GET ON TRACK:

Train alternatives to short-haul flights in Europe

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Introduction

The aviation industry is one of the most climate-damaging and unfair industries on earth. In recent decades, aviation has been the fastest-growing source of greenhouse gas emissions (GHG) in Europe (+29% between 2009 and 2019 in the EU) and the industry plans **to return to pre-COVID air traffic levels by 2024**, **doubling air traffic globally by 2037.**

While governments have supported the aviation industry via increased investments, bailouts and other subsidies paid with taxpayers' money, the rail industry has suffered as a consequence. Less than 7% of passenger transport in the European Union happens **by train**.

Scientists have long warned that the 1.5°C warming limit is still within reach, but only with rapid emission cuts that bring carbon emissions to net zero and beyond. A reduction in air traffic is necessary to limit global warming to 1.5°C but without political action to counter its growth prospects**, the aviation industry will have consumed 27% of the global carbon budget for 1.5°C by 2050.**

Only **1% of the world population flies and is responsible for half of global aviation emissions,** with many frequent flyers being European. If current trends continue, the aviation industry will be a major contributor to **climate collapse**.

We must completely change the way we move. Long haul flights account for the largest chunk of CO2 air transport emissions **(half of European aviation's CO2 emissions** come from **flights over 4000km**), and must clearly be reduced. However, in this report we only focus on short-haul flights, for which trains are a readily available and climate-friendly alternative.

Short-haul flights (under 1500km) account for **a quarter of EU aviation emissions**. In addition to the CO2 impact, the non-CO2 impact of air transport (e.g. oxides of nitrogen (NOx), soot particles, water vapour) is two times worse than its CO2 emissions, as **demonstrated by independent scientists and confirmed by a study published by the European Commission.**

Compared to trains, the climate impact of short-haul flights is completely disproportionate.
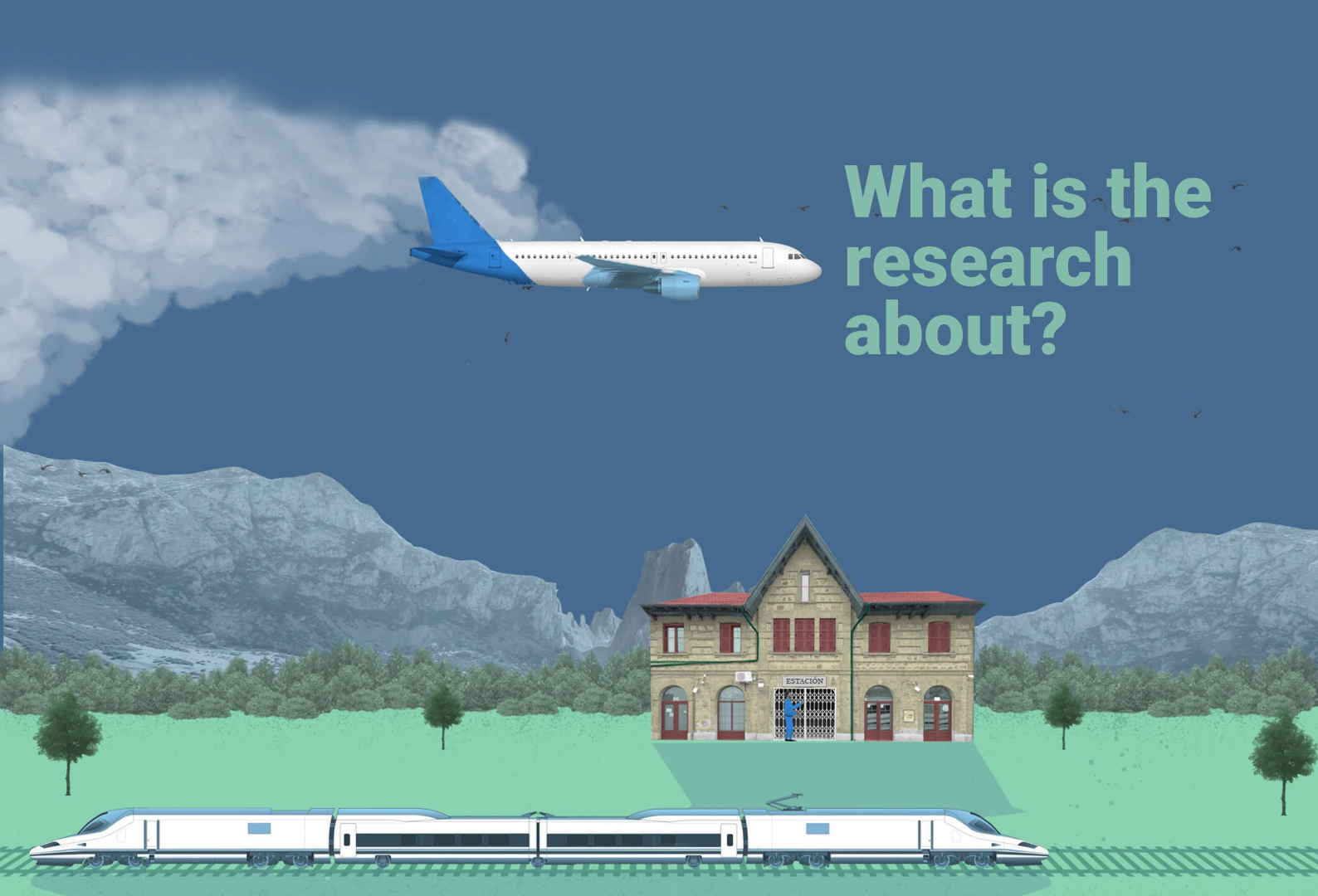
We must encourage and enable travel that prioritises sustainability, and the future of humanity. 62 % of Europeans support a ban on short haul flights, according to a **survey** conducted by the European Investment Bank (EIB) and a **large majority support** the development of daytime and night trains.

