



EFFECT OF THE TRAFFIC DISTRIBUTION RULE ON THE NATURE OF TRAFFIC DEVELOPMENT AT LELYSTAD AIRPORT

A study into market demand and dynamics following the opening of Lelystad Airport with a Traffic Distribution Rule (TDR) in place.



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EXECUTIVE SUMMARY



1 EXECUTIVE SUMMARY

In this study, we have addressed the following question:

“Can Lelystad Airport fulfil its targeted role of an overflow airport to Amsterdam Airport Schiphol (Schiphol) when the Traffic Distribution Rule (TDR) – supplemented by supportive measures if needed – is applied?”

We conclude that Lelystad Airport will largely fulfil the role of an overflow airport, with an expected 10-20% share of autonomous traffic in 2023 (at 10 thousand movements).

This conclusion is based on the following two premises:

1. The share of autonomous traffic depends on how the EU Slot Regulation is specifically applied. However, Lelystad Airport will be the first airport to be slot-regulated immediately upon opening. This makes it a special case, with no existing jurisprudence. Our finding in this report – an expected 10-20% autonomous traffic development – is therefore valid only if the final slot allocation conforms exactly to ACNL’s interpretation of the EU Slot Regulation.
2. During the approval process of the European commission, the anti-misuse provision of the TDR has been adjusted. We assume interest from airlines to use the TDR with the updated anti-misuse provision will be sufficient.

A SUMMARY OF THE SUPPORTING ARGUMENTS

- **Lelystad Airport will be slot-coordinated, and the combined mechanism of EU Slot Regulation and the TDR will determine the share of autonomous traffic:**
 - In all realistic demand and supply scenarios, airport capacity in the Netherlands will remain scarce up to 2030, and existing airports will not be able to fully facilitate the expected level of demand.
 - Scarcity at Schiphol – and to some extent at other airports in the Netherlands – will be the primary demand driver for slots at Lelystad Airport. This demand will likely exceed Lelystad Airport’s capacity.
 - As a result, Lelystad Airport will be slot-coordinated, and available capacity will be allocated by the independent slot coordinator ACNL, applying the EU Slot Regulation.
 - To support the selective development of Schiphol and to maximise its Mainport role, the Dutch government intends to introduce a Traffic Distribution Rule. The TDR that is currently proposed prioritises the slot requests for Lelystad Airport made by airlines that have given up operations at Schiphol for Point-to-Point (P2P) slots or have changed their use of slots for operations to Transfer destinations.
 - The combined mechanism of EU Slot Regulation and the TDR will determine how many slots can/will be allocated to each airline. Only slots at Lelystad Airport obtained as a result of this TDR-driven priority will be considered as non-autonomous traffic (i.e. overflow from Schiphol).

- **We expect that only those airlines who can effectively switch slots from serving Point-to-Point destinations to serving Transfer destinations will consider using the TDR:**
 - No airline is expected to make a one-for-one Schiphol-Lelystad Airport slot swap, no matter how much more attractive Lelystad Airport's operating costs will be. This is because slots at Schiphol are already valuable, and will become even more so the longer and the more constrained that airport becomes.
 - Therefore, the TDR will only be used by airlines that are able to use a Point-to-Point slot to serve a Transfer destination from Schiphol instead.
 - This is only feasible for airlines with sufficient Transfer destinations in their network, or airlines operating within a group with such a network:
 - Transavia (a member of the Air France-KLM Group) will most likely use the TDR to move part of their Transavia traffic to Lelystad Airport to allow KLM to expand its operation at Schiphol. KLM itself could also switch some P2P destinations to Transfer destinations.
 - easyJet and Vueling have not shown an explicit interest in moving to Lelystad Airport. However, they may make use of the TDR's attractive proposition as a way to grow market share/defend their position against new airlines entering the market.
 - Other parties currently operating at Schiphol will most likely not use the TDR, since they will not be able to swap the slots for a Transfer destination in an economic viable way.
 - A third, alternative route exists. An airline could use the TDR if they transfer slots at Schiphol Airport to another airline who will use these slots to operate transfer destinations. (Informal) compensation would be required, since the value of a Schiphol Airport slot exceeds the value of a Lelystad Airport slot.

- **The TDR will limit the share of autonomous development to 10%-20% in 2023, enabling Lelystad Airport to largely fulfil its role as an overflow airport**
 - The exact interpretation of the EU Slot Regulation, in combination with the TDR, significantly influences the allocation of slots. In our study, we use the ACNL's current interpretation:
 - Amsterdam and Lelystad Airport will not form an airport system.
 - The new entrant rule is limited to 5% of the slots per day, including requested slots.
 - Using the above definitions, the new entrant rule gives each airline priority access to 5% of the available slots, no matter what the TDR's priority settings are.
 - Therefore, the number of airlines requesting slots without using the TDR will determine the share of autonomous growth (5% for each airline).
 - The 5% share will result in 500 slots per airline when 10 thousand slots become available in 2023. Obtaining a maximum of 500 slots will not be interesting for most airlines. 500 slots are fewer than needed for a feeder, a stationed aircraft or a base. Although a single route is possible – and European examples of airlines serving an airport with a single route do exist – airlines usually want to operate at a more substantial scale to receive better payback on local development costs and reduce the risk of losing historic rights.
 - We therefore believe that 2-4 airlines will realistically operate slots without using the TDR. This will result in 10%-20% autonomous traffic at Lelystad Airport for the first 10 thousand movements.

- **We believe the TDR will be effective in limiting autonomous development when Lelystad Airport grows from 10 thousand to 25 thousand movements**
 - In essence, the TDR will limit the share of autonomous development to 10-20% up to 25 thousand movements, based on the same logic that applies to the first 10 thousand movements.

- So, if there is enough interest from TDR-eligible parties, the share of autonomous development will be limited to 10%-20% of slots allocated during the growth from 10 thousand to 25 thousand movements.
- However, the following uncertainties exist about whether TDR-eligible airlines will have enough interest and/or capacity to absorb all possible growth:
 1. Key factors driving traffic at Lelystad Airport could change significantly, impacting airlines' rationale for operating there. The most important factors are:
 - i. Scarcity at Schiphol: demand may grow more slowly than anticipated due to factors such as stricter environmental taxes, 'Flying Shame' movement traction, or economic downturn. If this is the case, capacity development at Schiphol might be sufficient to remove the need for additional capacity at Lelystad Airport.
 - ii. Attractiveness of Lelystad Airport: Lelystad Airport will prove its attractiveness to airlines and passengers during its first years. This could change stakeholders' perspective about Lelystad Airport.
 2. TDR-eligible airlines could reach their growth limit:
 - i. If only one airline uses the TDR to gain access to Lelystad Airport, they will most likely reach their limit in terms of what they can reasonably absorb in capacity.
 - ii. Furthermore, most airlines will likely want to keep some P2P slots at Amsterdam Schiphol and will not use all of their P2P slots for priority access to Lelystad Airport.

INTRODUCTION



2 INTRODUCTION

2.1 CONTEXT

The current Dutch aviation policy is based on the 2008 Alders agreement between stakeholders around Amsterdam Airport Schiphol (Schiphol). A key element of this agreement is the selective development of Schiphol to maximise its Mainport role, while adding capacity at regional airports (mainly Lelystad Airport) to relieve Schiphol from traffic that contributes least to the Mainport role.

Royal Schiphol Group and the government have taken several initiatives to implement this key policy element. Royal Schiphol Group, as owner of Lelystad Airport, has upgraded the existing general aviation airport to a full commercial airport. This includes a terminal designed to meet the needs of airlines operating a Point-to-Point (P2P) business model. At the same time, the Dutch government has been working on defining a Traffic Distribution Rule (TDR) which can be applied in the slot allocation process by Airport Coordination Netherlands (ACNL). The currently-proposed TDR raised concerns among stakeholders in the Netherlands. They wonder whether Lelystad Airport will be able to fulfil its role of an overflow airport ('Overloopvluchthaven' in Dutch) for Schiphol. In other words, will it be able to relieve Schiphol from traffic that least contributes to the Mainport role? The concept of non-autonomous versus autonomous traffic was introduced to address this concern. Autonomous traffic development refers to flights that do not directly relieve Schiphol from P2P flights.

2.2 OBJECTIVE OF THIS STUDY

The Ministry of Infrastructure and Water Management responded to stakeholders' concerns with regard to the nature of traffic development at Lelystad Airport. It informed parliament that it was committed to conducting an analysis of the expected transfer of flights from Schiphol to Lelystad Airport based on the TDR. This analysis would include the interests of market players into moving flights from Schiphol to Lelystad Airport.

M3 consultancy was commissioned to conduct this market study. The objective was to determine the extent to which Lelystad Airport can fulfil its role of relieving Schiphol Airport with the implementation of the TDR. A key element in this market study is the degree of autonomous traffic – traffic not coming from Schiphol Airport – at Lelystad Airport.

Therefore, this study addressed the following main question:

Can Lelystad Airport fulfil its targeted role of an overflow airport to Schiphol when the Traffic Distribution Rule – supplemented by supportive measures if needed – is applied?

We have been asked to include answers to the following sub-questions:

1. To what extent can additional measures (such as an attractive product and facility offering) contribute to preventing autonomous development at Lelystad Airport up to 10 thousand and 25 thousand movements?
2. What are airlines' (operational) considerations when considering a move to Lelystad Airport using the TDR?

3. To what extent will the TDR contribute to preventing autonomous development at Lelystad Airport up to 10 thousand and 25 thousand movements?
4. How will the TDR work across several scenarios?

2.3 SCOPE AND LIMITATIONS

The scope of this study is limited to the initial 25 thousand movements at Lelystad Airport. We placed a specific focus on traffic composition in 2023, when an initial 10 thousand movements limit is expected to be reached, and the TDR will be evaluated. This study aims to provide perspective about what type of airlines and what type of routes can be expected, and to what extent these operations can be characterised as non-autonomous versus autonomous development. It specifically does not aim to provide a detailed view of which airlines and which routes are expected to operate from Lelystad Airport in this time window.

The introduction of the TDR is foreseen at a time of high dynamism in global and national aviation. Airlines that have prospered in recent years are now battling high oil prices and yield pressure, while other airlines continue to do well. Awareness is also increasing about the environmental impact of aviation. New measures have been announced and partly implemented to reduce this impact. Examples include an aviation tax, a reduction in airport growth and opening hours, and new airport charging schemes. This study takes the most recent developments into account. However, a different industry and regulatory context in the future might well lead to a different outcome. At the same time, airlines have become very sophisticated in assessing the current and potential future value of a slot, and in optimising value generation from slots within an airline group and by partnering with others. Tactical/strategic slot strategy behaviour by incumbent airlines and new entrants is expected in the highly constrained Dutch airport market and could play an important role in traffic development at Lelystad Airport. This study does address some likely slot tactics. But defensive or offensive strategies adopted by airlines may trigger 'irrational' behaviour which can be hard to predict – it is difficult to easily determine the strategic value of such actions.

Finally, it should be noted that the practical application of the TDR and the number of additional slots over time at Lelystad and Schiphol Airports (and to a lesser extent at other airports in the Netherlands) are equally important factors in Lelystad Airport's traffic development. These factors are all governed by and/or subject to European legislation with different legal interpretations by various stakeholders (as the past has shown). M3 consultancy has, to the best of its ability, involved expertise from the Ministry, ACNL and independent experts in order to assess the type of operations that will develop over time at Lelystad Airport under this slot allocation mechanism. However, developments in slot allocation and availability may eventually differ from those outlined in this report due to factors such as legal challenges from stakeholders, and so on.



APPROACH TO ESTIMATING TRAFFIC DEVELOPMENT

3 APPROACH TO ESTIMATING TRAFFIC DEVELOPMENT

To answer this study's main and sub-questions, we modelled expected traffic at Lelystad Airport up to 25 thousand movements, distinguishing between autonomous and non-autonomous traffic development. We also used scenarios to capture uncertainties in model assumptions. This section details our approach.

3.1 LOGIC USED TO DETERMINE TRAFFIC DEVELOPMENT

Traffic development in Lelystad is driven by three factors: passenger demand, airport supply characteristics and (airline) market dynamics. The main focus of this study was not to develop a completely new view about these factors. We have therefore examined existing market studies and used consistent market data as our basis for evaluating policy outcomes. This study builds on the AEOLUS long-term forecast model [1], providing low and high passenger growth scenarios that include assumptions about average aircraft size and load factors. We also add insights into these existing market scenarios by applying our own market research, European case studies and interviews with multiple experts.

3.1.1 PASSENGER DEMAND

The primary market driver for air traffic is passenger demand for air travel. Airlines use passenger demand and preferences to decide on destinations to serve, flight frequency, and the airports they operate to and from. Extensive research on passenger demand has already been done, so we do not develop a new demand outlook here. Instead, we use existing research as a basis. We then detail the relevant forecasts for route-type and passenger segment to assess the type of traffic that will likely develop at Lelystad Airport.

3.1.2 AIRPORT SUPPLY CHARACTERISTICS

The most important supply characteristic is available airport capacity (i.e. slots). Without capacity, traffic is not possible, and airlines cannot meet passenger demand. Information about expected capacity development is therefore required to estimate future traffic at Lelystad Airport. Because Lelystad is a secondary airport, one of its key growth drivers will be how constrained the primary (Schiphol) and other secondary airports (Eindhoven, Rotterdam, and the Hague) are. If further Dutch airport growth is not possible, airlines will be more likely to consider Lelystad Airport as an alternative. We therefore considered capacity development for all Dutch airports in evaluating traffic development at Lelystad Airport. While we recognise that capacity at airports in Germany and Belgium are also a factor, we believe their effect will be small and so have considered them out of scope for this study.

A second important driver is the slot allocation mechanism, including the intended Traffic Distribution Rule (TDR). From its opening in 2020, Lelystad Airport will be a *coordinated airport*, and slots will be allocated according to EU Regulation. The exact working of this regulation in combination with the intended TDR will determine who gets the slots and the resulting traffic.

Finally, we consider airport attractiveness, looking at full airline operating costs (airport charges, ground handling costs, fuel costs, crew, etc.).

3.1.3 AIRLINE MARKET DYNAMICS

Airlines make airport and operations decisions based on the demand and supply outlook. Understanding this airline decision-making rationale is therefore required to estimate traffic development at Lelystad Airport. This includes general developments in the type of airlines and their network strategies, the role of secondary airports in general, and dynamics in slot-constrained airports. These factors all affect airlines' expected interest in Lelystad Airport.

3.2 METHODOLOGY FOR DETERMINING TRAFFIC DEVELOPMENT AT LELYSTAD AIRPORT

We developed multiple traffic scenarios by combining insights into demand, supply and airline market dynamics. The resulting scenarios reflect uncertainties in each of the underlying key factors, and provide a bandwidth of expected traffic at Lelystad Airport (including the share of autonomous traffic development).

