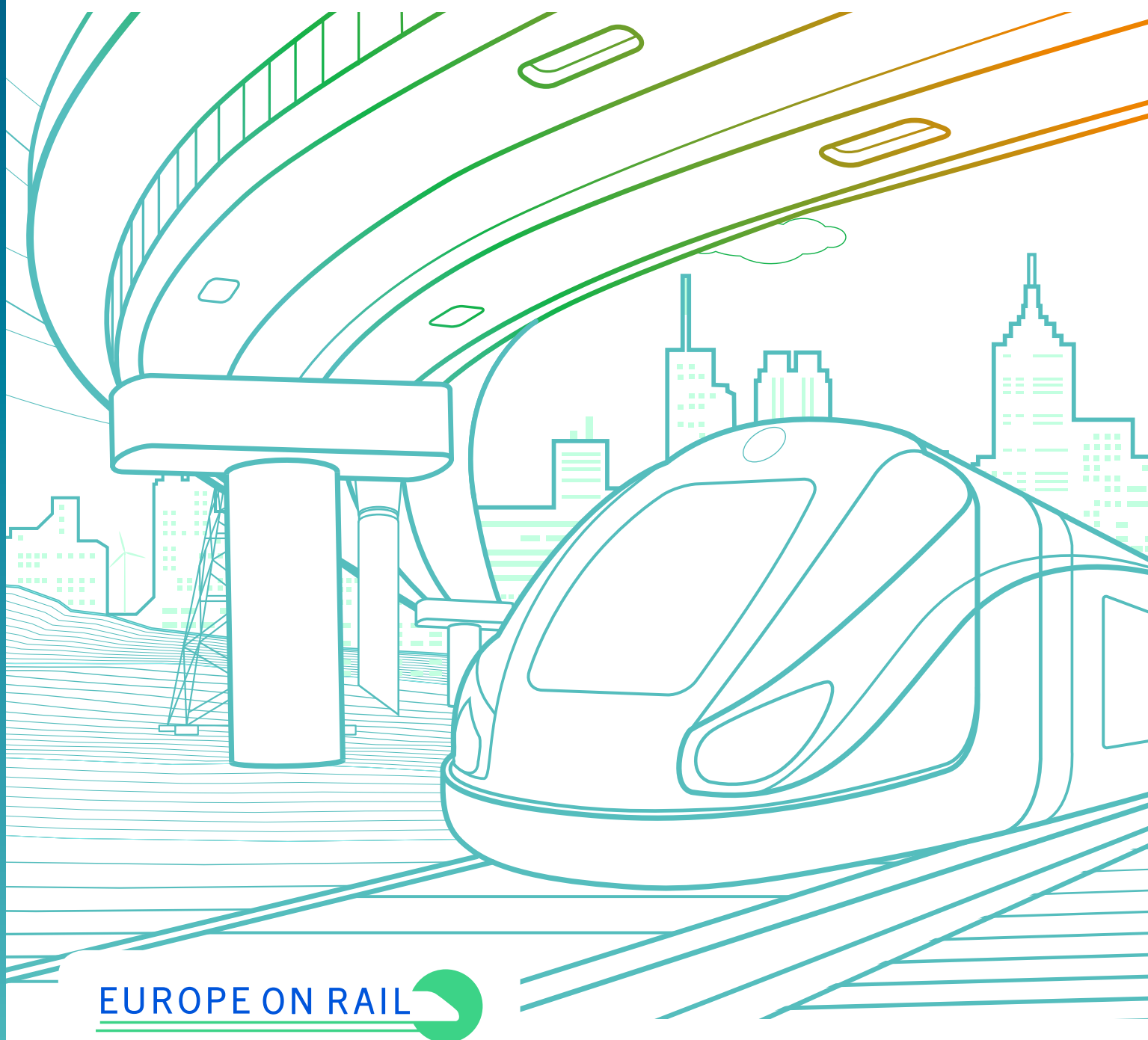


Hop on the train: A Rail Renaissance for Europe

How the 2021 European Year of Rail
can support the European Green Deal
and a sustainable recovery



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AUTHORS

Lena Donat, Manfred Treber (Germanwatch)
Lukasz Janeczko (Civil Affairs Institute)
Jakub Majewski (ProRail)
Thomas Lespierre (France Nature Environnement)
Jeremie Fosse (eco-union)
Monica Vidal (Ecodes)
Lucy Gilliam (Transport&Environment)

LAYOUT & TYPESETTING

Magda Warszawa
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PUBLISHER

Germanwatche.V.