The EU must stop flying into the climate crisis, and implement a serious plan to revitalise our railways, instead of continuing to support air over rail. Rather than trying to return to the unsustainable air travel volumes of the past, we should focus on adopting less polluting and more climate-friendly solutions. A ban on short-haul flights where there are already greener alternatives, like trains under six hours, would be a good start.

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What is the research about?

Greenpeace European Unit commissioned a report from OBC-Transeuropa to examine the availability and duration of train alternatives to the busiest short-haul flights in Europe, as well as their duration.

Researchers studied flights under 1500 kilometres (which is considered short-haul by Eurocontrol) that could be covered by trains if there were good connections, in particular night trains.

The analysis focused on the busiest flight routes, those which have the greatest potential for CO_2 reduction and a modal shift to trains. The review includes a set of the top 150 intra-EU routes in terms of air passenger traffic; a set of the top 250 European routes (including the EU, the United Kingdom, Norway and Switzerland) and detailed lists for seven countries (Austria, Belgium, France, Germany, Italy, the Netherlands and Spain).

The EU busiest 150 routes analysed in the report account for half of the passengers flying on all EU routes under 1500 km (connections to and from islands excluded).The 250 busiest routes analysed account for 86% of the passengers flying on all routes under 1500km in the EU, Norway, Switzerland and the UK (connections to and from islands excluded).

The research identified routes where train alternatives to flights already exist, and where the situation can be improved with new or better train services in the future.
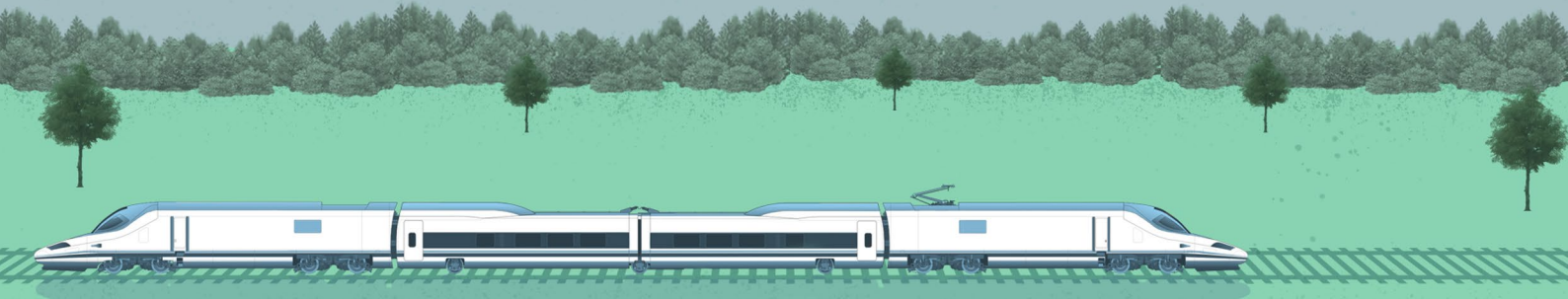
Islands connections were not analysed (except where there is a train connection, like in Sicily), although ferries can also be a good travel alternative to planes.

The report looked at air passenger figures for 2019, as transport services were severely disrupted in 2020 due to the pandemic and passenger data is not available yet for 2021. The report uses rail data and timetables information for 2019 and 2021 to assess the development of the situation. Unless specified, this briefing is based on data for 2021.

Read more about the methodology in OBCT's full report.

Key findings

- 51 (34 %) of the 150 busiest flight routes in the EU can be made by train in under six hours.
- 73 (29 %) of the 250 busiest flights in Europe (EU, Norway, Switzerland and UK) can be made by train in under six hours.
- 41 (27%) of the 150 busiest EU flights have direct night trains alternatives in 2021.
- For 81 million European air passengers, trains under 6 hours are available.

Map of flight routes among the top 150 intra EU routes for which train alternatives under 6 hrs exist

Recommendations

- To reduce air traffic, domestic and cross-border short haul flights must be banned where there is a train alternative under 6 hours.

- Increase and improve both daytime and night trains to expedite the transition from air to rail and build a truly European network fit for the 21st century.