We used the following logic:

1. We estimated slot demand (i.e. requested slots) per type of airline at Lelystad Airport:
 - Demand will be significant if the Netherlands is a capacity-constrained market, and detailing attractiveness relative to Schiphol will be less relevant.
 - Demand will likely be limited if the market is not capacity-constrained (airlines will prefer Schiphol over Lelystad).
2. We estimated expected traffic based on slot allocation rules, combining EU Slot Regulation and the TDR.
3. We derived the share of autonomous traffic development based on expected traffic.

3.3 DEFINITION OF AUTONOMOUS VERSUS NON-AUTONOMOUS TRAFFIC

The split between autonomous and non-autonomous traffic was introduced by the Ministry in order to capture the role of Lelystad Airport as an overflow airport to Schiphol. This definition distinguishes between Transfer destinations (10+% of passenger transfers at Schiphol) and Point-to-Point (P2P) destinations. The definition of non-autonomous traffic is as follows:

Flights launched to/from Lelystad Airport, having obtained slots through priority slot allocation as a result of the TDR. This includes:

1. *Flights for which a Schiphol P2P slot is returned to the ACNL;*
2. *Flights for which a Schiphol P2P slot will be used to serve a Transfer destination.*

All other flights at Lelystad Airport are defined as autonomous traffic.

A list of P2P destinations will be provided by a Ministerial order. Applying the version used in the latest internet consultation [2], we have identified the top 15 airlines serving these destinations with TDR-eligible slots (Exhibit 1).

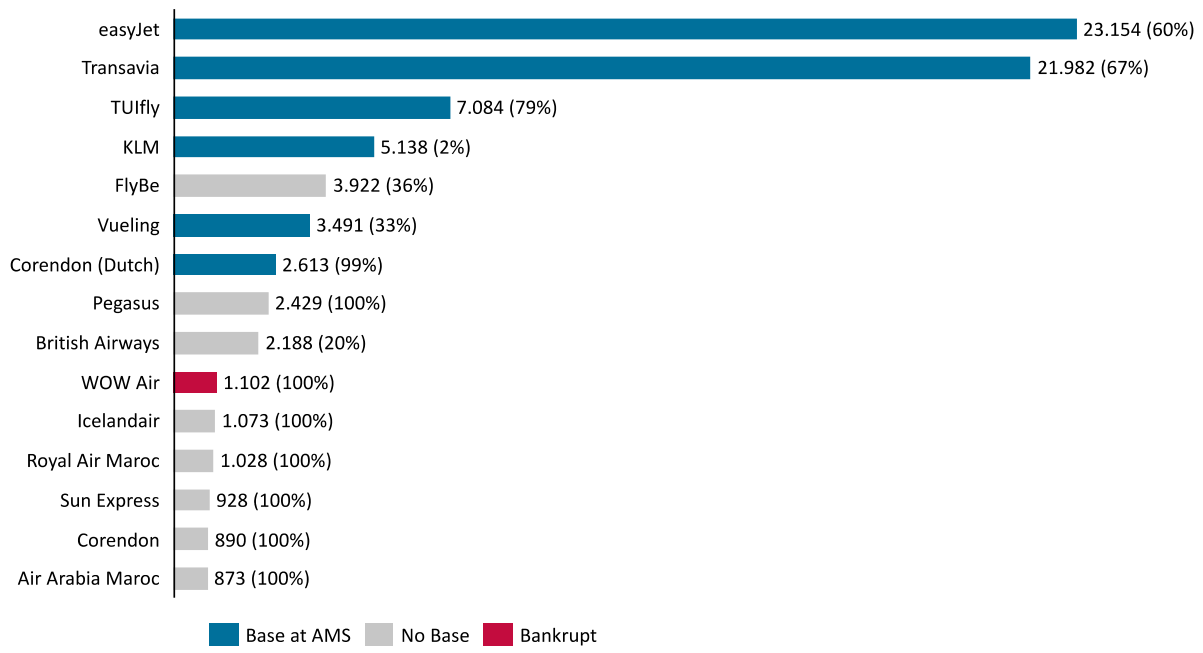


Exhibit 1: Short-haul flights in scope of TDR at Schiphol; top 15 airlines covering 95% of total (% of total flights per airline)

A close-up photograph of a person's hand pulling a blue, textured rolling suitcase. The person is wearing a dark, ribbed sweater. The background is a blurred airport terminal with many people walking. A white text box is overlaid on the left side of the image.

FACTORS DRIVING TRAFFIC DEVELOPMENT

4 FACTORS DRIVING TRAFFIC DEVELOPMENT

4.1 DEMAND OUTLOOK

This section presents the demand outlook, which consists of two parts:

1. Total demand in the Netherlands.
2. The addressable market for Lelystad Airport.

4.1.1 TOTAL DEMAND

We used a four-step process to estimate the development of total market demand:

1. We established the historic baseline for 2016-2018 by using traffic data from all commercial airports in the Netherlands.
2. We corrected the 2018 baseline to account for unmet demand (applying an additional one-off growth rate of 0.9%).
3. We accounted for the implementation of an aviation tax by applying a reduction of 4.2% on Origin/Destination (OD) passenger demand in 2020.
4. We extrapolated the baseline to 2030 in two growth scenarios – 1.98% and 4.42% for modelling a low- and high-growth scenario respectively.

Exhibit 2 shows the demand outlook for the total market (unconstrained), including the steps mentioned above. We estimate the total unconstrained market in the Netherlands to be 80.5 million passengers in 2018 (563 thousand air traffic movements (ATM)). This results in a demand outlook for the year 2030 of 97.6 million passengers (approximately 619 thousand ATM) in the low-growth scenario, and 129.6 million passengers (approximately 822 thousand ATM) in the high-growth scenario.

The following sections provide more detail about all four steps.

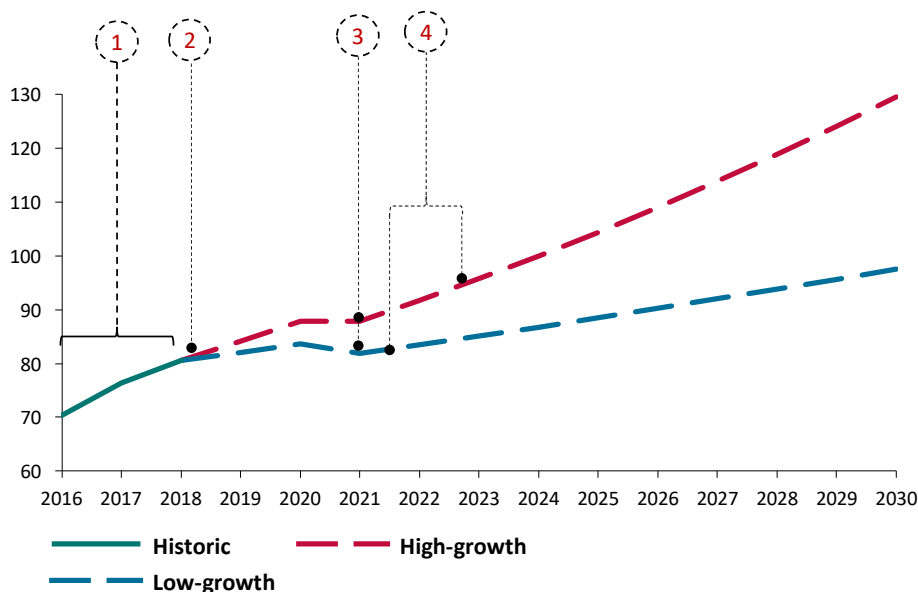


Exhibit 2: Demand outlook for the total market – unconstrained Dutch air traffic demand (million passengers)

HISTORIC BASELINE

The baseline for total demand is based on historic passenger statistics from all airports of national interest in the Netherlands. This includes Schiphol (AMS), Eindhoven Airport (EIN), Rotterdam The Hague Airport (RTM), Maastricht Aachen Airport (MST) and Groningen Airport Eelde (GRQ). The core of the historic passenger data is formed by Royal Schiphol Airport's detailed data combined with data from regional airports. To obtain this regional data, we combined total airport passenger data from CBS StatLine with airline schedule data obtained from Cirrium's DIIO SRS Analyser (this provides a route-level view of passenger flows).

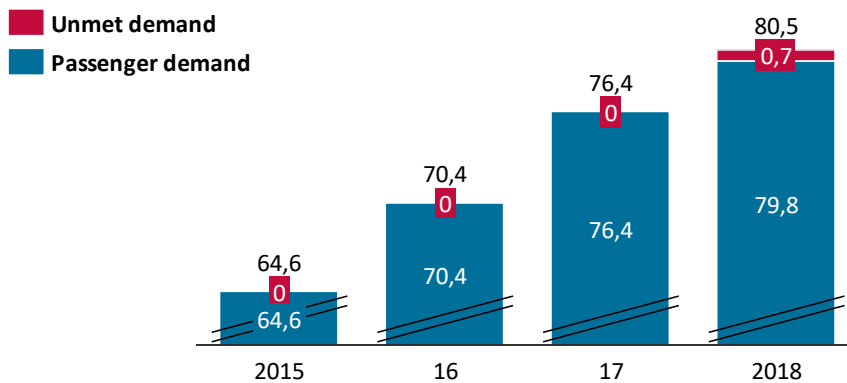
UNMET DEMAND

An important element of the demand outlook is 'unmet demand'. This refers to the additional market demand that would have been handled at airports if there were no capacity constraints. This unmet demand is currently captured through airports in Germany or Belgium and/or captured in the form of a scarcity premium positively impacting airline yields on routes to/from Schiphol. The purpose of assessing the extent of this unmet demand is not to suggest that capacity growth should accommodate it. But it is an important factor in determining how quickly new capacity in Lelystad Airport will be filled.

In 2018, passenger demand in the Netherlands developed more slowly than the European average due to capacity constraints at Schiphol Airport. This is shown in Exhibit 3. To reflect unconstrained demand, we corrected the 2018 baseline by 0.9% additional growth (the gap between European and Dutch growth in 2018). Unconstrained demand in the Netherlands in 2018 equals 80.5 million passengers versus 79.8 million passengers in the constrained baseline.

Passenger growth rates

Total Netherlands	6.1%	8.7%	8.4%	4.5%
EU airports average	5.2%	6.7%	7.5%	5.4%
Unmet growth rate				0.9%



Source(s): CBS; ACI Reports; Eurocontrol; Heathrow Airport

Exhibit 3: Total number of passengers at all airports in the Netherlands (million passengers)

IMPACT OF AVIATION TAX

The current government is preparing the introduction of an aviation tax in 2021. This proposal is part of the coalition agreement [3] and has since been translated into policy.

Progress in terms of other measures is currently limited, and a flat airport tax of approximately €7 per passenger is considered to be most likely [4]. The effects of an aviation tax have been studied by Significance [5], and we use their result in our model to correct demand outlook:

- Airport tax will reduce passenger demand by 4.2%.
- The impact of aviation tax will be a one-off occurrence the year it is implemented. Afterwards, it is assumed that passenger demand will follow the corrected baseline year-on-year.

While we recognise that the tax may affect some customer segments and geographic flows more than others, we have assumed an equal demand drop for all customer segments.

EXPECTED GROWTH

We consider two growth scenarios for the development of future demand. Both scenarios are based on a recent update of AEOLUS (the simulation model used in most government studies to estimate passenger demand and aircraft movements) [1]:

- Low-growth rate of 1.98% CAGR up to 2030.
- High-growth rate of 4.42% CAGR up to 2030.

To put these growth scenarios into perspective, we compared them with several other (industry) forecasts as shown in Exhibit 4. The low-growth scenario we use seems very conservative compared to other forecasts.

SOURCE	PUBLICATION	PERIOD	UNIT	REGION/FLOW	GROWTH
Significance, TO70	Actualisatie AEOLUS 2018 - low	2018-2030	PAX	To/from the Netherlands	1.98%
Significance, TO70	Actualisatie AEOLUS 2018 - high	2018-2030	PAX	To/from the Netherlands	4.42%
Airbus	GMF 2018	2018-2027	RPK	Intra-Western Europe	2.9%
Boeing	CMO 2018	2018-2037	RPK	Intra-Europe	3.6%
Eurocontrol	2019 7-year forecast	2019-2025	PAX*	To/from the Netherlands	3.2%
Eurocontrol	2019 7-year forecast	2019-2025	PAX*	EU-27 (ex. Croatia)	3.5%
Airbus	GMF 2018	2018-2027	RPK	Western to Central-Europe	6.2%
CBS	CBS-historical data (online)	2014-2018	PAX	To/from the Netherlands	6.5%

Remark(s): *Eurocontrol growth rates originally presented in #flights. Correction of 1.5% added to calculate for PAX/flight (based on average growth at Heathrow of 2% per year without ATM growth)

Exhibit 4: Summary of passenger demand forecasts

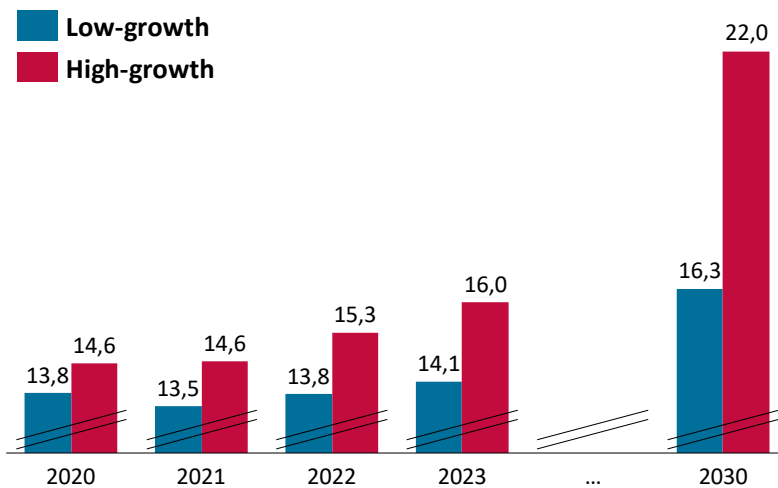
4.1.2 ADDRESSABLE MARKET FOR LELYSTAD AIRPORT

In order to establish the demand for Lelystad Airport, we established what is called the addressable market. This is the potential passenger demand that Lelystad Airport can compete for, given its geographic location in terms of demand flows.

We used two steps to derive the addressable market for Lelystad Airport from total demand:

1. **Lelystad Airport baseline:** We considered long-haul destinations, transfer and transit passengers to be out of scope for Lelystad Airport.
2. **Addressable market:** We estimated the addressable market share for each existing airport and applied this to the Lelystad Airport baseline.

We estimate the addressable market in 2020 at 13.8 (low-growth) or 14.6 (high-growth) million passengers. This is sufficient for 94 thousand or 96 thousand air traffic movements (Exhibit 5). The following sections explain both steps of our approach in more detail.