Office Bonn:
Kaiserstr. 201
D-53113 Bonn
Phone +49 (0)228 / 60 492-0, Fax -19

Office Berlin:
Stresemannstr. 72
D-10963 Berlin
Phone +49 (0)30 / 28 88 356-0, Fax -1

Internet: www.germanwatch.org

E-mail: info@germanwatch.org

Online available: <https://germanwatch.org/en/19680>

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ABOUT EUROPE ON RAIL

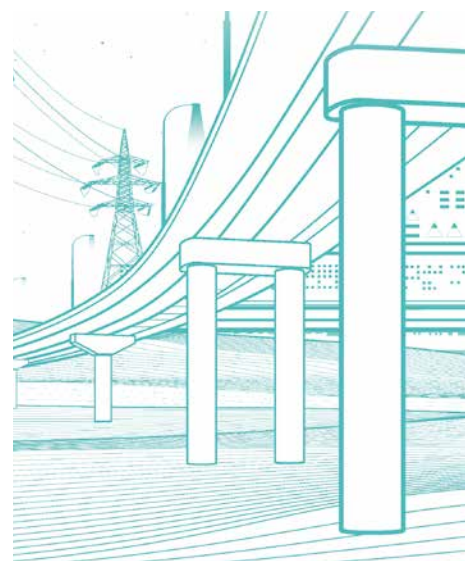
Europe on Rail is a network of non-profit organisations from Poland, Germany, France, Spain and Brussels. The network seeks to build support for a rail renaissance in Europe and for respective policy measures to boost cross-border passenger rail transport.



Table of Contents

The European Year of Rail 2021 is a key driver for the European Green Deal	4
1. A European network: launch direct international services on European arteries	6
2. Easy booking: Make rail data sharing mandatory	10
3. Smart spending: Use EU money to improve rail infrastructure capacity and connectivity	14
Other policy interventions for supporting European rail	16
Why is this important?	18
Annex: Specific recommendations for Poland, Germany, France and Spain	20
What can Poland do to boost European rail services?	20
What can Germany do to boost European rail services?	22
What can France do to boost European rail services?	24
What can Spain do to boost European rail services?	26
References	28

The European Year of Rail 2021 is a key driver for the European Green Deal



The European Union has set itself the target to become climate neutral by 2050. Making mobility more sustainable is necessary for reaching this target. Rail could play a key role in the future transport system because it is clean, safe and reliable, and it could become a symbol for the European Green Deal. Europe needs to become more climate friendly, and Europe needs to grow closer together. **A strengthened European rail system could (1) better connect people and businesses in Europe, (2) reduce transport emissions by creating alternative options to road transport and aviation, and (3) give a green boost to the European economy post-Covid-19.**

While many actors are praising railways, the European rail system is currently not in the best shape to take a central role in transport systems. In almost all EU member states, the importance of rail has declined over the last decades due to a heavy focus on road and aviation. Rail accounts for only 8% of passenger transport, and international rail services in particular are not sufficiently developed. Of the 365 cross-border rail links that once existed, 149 were non-operational in 2018, and today not even all European capital cities are linked by direct rail services. The rail system in the EU is currently not more than a patchwork of national systems, with no comprehensive European strategy.

In the European Year of Rail 2021, the EU and national governments need to seize the opportunity to boost European rail services. This is an excellent moment for initiating a rail renaissance for the following reasons: (1) Covid-19 has reshuffled transport systems and travelling habits; (2) with the European



Green Deal, the EU economy is on the brink of a new era; and (3) there is strong political support for rail from actors across the board.

The options for improving international rail are right in front of us on a silver platter. EU institutions and players tend to focus on infrastructure development, but this is expensive and time consuming. Also, rail infrastructure projects are often not matched with measures to simultaneously improve service quality to make efficient use of the new infrastructure. There are low-hanging fruits available to the EU which could boost international rail services immediately, without the need for large scale investments.

PRIORITIES



PRIORITY

1

Launch new direct international services, day and night, on existing infrastructure



PRIORITY

2

Make booking of international services attractive and convenient



PRIORITY

3

Invest in cross-border infrastructure connections and key corridors

A European network: launch direct international services on European arteries

International rail services between major European cities offer a large untapped potential. Most rail services stop at the border, or end just on the other side of the border. Travellers often need to change trains several times to get from one capital to the other—which means additional stress and waiting time for the traveller. The few direct services often stop too many times along the way and wait too often at major traffic nodes for track capacity. **Direct trains between all European major cities of neighbouring countries should be an absolute minimum**, but also other metropolitan areas should be connected with direct and frequent services. Furthermore, long-distance trains should connect well with regional rail services, to establish a dense and attractive network.

France and Spain have developed high-speed services but abandoned most regional lines