Oulu
Helsinki
Stockholm
Göteborg
Aalborg
Copenhagen
Malmö
Hamburg
Amsterdam
Hannover
Berlin
Düsseldorf
Cologne
Brussels
Frankfurt
Paris
Stuttgart
Vienna
Brest
Munich
Nantes
Lyon
Turin
Venice
Milan
Bayonne
Bordeaux
Nice
A Coruña
Oviedo
Toulouse
Montpellier
Marseille
Santiago
Bilbao
Vigo
Porto
Barcelona
Rome
Bari
Madrid
Naples
Brindisi
Thessaloniki
Lisbon
Sevilla
Malaga
Athens

Which are the busiest EU flights that have train alternatives under 6 hours?

- 34% of the top 150 intra-EU flight routes (based on the number of passengers) take less than 6 hours by train (listed in annex).

- This includes 14 of the 30 busiest routes in the EU, including the three most popular (Paris-Toulouse, Paris-Nice and Athens-Thessaloniki), carrying more than 1 million passengers per year. And the routes Madrid-Barcelona, Frankfurt-Berlin, and Munich-Berlin.

- Most of the routes with a travel time below 6 hours are domestic ones and located in Germany, France and Spain; the subset also includes a few international intra-EU routes, such as Stockholm-Copenhagen and Paris to Amsterdam, Frankfurt or Munich.

- 21 of the top 150 intra-EU routes can be travelled by train in less than 4 hours. Apart from Amsterdam-Paris, Amsterdam-Frankfurt, Brusselss-Frankfurt, and Paris-Frankfurt routes, they are all domestic routes. All of these are covered by daytime connections and are direct.

- Three routes take 2 hours or less, including Paris to Lyon, Bordeaux or Nantes, where air traffic will however be only partially banned **following the adoption of the French Climate law.**

- Only 41 (27%) of the 150 busiest EU flights have direct night trains alternatives in 2021.

Duration of the journey	N. of routes	% of routes among the top 150 intra-EU routes	Cumulative n. of air passengers for these routes (mln)
Less than 4 hours	21	14 %	24.1
4-6 hours	30	20 %	33.6
6-8 hours	15	10 %	15.1
8-16 hours	58	39 %	54.9
More than 16 hours	23	15 %	21.4
Cannot be travelled by train	3	2 %	2.4
Total	150	100 %	151.5

Duration of the train journey for the top 150 intra-EU routes (2021)

See annex for a full list of the top 150 intra-EU routes which are served by train journeys under 6 hours, by direct night trains, or by night train services taking less than 12 hours.

Which are the busiest flights that can be replaced by trains in EU + Norway + United Kingdom and Switzerland?
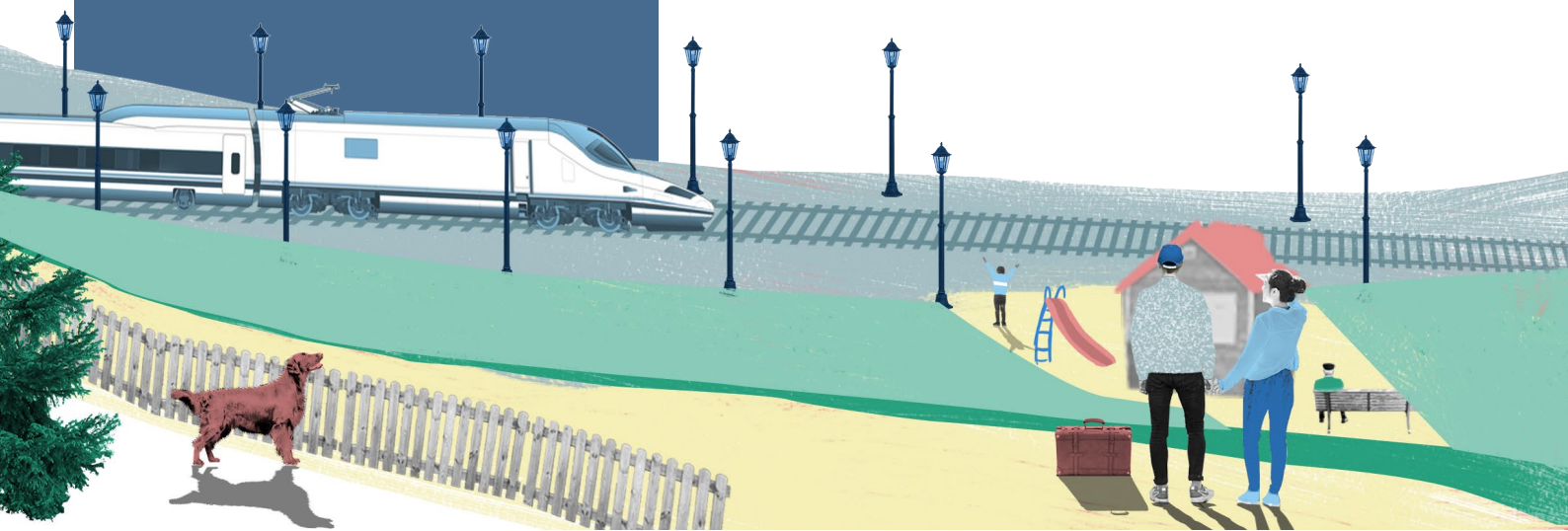
A broader analysis of the top 250 routes includes Norway, Switzerland and the United Kingdom in addition to the EU. 34% of air passengers traveled on domestic routes and 36% traveled on international intra-EU routes, but 28% of travelers – meaning 72,4 million people – traveled between the EU and the UK, Norway or Switzerland. The great majority of them traveled to/from the UK, and on British-German or British-Spanish routes in particular. Routes flying to and from islands, which are not accessible by train, are excluded.