Source(s): WLO study Aeolus; CBS; ACI reports; Eurocontrol; Heathrow Airport; Significance study 2018

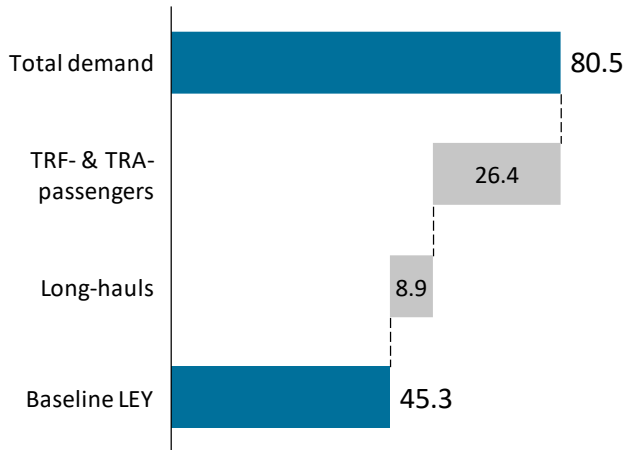
Exhibit 5: Demand outlook for the addressable market for Lelystad Airport (unconstrained, million passengers)

LELYSTAD AIRPORT BASELINE

Lelystad Airport will be limited to narrow body aircraft, which places all long-haul destinations out of scope. The distinction between long-haul and short-haul is based on the type of aircraft typically used to operate a destination from Amsterdam Schiphol. The resulting short-haul destinations include all destinations in Europe and North Africa.

Lelystad will also function as a Point-to-Point airport and will only serve local boarding passengers. This means that transfer and transit passengers from Amsterdam Schiphol are not addressable for Lelystad Airport.

Correcting total demand for the above two items results in our baseline for Lelystad Airport, including 45.3 million short-haul OD passengers in 2018 (shown in Exhibit 6).

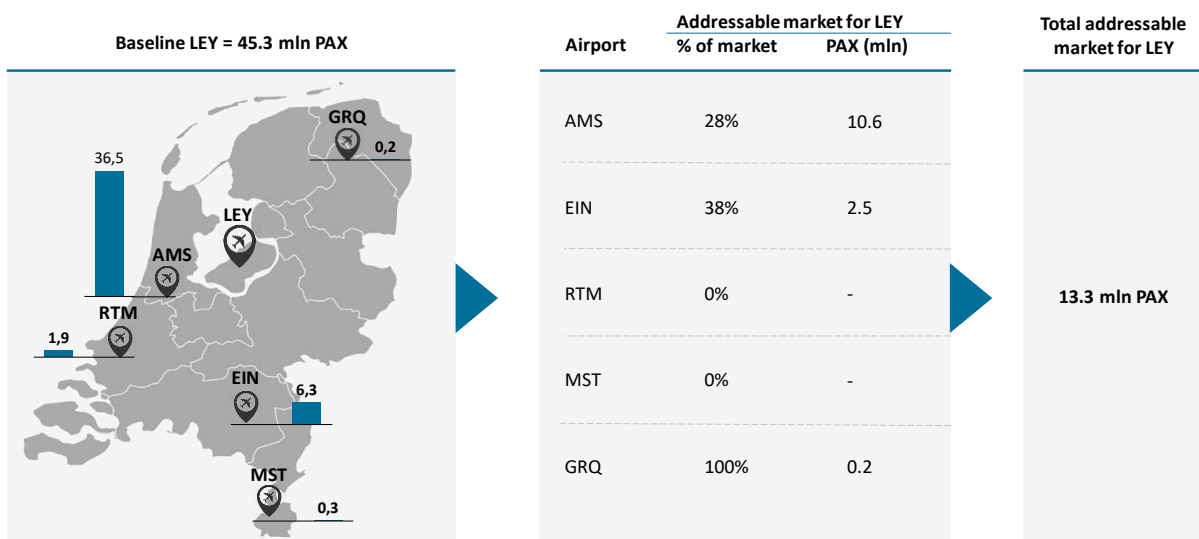


Source(s): Schiphol statistiek 2016-2018; DIIO; CBS

Exhibit 6: Breakdown of total market to addressable market for Lelystad Airport – 2018 air traffic demand (million passengers)

ADDRESSABLE MARKETS FOR EXISTING AIRPORTS

Finally, we estimated the addressable market share for each of the existing airports in the Netherlands. The result per airport is shown in Exhibit 7, and is further explained below.



Source(s): DIIO; Reizigersmonitor EIN 2018

Remark(s): Provinces within the LEY catchment area include Flevoland, Noord-Holland, Utrecht, Gelderland, Overijssel, Drenthe, Groningen and Friesland

Exhibit 7: Addressable market – % of market share per airport & total addressable market (million passengers)

Amsterdam Schiphol: We estimated Lelystad Airport's addressable market share of current Schiphol traffic using a benchmark of traffic split between primary and secondary airports in 10 multi-airport cities. In this benchmark, we compared the market shares of routes operated at both airports. The average route market share in the European benchmark was 28%, and was used as a proxy for Schiphol's addressable market. A summary of this benchmark is shown in Exhibit 8.

Eindhoven Airport: We estimated Lelystad Airport’s addressable market share of current Eindhoven Airport traffic using the residency of their passengers [6]. 38% of the Eindhoven traffic has its origin/destination within the catchment area of Lelystad Airport and is therefore addressable for Lelystad Airport. This catchment area includes Drenthe, Flevoland, Friesland, Gelderland, Groningen, Noord-Holland, Overijssel and Utrecht.

Rotterdam and Maastricht Airport: Both airports are positioned largely outside the catchment area of Lelystad Airport. The distance between these airports and Lelystad Airport is relatively high, and other airports such as Schiphol and Eindhoven Airport are much better positioned to capture their markets. Therefore, the addressable market share is assumed to be 0%.

Groningen Airport Eelde: Lelystad Airport’s addressable market share of current Groningen Airport Eelde traffic is assumed to be 100%. Lelystad Airport is well positioned and provides a good alternative for travellers to/from North and East Netherlands.

City	1 st AP	2 nd AP	# Cases	Market share 2 nd AP
Brussels	BRU	CRL	13	40%
Rome	FCO	CIA	23	40%
Milan	MXP/ LIN	BGY	16	39%
Barcelona	BCN	GRO	6	37%
Stockholm	ARN	NYO	4	26%
Warsaw	WAW	WMI	19	25%
Oslo	OSL	TRF	10	22%
Paris	CDG/ ORY	BVA	10	19%
Amsterdam	AMS	EIN	22	16%
Frankfurt	FRA	HHN	7	16%
Average market share of secondary airports				28%

Source(s): DIIO
 Remark(s): Average market share after market stimulation

Exhibit 8: Benchmark of European reference cases – average market share of secondary airports

4.2 SUPPLY OUTLOOK

This section first addresses the key supply factors. How will capacity (slots) develop? How will available capacity be allocated among requests? And how attractive is Lelystad Airport compared to Amsterdam Schiphol? The major drivers for traffic development at Lelystad Airport depend on whether the existing airports are capacity-constrained and how the allocation of slots will work under the Traffic Distribution Rule.

We conclude this section with relevant supply scenarios. These scenarios reflect the bandwidth of most likely outcomes and are used later in developing traffic scenarios for Lelystad Airport

4.2.1 SUPPLY FACTORS

Capacity for commercial flights in the Netherlands is currently extremely scarce, especially at airports serving the Randstad. 99% of available capacity in 2018 was in use at these airports (Schiphol, Eindhoven & Rotterdam The Hague).

Available capacity (in number of slots) for these *coordinated airports* is declared each season by the airport operator. These slots are allocated to airlines by an independent slot coordinator (ACNL). Both the capacity declaration and the allocation process are regulated by European Regulation [7]. ACNL will also allocate slots for Lelystad Airport, designated as a coordinated airport. An overview of available capacity is shown in Exhibit 9. It should be noted that capacity for accommodating large commercial passenger aircraft at regional airports is heavily influenced by the traffic mix. This is particularly the case for airports with freighter operations (Maastricht Aachen Airport) and airports with significant numbers of police and ambulance helicopter operations ('maatschappelijk verkeer'), which include Rotterdam The Hague Airport and Groningen Airport Eelde.

AIRPORT	YEARLY CAPACITY	REMARK
Schiphol	500,000	16k used by full freighter flights
Eindhoven	43,000	Will be reached in 2020
Rotterdam The Hague	17,900	
Groningen	Approximately 9,000, (4,425 used in 2018)	Number of large commercial ATM used for the MER in preparation for the new <i>Luchthavenbesluit</i>
Maastricht	Approximately 19,000 (6,013 used in 2018)	Number of large commercial ATM in current <i>Luchthavenbesluit</i> . Due to freighter operations, the capacity for passenger aircraft operations is expected to be <10,000 ATM
Total	588,900	

Source(s): Declared capacity at website ACNL (www.slotcoordination.nl)

Exhibit 9: Airport capacity in the Netherlands (slots)

CAPACITY DEVELOPMENT AT EXISTING AIRPORTS

At the moment of writing this report, the *White Paper on Dutch Aviation 2020-2050 (Luchtvaartnota 2020-2050)* is being drawn up by the Ministry of Infrastructure and Water Management. Part of this memorandum will include the future capacity of Dutch airports. However, the memorandum isn't finished yet and the outcome will likely be debated first before becoming final.

What we do know is that capacity at existing airports will most likely be insufficient to meet demand up to 2030:

1. A recent update of AEOLUS (the simulation model used in most government studies to estimate passengers and aircraft movements) shows that demand for air traffic movements in 2030 in the Netherlands will be 640 thousand in the low passenger growth scenario, and 880 thousand in the high passenger growth scenario [1].
2. To facilitate the low-growth scenario, almost 85 thousand additional slots are required compared to current capacity (assuming full freighters will keep 16 thousand slots a year at Schiphol). This

represents an average yearly growth of 1.4% (actual flights are used as a baseline for Groningen and Maastricht, since demand will focus on Rotterdam The Hague, Schiphol & Eindhoven).

3. Based on public statements from several sector parties, meeting the 1.4% capacity growth up to 2030 is most likely a maximum growth scenario:
 - a. Proefcasus Eindhoven advised the Minister to limit capacity at Eindhoven Airport to 41.5 thousand slots until at least 2021 [8].
 - b. Sector parties aim for 1.84% annual growth up to 2030 for Schiphol (including Lelystad Airport). For Schiphol, they specifically propose an additional 25 thousand movements up to 2028, corresponding to 0.61% a year [9].
 - c. Other involved parties (BRS, residents, environmental parties) want to postpone growth at Schiphol up to at least 2023 [9].
4. Since the involved parties haven't reached an agreement about the growth of Schiphol Airport, it's up to the Minister to propose a growth path. This growth will most likely will be lower than 1.84% (i.e. growth is not likely to fully meet sector ambition).
5. We therefore think it is realistic to assume that capacity at existing airports will not be enough to meet demand, even in the low passenger demand growth scenario (2% per year).

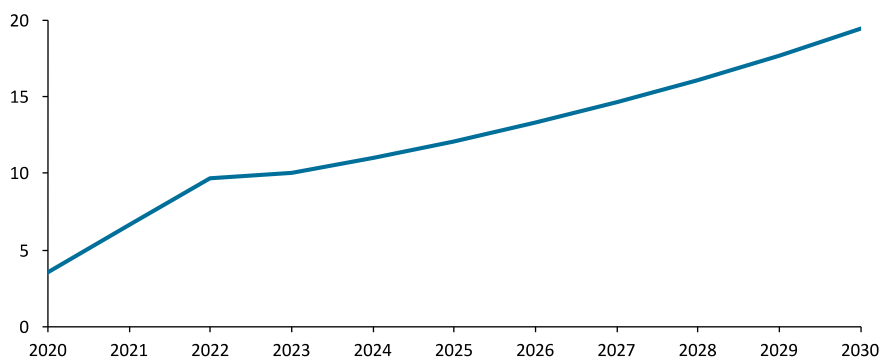
This means that airlines will be more likely to consider moving to Lelystad, since capacity at existing Dutch airports is scarce and further passenger demand exists.

CAPACITY DEVELOPMENT AT LELYSTAD AIRPORT

Three clear milestones for capacity growth at Lelystad Airport exist, all based on statements by the Ministry of Infrastructure and Water Management [10]:

1. The maximum number of air traffic movements (ATMs) will be 45 thousand [11].
2. Up to 2023, the number of ATMs will be limited to 10 thousand [12].
3. Growth will be phased in the first three years: 4 thousand in 2020; 7 thousand in 2021; 10 thousand in 2022 [13].

It remains unclear how capacity at Lelystad Airport will develop after 2023 in terms of how quickly capacity will increase up to the maximum of 45 thousand movements as stated in the *Luchthavenbesluit*. Lelystad Airport itself assumes growth up to 20 thousand movements in 2030 (based on an interview with Lelystad Airport NV), growing by 10% each year. This growth path is shown in Exhibit 10. Maximum capacity is, however, set at 45 thousand movements by law, and a faster pace might be a realistic alternative too.



Source(s): Lelystad Airport's business plan

Exhibit 10: Growth of ATMs at Lelystad Airport, according to Lelystad Airport's business plan (in thousands)

ATTRACTIVENESS OF LELYSTAD AIRPORT

The proposition of Lelystad Airport is that of a no-thrills airport serving carriers operating a Point-to-Point business model with no fast lanes or special add-ons, allowing for quick aircraft turnaround (25min). It aims to facilitate an efficient airline operation at an attractive cost.

For an airline, the attractiveness of Lelystad Airport will depend on the total cost to operate relative to the closest primary airport – namely Schiphol. This section takes a closer look at the total costs at Lelystad Airport, including airport charges, handling costs and capacity costs (if an airline opens a base).

Airport charges and handling

Lelystad Airport NV indicated (in an interview) that the total cost to operate will be comparable to Eindhoven Airport. A comparison between Eindhoven Airport and Schiphol charges and handling costs shows that costs at Lelystad will be roughly €20 lower per departing passenger than those at Schiphol. Details concerning cost items are shown in Exhibit 11.

ITEM	AMS	EIN	REMARKS
Landing and take-off charges	€1.97	€1.64	<ul style="list-style-type: none">Schiphol based on S2 noise; day; connected handlingCharge per aircraft, converted using 170 PAX / aircraft
Aircraft, baggage and passenger handling	€10	€5	Estimate, based on interviews with Royal Schiphol Group
Fuel cost		€1.30	Fuel is expected to be 3% more expensive at Eindhoven since it will be supplied by truck. Impact in price based on a 5-hour flight (737-800) at latest European aviation fuel prices
Passenger service charge	€13.10	€7.47	
Security charge	€11.61	€3.17	
Incentives/ discount		€2.63	50% of maximum incentives are used
Total per departing passenger	€36.68	€15.96	

Source(s):

- Schiphol and Eindhoven websites (airport charges summer season 2019)
- <https://www.indexmundi.com/commodities/?commodity=jet-fuel&months=120¤cy=eur>
- https://en.wikipedia.org/wiki/Boeing_737_Next_Generation#737-800

Exhibit 11: Airport charges – a comparison between Schiphol and Eindhoven Airport

Three additional cost items compared to Eindhoven Airport are mentioned by stakeholders (from our own interviews and publicly-available sources):

1. Fuel consumption will be higher due to extended flying at low altitude.
2. Maintenance costs will be (slightly) higher due to a shorter runway (more thrust is needed to take off and more intense braking is needed to land).
3. Lelystad Airport is sensitive to North-western storms, resulting in a higher risk of diversions and consequently higher delay-related costs.