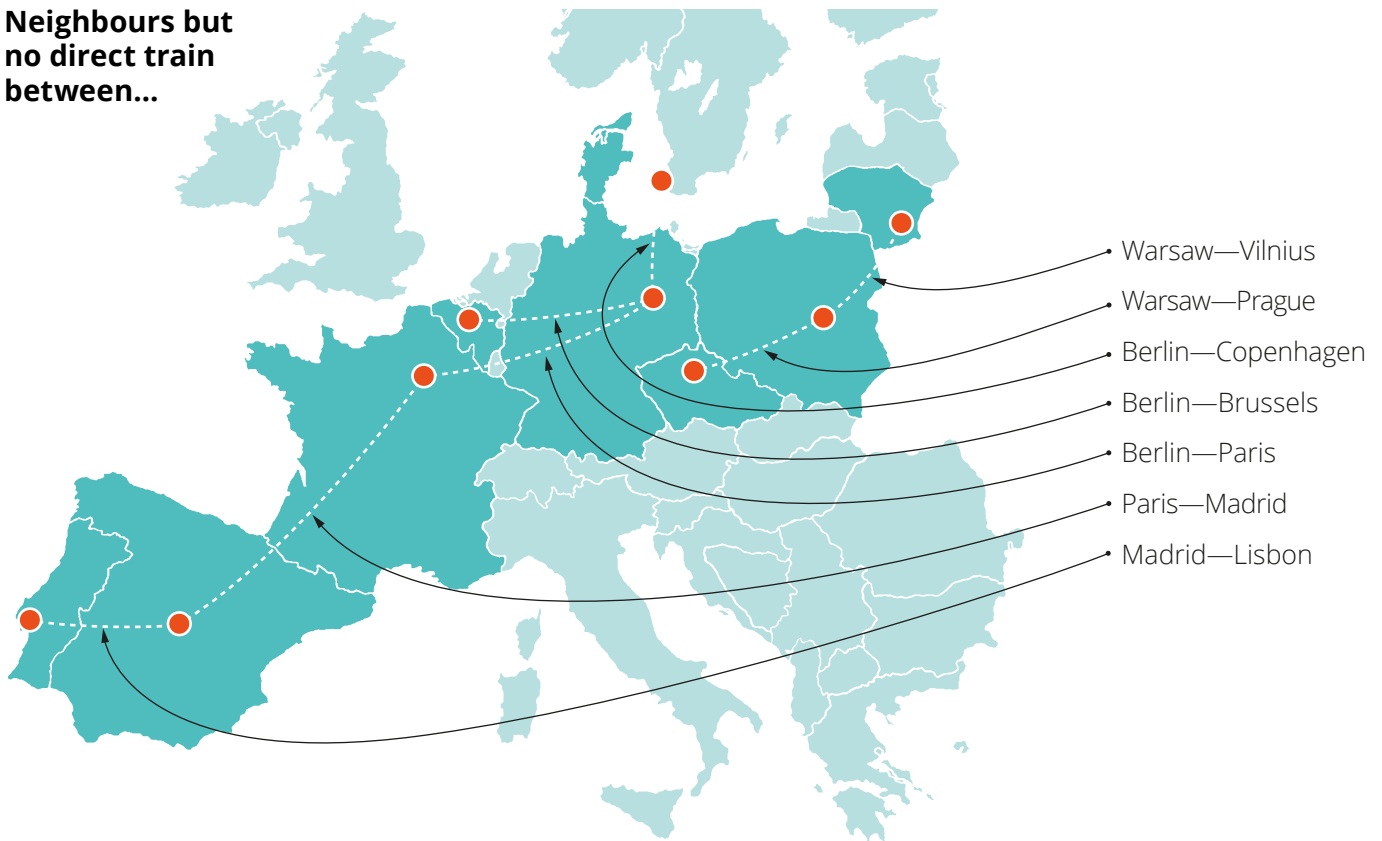
Both France and Spain have invested heavily in high-speed lines.

France has built 2,800 kilometres (km) of high-speed lines since the 1980s, which makes it one of the densest high-speed networks in Europe. Unfortunately, the cost of building and maintaining these lines has taken its toll on regional and local lines. Between 1998 and 2018, 13.1% of the total length of the French network was closed. Local and regional infrastructure is aging and in urgent need of renewal. For this reason, the French government, along with SNCF, has recently shifted its priorities

to maintaining local lines and postponing several high-speed projects.

In Spain, three out of four euros allocated in 2018 to rail infrastructure went into high-speed infrastructure. Spain now has the longest high-speed network in Europe (around 3,000 km) but it is the least used, with only 13 billion passenger-kilometres in 2018. As a comparison: France transported 49 billion passenger-kilometres on a high-speed network of almost equal length (IRG 2020). In contrast, only a minor share of the Spanish rail budget was invested in suburban rail.

Neighbours but no direct train between...



Connecting long-distance trains to regional rail services does not always require new high-speed infrastructure. **Much of the infrastructure is already there**, especially in western Europe, but is not utilised to its full potential. **A European Commission report found that of 202 operational cross-border rail links, only 57 were fully exploited in 2017 (European Commission 2018).** In many cases more efficient use of existing high-speed or even conventional infrastructure and better coordination of timetables would be sufficient. A well-coordinated timetable could also integrate regional and long-distance trains and improve connectivity in Europe.

Currently, the main obstacles to international services are:

- **National perspective:** incumbent operators focus on their national market (especially on lucrative main routes) and often lack an international vision and experience (e.g. market potential, administrative). Trains stop at 'at every haystack', which might make sense from a national perspective, but leads to additional travel times for international services.
- **Administrative hurdles** make international services less attractive for operators. For example: they need to apply for track capacity with various

A new East-West European line: Warsaw—Berlin—Brussels—Paris

A direct service between Warsaw and Paris could be the first test case for new international lines. There are already direct services on the following sections: Warsaw—Berlin (6h), Berlin—Cologne, Cologne—Brussels, Brussels—Paris (1h30).

The TEE2.0 study assumes that Warsaw—Paris journey can currently be done in 13h15; with infrastructure improvements travel time could be reduced to 12h45 (BMVI 2020). There is already rolling stock (TGV) available that is certified in Germany, Belgium and France. While the certification process in Poland is ongoing, the trial service could start with Berlin—Paris.

