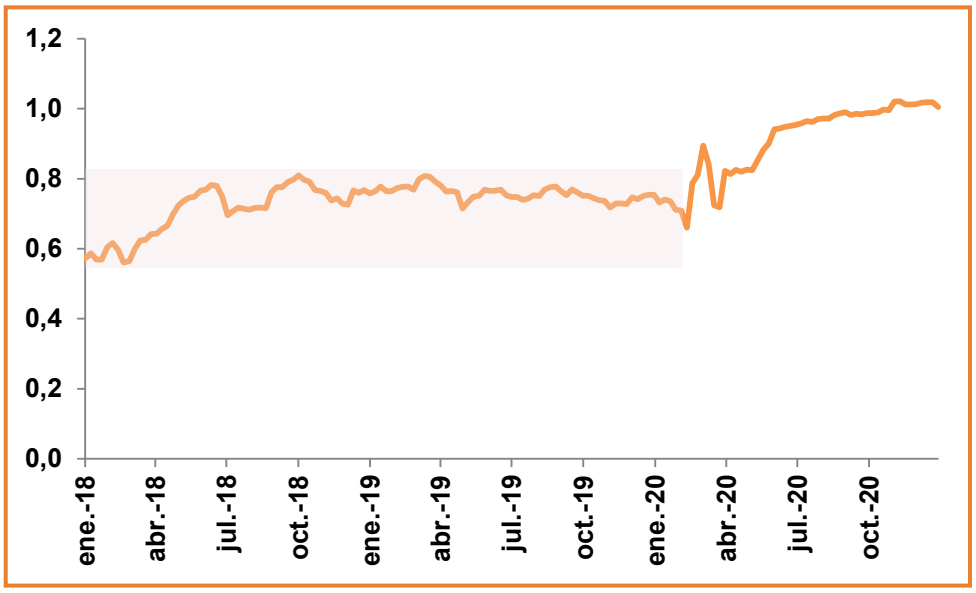
In line with the CNMC's proposal for DORA I, it also proposes calculating the beta using half-yearly data and a 5-year period with local indices. Then, using peer's levered betas, Aena obtains the unlevered asset betas applying the Hamada formula[31].

Thus, the asset beta ultimately used is the average of each peer's asset beta. Using this calculation, Aena proposes an asset beta of 0.75.

The airport user associations assessed the value of the beta with different frequencies (daily and weekly), indices (local and European) and forecast periods (2 and 5 years). The conclusion reached was that an asset beta within a range of 0.60 and 0.65 could be considered appropriate.

The COVID-19 pandemic drove sharp increases in both Aena's and its peers' asset betas in 2020. So, Betas calculated vary widely depending on whether 2020 is included in the analysis.

Chart 3. Levered beta: Aena vs. IBEX 35



Source: CNMC.

The Commission considers this exceptional increase in betas to be the direct consequence of the extraordinary impact of the COVID-19 pandemic on air traffic and that the betas should return to long-run pre-COVID values as travel bans are removed and passenger flows pick back up.

[31] Hamada's equation relates the beta of a levered firm (a firm financed by both debt and equity) to that of its unlevered (i.e., a firm which has no debt) counterpart.

Because of this, plus the fact that the pandemic is still ongoing and the effects are likely to persist at the start of the new regulatory period, the Commission does not consider any adjustment to the observations obtained for the betas or the observation period appropriate.

The Commission's proposal for DORA I was to estimate the beta with weekly data for 5 years of each peer relative to its local index.

The levered beta of each peer obtained was adjusted using the Blume method[32] and subsequently unlevered by the peer's capital structure and the corporate income tax rate in each airport manager's country.

Lastly, the simple average of the peers' unlevered betas was calculated to obtain the "industry" unlevered beta.

Based on the criteria explained previously, the Commission will assess whether to make changes to the methodology for estimating unlevered beta proposed for DORA I for the new regulatory period covered by DORA II.

The recent European Commission Notice for electronic communications markets resulted in changes to the approach used by the Commission until now for estimating betas.