We believe these additional items will have limited impact:

1. The impact of fuel cost will be an extra €4 at most (at 10% extra consumption). This will apply during the first years of operation, until the planned rearrangement of Dutch airspace occurs in 2023.
2. Additional maintenance costs are hard to estimate. However, if they increase by 5%, the expected additional cost will be below €1 [14].

3. Lelystad Airport's runway orientation is similar to Eindhoven's, and the Instrument Landing System (ILS) will be of the same category. We conclude that Lelystad Airport and Eindhoven Airport are equally sensitive to adverse weather conditions.

To conclude, total costs to operate at Lelystad Airport might be slightly higher compared to Eindhoven Airport, but these differences will be small (not higher than €1 per departing passenger after the rearrangement of Dutch airspace).

Capacity costs

If a base is opened at Lelystad Airport, capacity costs will need to be considered as well. The main components are aircraft, crew and maintenance costs.

Optimising aircraft utilisation is a key priority for airlines. In order to do this, a narrow body aircraft typically operates a minimum of 2 rotations a day. This means an airline will have to acquire enough slots (~1400 slots per aircraft per year at 4 slots per day, 7 days a week).

Lelystad Airport's planned opening hours are 06:00-23:00 [15]. This is sufficient to accommodate a combination of a short haul and a medium haul trip (e.g. Canary Islands and Milan). Flexibility in the case of delays is an important aspect here. Will late aircraft be allowed to land at Lelystad Airport, or will they need to deviate to Schiphol? The approach to approving late aircraft handling is of high importance for home-based airlines.

In general, we conclude that since Lelystad Airport's opening hours are similar to those of Eindhoven Airport (07:00-00:00), operational conditions are sufficiently in place for airlines to establish and operate a base at Lelystad Airport if they obtain enough slots to do so.

SLOT ALLOCATION, INCLUDING TDR

An important component of the supply dynamics at Lelystad Airport will be the allocation of slots by ACNL based on the EU Slot Regulation in combination with the TDR. This is especially true when it comes to the exact way the **new entrant** rule will work. We use the following definition for **new entrants** based on the latest interpretation by the ACNL:

New entrant (EU Slot Regulation, article 2):

- i. An airline holding fewer than five slots at that airport on the requested day, including the requested slots.
- ii. An airline requesting to operate a scheduled passenger service between two community airports, where a maximum of two other airlines operate the same route/service. Total slots for this route on that day for such an airline should be fewer than five, including requested slots.
- iii. An airline requesting to operate a scheduled passenger service to a regional airport with no other airlines (total slots for this route on that day should be fewer than five, including requested slots).

An airline holding more than 5% of the total slots available on the day in question at a particular airport – including requested slots on that day – shall not be considered as a new entrant at that airport.

New entrant+: If an airline qualifies on items i and ii/iii, they will gain priority over the other new entrants.

A schematic overview of this process is given in Exhibit 12.

#	STEP	RESPONSIBLE	REGULATION
1	Declare available capacity per season	Airport	EU Art 6
2	Grant historic rights	ACNL	EU Art 8.2
3	Allocate the remainder of slots (i.e. the slot pool) to (new) requests	ACNL	EU Art 10
3a	A maximum of 50% of slots are given with priority to new entrant requests in the following order: 1. New entrants+: qualifying under i and ii/iii 2. Year round operations (extend operation from previous season) 3. TDR	ACNL	EU Art 8.3 EU Art 10.6 TDR
3b	Remainder of slots are given to <u>all</u> remaining requests in the following order: 1. Year round operations (extend operation from previous season) 2. TDR	ACNL	EU Art 8.3 TDR

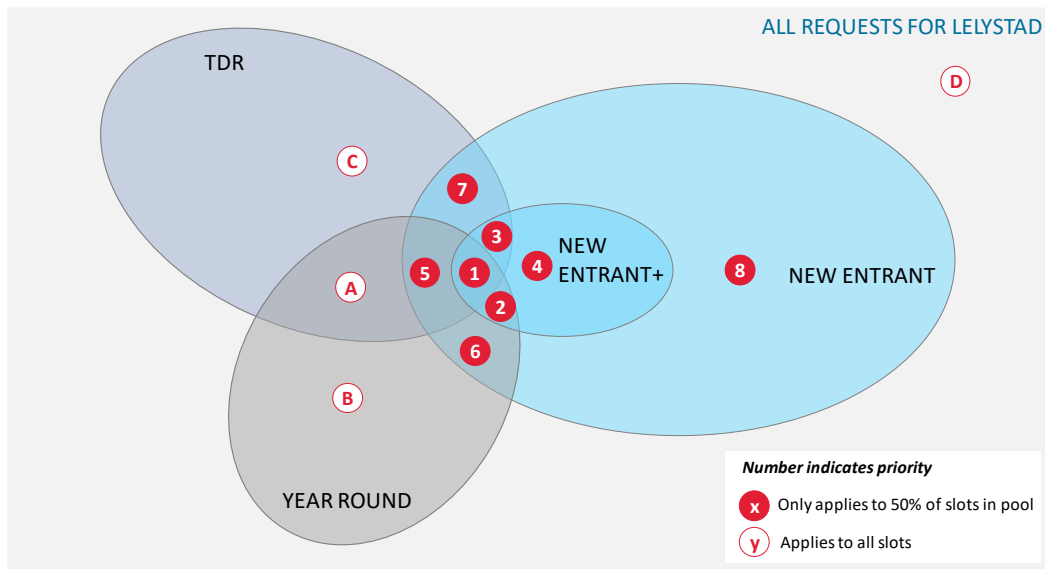
Source(s): The Council Regulation (EC) No 95/93; TDR used in latest internet consultation

Remark(s): Two priorities are left out of scope since these will likely have marginal impact: priority for commercial aviation and priority for scheduled over unscheduled flights

Exhibit 12: Overview of slot allocation process at Lelystad Airport

To summarise, the EU Slot Regulation and the TDR will create several overlapping priorities for each slot request. This will result in an overall priority sequence for the slot allocation process (as illustrated in Exhibit 13). The allocation process will follow two steps:

1. Allocate a maximum of 50% of the slot pool (slots after historic rights) to requests from new entrants (priority shown in numbers, red balls).
2. Allocate the remainder of the slots according to the priority shown in letters (white balls).



Source(s): The Council Regulation (EC) No 95/93; TDR used in latest internet consultation

Remark(s): Two priorities are left out of scope since these will likely have marginal impact: priority for commercial aviation and priority for scheduled over unscheduled flights

Exhibit 13: Slot allocation priorities for Lelystad Airport

4.2.2 SUPPLY SCENARIOS

UNCERTAINTIES WITH REGARD TO SUPPLY

Two main uncertainties exist regarding the supply outlook:

1. Capacity development at existing airports is unclear. We expect some increase in capacity up to 2030, but how much is highly uncertain.
2. The legal basis for regulating the release of slots by the airport operator is also somewhat unclear. Gradual capacity growth at Lelystad Airport after 2023 has no legal basis. The maximum of 45 thousand movements is covered in the *Luchthavenbesluit Lelystad Airport*, but the growth path after 2023 is not. It is therefore possible that growth will occur faster than the scenario based on Lelystad Airport's business plan.

SCENARIOS

We developed 4 capacity scenarios to deal with capacity growth uncertainties at existing Dutch airports and capacity release at Lelystad Airport (items 1 & 2 in the previous section). The 4 scenarios are a combination of 2 scenarios for growth at existing airports and capacity release at Lelystad Airport:

1. Growth at existing airports:
 - a. High-growth: Based on the sector position of 1.84% growth per year, including the development of Lelystad Airport (45 thousand movements in 2030, resulting in 1% growth per year for the existing airports).
 - b. Low-growth: 50% of the high-growth scenario.
2. Capacity release at Lelystad Airport:
 - a. Lelystad Airport's business plan: Slot growth at Lelystad Airport will follow the growth path indicated in Lelystad Airport's business plan.
 - b. Quick release: The first 10 thousand slots will be released immediately in 2020. From 2024 onwards, 5 thousand slots will be added each year to Lelystad Airport's capacity, resulting in a capacity of 45 thousand movements in 2030.

The combination of these capacity growth scenarios is shown in Exhibit 14.

SCENARIO	GROWTH SCENARIO	AIRPORT	2018	2020	2021	2022	2023	...	2030
High-growth existing + LEY business plan	<i>1% / year (in line with sector statement of 1.84% incl. LEY @45k)</i>	AMS	500	500	505	510	515		552
		RELU's	69	71	72	73	74		79
		LEY business plan	LEY	0	4	7	10	10	
Low-growth existing + LEY business plan	<i>0.5% (half of high growth)</i>	AMS	500	500	503	505	508		526
		RELU's	69	71	72	72	72		75
		LEY business plan	LEY	0	4	7	10	10	
High-growth existing + LEY quick release	<i>1% / year (in line with sector statement of 1.84% incl. LEY @45k)</i>	AMS	500	500	505	510	515		552
		RELU's	69	71	72	73	74		79
		Quick release	LEY	0	10	10	10	10	
Low-growth existing + LEY quick release	<i>0.5% (half of high growth)</i>	AMS	500	500	503	505	508		526
		RELU's	69	71	72	72	72		75
		Quick release	LEY	0	10	10	10	10	

Source(s): Public statement regarding capacity growth at existing airports; Business plan of Lelystad Airport

Exhibit 14: Capacity growth scenarios

4.3 AIRLINE MARKET DYNAMICS

The third and final element influencing traffic development at Lelystad Airport is airline market dynamics. New business models – most notably the low-cost airline model – have emerged during the past decades. At the same time, traditional business models – such as the charter airline model – have been adapted or are in decline. Along with new business models, route networks have increasingly involved the use of secondary airports within the same catchment area, while most regional airports have been struggling to maintain a consistent network and to achieve passenger growth. Lelystad Airport can be considered as a secondary airport tapping into a catchment area that Schiphol serves. It can also be considered a regional airport serving the North-eastern part of the Netherlands. Certain information is needed to assess which airlines may be interested in operating from Lelystad Airport, either to benefit from the TDR or to apply for slots as a new entrant. This includes a review of airlines' business models, the development of secondary airports in general, and an assessment of the airlines' point of view/potential interest by reviewing their network strategy and operations at Schiphol.

4.3.1 AIRLINE BUSINESS MODELS

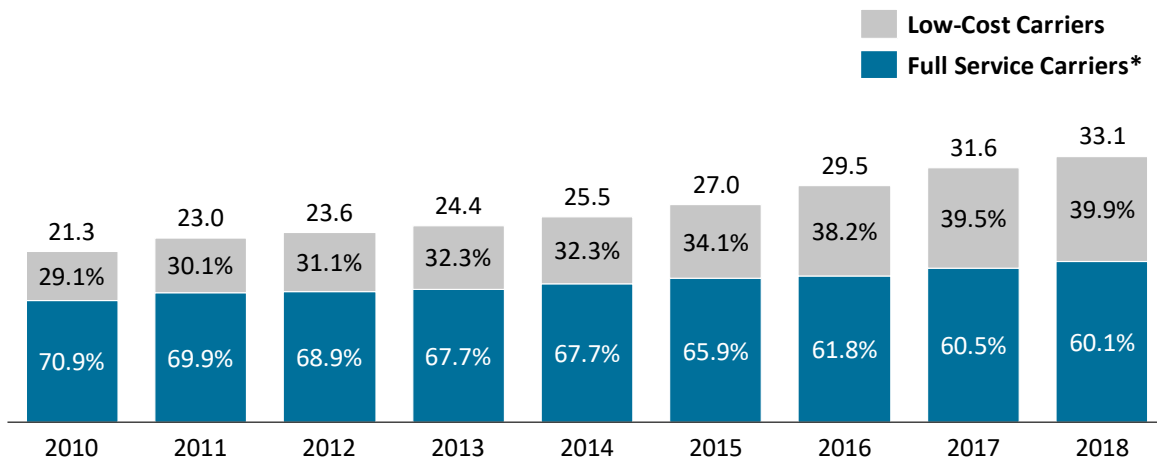
In terms of passenger air transport in Europe, airline business models can be broadly categorised into 3 buckets. Each has a different strategy for the use of secondary and regional airports:

- **Low-Cost Carriers (LCCs)** operating a Point-to-Point network served from bases throughout Europe. Ultra-low-cost airlines frequently operate from secondary airports, while other low-cost airlines focus their operations at primary airports tapping into higher yield passenger segments.
- **Charter-holiday airlines** operating mostly non-scheduled flights, selling most of their seat capacity in blocks to in-house or third-party tour operators. These airlines operate equally from primary and regional airports.
- **Full Service Airlines (network airlines)** and the associated regional feeder airlines dominating the primary airport(s) in a country targeting connecting passenger flows. They operate from large airports as well as regional airports at small/medium-sized cities to feed their hub.

In terms of dynamics in the airline business models, we have identified three key trends relevant for potential traffic development at Lelystad Airport:

1. **Continued market share growth of Low-Cost Carriers:** Since the arrival of this segment in the 1990s, LCCs have achieved a continued increase in market share. In 2018, LCCs accounted for 43% of seats on intra-European flights, up from 36% in 2010 [16]. The Netherlands has had relatively low representation in this area, with only 29% in 2010, but started catching up in 2018, with 40% (see Exhibit 15). Although this LCC gap is closing, it still represents approximately 7 million seats (or 40 thousand flights) in the Netherlands, as shown in Exhibit 16. In addition to expanding their operation at existing bases, the largest players continue to add new bases. As shown by Exhibit 17, Ryanair added 35 bases between 2015 and 2019, while easyJet and Wizz Air opened 7 and 4 respectively during the same period. Interviews with industry experts confirm that LCCs are continuing to look for more airports, but find that airports attractive enough to start a new base are becoming scarce. A greenfield airport like Lelystad Airport in an underserved market is therefore highly sought after. According to a former Head of Network and Fleet Management at a large LCC who has been evaluating the potential for Lelystad Airport, the attractiveness of these types of airports is a dream come true for Low-Cost Carriers. However, 3 aircraft is the minimum scale for an LCC base, which implies approximately 4,500 movements per year. The gradual release of slots at Lelystad Airport will make it hard for a single airline to obtain this many slots in the initial years of operation.

According to a former Chief Commercial Officer at a large Low-Cost Carrier, it is very likely that LCCs will operate flights from their bases across Europe in the absence of a base at Lelystad.