The route would have a significant potential to shift flights to rail, as some sections are heavily frequented flight routes. There are more than five million passengers every year who fly the total distance Warsaw—Paris, or smaller sections of it. For instance, between Cologne and Paris an average of more than 2,500 people fly every day, and between Berlin and Paris 3,000 (in 2019, Eurostat 2020).

infrastructure managers; drivers are required to speak several languages; and rolling stock needs to be designed and licensed for different national electricity, signalling and safety systems.

What is needed is a **European spirit in planning and management of rail services**, and start-up support for new international services. In the 1960s and 70s, a network of direct trans-continental services connected Europe across borders—the **Trans-Europe Express (TEE)**. This joint endeavour of French, German, Swiss, Dutch, Belgian, Luxembourg and Italian railways only offered first-class services and only connected a number of countries in western and central Europe; however, the idea might serve as a starting point. TEE trains only stopped at major cities and were often scheduled to allow travellers to do a roundtrip in a single day. At its height in the late

1970s, the TEE served 31 routes. The network also gave impetus to the development of interoperable trains that could run on different voltage systems.



Germany is a key player for new European rail services

Due to its central location in the EU, Germany is crucially important for a European rail network. Yet running international services through Germany is difficult, as:

- Germany is one of the few EU member states that does not place public service obligations on long-distance rail services;
- the German infrastructure manager DB Netz charges one of the highest mark-ups on track access charges in the EU. Many other EU member states charge only direct costs for infrastructure use and no additional mark-ups;
- responsibility for train services is devolved to regional government, cross-border coordination with Germany is more difficult than with other EU member states.

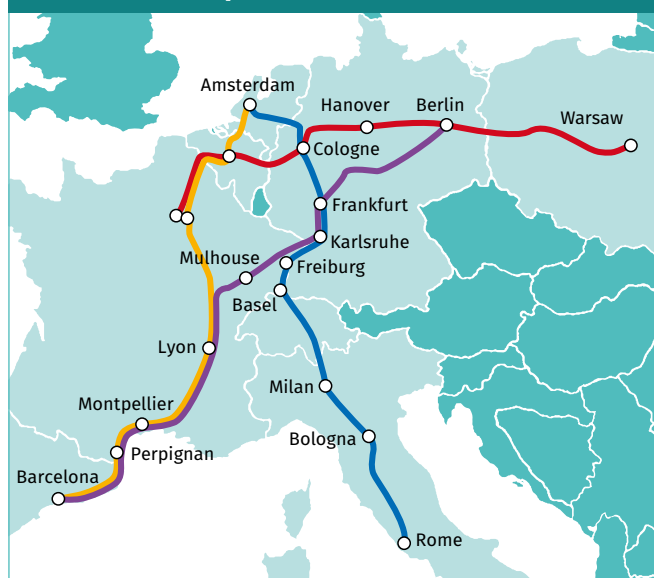
A few decades ago, countries in Europe were still connected via many **night train** routes, but most of these have been discontinued. These night trains were important connections, particularly for longer distances. Austrian rail operator ÖBB has begun to revive some of the routes.

In September 2020 the German government proposed reviving the TEE idea, with eight core international routes together with a network of European night trains (BMVI 2020). The idea of a TEE2.0 is a good start to ‘Europeanising’ train services and overcoming some of the major hurdles. The proposed network could then be expanded to reach further into Spain/Portugal and south and eastern Europe.

How can the EU launch new international rail services in the short term?

- **Get started:** Agree on one or two corridors to start with (e.g. Warsaw—Berlin—Brussels—Paris or Amsterdam—Paris—Barcelona).
- **Corridor coordination:** Task the European Railway Agency (ERA) with coordinating rail services on these corridors to create a one-stop shop for train operators. The agency could provide information on which rolling stock is required, and the frequency and speed of the services. It could facilitate coordination between infrastructure managers to ensure that services get the required track slots for fast and smooth journeys.
- **Start-up support:** Determine those sections of the corridor that the service can run on a commercial basis and those where it needs subsidies (at least to get started); start-up support should be tied to the condition that low-price tickets are available to make the service accessible to price-sensitive passengers.
- **Vision:** Agree on a comprehensive network of European day and night trains, with trains crossing external EU borders into the neighbourhood (especially to the UK, Western Balkans, Turkey, Ukraine, Belarus and Russia).

Short-term implementation of the TEE2.0



Source: BMVI (2020)

A new North—South European line: Amsterdam—Barcelona

Another test case could be a direct service between Amsterdam and Barcelona. Currently, there are trains making this journey in three segments: Amsterdam—Brussels (2h30), Brussels—Lyon (3h45) and Lyon—Barcelona (5h)—a total of 11 hours 15 minutes. A direct train could connect Amsterdam and Barcelona in 10h15. Rolling stock is available for this route: the Siemens Velaro train is certified in Netherlands, Belgium, France and Spain. The route would have significant potential to shift travel from air to rail. For example, there are on average 6,500 people flying from Paris to Barcelona each day. In 2019, almost 8.5 million people took a flight on the Amsterdam—Barcelona route or smaller sections of it (Eurostat 2020).

Easy booking: Make rail data sharing mandatory

Booking international flights is very easy but buying international rail tickets is the opposite. Passengers cannot easily find and compare all available connections and prices, and bear the risk of delays on the way. That needs to change: **travelling by rail needs to become at least as easy as travelling by plane.** Consumers should be able to book rail tickets for any connection in the EU via one-stop shops. In the best case, this should integrate with other sustainable modes for the first and last miles of the passenger's journey, such as buses, trams, shared bikes, etc.