Similar to the top 150 intra-EU routes, 29% of the top European 250 routes (EU+NO+UK +CH) can be travelled in under 6 hours by train.

These include 11 of the 30 busiest "air" routes in Europe. Some of these routes take two hours or less by train, such as Brussels-London and London-Manchester or under four hours, such as Zurich-Geneva. The busiest "air" route in Europe is London-Amsterdam, which takes less than six hours by train. More than two million passengers travel every year on the domestic Norwegian routes Oslo-Bergen and Oslo-Trondheim, despite the availability of a direct night train.

Most of the routes with a travel time below six hours are domestic, located in Germany, France and Spain; the subset also includes a few international routes however, such as Paris-London, Stockholm-Copenhagen and Paris-Amsterdam.

Only 51 (20%) of the 250 busiest flights in the EU, Norway, UK and Switzerland have direct night train alternatives in 2021.

Short-haul flights : a disproportionate climate impact

Although long-haul flights account for the largest chunk of CO2 air transport emissions and need to be reduced, due to energy-intensive take-off, short-haul is actually a **bigger emitter per passenger, and per kilometre.** Train travel is an obvious and immediate alternative to these journeys. When taking into account the combined CO2 emissions (including everything from well to tank), trains emit an average of 5 times less CO2e than a plane on the same route. If we include the non-CO2 impact of air travel (e.g. NO_x and water vapours), the overall climate impact could be over 80 times worse than taking a train – as can be the case in **Austria** or **France**.

Paris - Amsterdam:
Plane 119kgCO2e/pass*
Train 11,5kgCO2e/pass

The flight emits 10 times more CO2e than the train. Yet, more than 1 million passengers fly this route every year, while the train trip takes 3:23 hours.
Source: eco passenger

Brussels-Amsterdam:
Plane 119kgCO2e/pass*
Train 9,1kgCO2e/pass

The flight emits 13 times more CO2e than the train. Yet, more than 1 million passengers fly this route every year, when the train trip takes 1:52 hours.
Source: eco passenger

Frankfurt - Berlin:
Plane 126,9kgCO2e/pass*
Train 10,8kgCO2e/pass

The flight emits 12 times more CO2e than the train. Yet, it's one of the busiest flights in Europe and the busiest in Germany. The train trip takes 3:54 hours.
Source: eco passenger

Barcelona - Madrid:
Plane 140,8kgCO2e/passenger*
Train 16.5kgCO2e/pass

The flight emits 9 times more CO2e than the train. Yet it is one of the busiest flights in Europe and the busiest in Spain. The distance could be covered with a 2,5 hours train trip, faster than the entire plane journey.
Source: eco passenger | Omio

* With total climate impact.

We need more and better trains

The airline industry has always depended on public support to develop. State aid to airports and **tax exemptions such as VAT and kerosene tax have resulted in artificially low fares**. This is one of the main reasons why the industry has been able to grow so rapidly. Meanwhile, many public services like night trains or short cross-border links between European cities have been neglected or abandoned in the last few decades.

In general terms, train services in Europe in 2021 are worse than in 2019, mostly because of the suppression of some services in the wake of the Covid-19 pandemic. Now that the freedom of circulation has recovered, those services should be resumed - but this is not guaranteed.
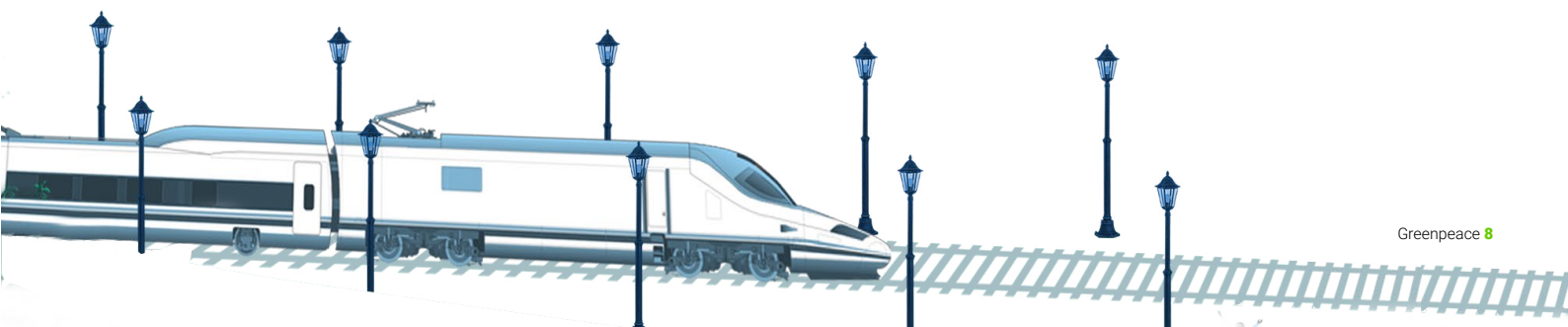
Lost night trains