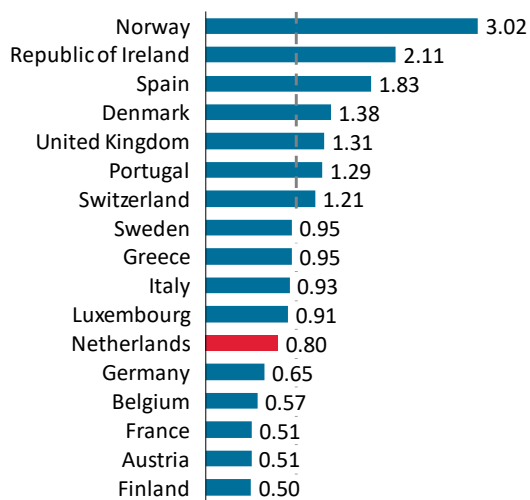


Source(s): DIIO, 2019

Remark(s): *Including regional airlines

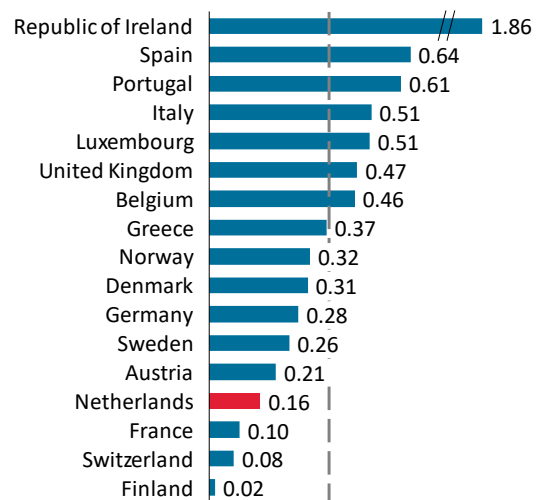
Exhibit 15: Development of seats on intra-European flights (millions) at airports in the Netherlands

PENETRATION OF LCC (seats/capita) (OAG-definition)



If the Netherlands moves towards the average: +6.8mln seats (LCC)

PENETRATION OF ULCC (seats/capita) (RYANAIR, WIZZAIR & EUROWINGS)

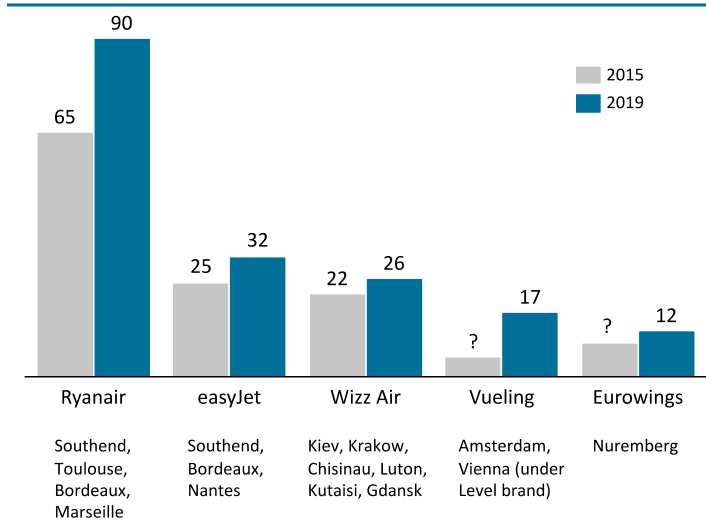


If the Netherlands moves towards the average: +7.2mln seats (ULCC)

Source(s): OAG schedules; Eurostat statistics

Exhibit 16: Penetration of Low-Cost Carriers in the Netherlands, 2018

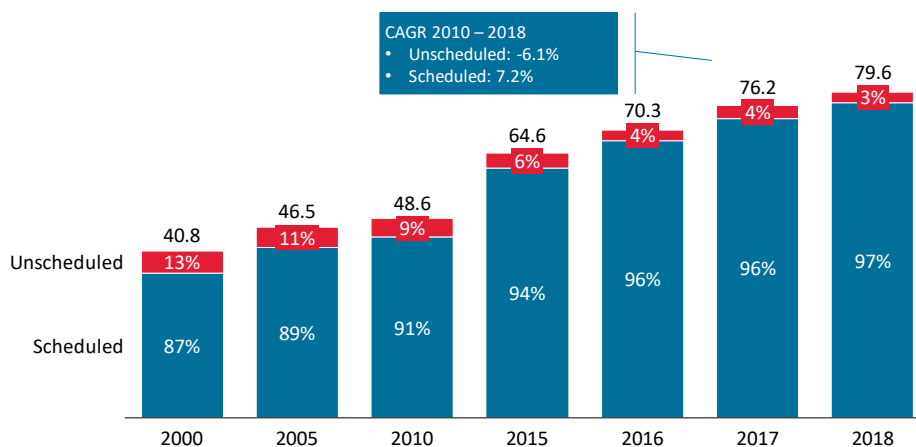
RECENT NEW BASES



Source(s): airline websites, 2019; press

Exhibit 17: Number of bases of the main Low-Cost Carriers

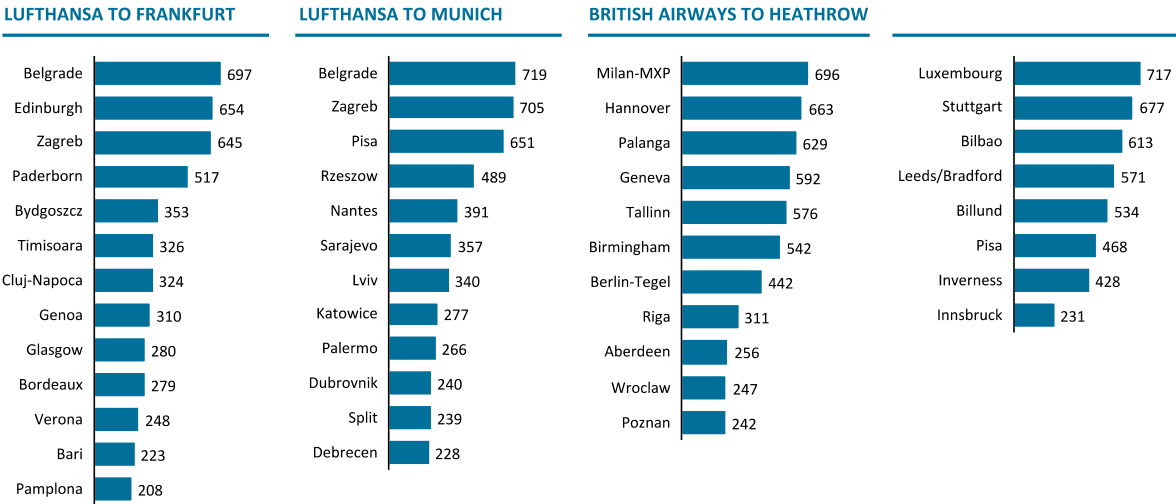
- The rapidly-declining charter airline segment:** The past two decades have shown a continued decline of this charter segment in terms of the overall development of scheduled versus non-scheduled traffic. The passenger market share of non-scheduled operations in the Netherlands went from 13% in 2000 to just 3% in 2018, dropping annually by 6% (see Exhibit 18). This development matches the mature US aviation market, where charter operations have long been nearly non-existent. Factors such as increasing competition from Low-Cost Carriers and an increasing number of self-booking travellers have contributed to this. Some regional airports in the Netherlands, such as Rotterdam The Hague, have seen charter traffic start to increase since 2017, growing from 45 thousand non-scheduled passengers in 2016 to 121 thousand in 2018 [17]. This can be explained by the scarcity of slots at Schiphol, and the fact that charter airlines have not held on to historical slots. However, with a total of only 2.7 million passengers on non-scheduled operations, this is not likely to become a major part of Lelystad Airport’s traffic.



Source(s): CBS, 2019

Exhibit 18: Development of scheduled versus non-scheduled passengers at airports in the Netherlands, in millions

3. **Network airlines adding niche routes from regional airports:** Network airlines face heavy competition on routes to large cities within Europe from LCCs, but also from Middle Eastern airlines on connecting passenger flows from major European cities to regions such as Asia. To compensate for these low yield markets that have to be part of any large airline’s network, network airlines have been adding routes to small/medium-sized cities, where they can achieve high yields due to the more limited competition [18]. KLM has been adding many such destinations in the UK and Scandinavia (such as Växjö, a city in central Sweden with just 55 thousand inhabitants). The attractiveness of Lelystad Airport for such operations is not a clear-cut case, as it is a secondary airport serving the same catchment area as Schiphol as well as a regional airport much closer to the 3.3 million inhabitants of the provinces of Groningen, Friesland, Drenthe, Overijssel and Flevoland. Network airlines and/or regional partners have shown interest in regional airports in the Netherlands with operations from Groningen to Copenhagen and from Rotterdam to London (City), while British Airways has shown an interest in flying from Eindhoven [19]. Looking at the list of feeder destinations for the main surrounding hub airlines in a 750 mile/1200 km range from their hub served with 1-2 daily flights, Lufthansa from Frankfurt and Munich has the highest number of such feeder routes and might therefore be the most likely candidate to do so (see Exhibit 19). However, an attractive business proposition with twice daily service during the week would require 1,000 – 1,400 slots per year (operating 5 – 7 days a week), which will not likely happen until at least 2023.



Source(s): DIO, 2019; interview CEO Eindhoven Airport in Eindhovens Dagblad
 Remark(s): 4 flights/week = 208 flights/year; 14 flights/week = 728 flights/year

Exhibit 19: Number of annual departures to destinations <1250 km served with 0.5 – 2 daily frequencies of 4 key surrounding hubs, 2018

4.3.2 ROLE OF SECONDARY AIRPORTS

Secondary airports have seen a strong increase in traffic following the rise of Low-Cost Carriers. However, each LCC has a different network strategy in terms of what types of cities and airports to serve, and some have changed their strategy in recent years.

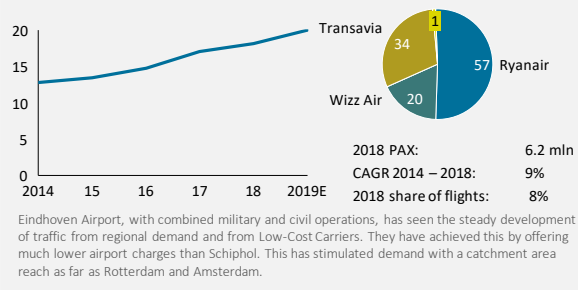
Overall, secondary airports continue to see higher than average growth. Between 2010 and 2018, 9 large secondary airports¹ in Western Europe grew at a 4.3% annual growth rate versus 4.0% for all European airports. This growth difference was more significant between 2014 and 2018 at 7.3% versus 5.6% respectively [16]. There are some notable differences between these secondary airports. Secondary airports in a catchment area with a primary airport with unconstrained capacity show much slower growth than similar airports with their primary airport's capacity constrained. This is illustrated in the case studies of 4 airports in Exhibit 20. Both Eindhoven and London's Southend operate in a highly-congested airport capacity market, with accelerated growth in recent years. Stockholm's Skavsta airport, 100 km south of the city and next to the city of Nyköping, has shown moderate growth, with Arlanda airport still having capacity (though not in peak hours). Frankfurt Hahn's airport saw a strong drop in traffic after Frankfurt Main airport increased its capacity by taking away the slow release of additional slots policy it had adopted after the opening of a new runway. At the same time, it introduced a new route incentive programme. The implication of this for Lelystad Airport is that its growth potential will, to a high degree, be dependent on the availability of new slots at Schiphol.

The type of airlines operating at secondary airports is very much limited to LCCs – typically 1 or 2 main LCCs dominate the airport. Charter airlines usually have little presence at such airports. As a CEO of a secondary airport has put it: "Charter airlines want to avoid head-on competition with LCCs who operate on many of the traditional charter airline routes to the Canary Islands and mainland Spain". This may be less of a factor in the Netherlands. As the CEO of a Dutch airline has said: the integrated tour market in the Netherlands has remained stronger than in other European markets, and there is therefore less direct competition between charter/leisure airlines and LCCs.

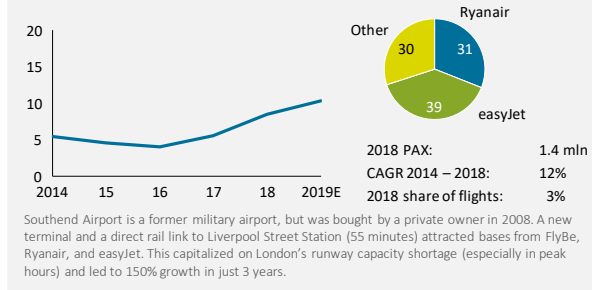
In terms of markets served from secondary airports in North-western Europe, flights to Southern European countries along the Mediterranean represent the largest share – 44% of all departing seats, followed by city destinations in Western Europe at 27%. However, annual growth in these markets in 2014 and 2018 was relatively low at 2.4% for seats to destinations in Southern Europe and 4.1% to destinations in Western Europe. Instead, growth is concentrating on routes to Eastern European destinations (14.2%) and North Africa/the Middle East (23.8%) [16]. According to a route manager at a large LCC, markets to the Mediterranean are saturated. The case of Frankfurt Hahn vs. Frankfurt Main shows how LCCs differentiate the type of routes operated from the primary airport versus the secondary airport. Ryanair had no presence at Frankfurt Main until 2017. After Fraport changed its declared capacity policy, Ryanair quickly moved into the primary airport. The routes that moved to the primary airport had big city destinations, while new routes to big markets such as Manchester, Seville and Madrid were also added. What remained – and in some cases expanded – from Frankfurt Hahn were the low-frequency, thin routes to smaller cities (see Exhibit 21). A key factor in the type of routes operated from a secondary airport is whether it is a base airport. A Low-Cost Carrier will only operate to/from base airports to minimise operational complexity. Apart from Ryanair, most LCCs have the majority of their bases in Western and Eastern Europe.