It is not possible to book a train ticket Frankfurt—Barcelona online



If you try to buy a train ticket from Frankfurt to Barcelona, this is what you find:

- Deutsche Bahn shows two connections (fastest is 13h04) that reach Barcelona within the same day but no tickets are sold.
- SNCF shows no connections.
- RENFE shows no connections, and this information is available only in Spanish.
- Trainline offers tickets for three connections, which are different from the Deutsche Bahn connections and require at least 25 hours of travelling.
- Omio shows no connection.

The only possible ways to book the trip from Frankfurt to Barcelona are to buy tickets for segments of the journey from the different operators' websites, contact an offline travel agent or queue up at one of the few remaining Deutsche Bahn ticket sale desks.

As a comparison: Google Flights search shows for the same day approximately 60 connections, even during the Covid-19 pandemic.



Finland shows the way for multimodal ticketing

Finland is the European frontrunner when it comes to multimodal ticketing. The 2018 Transport Act obliges all mobility service providers to grant access to essential data, sales interfaces and reservation interfaces, via an Application Programming Interface (API). The law thus covers not only rail but also public road services. Mobility service providers are obliged to cooperate and to enter into agreements, based on criteria set out in the Transport Act. The Finnish Transport Agency is responsible for monitoring the supply and demand of mobility services, and produces statistics from the data obtained (European Commission 2019).

The EU has trusted the rail sector to find its own solution but that sector has delayed progress for years. **Technical solutions for integrating information from different train providers are available.** Independent online ticket vendors like Trainline, Omio, etc try to assemble tickets from different operators, but their websites do not yet show all available rail connections and ticket offers. This is because rail operators are reluctant to share all the necessary data with other operators or with independent ticket vendors.

The EU needs to require rail operators to share all necessary data for easy booking of international rail trips.

European law currently obliges transport operators to share only some basic data, such as static travel and traffic data (1926/2017 Delegated Regulation of the **Intelligent Transport Systems (ITS) Directive**). The regulation does not cover fare data and also leaves it open to member states to require dynamic travel and traffic data (e.g. information on platform numbers and changes, accurate seat plans, real-time delays and cancellations, predicted arrival time). These data are critical for a seamless journey and for passengers to be able to find alternative connections in case of disruptions (European Commission 2019).

Some member states move beyond that regulation while others implement only the absolute minimum, resulting in **legal fragmentation across the EU**. In Germany, for instance, Deutsche Bahn (DB) data on timetables and planned disruptions is open to ticket vendors, but not data on real-time platforms, real-time delays and cancellations, or next-day information on delays and cancellation (which is required for claiming compensation).

The EU needs to **establish a comprehensive multimodal legal framework for booking, ticketing and payment services**. In its 2021 Work Programme the European Commission announced it would revise the ITS Directive and propose a multimodal ticketing initiative. This initiative needs to fulfil the following criteria:

- The framework will make access to **static and dynamic data mandatory** (including routes, stops, timetables, prices and the availability and accessibility of services).
- Rail operators will be required to share data via an **open Application Programming Interface (API)**, which must be in machine readable format. Many operators have so far failed to build interfaces into their own booking systems.
- The framework should **allow ticket vendors to assemble their own discount and promotion packages** to compete in an open ticketing market.

The Berlin—Brussels roulette—no 'hop on the next train'

When travelling by train from Berlin to Brussels, passengers need to change trains in Cologne. Frequently the ICE train (operated by DB) from Berlin to Cologne is delayed and travellers miss their connection. From Cologne to Brussels there is only one ICE train every two hours, but a Thalys train several times a day in the 'interim slots'. Yet, the DB traveller is not allowed to take the Thalys trains to Brussels earlier than the next ICE train because there is no 'hop on the next train' agreement between Thalys and DB, meaning travellers often need 08h49 instead of 06h49 for the trip.

The EU needs to establish rules to guarantee that international rail passengers arrive at their final destination and can hop on the next train in case of missed train connections. Rail passengers often need to buy individual tickets from different rail operators for a multi-leg journey—and under current rules **passengers bear the risk if a connection is missed**. Rail operators are currently not obliged to sell so-called 'through tickets', that is, one ticket contract for multi-leg journey with a guarantee to arrive at the final destination. Also, independent ticket vendors that assemble tickets from various operators do not offer such an 'arrival guarantee'. As there are only a few direct international train connections between major European cities, this is a concern for passengers.





Smart spending: Use EU money to improve rail infrastructure capacity and connectivity

EU funding (cohesion funding, Connecting Europe Facility, Recovery and Resilience Facility) makes up an important share of overall transport infrastructure funding, especially in the new member states. Yet, in the past, EU transport funding has not always been used wisely. Too much funding went into road and airports, and too little into rail. This is especially the case for EU cohesion funding: around **50% of transport cohesion funding goes into road**, and only 25% into rail projects. Funding decisions are based on plans prepared by the

respective member state, and negotiated between member states and the European Commission.