Of the routes included in this analysis, the most impactful changes include the cancellation of the Madrid-Lisbon and Hendaye-Lisbon night trains that connected Portugal to foreign countries. And the cancellation of the Venice-Milan-Paris night trains that connected Italy to foreign countries.

As a result of the closing of these services, a trip from Paris to Porto has gone from 19 hours to 34 hours for example. This also impacts wider connections between Lisbon and Porto, and between Brussels, Geneva, London and Lyon.

Night services involving France were further hit by the reduction of the Paris-Portbou service, which now covers only the Paris-Toulouse stretch on weekdays. This impacted on quite a few connections between Spain and foreign countries, which heavily relied on the Barcelona-Portbou-Paris route; current travel options between Toulouse and Barcelona are very limited. For instance, the London-Valencia trip making use of a night train now takes 27h24 compared to 20h24 in 2019, and Barcelona-Frankfurt now takes 26h54 compared to 21h32 in 2019. The night train Rome-Bari-Brindisi was also partially cancelled, since it now only runs at weekends.

Even before 2019, many domestic and international night trains were cancelled in the EU, leaving passengers with poor alternatives to travel long distances across Europe. There used to be direct night trains on key routes serving as corridors for European passenger traffic, but night trains connecting Copenhagen to Amsterdam, Basel and Prague, as well as night trains between Paris and Berlin, and Paris to Barcelona and Madrid were cancelled in the 2010s.

Inadequate services

Options for train travel decreased in 2021 compared to 2019 also because of the lower number of services operated by Eurostar on the London to Paris/Brussels/Amsterdam routes and by the reduction in daytime connections between Barcelona and Paris. As a consequence, it is no longer possible for instance to travel from London to Warsaw or Prague or Valencia within a day; the same goes for Alicante-London and Paris-Malaga. On top of this, all train services between Sweden and Norway have been replaced by buses.

Frankfurt-Lyon, which is a key axis connecting Germany and France, has only one direct train per day. Berlin-Warsaw has very few connections per day. In the holiday season, night trains are often fully booked, weeks in advance.

Some of the routes included in the top 150 intra-EU list require travelers to take three or even four trains during their journey. A high number of transfers is required in order to travel on several short routes, including very popular ones such as Amsterdam-Copenhagen, Barcelona-Lisbon, Madrid-Lisbon and Paris-Copenhagen. There is room for improvement and more direct links.

According to the analysis, if travelers want to use a night train during their journey on the top 150 intra-EU routes, from France, Germany, the Netherlands or Belgium to Spain for example, they would probably need to pass through Paris. This shows that a more decentralized network of daytime and night trains, connecting all European regions, is necessary.

New night trains

On a positive note, a couple of domestic night trains have been revived in France (Paris-Nice since June 2021 and Paris-Tarbes will resume in December 2021) and three new night train services covering the Stockholm-Berlin, Munich/Vienna-Amsterdam and Vienna-Brussels routes have been launched recently. As a consequence, a night train option is now available for passengers travelling from London to Stockholm.

By December 2021, a new night service will operate between Vienna and Paris, as well as between Zurich and Amsterdam. Trains between Zurich and Rome will be available from December 2022. In December 2023 a new train service connecting Vienna to Paris via Berlin and Brussels will be launched. More night trains are also expected to be launched in Central and Eastern Europe from 2022 onwards.

Highlights

Austria

By train, it takes less than 6 hours to travel on 20% of the top 30 intra-EU routes. Almost all of the routes with a travel time below 6 hours are international: Vienna-Munich (535,673 air passengers/year, 4:00), Graz-Munich (225,569 air passengers/year, 5:56), Linz-Frankfurt, (177,638 air passengers/year, 5:33) and Vienna-Prague (180,795 air passengers/year, 4:25). Therefore, as a country that cares about climate protection, Austria would greatly benefit from European climate action replacing short-haul flights with trains. Two of the top three Austrian domestic routes are served by trains that take less 4 hours, like Vienna-Graz (131,918 air passengers/year, 2:35), and Vienna-Klagenfurt (119,688 air passengers/year, 3:55), and one route, Vienna-Innsbruck (204,896 air passengers/year, 4:14) takes less than 6 hours. Vienna-Salzburg (92,555 air passengers/year 2:22) is the only air route that is banned as part of the bailout package of Austrian Airlines. There are direct night trains for 53 % of the top 30 routes for Austria, much more than for any other country included in the analysis.