Accordingly, the Commission considers that the methodology for estimating betas should be consistent across the various regulated sectors under its authority and that do not present any particularities as a result of the applicable regulatory framework. Therefore, in line with the provisions outlined in the EC Notice and the recent resolution of the CNMC on the electronic communications sector[33], the following changes will be made to the estimation methodology: (i) use of European indices, and (ii) the elimination of Bayesian adjustments, such as the Blume adjustment.

Noteworthy is that Aena's peers will be the same as those in the DORA I proposal, since the reasons they were chosen remain valid[34]. Moreover, Aena and the users associations have used these peers in their respective estimates.
Lastly, the weekly frequency and the 5-year observation period stipulated in the DORA I report and in the European Commission Notice are maintained. While Aena has used the same criteria, user associations have not proposed any specific criteria

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[32] The Blume adjustment is the weighted average of 2/3 of the forecasted beta and 1/3 of the underlying market beta of 1.

[33] Resolution approving the new methodology for calculating weighted average cost of capital (WACC) of electronic communications operators designated as having significant market power and agreeing to disclose this to the European Commission and the Body of European Regulators for Electronic Communications (WACC/DTSA/011/20/NUEVA METODOLOGIA WACC). Available at: https://www.cnmc.es/expedientes/waccdtsa01120.

[34] The criteria of the Commission Notice and the selection made in DORA I are similar and compatible.

regarding frequency or observation period, although they warned about the sensitivity of the calculation to the selected frequency and period.

Levered beta (β_l)

Aena's proposal uses the Hamada formula to calculate the levered beta. This formula takes into account the asset beta, the underlying debt level to weight debt and equity, and the tax rate.

The Commission will use this same formula, maintaining the criteria used in its DORA I report.

Market risk premium (P_{rm})

The market risk premium, or market premium, is the investment return shares are expected to yield in excess of the risk-free rate of return.

Aena performs a preliminary analysis of total market return, which it estimates at 8%, before proposing the value of this parameter. With the outcome, it obtains the market risk premium as the difference between the total market return and the risk-free rate. This calculation gives a market risk premium of 6.25%.

After obtaining the result, Aena compared it with other market risk premium values, such as those obtained from the Pablo Fernández survey (2020), the Duff & Phelps risk premium analysis for the 1970-2018 period, and the latest stances of regulators of the Dublin and Heathrow airports.

As for the value obtained from the generally accepted report for this type of analysis, i.e. the Dimson, Marsh and Staunton ("DMS") report, Aena does not attach much importance to the market premium since the risk-free rate proposed by the airport manager (1.75%) is considerably lower than the long-run averages in the report.

Table 9. Risk premiums analysed by Aena

	Risk premium
DMS (1900-2019)	3.5%
Fernández (2020)	6.3%
Duff & Phelps (1970-2018)	5.9%
CAR (Dublin Airport 2020-2014)	7.0%
CAA (Heathrow Airport 2022-2027)	7.6%

Source: Aena

The airlines have criticised Aena's proposal. They argue that that the total market return is in the upper end of the range in recent decisions and that, for instance,

Heathrow[35] airport shows a lower total market return and market risk premium than what Aena proposes.

The user associations consider that the total market return should be between 7.2% and 7.6%. Therefore, with their proposed risk-free rate (0.75%), the market premium should be between 6.45% and 6.85%.

In its approach to DORA I, the Commission considered it appropriate to estimate a national market risk premium, obtained as the average of the data from the DMS and Pablo Fernández studies.

Lastly, the Notice from the European Commission singles out this parameter as one of the key objectives for EU harmonisation, since it believes there is empirical evidence suggesting that financial markets in the EU are increasingly integrated (as shown by their increased correlation) and therefore have convergent market premiums.

It is extremely difficult for regulators and companies to estimate the market risk premium. Therefore, in practice, they often turn to external calculations or a series of external calculations to determine the market risk premium[36].