Only one out of seven border crossings between Germany and Poland is electrified



There were once 24 rail links between Germany and Poland of which only seven remain in operation. Yet, only the border crossing at Frankfurt (Oder) is electrified. The trains from Berlin to Warsaw or to Gdansk operate on this line. The remaining six border crossings are not yet electrified, meaning that trains need to run on diesel.

The Cottbus—Legnica link is particularly relevant to connect Berlin to densely populated Southern Poland (Wroclaw, Silesia, Krakow). To electrify this 138 km link would cost approximately €100 million but could reduce travel time between Berlin and Wroclaw from currently 4.5 hours to only 3 hours because Eurocity trains could take a more direct route (currently going through Frankfurt (Oder)). For comparison: before the 2nd World War travel time was only 2.5 hours.

European Investment Bank (EIB) transport lending is still supporting unsustainable infrastructure such as airports and new motorway projects. Transport is the single largest sector of EIB activity, accounting for about 1 in every 4 euros invested by the bank. The bank is, however, in the process of revising both its climate (2020) and transport policies (2021).

Too much money also goes into **mega-projects with exploding costs and long delays**. The European Court of Auditors (2018) cautioned that projects were often chosen based on political decisions and not on thorough cost-benefit analyses.



The evaluated high-speed projects took 16 years on average, cost on average €25 million per track km, but often do not deliver on expectations: average speeds rarely reach 200 km/h, and only few lines transported more than nine million passengers per year (the benchmark for a successful high-speed line). In contrast, small-scale interventions with greater European potential are often not implemented. This can be electrification, constructing a second track or bypasses to increase capacity and speed, or closing smaller missing links on the border.

The European Court of Auditors also noted a **lack of coordination of cross-border infrastructure** projects. Member states take a national perspective and do not prioritise closing cross-border gaps. This means that infrastructure might have been completed on one side of the border but delayed by years on the other side.

The EU should ensure that EU funding:

- **Supports modal shift towards rail:** In the negotiations of the Operational Programmes for Cohesion funding, the European Commission should ensure that more budget goes to rail than to road, and no new roads are financed in the old member states, as they already have a sufficiently dense road network. The European Commission should also ask member states to present modal shift targets if they want to access funds for transport under the Recovery and Resilience Facility. The EIB should, in the upcoming review of its Transport Strategy, decide to stop funding any airport infrastructure or road network expansion, and instead increase funding for electric cross-border rail projects and rolling stock.
- **Prioritises rail projects essential for intra-European rail services:** Connecting Europe Facility (CEF) funding should only go into projects that are key to cross-border connectivity (e.g. for key corridors), and should focus more on low-hanging fruits than on new mega-projects. Such interventions should be based on sound cost-benefit analysis. When evaluating

Spain has only one international long-distance rail line

Spain has invested massively into high-speed lines over the last decades, with €14 billion (25% of total investment) coming from EU funds (International Railway Journal 2020). Yet there is only one international high-speed rail line connecting Barcelona with Montpellier in France. The tracks are underused, with only two services per day. For regional services there are additional border crossings in Portbou-Perpignan (Mediterranean coast), Irun/Hendaye (Atlantic coast) and Puigcerda (Pyrenees), but none of them is serviced frequently. Another difficulty on these regional lines is that trains need to change between standard and Iberian track gauge at the border.

The connection between Spain and Portugal is even worse: a rail trip from Madrid to Lisbon (625 km) takes 10h50 and requires three changes, as only regional lines operate across borders. There are border crossings in Badajoz-Elvas, Fregeneda-Barca de Alva and Vigo-Porto but they are under-used. The only long-distance line to Portugal is a night train from Hendaye/Irun to Lisbon (currently suspended due to Covid-19). The TEN-T network plan foresees a high-speed connection between Madrid and Lisbon as part of the core network but the project is currently not being pursued by either the Portuguese or the Spanish government.

member states' operational programmes for cohesion funding/recovery funding, the European Commission should suggest to member states that they include rail projects that are key to the functioning of a European rail network.

- **Promotes infrastructure interventions which are accompanied by transformative measures:** When accessing EU rail infrastructure funding, member states should be required to present accompanying policy measures which ensure that the infrastructure is used efficiently.

Examples of border crossings between Spain, France, Belgium, Germany and Poland that need urgent attention

Member States involved	Border crossing	Important for	Required action
Germany—Poland	Cottbus—Forst—Legnica	connecting Berlin with southern Poland	electrification of 138 km
France—Germany	Colmar—Freiburg	connecting regions	build 1 km bridge
Spain—France	Astigarraga—Irun / Hendaye—Bayonne	connecting Bordeaux to northern Spain	upgrade cross-border section
Spain—France	(Pau) Bedous—Canfranc (Zaragoza)	Reconnect central corridor in the Pyrenees	Refurbishment of 30 km railtrack on French side