Belgium

It takes less than 6 hours in order to travel by train on 20% of the top 30 intra-EU flight routes for Belgium. None of these routes is domestic. That includes the Brussels-Frankfurt flight, which transports 578,559 passengers every year despite a train alternative that takes only 3:07 hours, against an average 3:15 hours for the total time spent traveling by plane, including average check-in and metro transfers to the airports. Two routes take less than 2 hours: Brussels-Paris (196,534 air passengers/year, 1:22 hours) and Brussels-Amsterdam (281,812 air passengers/year, 1:52 hours). Only one of the top 30 intra-EU routes for Belgium is served by a night train (Vienna-Brussels), despite the fact that Belgium shares borders with 4 different countries.

France

France has a great responsibility in terms of air traffic in Europe, as 30 out of the 150 top intra-EU flight routes come from and/or land in France. 19 (47,5%) of the 40 top intra-EU routes for France can be travelled in less than 6 hours by train. This includes the two busiest flight routes in France and in the EU, Paris-Toulouse and Paris-Nice, which move around 3,2 million air passengers each. Most routes with a train travel time below 6 hours are domestic. But France is also strongly represented in the top 5 of the busiest international flight routes in the EU that take less than 6 hours by train: Paris-Amsterdam (1,388,051 air passengers/year, 3:23 by train), Paris-Frankfurt (1,042,112 air passengers/year, 3:50 by train), Paris-Munich (1,014,392 air passengers/year, 5h47 by train). The three busiest international air routes in the EU which are Paris-Barcelona (2,705,785 air passengers/year, 6:41), Paris-Madrid (2,554,563 air passengers/year, 10:43) and Paris-Rome (2,251,688 air passengers/year, 11:05) take more than 6 hours by train during the day, but could easily be travelled overnight if direct night train services were available, as they were in the past. In 2021, only four of the routes among the top 40 intra-EU routes and among the top 40 domestic routes are served by a direct night train (Paris-Toulouse, Paris-Nice, Paris-Marseille, Paris-Toulon) as well as Paris-Perpignan (on week-ends only).

Germany

Germany has the greatest responsibility in terms of air traffic in Europe, as one third out of the 150 top intra-EU flight routes come from and/or arrive in Germany. It takes under 6 hours to travel by train on 37.5% of the top 40 intra-EU flight routes for Germany where trains are available. These routes include 9 of the 10 busiest routes in Germany which all carry over 1 million air passengers every year. 11 out of the 15 routes with a travel time below 6 hours are domestic. Germany is also strongly represented in the top 5 of the busiest international flight routes in the EU that can be travelled in maximum 6 hours by train, namely the international EU flights Paris-Frankfurt (1,042,112 air passengers/year, 3:50 by train), Paris-Munich (1,014,392 air passengers/year, 5:47 by train), and Amsterdam-Berlin (1,004,745 air passengers/year, 6:00 by train). Only twelve routes out of the top 40 intra EU routes in Germany and only eight of the top 40 German domestic routes have direct night train options in 2021.

Italy

40 out of the top 150 intra-EU flights come from and/or arrive in Italy. 15% of the top 40 intra-EU flight routes for Italy can be travelled by train in under 6 hours. They are all domestic, including Milan-Naples which is the 10th busiest route in Italy with 1,376,954 air passengers/year, despite the fact that there are a daytime train option taking 4:33 hours and a night train available. One of these routes takes less than 3 hours (Rome-Milan). 14 of the top 40 (35%) intra-EU routes in Italy have direct night train alternatives (and two only on weekends), but the international connections from Milan and Venice to Paris were cut in the wake of the pandemic. The top international route for Italy is Rome-Paris (2.3 million passengers per year), which was served by a night train in the past.

The Netherlands

It takes less than 6 hours to travel by train on 20% of the top 30 intra-EU flight routes for the Netherlands. These routes include 2 of the 10 busiest routes in the Netherlands (and they include the top one, Amsterdam-Paris, which moves around 2.8 million air passengers per year). One route is below 2 hours of duration (Brussels-Amsterdam), while the rest takes a bit over 3 hours to travel by train. None of these routes is domestic. Only two of the top 30 intra-EU routes for the Netherlands are served by a night train (Munich/Vienna-Amsterdam). Therefore, the country would be a great beneficiary of European climate action.

Spain

Passengers need less than 6 hours in order to travel by train on 25% of the top 40 intra-EU flight routes for Spain. Two routes are just over 2 hours by train: Madrid-Sevilla which carries 486,437 air passengers per year, and Madrid-Barcelona, which is the busiest intra-EU route for Spain and is among the busiest flying routes in Europe, carrying more than 1 million air passengers per year. All the routes with a travel time below 6 hours are domestic. The top international intra-EU route for Spain is Barcelona-Paris (2.7 million air passengers per year) and it was served by a night train until 2013. The last night train connection between Spain and its neighboring countries was suspended in 2020. None of the top 40 Spanish domestic routes is served by a direct night train today.