Another difficulty estimating market premium arises when choosing to select a local market as the benchmark or a broader geographical area, such as Europe.

As a result, it is rather common to see European regulators taking different approaches. Given the disparity, in its Notice the EC points out the need to have an EU-wide market risk premium. BEREC calculated this parameter and published the results in its "*BEREC Report on WACC parameter calculations according to the European Commission's WACC Notice*"[37].

Based on this, the Commission proposes using the EU-wide risk premium calculated by BEREC[38], which is consistent with the European index used to calculate the unlevered beta.

Therefore, the CNMC considers that:

- The market risk premium to apply in DORA II should be the same as the EU-wide market premium estimated by BEREC; i.e. 5.31%.

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[35] During the consultations, Aena and the user associations both used Heathrow Airport as an example. However, this comparison with the British airport manager's values is not entirely valid since they used different time periods.

[36] The CNMC used this approach for the airport sector as well as for other regulated sectors.

[37] See full methodology used for the estimations: https://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/9364-berec-report-on-wacc-parameter-calculati_0.pdf.

[38] Arithmetic mean.

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Gearing

The values of debt (D) and equity (E) are needed to calculate gearing.

In line with the criteria used in DORA I, Aena obtained the average gearing of the four peer airports taking share price for the value of equity and net debt for the value of debt.

Aena proposes a gearing or leverage ratio of 32%.

While during the consultations user associations first used a different approach based on underlying gearing, they ultimately made a final cost of capital proposal in which they accepted the 32% calculated by Aena.

Aena calculated cost of debt considering only net debt, without including any other type of interest-bearing liabilities. This proposal by Aena has been accepted by the user associations and is consistent with the EC's recommendation[39].

Bearing in mind these two considerations, the Commission considers that DORA I criteria should be amended and that net debt be applied to calculate the gearing ratio rather than total debt. The calculation was made considering short- and long-term net debt less cash and cash equivalents.

Regarding equity value, there is wide consensus that the estimate should be based on the quoted market price of the shares. This approach uses the same criteria as in DORA I, is the same as in Aena's and the user associations' proposals, and is in line with the Notice from the EC.

Therefore, as a result of the above the Commission considers that:

- The value of debt should be obtained from net debt and the value of equity from the market capitalisation of the securities with an estimated gearing ratio of 33%[40].

3. CNMC cost of capital proposal for DORA II

Considering the above analysis of each parameter, the following table summarises the criteria adopted by the CNMC, the estimated values of the parameters with data for the year ended 31 December 2020 and the estimates in the Aena proposal.

Table 10. CNMC weighted average cost of capital proposal

[39] The Notice only indicates that the appropriate value is the company's net debt.

[40] This is different to Aena's proposal (32%) since data for gearing are updated with profit or loss in the peers' latest financial statements as at year-end 2020.

	Aena proposal	CNMC proposal	CNMC criteria
Pre-tax cost of debt	1.06%	1.06%	Aena S.A.'s weighted average cost of debt during the DORA period based on interest rates in financing agreements in force
Tax rate (T)	25%	25%	Expected corporate tax rate for DORA
Post-tax cost of debt	0.80%	0.80%	
Gearing $\left(\frac{D}{D+E}\right)$	32%	33%	Average gearing of the peer group (AdP, Fraport, Vienna and Zurich) with E being the market capitalisation and D being short- and long-term net debt
Post-tax weighted average cost of capital	**5.74%**	**4.51%**	
Cost of equity	8.06%	6.31%	
Risk-free rate (R_f)	1.75%	0.58%	5-year average spot rate and implicit yield of Spanish 10-year bonds. Spot and implicit values are obtained from the average of the last 6 months
Levered beta (β_l)	1.01	1.08	Obtained based on the asset beta and gearing of peer airports
Market Risk premium (P_{rm})	6.25%	5.31%	Obtained from the European market risk premium of the value estimated in the BEREC report
Unlevered beta (β_u)	0.57	0.79	Obtained from the respective quoted prices and the European STOXX Europe TMI index of each peer for a period of 5 years and a weekly frequency. The beta of each peer is unlevered with the peer's capital structure using the same calculations as for gearing. From the individual unlevered betas of each peer, a simple average of the unlevered beta (β_u) is taken as a reference.