¹ Milan Bergamo; Paris Beauvais, Eindhoven Airport, Frankfurt Hahn, London Luton, Stockholm Skavsta, London Southend, London Stanstad, Oslo Sandefjord

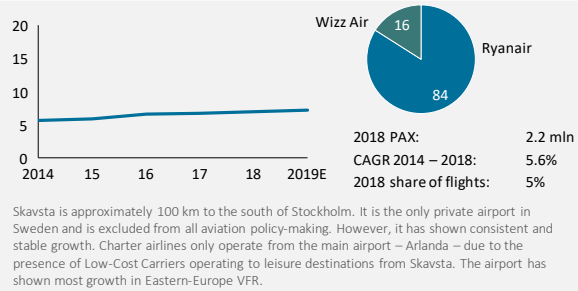
EINDHOVEN



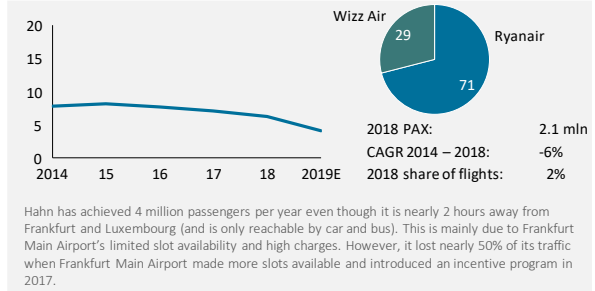
LONDON SOUTHEND



STOCKHOLM - SKAVSTA



FRANKFURT HAHN



Source(s): DIIO, 2019; airport statistics; expert interviews

Exhibit 20: Traffic development per year in thousands of departing flights and seat share in millions per Q2, 2019

FREQUENCY CHANGE HHN

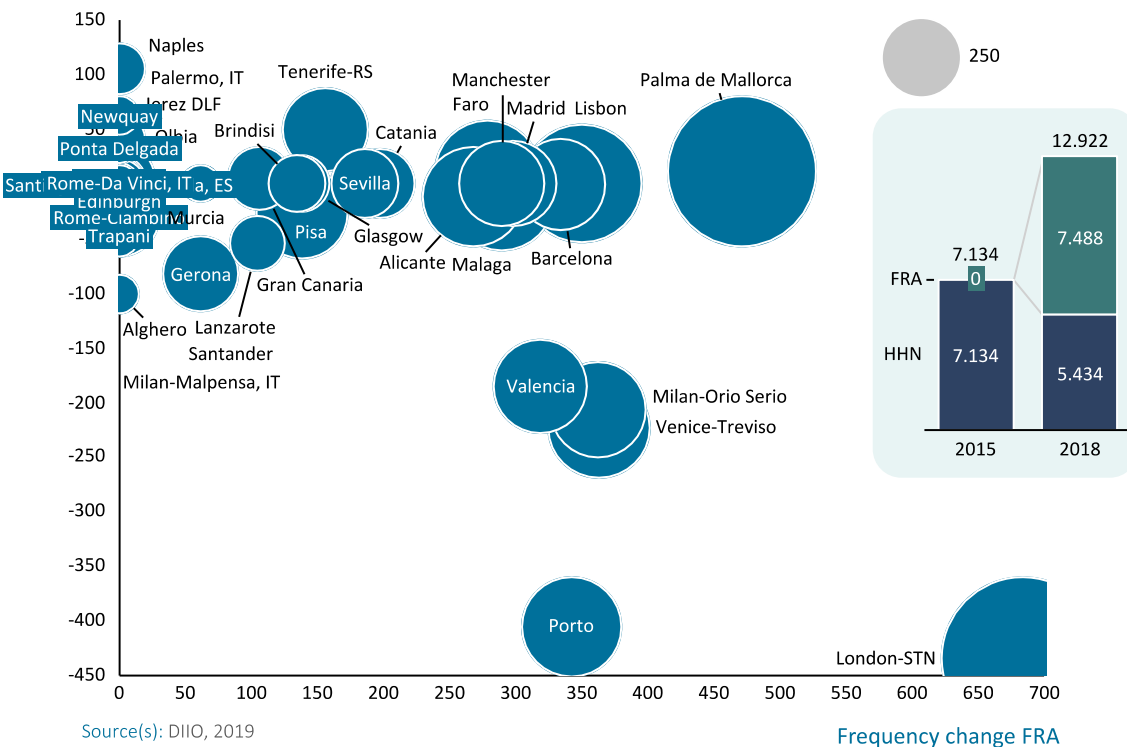


Exhibit 21: Change in Ryanair's annual departing flights; 2018 versus 2015 at Frankfurt Hahn and Frankfurt Main

4.3.3 AIRLINE INTEREST IN OPERATING FROM LELYSTAD AIRPORT

Airlines' ability and interest in operating from Lelystad Airport will depend on how scarce slots at Schiphol will be after 2020. Schiphol will remain most airlines' first choice and they will only consider developing at Lelystad Airport if capacity at Schiphol is scarce.

An attractive total cost for operating at Lelystad Airport is therefore a prerequisite – not a driver – for the decision to start operations at Lelystad Airport. As we concluded in Section 4.2.1, total costs to operate are expected to be similar to Eindhoven Airport, meeting this prerequisite.

Since capacity will remain scarce at Schiphol, airlines will be interested in operating at Lelystad Airport. They will, however, require a minimal scale to operate efficiently, as Exhibit 22 demonstrates.

OPERATIONAL ARCHETYPES				OPERATIONAL DETAILS		
Archetype	Required slots			No. aircraft	No. slots per day	No. days per week
	Summer (30 weeks)	Winter (22 weeks)	Year-Round (52 weeks)			
Single route/ destination (served by aircraft based on other airport)	180	132	312	1	2	3
Single stationed aircraft (serving multiple destinations)	840	616	1,456	1	4	7
Minimum base (operations at acceptable level of efficiency)	<i>Not applicable</i>		4,368	3	4	7

Exhibit 22: Number of slots required per operational archetype

Year-round, 312 slots per year (or 180 for the summer) are required for a single route. Most airlines will likely not be interested in just a single route in the long-term.

For airlines serving Lelystad Airport from a foreign base, the minimum scale will be a single route with a frequency of at least 3 times a week (the minimum for leisure traffic). This translates into at least 312 slots for a full year operation (summer is just 180 slots).

Although a single route is possible – and European examples of airlines serving an airport with a single route do exist – airlines usually want a more substantial scale to:

1. Receive better payback on costs to develop Lelystad Airport (marketing costs, contracting handling, etc.).
2. Reduce the risk of losing historic rights. Airlines need to operate 80% of their slots with historic rights to keep them. A small-scale operation could therefore risk losing historic rights with a single (large) disruption.

Our traffic models assume that a single route will be feasible during start-up if airlines are able to grow their presence later.

Note: a feeder route will require a much higher frequency, with at least 2 flight per day. The minimum number of slots for a feeder flight will therefore be 1000 slots per year (operating 5 days per week).

To serve outbound passengers with attractive flight times, an aircraft needs to be stationed overnight. This requires at least 840 slots for a summer season.

Most passengers prefer an early outbound flight and a late return flight to maximise the stay at their destination. Therefore, flight times between 06:00-08:00 and 20:00-23:00 will be most attractive at Lelystad Airport for outbound traffic.

To operate at these times, an aircraft needs to be stationed (overnight) at Lelystad Airport. This will allow their first flight of the day to depart from Lelystad Airport and their last flight of the day to return to Lelystad Airport.

The most efficient way to achieve this is to station an aircraft at Lelystad Airport during the summer season while using crew and maintenance from a nearby airport (i.e. Schiphol). This will require 840 slots (4 each day, for 30 weeks).

Airlines would like to develop a base to avoid split operations. This requires over 4,000 slots per year.

Stationing a single aircraft at Lelystad Airport during the summer is possible. However, organising crew, maintenance, and other support staff from Schiphol will be inefficient and should only be seen as a temporary solution while a base is established at Lelystad Airport [20].

Interviews with former LCC executives confirm that 3 aircraft is the minimum viable scale to achieve a reliable operation at an acceptable level of efficiency for a base. Given that an LCC generally needs their aircraft to perform at least 2 rotations (4 movements per day) to be cost-efficient, approximately 4,500 slots (at least) need to be secured at the base airport.

To summarise, airlines will be able to start small with a single route (312 slots per year). However, they will most likely want to grow their presence to establish a base or, if they decide to serve Lelystad Airport from foreign bases, they will need enough scale to efficiently establish local support (managing contacts with local parties, marketing, etc.). This amount might be lower for an LCC that can pool resources with a nearby base.

























4.3.4 AIRLINE INTEREST IN USING THE TDR

Globally speaking, airlines that have obtained a slot at a (highly) constrained airport are reluctant to give up this slot. The longer that demand is not fully accommodated at Schiphol, the higher yields will be, making it even more unlikely that an airline will hand back its slot. According to a former head of strategy at a large European network airline, airlines have developed sophisticated slot strategies and tactics to obtain and maintain slots at congested airports and are even willing to operate a route at a loss for some time to leverage the medium-term value of that slot. It appears that slot growth at Schiphol will be limited and gradual, so it is unlikely that airlines will simply trade in a slot at Schiphol for a slot at Lelystad Airport. The TDR, however, provides an opportunity for airlines to maintain operational scale at Schiphol by switching from a Point-to-Point route to a Transfer destination while also getting priority access to slots at Lelystad Airport. They will then be able to gain market share in the catchment area. As a result, the key factors in assessing an airline's interest in operating from Lelystad Airport to benefit from the TDR are the number of Point-to-Point operations at Schiphol and the ability to use the slot for (additional) flights to Transfer destinations.

We carried out an assessment of the top 15 airlines with 95% of the Point-to-Point slots at Schiphol in terms of their likelihood of benefitting from the TDR. This assessment took into consideration the ability to switch routes, as well as the general fit of operating at a secondary airport, the strategy, and the ability to secure sufficient slots.

For most of the top 15 airlines, switching to Transfer destinations and/or starting a service to Lelystad Airport does not fit with the type of network they are operating (see Exhibit 23). The most likely airline to take benefit from the TDR is Transavia, who has the opportunity to hand over slots within the Air France-KLM Group to KLM. The case for easyJet and Vueling/Level is more complicated. Both airlines have sufficient opportunities to switch routes at Schiphol to Transfer destinations, but they generally do not operate at secondary airports. Also, there has not been any publicly announced interest in operating from Lelystad Airport. Finally, the list of Transfer destinations reflects KLM's network, and switching to these destinations means competing with the high-frequency KLM feeder flights, which seems unattractive. However, as their rapid growth at London's Southend airport has shown, they may still do so if the market is very congested and a secondary airport is the only option to grow. easyJet has operations from 4 London airports, including Luton and Southend (that can be considered as secondary airports) and 2 Parisian airports. Therefore, serving a second airport in the Netherlands is certainly not out of the question. Whether it will take the benefit of the TDR will likely also depend on its chances to grow at Schiphol.

The same is true for IAG's Low-Cost Airlines Vueling and Level. The interest these airlines have in starting a new route from Lelystad (not benefitting from the TDR) will depend on their ability to operate a route profitably. This will be driven by price (yield) level and operating cost vis-à-vis operating at Schiphol Airport.

	Airline	P2P slots in 2018	Likelihood of requesting slots at LEY benefitting from TDR	Expected interest in LEY slots w/o TDR
MIX OF TRANSFER AND POINT-TO-POINT DESTINATIONS	easyJet	23.2	 <ul style="list-style-type: none"> easyJet will be able to reallocate slots for operations to TRF destinations from Schiphol. However, the airline has not shown interest in this so far, because this does not fit with its strategy to serve secondary airports. It may, however, apply for slots at Lelystad Airport if it is difficult to grow at Schiphol. If they do, they will likely request slots for operations to its other bases. 	
	Transavia	22.0	 <ul style="list-style-type: none"> Transavia will very easily be able to use P2P slots for TRF destinations itself. It may also pass them on to the Air France/KLM Group. It will likely request slots for operations to smaller cities/leisure destinations from Lelystad Airport. 	
	TUIfly	7.1	 <ul style="list-style-type: none"> TUIfly will likely not fly to any TRF destination unless a certain destination becomes a transfer destination once KLM or its network partners start operating from it. It will, however, seek to expand its business by operations from LEY. 	
	KLM	5.1	 <ul style="list-style-type: none"> KLM might trade in some slots that they currently use for destinations such as Ibiza to operate more TRF flights. However, they are expected to depend primarily on Transavia to benefit from the TDR while using their Schiphol slots for additional TRF flights. 	
	FlyBe	3.9	 <ul style="list-style-type: none"> FlyBe has been scaling down operations, and is expected to hold on to 'protect' operations at slot-constrained airports. FlyBe was also recently acquired by a consortium that includes Virgin Atlantic (partly owned by Delta Airlines), and may transfer its slots to the new airline grouping. 	
	IAG (BA, Vueling Level)	5.7	 <ul style="list-style-type: none"> British Airways' P2P operations are based at the highly-congested London Gatwick Airport. It is very unlikely that they will give up these slots. Vueling has recently started to transfer slots to Level, which has launched operations to TRF destinations such as Vienna. They will likely take advantage of the opportunity to do more. While Vueling doesn't generally operate from secondary airports, it may be asked to do so from a Group interest point of view. 	
>95% OF FLIGHTS TO POINT-TO-POINT DESTINATIONS	Corendon Dutch Airlines + CAI	3.5	 <ul style="list-style-type: none"> Corendon will likely not fly to any TRF destination unless a certain destination becomes a transfer destination once KLM or its network partners start operating from it. It will, however, seek to expand its business by operations from LEY (as it did at MST). CAI (Turkish AOC) holds ~900 P2P slots that can be transferred to CND if needed. 	
	Pegasus	2.4	 <ul style="list-style-type: none"> Pegasus, with its Turkish bases, will not be able to fly from TRF destinations to AMS. However, it may still be interested in requesting slots at LEY to grow its business. This is limited to serving destinations in Turkey. 	
	Icelandair	1.1	 <ul style="list-style-type: none"> Icelandair will not have traffic rights to operate from Amsterdam to destinations other than Reykjavik, and will not want to split operations with flights at both AMS and LEY. 	
	RoyalAir Maroc	1.0	 <ul style="list-style-type: none"> RAM will not have traffic rights to operate from Amsterdam to destinations other than Morocco. It will also not be interested in splitting operations and competing with Low Cost Carriers at LEY. 	
	Sun Express	1.0	 <ul style="list-style-type: none"> Sun Express, with its Turkish bases, will not be able to fly from TRF destinations to AMS. However, it may still be interested in requesting slots at LEY to grow its business. However, as it owned by Lufthansa/Turkish Airlines, it may be asked by the Group to use the TDR to give other airlines within the group opportunity to grow at Schiphol. 	
	Air Arabia Maroc	0.9	 <ul style="list-style-type: none"> Air Arabia Maroc will not have traffic rights to operate from Amsterdam to destinations other than Morocco, so it cannot benefit from TDR. It might have some interest in operating from LEY, being less concerned with splitting operations and competition from LCCs. 	

Note: airlines not holding any (or just a few) P2P slots and that are expected to show an interest in serving Lelystad include: Ryanair, Wizz Air, potentially Eurowings, and other smaller LCCs.

Source(s): expert interviews

Exhibit 23: Expected interest in Lelystad Airport among airlines

To summarise, Transavia will likely use the TDR to get priority access to Lelystad Airport, and may even use KLM P2P slots at Schiphol Airport. easyJet and Vueling might be interested from a strategic perspective, but this remains unclear. Although unlikely, a few airline groups might consider moving slots from one of their subsidiaries to Lelystad Airport to support growth at Schiphol Airport of another subsidiary (e.g. FlyBe – Virgin, Sun Express – Lufthansa).

Finally, a third, alternative route exists. An airline could use the TDR if they transfer slots at Schiphol Airport to another airline who will use these slots to operate transfer destinations. A (informal) compensation would be required since the value of a Schiphol Airport slot is far greater than one for Lelystad Airport.

4.3.5 IMPLICATIONS

There will very likely be enough demand for Lelystad Airport from airlines benefitting from the TDR and from airlines unable to benefit from the TDR. This means that the combined mechanism of EU Slot Regulation and the TDR will determine how many slots can/will be allocated for non-autonomous versus autonomous development.