What is the EU doing on short-haul flights ?

Statements by Executive Vice-President Timmermans, responsible for the European Green Deal, after his appointment:

May 2019, candidate Frans Timmermans running for European Commissioner:

"Short-haul flights should be abolished?" "Yes! But then there has to be a good railway."

9 December 2020, day of the publication of the European Commission's mobility strategy:

"We need to limit short-haul journeys by aviation and make sure that under 500 km within Europe travel becomes carbon neutral."

May 2021:

"We want to get rid of short-haul flights, but not with bans. If we offer good and affordable train connections with express trains or night trains at the same time, the citizens have no disadvantages."

The EU failed to adopt concrete measures that will curb air traffic and phase out short-haul flights in particular. While ending the kerosene tax exemption is essential, according to the European Commission's Fit For 55 proposals, the kerosene tax will only be fully implemented in 2033 and the proposal is flawed by an exemption for cargo-only flights. The minimum tax rate in 2033 (38 cents per liter of fuel) will be below the **average tax rate of diesel and petrol** used by drivers today. Unless national governments and the European Parliament decide to strengthen the proposal, the kerosene tax will not lead to any significant reduction in aviation emissions, at least in the short term. Moreover, extra-EU flights are exempt from both carbon pricing on the ETS and the kerosene tax, as the European Commission has favoured the implementation of the global and ineffective CORSIA offsetting scheme.

What should the EU do?

Domestic traffic accounts for 43% of all passengers on the top 150 intra-EU routes, hence the need for political measures at European level in addition to bold national governments' decisions.

- The EU and its member states must invest in passengers making the shift from planes to trains by building a European-wide network connecting big cities on the national territory and across borders, as well as connecting small cities, towns, and rural communities and applying measures to cut flying:

- **Introducing a ban on short-haul flights** where there is a train for the same route under six hours. They should ensure that the suppressed short-haul flights' slots are not offset and used for longer flights.
- **Activating and reviving underused train routes for daytime and night trains**, with at least 30 new routes announced in 2021. National governments should cooperate and the EU should support them, notably in developing cross-border daytime and night trains with public service obligations, and make these services accessible to all, including people with reduced mobility, households with low income, cyclists, and all users with specific needs. Rail frequency needs to be improved with regular daytime trains and more than one night train per night, with a European timetable.
- **Increasing funds dedicated to a better rail system**. The EU must make more funds available for the upgrade and modernisation of the European rail infrastructure, re-opening rail links and removing bottlenecks for cross-border traffic; and for the refurbishment and expansion of compatible rolling stock to run more day and night trains.
- **Making travelling by train cheaper and easier than flying**. This can happen by phasing out air travel subsidies and kerosene and VAT tax exemptions, decreasing track access charges, introducing social fares on train tickets, and exempting international routes from VAT (international air tickets are exempt while VAT is still applied to international rail journeys in some countries). Sharing of real-time and ticketing data should be mandatory for rail operators across EU countries.

- The EU should protect the workers of the transport sector. Cutting flight routes will have an impact on aviation workers and the number of jobs. Their income and wages, health, livelihoods must be secured while they are offered reskilling opportunities and a just transition. In Switzerland, **former air pilots have been offered a job in the rail sector** for example. All workers of the sector should benefit from high social standards and stop suffering from poor working conditions and wage dumping.

Shifting the 150 busiest intra-EU short-haul flights which have a train alternative under 6 hours to rail, would save some 3.5 million tons of CO_{2e} per year.

Shifting all top 250 short-haul flights in Europe, except those ones where a train does not exist or where a train goes a route which is more than 5 times longer (e.g. Helsinki-Oslo) to rail, would result in a CO_2 saving of around 23.4 million tons of CO_{2e} per year, as much as the annual CO2 emissions of **Croatia**.

Under the French climate law (2021), only short-haul domestic flights that could be made by train within less than 2.5 hours will be scrapped. However, because of the exemptions, the measure will probably only apply to one to three domestic routes, out of more than a hundred. The expected climate impact will be less than **1% reduction in CO2** emissions of the French air transport sector.

List of the routes among the top 150 intra-EU routes which are either served by trains taking less than 6 hours, by direct night trains, or by night train services taking less than 12 hours in 2021:

Connection	Duration of daytime train trip	Route served in less than 6h	Route served by a direct night train	Route served by a night train option under 12h	N. of air passengers (2019)
Paris-Toulouse	4:22	x	x	x	3,221,467
Paris-Nice	5:55	x	x	x	3,191,073
Athens-Thessaloniki	4:23	x			2,621,638
Madrid-Barcelona	2:30	x			2,572,844
Frankfurt-Berlin	3:53	x	x	x	2,248,754
Milan-Paris	7:16		Night train cut since COVID	x	2,160,528
Milan-Catania	13:37		x		2,026,011
Munich-Berlin	3:58	x			1,934,712
Rome-Catania	8:27		x	x	1,824,588
Hamburg-Munich	5:48	x	x	x	1,745,720
Rome-Palermo	10:27		x	x	1,582,685
Paris-Marseille	3:04	x	x	x	1,569,716
Madrid-Lisbon	10:37		Night train cut since COVID		1,558,577
Milan-Palermo	15:05		x		1,539,626
Munich-Düsseldorf	5:02	x	x	x	1,488,902