Source: CNMC.

Therefore, based on the information in the preceding table, the Commission proposes a pre-tax cost of capital of 6.02%, compared to Aena's proposal of 7.68%.

6. Determination of the X parameter

After assessing the elements comprising the calculation of the X parameter, this section recalculates its value based on the changes proposed by the Commission to Aena's proposal. As illustrated in the following table, these adjustments affect both operating expenses and cost of capital.

Table 11. Variables in the CNMC proposal for airport charges for the DORA

	2021	2022	2023	2024	2025	2026
Operating expenses (million euros)		1011.7	1220.1	1307.3	1356.9	1386.8
Depreciation and amortisation, impairments and other adjustments (million euros)		558.8	557.5	546.3	532.3	485.6
Cost of capital (million euros)		593.5	586.6	580.0	573.4	568.2
Average RAB (million euros)		9858.9	9744.0	9635.2	9525.3	9438.8
$WACC_{PT}$				**6.02%**		
IRR_t (million euros)		2164.0	2364.2	2433.6	2462.6	2440.6
IRR_a (million euros)	63.30					
Q_t (passengers) (million)		184.6	229.5	255.0	269.8	279.1
X component				**-0.44%**		
$IMAP_t$ (*) (euros/passenger)	9.89	9.85	9.80	9.76	9.72	9.67

Source: CNMC.

After the aforementioned adjustments, the value calculated for the X parameter is -0.44% excluding any additional adjustments the DGAC could make based on recommendations by the Commission in previous sections. While the final value of the P component is still unknown, this would imply an annual reduction in charges during application of the second five-year DORA of 0.44%.

Lastly, it is worth noting that among the security service costs included in the DORA, Aena differentiates between costs arising from regulatory requirements related to cabin baggage inspection, hold baggage inspection and systematic European Union border control. Aena requests exceptional treatment for these expenses since they were incurred after enactment of Law 18/2014.

Aena argues that these costs should be exempted from applying the 0% cap on the change in charges until 2025 provided for in the sixth transitional provision of Law 18/2014, as their trend is unpredictable and beyond the operator's control and cannot be offset by efficiency measures without jeopardising the quality standards set out in the DORA.

Therefore, according to Aena, the regulator must recognise these unforeseen costs and allow an increase of 0.52 percentage points in airport charges until 2025. This value is the difference between applying the formula for calculating the X component stipulated in Law 18/2014 and the value that would result had these regulatory requirements not arisen.

Aena's proposal should be assessed in relation to the efficiency requirements outlined in section 1 of the sixth transitional provision of Law 18/2014, whereby if the DORA defines IMAP values for the years 2014 to 2025 and application of the methodology for calculating the IMAP leads to an increase of more than 0% per

year, 0% would be applied to the cap on the annual increase of both the IMAP and the IMAAJ.

According to paragraph 2 of that transitional provision, exceptionally, by resolution of the Council of Ministers (prior report by the CDGAE and the Directorate General for Economic Policy), an increase in the cap on passenger revenue of over 0% may be authorised when the unforeseeable trend of costs beyond the operator's control, duly recognised by the regulator, could not be offset by efficiency measures to ensure the increase in the cap on passenger revenue provided for in paragraph 1 without jeopardising the standards provided for in the DORA. On grounds of general interest such as and trends in economic activity, the Council of Ministers, prior report by the CDGAE, may agree that part of the impact be borne by the operator.

According to section 3 b) of the sixth transitional provision, the same rules apply during DORA II, except that it may not be agreed that Aena assume part of the impact of supervened and authorised changes that resulted in the need to increase revenue.

Accordingly, an interpretation must be made as to whether the security costs referred to in Aena's proposal should be considered to form part of "supervened changes" allowing for an increase in revenue.