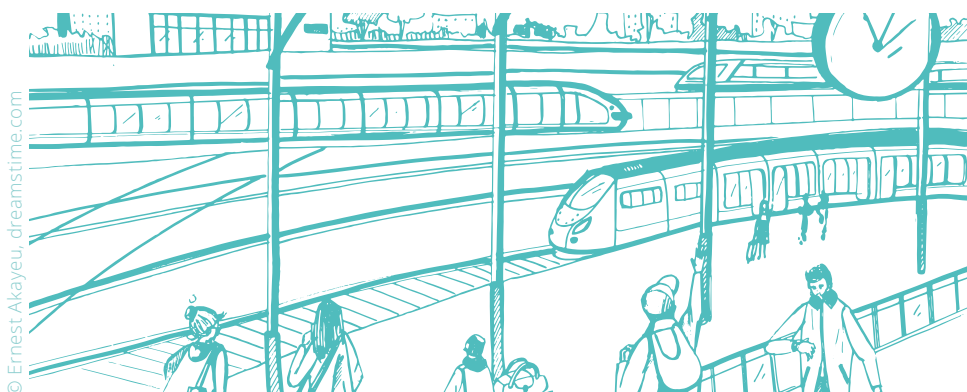
Other policy interventions for supporting European rail

Apart from the above mentioned priorities, the EU and member states should address the following obstacles:

- **International rail has no strong voice** in the current system because member states and incumbent railway operators tend to focus on their own national markets. There is also a lack of coordination of infrastructure managers across borders. **The EU should strengthen the European Rail Agency (ERA) as a traffic control and coordination authority for international rail transport.** The ERA should be entrusted with forecasting demand, assessing the level of required services (destination, frequency, speed) and allocating capacities. The ERA could identify routes that may be of interest to travellers but which are not yet fully exploited, and could make this information available to train operators. It could also determine which sections of the desired network services would be

commercially viable and where public service obligations (PSOs) would be needed in order to guarantee a service.

- **Night train operators and new rail operators have an especially hard time** finding trains that can operate in more than one country. The second-hand market for interoperable rolling stock and night trains is limited, ordering an entire new fleet is prohibitively expensive, and no functioning leasing market is in place for this specific segment. The EU and member states should help to **find new, creative finance mechanisms for overcoming the lack of rolling stock and consider establishing a publicly managed rolling stock pool.**
- **Airlines pay no tax on kerosene, receive 85% of allowances of the European Emissions Trading Scheme free of charge, and pay no VAT on international tickets.** This creates an uneven playing field between aviation and rail. The European Commission has announced it will review both the EU Energy Taxation Directive and the EU ETS Directive in 2021. It is crucial to use this opportunity to **introduce a kerosene tax, introduce full auctioning for aviation allowances in the EU ETS, and create a stronger price for emission allowances.**
- **Track access charges are prohibitively high** in some EU member states. EU Regulation suggests that charges should cover only marginal costs, but some member states ask for much higher mark ups, for example on highly frequented routes or during rush hours. This creates an unfair advantage for road transport, which pays only infrastructure charges on approximately 3% of the EU road network. For freight rail, some member states have reduced charges, but not so for passenger rail. EU member states should **agree to reduce track access charges to direct cost levels.** This would increase the use of tracks and could bring higher income for infrastructure managers in return. During the transition period, alternative funding to cover losses of infrastructure managers could come from ETS auctioning revenues.



Why is this important?



Rail can help the EU to achieve its climate targets

Rail is the cleanest mode of transport. A flight from Paris to Berlin causes at least six times the CO₂ emissions of a train journey. Counting also the non-CO₂ impacts of aviation, the flight is responsible for 18 times the climate impact of a rail trip. With further electrification and decarbonisation of power generation, the carbon emissions of rail could be reduced to close to zero.

Intra-European flights on distances less than 1,000 km are estimated to cause 28 MtCO₂ every year, without counting the non-CO₂ impacts. Seventeen of the 20 most frequented air routes in Europe are for distances less than 700 km. In theory, almost all of these journeys could be shifted to rail.