It should be noted that the TDR will encourage some airlines to relocate operations for Point-to-Point destinations from Schiphol to Lelystad Airport. However, their withdrawal may attract new airlines to apply for slots to those destinations from Schiphol and/or to switch a Transfer destination to a Point-to-Point destination if the profitability is more attractive. Given that a slot is not tied to a specific destination (apart from the first-time request), airlines are free to use them. It is therefore expected that a portion of the Point-to-Point frequencies that have been given up will be substituted by other airlines.

A photograph of an airport waiting area. The room features rows of dark-colored, padded airport-style seats arranged in a central aisle. Large windows with a grid pattern and decorative cross-shaped fasteners line the back wall, offering a view of an airfield. A potted plant sits on the windowsill to the right. The entire image has a warm, orange-tinted overlay.

TRAFFIC DEVELOPMENT SCENARIOS FOR LELYSTAD AIRPORT

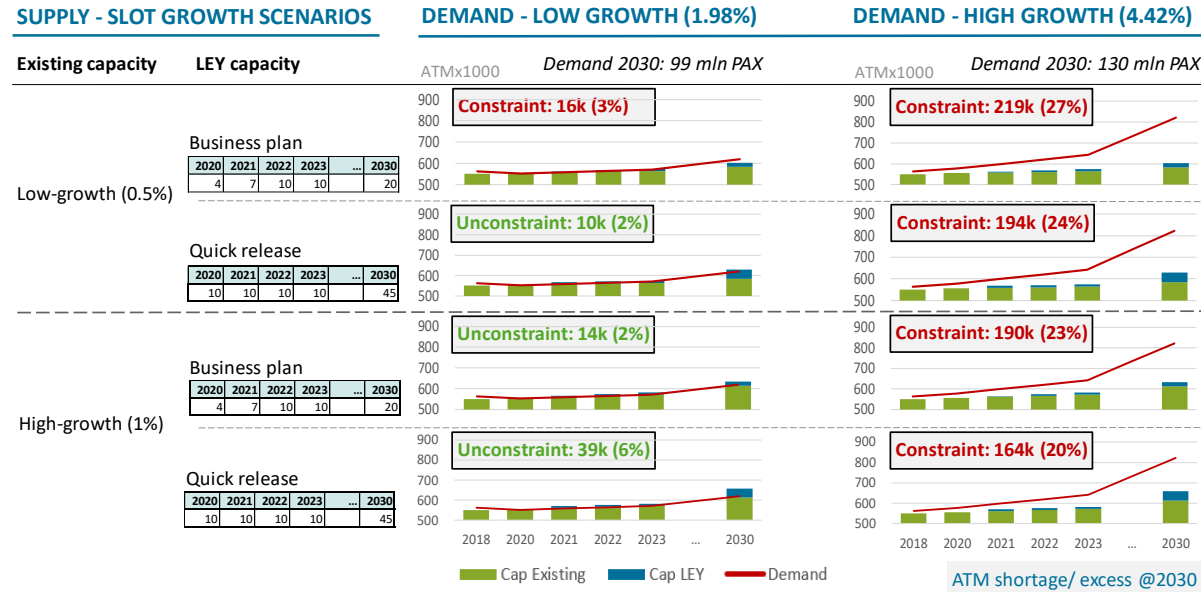
5 TRAFFIC DEVELOPMENT SCENARIOS FOR LELYSTAD AIRPORT

This section presents the relevant scenarios for traffic development at Lelystad Airport. The aim of developing these scenarios is to:

1. Establish whether there will be enough demand for Lelystad Airport.
2. Develop scenarios for the mix of interested airlines applying for slots at Lelystad Airport.
3. Develop slot allocation scenarios that allow for a split into non-autonomous and autonomous traffic.

5.1 DEMAND AND SUPPLY BALANCE IN THE NETHERLANDS

Here, we combine two demand scenarios and four supply scenarios. These scenarios are the exact demand and supply scenarios described previously in the section on demand outlook and supply outlook. This results in 8 different scenarios, as shown in Exhibit 24.



Source(s): Analysis of supply and demand scenarios
 Remark(s): 1% high growth existing capacity (supply scenario) is in line with sector statement (1.81%/year, incl. LEY @45k slots)

Exhibit 24: Demand and supply scenarios for Dutch air traffic

Three of the four low demand growth scenarios are unconstrained (i.e. sufficient capacity exists to accommodate all future demand up to 2030).

However, the existing unmet demand of (U)LCC in the Dutch market (corresponding to 40 thousand air traffic movements as described in Section 4.3.1) needs to be added to the balance. All eight scenarios are constrained when one includes this unmet demand for (U)LCC.

Our conclusion is that enough demand for Lelystad Airport will exist to fill capacity. Even with Lelystad Airport operating at full capacity (45 thousand in 2030), the total market will remain constrained up to 2030.

5.2 POTENTIAL DEMAND FOR SLOTS AT LELYSTAD AIRPORT

Another important factor for the development of Lelystad Airport is the actual interest from airlines to operate there. Airline interest as described in Sections 4.3.3 and 4.3.4 resulted in the airline interest scenarios applied in this section. Among the total number and mix of potentially interested airlines, we distinguish between two types:

1. The number of interested TDR-eligible airlines: Airlines using P2P slots at Schiphol to request slots at Lelystad Airport (i.e. non-autonomous traffic). The candidates are Transavia, KLM, easyJet & Vueling.
2. The number of interested other airlines: Airlines applying for slots without the TDR priority (i.e. autonomous traffic development). The candidates are: Corendon, TUIfly, and all major European LCCs.

5.2.1 INTERESTED TDR-ELIGIBLE AIRLINES

The interest from easyJet and Vueling remains unclear. They have not expressed any interest in operating at Lelystad Airport. However, they might consider operating at Lelystad Airport if further growth at Schiphol is limited and/or as a defensive move to prevent other LCCs establishing a strong base at Lelystad Airport targeting the same catchment area.

Transavia has shown public interest and is expected to try to quickly develop some scale at Lelystad Airport. The Air France-KLM group is able to use KLM’s P2P slots (currently 5K) to try to secure additional slots at Lelystad Airport for Transavia.

This results in four scenarios for the number of interested TDR-eligible airlines, as shown in Exhibit 25.

NUMBER OF INTERESTED TDR-ELIGIBLE AIRLINES	HOW THIS SCENARIO COULD WORK OUT IN PRACTICE (options are listed as non-exclusive examples)
1	Transavia only
2	1. Transavia and Vueling or easyJet 2. Transavia and KLM
3	1. Transavia, Vueling and easyJet 2. Transavia and KLM + Vueling or easyJet
4	Transavia and KLM, Vueling and easyJet

Exhibit 25: Number of interested TDR-eligible airlines

5.2.2 INTERESTED OTHER AIRLINES

LCCs currently have relatively low penetration in the Netherlands and will most likely request slots for Lelystad Airport. Usually, a maximum of two to three LCCs operate at a secondary airport, limiting the likely range of requesting LCCs from one to three.

As stated in the Airline market dynamics section, Corendon and TUIfly have an interest in operating at Lelystad Airport. However, they will not be able to use the TDR priority, and are therefore considered as *other airlines* here. They might lose interest if they are not able to secure sufficient slots for a base.

Slot tactics might result in even more airlines applying for slots:

- The new entrant rule applies to each legal entity requesting slots (i.e. each legal entity can accumulate a maximum of 5% of the slots per day).
- Slots can be transferred between subsidiaries of the same company (in the case of slots acquired with new entrant priority only after 2 seasons).
- The major airlines all operate multiple AOCs (e.g. easyJet operates 3: EZY, EZS and EJU), and can apply for slots with each AOC.
- This is, however, slightly cumbersome. You need to operate the slot with the party who acquired it, but you can market it with the right airline using a codeshare.

To summarise, the number of other interested airlines could range between 1 and 7, as is shown in Exhibit 26.

NUMBER OF INTERESTED OTHER AIRLINES	HOW THIS SCENARIO COULD WORK OUT IN PRACTICE (options are listed as non-exclusive examples)
1	1. 1 LCC (e.g. Ryanair)
2	1. Corendon or TUIfly + 1 LCC (e.g. Ryanair) 2. 2 LCC (e.g. Ryanair & Wizzair)
3	1. Corendon and TUIfly + 1 LCC 2. Corendon or TUIfly + 2 LCC 3. Corendon or TUIfly + KLM City hopper (getting slots for Transavia)
4	1. Corendon or TUIfly + 2 LCC 2. Corendon or TUIfly + 3 LCC (e.g. Ryanair, Wizzair & Eurowings) 3. Corendon or TUIfly + KLM City hopper + easyJet EZS (getting slots for easyJet EZY) + 1 LCC
5	1. Corendon and TUIfly + 1 LCC and 2 additional AOC 2. Corendon or TUIfly + 2 LCC and 2 additional AOC 3. Corendon and TUIfly + 2 LCC and 1 additional AOC
6	Corendon and TUIfly + 2 LCC and 2 additional AOC
7	Corendon and TUIfly + 2 LCC and 3 additional AOC

Exhibit 26: Number of interested other airlines

5.3 SCENARIOS FOR SLOT ALLOCATION

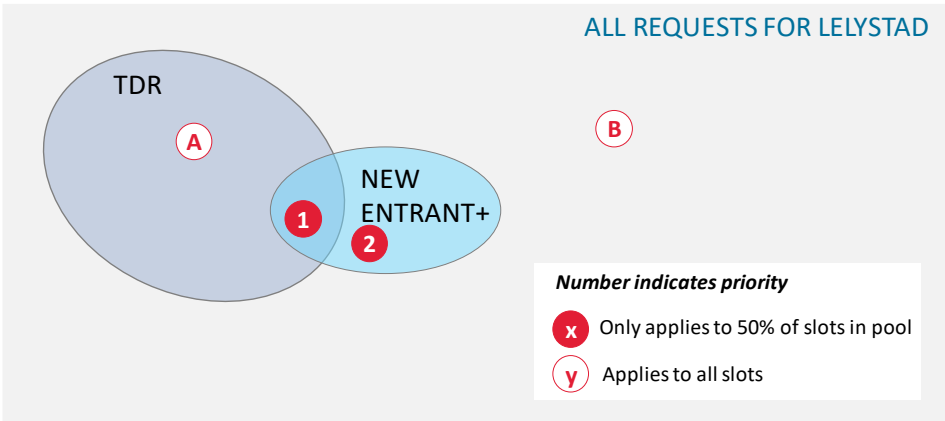
This section presents slot allocation scenarios for Lelystad Airport.

5.3.1 SIMPLIFIED RULES FOR MODELING

In practice, not all slot allocation priorities will be distinctive for Lelystad Airport. We believe airlines understand the slot allocation priorities well and will request slots using all of the priority rules that they can apply too. Therefore, the following criteria will not make a difference allocating slots:

1. New route criteria: We assume airlines will always meet the new route criteria, so this will not be a distinguishing factor. Our rationale:
 - a. The new route criteria apply to up to 3 airlines operating the same route.
 - b. Lelystad Airport is a new airport, with limited capacity, and we do not expect 3 airlines to compete on the same route.
 - c. Airlines are well aware of the new entrant rule and will ensure that routes qualify as new for priority reasons.
2. Year-round operations: We assume airlines will always meet year-round criteria, so this will not be a distinguishing factor. Our rationale:
 - a. All airlines will be able to capture year-round priority by operating typical city destinations as long as required to secure the slot (and change the destination later, if they like).
 - b. Even though these might not be the most profitable destinations for some airlines, we believe airlines will operate them in order to qualify for scarce slots.
 - c. Finally, an airline will need to have had slots in the previous season in order to qualify for year-round priority. This will limit the possible impact of this rule to the share an airline had in the previous season.
3. No return of slots: We believe that no airline will return slots or lose historic rights during the build-up of capacity at Lelystad Airport. Therefore, the slot pool will only contain newly added capacity each season.

The result is a simplified version of the priority allocation from Exhibit 13, and is shown in Exhibit 27.



Source(s): Exhibit 13 of this report (Slot allocation priorities for Lelystad Airport); team interpretation of distinctiveness of rules
 Remark(s): This simplification is used to model the likely traffic at Lelystad Airport

Exhibit 27: Simplified slot allocation rules for model purposes

5.3.2 SCENARIO ANALYSIS

We took all parameters described in the previous sections into account to create a complete picture of realistic traffic development scenarios at Lelystad Airport. The parameters and the scenarios for each are shown in Exhibit 28.

PARAMETER	SCENARIOS
Capacity development at Lelystad Airport	1. LEY business plan (base case) 2. Quick release
# interested TDR eligible airlines	Number of airlines currently operating P2P slots at AMS requesting slots at LEY using TDR (1 – 4 parties)
# interested other airlines	Number of interested airlines not using the TDR (1-7 parties)

Exhibit 28: Parameters and values considered in our sensitivity analysis

5.3.3 RESULTS

The share of autonomous traffic development at Lelystad Airport varies between the different scenarios studied. It ranges between 5% and 35% at the 10 thousand slot milestone, and between 5% and 35% at the 25 thousand milestone.

The main dynamics observed in our scenario analysis are:

1. At least 50% of the slots will go to 'TDR requests', and will involve non-autonomous traffic development (as long as airlines have sufficient P2P slots at Schiphol):
 - a. The new entrant priority is limited to 50% of the available new slots (more specifically, the slot pool).
 - b. Without new entrant priority, all slots will go to TDR-eligible airlines.
 - c. Therefore, at least 50% of the slots will go to TDR-eligible airlines and qualify as non-autonomous traffic.
2. The share of autonomous traffic development for the other 50% of the slots will depend primarily on the number of interested other airlines:
 - a. The number of requests with *new entrant* priority is maximised per airline (i.e. a maximum of 5% of the slots per season or a maximum of 4 slots per day).
 - b. The maximum number of slots allocated to autonomous traffic will therefore depend on the number of *interested other airlines*.
 - c. In the first years, the 5% rule limits the *new entrant* priority. To illustrate this, let's look at the situation with 10,000 slots /year:
 - i. A maximum of 5% of the slots translates to 500 slots under new entrant priority.
 - ii. A maximum of 4 slots per day equals 1,456 slots.
 - iii. The '5% rule' is therefore more limiting than the '4 slots per day' rule and determines the slots per *interested other airline*.

To better explain the dynamics, we will describe the extreme scenarios at the 10 thousand slot milestone:

- **Lowest autonomous traffic development (5% at 10 thousand)** will happen if only 1 other interested airline requests slots. This seems highly unlikely, since interest in growing traffic in the Netherlands is expected to be high.
- **Highest autonomous development (35% at 10 thousand)** will happen if 7 other interested airlines request slots. This scenario seems unlikely because it would require 9 airlines (i.e. 2 TDR-eligible airlines and 7 other airlines) to operate at Lelystad: slots are limited and typically 2-4 airlines operate at a secondary airport at the most.