Aena's argument is limited to the fact that the costs were incurred after enactment of Law 18/2014 and, therefore, they should be considered supervened . However, the fact that the costs arose from a regulation after the entry into force of the law introducing the efficiency requirement is not sufficient to authorise that this requirement not be applied. Since this is an exception to a general rule, Aena must prove that it is an exceptional situation.

The regulator is not obliged to cease applying the efficiency requirement included in paragraph 1 of the sixth transitional provision to any costs arising from a regulation after entry into force of the law, but rather only those recognised as unforeseeable and beyond the operator's control.

Unforeseeable costs include, for example, costs derived from the health and operational controls at the airports managed by Aena referred to in the first additional provision of Law 2/2021, of 29 March, on urgent measures of prevention, containment and coordination to address the health crisis caused by COVID-19. It is expressly stated that where unforeseen costs cannot be recovered under DORA I, they can be capitalised in any subsequent DORA to minimise the impact of their application on the sector. In this case, the freeze on airport charges envisaged in section 1 of the sixth transitional provision of Law 18/2014 will not be applied to these costs and the cumulative deficit may be transferred to the ensuing DORAs.

However, it seems that the costs referred to by Aena in its DORA proposal as supervened cannot be reasonably considered unforeseeable.

As stipulated in Annex VIII of Law 18/2014, the X component of the IMAP calculation formula includes all increases and decreases in the operator's cost base caused by specific factors linked to the operator's activity, which can be predicted by the operator when preparing the DORA and are duly recognised by the regulator.

Therefore, costs related to airport safety measures for which Aena has requested an exemption may be considered caused by specific factors related to airport management and could be perfectly included in the category of operating expenses (along with other security costs already included in DORA I). In addition, these costs are foreseeable by the operator when preparing the DORA, as illustrated in the proposal. Aena could reasonably foresee the increase in these costs affecting its activity since the airport manager was well aware of the process for drafting the rules from which they derive up to their approval and entry into force. Therefore, they can hardly be considered unforeseen costs that allow for application of the efficiency requirements contained in the sixth transitional provision of the DORA to be waived.

In fact, these costs were already known during DORA I, as stated by user associations during the consultations. So, it makes no sense for Aena to now be asking for them to be recognised as unforeseeable costs beyond the operator's control in DORA II.

Based on all the above, the Commission considers that Aena has been unable to justify the existence of circumstances for applying the exemption to the efficiency on cost, and therefore should not be t recognised. As a result, a value of -0.44% for the X component should be determined.

7. Assessment of the network economic sustainability over the 5-year period

According to Law 18/2014, in the exercise of its competence of issuing a report to the DGAC on the DORA and its modifications, the CNMC must ensure that the DORA proposal guarantees the sustainability of the airport network manager.

To comply with this requirement, this Commission analysed Aena's economic sustainability in the regulatory period based on an assessment of a set of solvency ratios selected among those it used in the review of DORA I and other commonly used ratios by rating agencies for airport managers.

Based on this analysis, it verified that Aena's actual and forecast earnings ensure the economic sustainability of Spain's airport network over the DORA II period. This analysis was performed taking into account the reduction on airport charges proposed in this report by the Commission and not the positive impact that the proposed reduction could have on traffic during the 5-year period.

V. CONCLUSIONS

This report is the second oversight and control exercise of the multi-year framework for charges performed by the CNMC as set out in Law 18/2014, which requires a compulsory report by this body on relevant aspects of the framework for determining

airport charges before approval of the DORA and the oversight of the transparency and consultation procedure to which the airport operator has submitted its proposal.

Based on the progress and outcome of Aena's consultations with the representatives from airport users' associations, the CNMC has verified that:

1. The requirements of Law 18/2014 regarding consultations prior to approval of its DORA proposal were met. In the various meetings held, the main areas of dispute between the airport manager and airlines were addressed. In its document, Aena alleges the reasons why it did not take into consideration the viewpoints of user associations.