Berlin-Cologne	4:42	x			1,434,481
Frankfurt-Hamburg	3:37	x	x	x	1,426,732
Stockholm-Copenhagen	5:01	x	x	x	1,397,474
Amsterdam-Paris	3:23	x			1,388,051
Milan-Naples	4:33	x	x	x	1,376,954
Berlin-Stuttgart	5:31	x		x	1,235,068
Berlin-Düsseldorf	4:20	x			1,233,072
Paris-Bordeaux	2:04	x			1,219,673
Venice-Paris	11:39		Night train cut since COVID		1,212,566
Milan-Lamezia Terme	7:34		x	x	1,204,651
Rome-Milan	2:59	x	x	x	1,198,119
Milan-Bari	7:17		x	x	1,159,746
Stockholm-Göteborg	2:59	x			1,148,015
Frankfurt-Munich	3:28	x	x	x	1,146,439
Vienna-Frankfurt	6:49		x	x	1,109,793
Stockholm-Luleå	13:15		x		1,045,828
Barcelona-Sevilla	5:16	x			1,045,029
Paris-Frankfurt	3:50	x			1,042,112
Stockholm-Malmö	4:27	x	x	x	1,022,621
Munich-Cologne	4:38	x	x	x	1,018,045
Munich-Paris	5:47	x			1,014,392
Lisbon-Porto	2:58	x			1,008,288
Paris-Montpellier	3:29	x			989,296
Amsterdan-Munich	11:41		x	x	971,192
Madrid-Porto	10:08			Night train cut since COVID	969,125
Vienna-Berlin	8:15		x	x	966,659
Helsinki-Oulu	5:53	x	x	x	956,641
Vienna-Amsterdam	11:14		x		943,844
Milan-Brindisi	8:14		x	x	885,734
Amsterdam-Frankfurt	3:53	x			882,532

Stockholm-Umeå	9:01		x	x	872,118
Barcelona-Malaga	5:14	x			848,962
Madrid-Bilbao	5:04	x			835,731
Copenhagen-Aalborg	5:00	x			782,849
Vienna-Düsseldorf	8:21		x	x	771,175
Rome-Bari	3:59	x	x	x	765,162
Hamburg-Stuttgart	5:01	x		x	738,375
Frankfurt-Budapest	10:22			x	725,600
Vienna-Hamburg	9:04		x		720,332
Madrid-Santiago	4:40	x			719,692
Rome-Munich	9:08		x		718,525
Paris-Lyon	1:58	x			715,117
Madrid-Vigo	5:40	x			683,927
Madrid-A Coruña	5:12	x			680,075
Vienna-Bucharest	19:22		x		634,044
Paris-Bayonne	3:57	x			629,775
Lyon-Bordeaux	5:05	x			584,312
Brussels-Frankfurt	3:07	x			578,559
Paris-Nantes	2:06	x			568,942
Lyon-Nantes	4:51	x			562,382
Vienna-Milan	9:45		x	x	562,246
Paris-Brest	3:28	x			562,128
Rome-Vienna	11:40		x	x	558,401
Vienna-Stuttgart	6:29			x	558,006
Madrid-Oviedo	4:46	x			548,209
Helsinki-Rovaniemi	8:22		x	x	543,716
Munich-Hannover	4:17	x	x	x	542,253
Venice-Naples	5:10	x		x	535,778
Vienna-Munich	4:00	x	x	x	535,673
Rome-Brindisi	4:57	x	x	x	525,571
Hamburg-Düsseldorf	3:11	x			522,362

Stockholm-Berlin	13:34		x		516,452
Milan-Munich	7:21		x	x	503,772
Turin-Rome	4:20	x	x	x	489,190

- Note: Night trains featuring in this table meet the following criteria: duration over 6 hours long, departure time before 01:00am, arrival time after 05:00am and couchettes and/or sleepers available. Some night trains only run a few days per week, such as Rome-Brindisi. By December 2021, a new night service will operate between Vienna and Paris, which features in the top 150 intra-EU routes.

[1] Greenpeace calculated how much CO2e could be saved by shifting the busiest short haul-flights in Europe to rail. The following key datasets were used for the calculation: number of flight passengers per route in 2019, air distance (city-city as airports were merged for cities with more than one airport), train distance (if there was a difference in the travel distance between day and night train, Greenpeace took the distance of a day train when under 6 hours, otherwise the night train connection), EU average CO2 per passenger kilometers for flights and trains (EEA 2021 data: 160 g/CO2e/pkm for flights and 33 g/CO2/pkm for trains). In addition, 50 kms were added to each flight for non-straight flights, waiting circles and other deviations from the straight way.

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