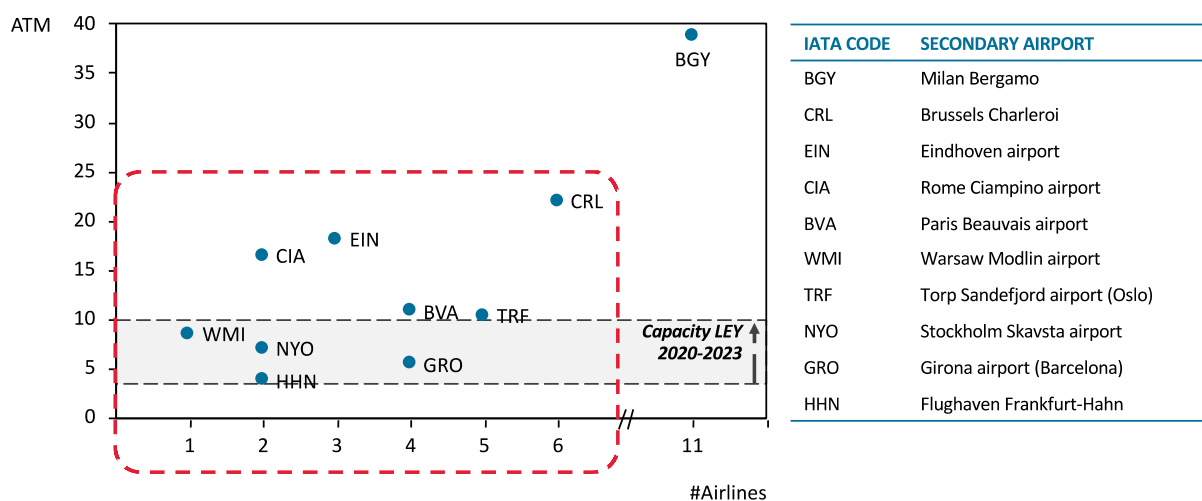
For the 25 thousand slot milestone:

- **Lowest autonomous traffic development (5% at 25 thousand)** will happen if only 1 other interested airline requests slots. This seems highly unlikely, since interest in growing traffic in the Netherlands is expected to be high.
- **Highest autonomous development (35% at 25 thousand)** will happen if 7 other interested airlines request slots. This scenario seems unlikely because it would require 9 airlines (i.e. 2 TDR-eligible airlines and 7 other airlines) to operate at Lelystad: slots are limited and typically 2-4 airlines operate at a secondary airport at the most.

SHARE OF AUTONOMOUS DEVELOPMENT AT 10 THOUSAND SLOTS (2023)

The share of autonomous traffic development primarily depends on the number of *other interested airlines* (non-TDR eligible) applying for slots at Lelystad, and ranges from 5% (1 party) to 35% (7 parties).

We believe that 4 other airlines at most will be interested in operating at Lelystad Airport, since the number of available slots will be very limited and unattractive. Furthermore, competitive dynamics typically result in a viable operation for 2 to 5 airlines at secondary airports such as Lelystad Airport (see Exhibit 28). The same range at Lelystad Airport would imply, with 1-2 TDR-eligible airlines, a range of 1-4 other interested (non-TDR eligible) airlines.



Source(s): DIIO, June 2019

Remark(s): Selection of secondary airports based on expert interview

Exhibit 29: Benchmark with 10 European secondary airports indicating a scenario with 1-5 operating airlines is most likely (ATM, in thousands)

We also believe that at least 2 parties will be interested in – or will at least try to establish an operation at – Lelystad Airport in the first years. Operating at an airport offers the opportunity to influence further development (via the coordination committee) and is an interesting reason to start early.

As a result, we estimate the share of autonomous development for the first 10 thousand movements to be between 10%-20%. Two possible scenarios are shown in Exhibit 30.

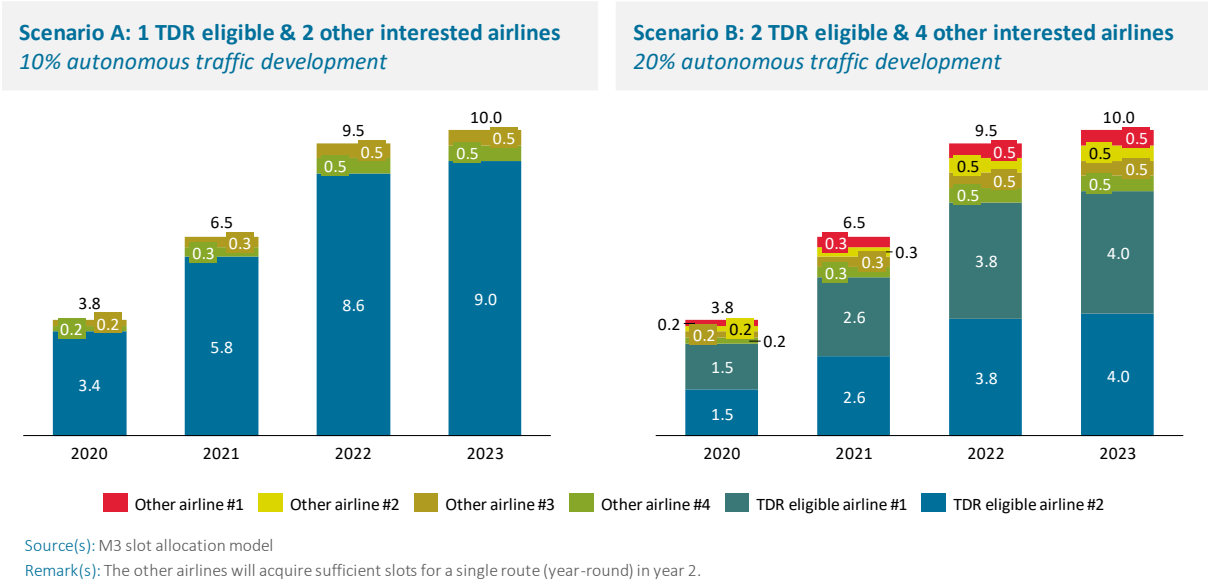


Exhibit 30: Two possible scenarios for slot allocation at Lelystad Airport under TDR conditions

Both scenarios show that the *new entrant* rule will prevail over the TDR, and 5% of the available slots will be allocated to each *interested other airline* that makes a request. If 4 other airlines are interested (Scenario B), this will result in 20% autonomous traffic development. A detailed breakdown of the logic used to allocate the slots is shown in Exhibit 30.

Year/ Season	2020		2021		2022		2023	
	S20	W20	S21	W21	S22	W22	S23	
Available slots	3,300	1,100	5,115	1,705	7,468	2,489	7,468	
Newly-available slots	3,300	1,100	1,815	605	2,353	784	0	
#	Rule	Origin						
1	Historic rights	EU Slot Regulation, article 8 sub 2		Not applicable in the first season	All airlines keep historic rights on previously allocated slot → only newly available slots need to be allocated			
2	Priority commercial over general	EU Slot Regulation, article 8 sub 3		General aviation will not get any slots				
3	Priority scheduled over unscheduled			Charter airlines will not get any slots				
4	Priority to year-round operations			We assume airlines will always meet year-round criteria, so this will not be a distinguishing factor (i.e. they all have year-round priority)				
5	New entrants get priority for 50% of the slot pool	EU Slot Regulation, article 10 sub 6		All airlines will get up to 5% of the available slots with new entrant priority. For S20 this equals: 5% * 3,300 = 165 slots				
6	TDR-eligible airlines have priority over others	TDR		The remaining slots will be distributed among the TDR-eligible airlines as long as they have sufficient P2P slots at Schiphol to use				
7	No priority			In case TDR-eligible airlines have insufficient Schiphol P2P slots, remainder of slots will be distributed among all interested parties NB: this doesn't happen in any of our scenarios in the first 4 years				

Exhibit 30: Schematic overview of slot allocation logic for the first 4 years

SHARE OF AUTONOMOUS DEVELOPMENT BETWEEN 10 AND 25 THOUSAND MOVEMENTS

After 10 thousand movements are reached, the European Commission will evaluate the TDR and decide whether to allow its application up to 25 thousand movements.

If the European Commission's verdict is positive, the TDR will have a large impact on traffic development up to 25 thousand movements. Theoretically, the TDR will limit the share of autonomous development to 10-20% through the same reasoning that was used for the first 10 thousand movements.

However, some important uncertainties exist that could possibly influence the result:

1. Key factors driving traffic at Lelystad Airport could change significantly, impacting airlines' rationale for operating there. The most important factors are:
 - a. Scarcity at Schiphol: Demand may grow more slowly than anticipated due to factors such as stricter environmental taxes, 'Flying Shame' movement traction, or economic downturn. If this is the case, capacity development at Schiphol might be sufficient to remove the need for additional capacity at Lelystad Airport.
 - b. Attractiveness of Lelystad Airport: Lelystad Airport will prove its attractiveness to airlines and passengers during its first years. This could change stakeholders' perspective about Lelystad Airport.
2. TDR-eligible airlines could reach their growth limit:
 - a. If only one airline uses the TDR to gain access to Lelystad Airport, they will most likely reach their limit in terms of what they can reasonably absorb in capacity.
 - b. Furthermore, most airlines will likely want to keep some P2P slots at Amsterdam Schiphol and will not use all of their P2P slots for priority access to Lelystad Airport.

We therefore believe that the TDR will be effective in limiting autonomous development between 10 thousand and 25 thousand slots. If there is enough interest from TDR-eligible parties, the share of autonomous development will be limited to 10%-20%. However, the factors described above could result in a share larger than 20%.



OTHER FACTORS THAT COULD
INFLUENCE TRAFFIC DEVELOPMENT

6 OTHER FACTORS THAT COULD INFLUENCE TRAFFIC DEVELOPMENT

Additional measures can influence the choice of Lelystad Airport for relocating flights to Transfer destinations. However, the effects will be limited and may not be feasible to realise:

1. Lower airport charges will be attractive. However, the airport will be constrained by EU state aid rules (charges need to be in line with costs), so flexibility will be limited.
2. Lelystad Airport could become more attractive to airlines considering a base if it applies a broader view in terms of allowing delayed landings between 23:00 and 24:00:
 - This would mean taking an initial delay at the start of the day for home-based airlines into account, as opposed to just the departure time of the last flight into Lelystad Airport. The stricter application benefits foreign-based airlines only.
 - An alternative would be to create a procedure to allow deviations to Amsterdam Schiphol.
3. It would be highly beneficial to strictly monitor TDR-released slots at Schiphol, and to prevent existing airlines from using slots to start operations to destinations given up by the airline making use of the TDR. This could even be a precondition to encourage airlines to move to Lelystad Airport. However, given that historic slots cannot be bound to a specific destination, this seems difficult to achieve.



CONCLUSION

7 CONCLUSIONS

Main question: Can Lelystad Airport fulfil its targeted role of an overflow airport to Schiphol when the Traffic Distribution Rule – supplemented by supportive measures if needed – is applied?

As a starting point, we conclude that there will be more demand than supply in all demand and supply scenarios. This applies to airlines requesting slots using the Traffic Distribution Rule (TDR) and non-TDR eligible slot requests. The Netherlands is underserved in terms of airline capacity in all scenarios. We have proven this by assessing:

- Relative growth in the Netherlands compared to Europe.
- Low-Cost Carriers' capacity relative to population size.
- Airline interest in launching additional flights from Schiphol and Lelystad Airport.

To put it simply: any flight within the applied demand and supply scenarios will have sufficient demand. Slot demand will therefore outweigh slot supply. This means that the composition of traffic at Lelystad Airport will be determined by the slot allocation rules applied by ACNL. These slot allocation rules combine EU Slot Regulation with the proposed TDR rules.

We found that the degree to which traffic at Lelystad Airport is non-autonomous is primarily driven by the number of non-TDR airlines requesting and receiving an operationally-viable number of slots. The slot coordinator will have to first apply the New Entrant rules, which will result in priority access to a certain number of slots per airline. This means that the number of applicant airlines will determine the share of autonomous traffic: each non-TDR airline results in approximately a 5% share of autonomous development.

We simulated these rules, applying them to expected airline interest in Lelystad Airport slots while taking the number of P2P slots at Schiphol into account. We conclude that 80%-90% of the first 10 thousand slots can be considered non-autonomous traffic. The bandwidth of 10%-20% autonomous growth corresponds with the 2-4 airlines likely to request and receive slots without applying for the TDR. The range of 2-4 airlines is based on the number of airlines operating at comparable European airports.

We therefore conclude that Lelystad Airport will largely fulfil the role of an overflow airport if the Traffic Distribution Rule is applied as intended.

Sub-questions

1. *To what extent can additional measures (such as an attractive product and facility offering) contribute to preventing autonomous development at Lelystad Airport up to 10 thousand and 25 thousand Air Traffic Movements (ATMs)?*

Additional measures may trigger airlines into considering Lelystad Airport. However, the effects will be limited and may be difficult to realise:

- Lower airport charges will be attractive. However, the airport will be constrained by EU state aid rules (charges need to be in line with costs) so flexibility will be limited.
- Lelystad Airport could become more attractive to airlines if the Human Environment and Transport Inspectorate (ILT) applies a broader view in terms of allowing delayed landings

between 23:00 and 24:00. This would mean taking an initial delay at the start of the day for home-based airlines into account, as opposed to just the departure time of the last flight into Lelystad Airport. The stricter application benefits foreign-based airlines only.

- It would be highly beneficial to strictly monitor TDR-released slots at Schiphol, and to prevent existing airlines from using slots to start operations to destinations given up by the airline making use of the TDR.

2. *What are airlines' (operational) considerations when considering a move to Lelystad Airport using the TDR?*

The key factor is the number slots that can be obtained to base an aircraft:

- Approximately 840 slots (4 slots per day) are needed to station an aircraft during the summer season, which is required to serve outbound traffic with attractive flight times.
- Approximately 4,500 slots are needed for a typical Low-Cost Carrier base (typically at a minimum scale of 3 aircraft).

3. *To what extent will the TDR contribute to preventing autonomous development at Lelystad Airport up to 10 thousand and 25 thousand ATM*

We believe the TDR will be effective in limiting autonomous development between 10 thousand and 25 thousand slots. If there is enough interest from TDR-eligible parties, the share of autonomous development will be limited to 10%-20% between 10 thousand and 25 thousand movements. However, uncertainties exist about whether TDR-eligible airlines will show enough interest to absorb all possible growth. This could possibly result in a share of autonomous development larger than 20% beyond 10 thousand air traffic movements.

4. *How will the TDR work across several scenarios?*

This document has illustrated the way the TDR will work across several slot allocation scenarios.

OVERALL CONCLUSION

The proposed TDR is an effective way for Lelystad Airport to fulfil its role as an overflow airport to Schiphol, and the majority of traffic will be represented by non-autonomous development.

The share of autonomous traffic depends on how the EU Slot Regulation is specifically applied. However, Lelystad Airport will be the first airport to be slot-regulated immediately upon opening. This makes it a special case, with no existing jurisprudence. Our finding in this report – an expected 10-20% autonomous traffic development – is therefore valid only if the final slot allocation conforms exactly to ACNL's interpretation of the EU Slot Regulation.

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