Moreover, regarding the airport manager's DORA proposal sent by the DGAC and the items on which f the Commission is required to issue an assessment report under article 20.5 of Law 18/2014, the conclusions reached are:

2. Aena's traffic estimate is based on a forecast model which is coherent with those applied by other organisations and regulators although the subsequent adjustments made to the result obtained directly from the model using other external criteria are lacking in transparency. Apart from that, despite the uncertainties arising from the COVID-19-related health and economic crisis and the extension of the regulatory period, the assumptions included in the DORA are considered conservative when set against estimates made by other international organisations and by this Commission.

   Therefore, the Commission recommends that the DGAC make a traffic forecast based on the latest data available. This could imply bringing forward both the period of recovery to pre-pandemic levels and the final estimated traffic volume for 2026.

3. Aena's proposal complies with the 450-million-euro cap on investment set in Law 18/2014.

4. Broadly speaking, the quality indicators are adequate, even considering the improvements and modifications described in Section VI.4. However, based on the experience gained from the first DORA, the proposal includes updated neutral bands for incentives and penalties for certain indicators to introduce incentives for enhancing the airport managing body's performance. Similarly, the proposal includes the possibility of updating certain target values.

   Moreover, given the exceptional situation in the sector caused by the COVID-19 pandemic, which most likely will last for several years of DORA II, the Commission believes it would make sense to suspend the application of the incentive scheme until traffic levels and the traffic mix return to pre-pandemic levels.

5. Regarding operating expenses (see Section VI.5.1 of this report), the Commission estimates that efficiency adjustments based on forecast traffic

and other adjustments related to the scope in Aena's forecasts regarding staff costs, cleaning and security, are required. In addition to these adjustments, it also recommends applying an adjustment to operating expenses to comply with the 2.71 euros/ATU efficiency factor included in Law 18/2014 for 2022 and 2023.

6. The Commission assessed each component of Aena's proposed methodology for calculating the cost of capital of the DORA and put forward an alternative proposal that is in line with European Union practice and the methodology used in other regulated industries. The main differences lie in the estimation of the risk-free rate and market premium parameters. As a consequence, the Commission's methodology estimates a pre-tax cost of capital of 6.02% compared to the 7.68% proposed by Aena.

7. As for costs relating to airport security measures, which Aena argues should be exempt from application of the 0% cap on the variation in the airport charges until 2025 stipulated in the sixth transitory provision of Law 18/2014, as it considers them to be unforeseeable costs beyond the operator's control, the Commission considers that, based on the reasons set out in section VI.5.2, there are no circumstances that would release Aena from complying with the efficiency factor required in the Law.

Based on past precedent and the adjustments to the formula for updating airport charges included in Law 18/2014, the Commission estimates that the X parameter should be -0.44%.

8. Lastly, the CNMC has verified that Aena's actual and forecast results ensure the economic sustainability of Spain's airport network over the DORA II period. This analysis was performed taking into account the reduction to airport charges proposed in this report by the Commission and not the positive impact that the proposed reduction could have on a traffic during the 5-year period.

To conclude, the Commission notes that in accordance with the criteria already stated by it in previous reports and given that the various parameters approved in the DORA will dictate the final level of airport charges, for the regulatory framework outlined in Law 18/2014 to be compatible with the requirements of Directive 2009/12/EC on airport charges, this report should be binding.

Indeed, this Directive stipulates that a compulsory procedure for regular consultation between airport managing bodies and airport users be put in place to establish airport charges in which the airport managing body must provide its users with information on the components serving as a basis for determining the system or the level of all charges levied at each airport. This procedure should allow the possibility for either party to have recourse to an independent supervisory authority in the event of disagreement regarding the charging system or the level of airport charges.
Therefore, to ensure material consistency with the content of the Directive, the Commission considers that the proposal submitted by the DGAC to the Council of

Ministers should incorporate the recommendations outlined in this report regarding the various components of the formula for updating charges in their strictest terms, notwithstanding potential updates to data arising from the lag between the date of issue of this report and the date of approval of the DORA by the Council of Ministers.