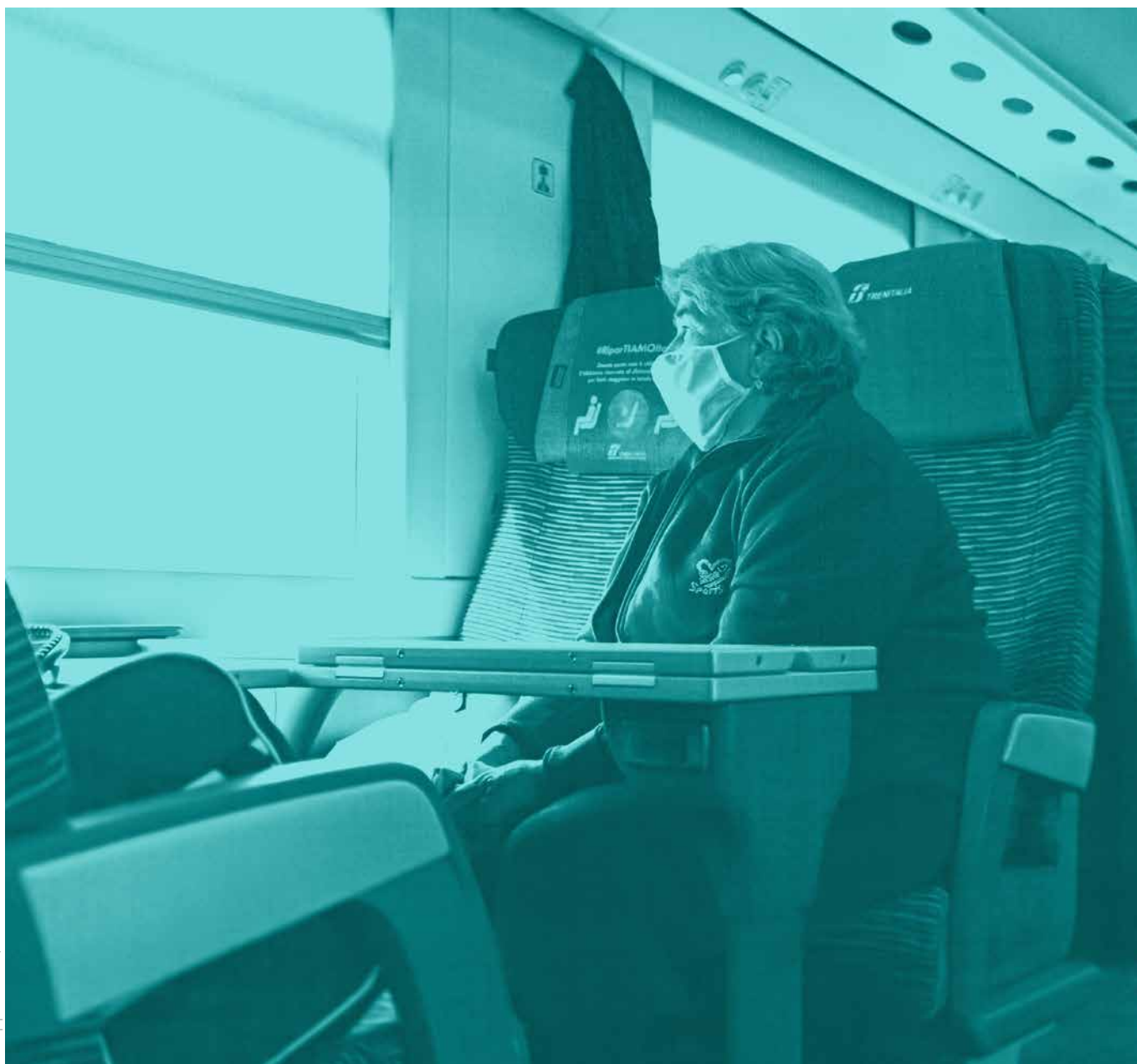
The better European cities are connected by rail, the easier it is to move transport away from high-polluting transport modes such as aviation and cars. The more attractive and easy-to-use rail services are, the more likely it is that people will want to switch.



Rail can be a driver for European recovery post-Covid-19

The rail sector employs more than 2.3 million people (directly and indirectly) and creates a gross value added of €143 billion, of which €66 billion is created directly by the sector. This is larger than the gross value added of air transport. The EU rail supply industry accounts for around 20% of the global market.

Rail infrastructure investments usually need more time but add to mid-term stability and growth expectations in the construction sector. Some rail infrastructure modernisation projects could be realised rapidly—for example track switches, bypasses, European Rail Traffic Management System (ERTMS). The investments needed for the realisation of the Trans-European Transport (TEN-T) core network, for example, is estimated to create €4.5 trillion cumulated GDP and 13 million job-years EU-wide.



Rail connects people, cities and countries



In contrast to aviation, rail not only services highly frequented core routes but also has a network that reaches into remote regions. This network was much more dense 50 years ago, both within countries and in border regions. While many connections are not in use anymore because of massive divestment from rail, many could easily be reinstalled. A network of fast long-distance connections combined with dense regional services could make Europeans feel connected to and part of the EU.

Annex: Specific recommendations for Poland, Germany, France and Spain



What can Poland do to boost European rail services?

1 Create fair conditions for infrastructure access

The current system of infrastructure access charges is extremely asymmetric and strongly favours road over rail transport. Rail currently pays infrastructure access charges on 100% of the railway network (including layovers or the use of railway stations), while road (bus) operators pay charges only on 1% of Polish roads, and individual drivers pay only for selected sections of motorways, representing around 0.2% of the entire network. Infrastructure charges of road and rail should be aligned in all market segments—including international long-distance transport.

The second problem is the high level of track access charges for rail operators. As a first step, track access charges in Poland should be reduced to the level of costs directly induced by the train journey. This would reduce charges from the current 60% of total infrastructure maintenance costs to 30%. These charges should go entirely to the Railway Fund and thus contribute to the development and construction of new railway lines (as is the case with roads). Maintenance costs should be covered through the general state budget. Ultimately, the system of charges for transport infrastructure should be dependent on the level of external costs (pollution, noise, traffic safety, etc).

2 Invest in interoperable rolling stock for international connections, including night trains

The lack of interoperable rolling stock is a key obstacle for the launch of new international long-distance connections. Due to the very limited number of international connections and small passenger flows, it is not a priority for carrier investment. As a result, international rail operators—especially night trains—have access only to old wagons of poor quality. In addition, international trains waste time at borders due to the lack of multi-system locomotives, which could run on different voltage and safety systems. In Poland, an estimated 40 locomotives and approximately 350 wagons are needed to operate connections with other EU countries (Germany, Czech Republic, Slovakia and Lithuania). To improve the quality and frequency of international connections Poland should launch an investment programme for interoperable rolling stock. This could also help the country negotiate with the European Union on the co-financing of rolling stock, or even an EU-financed rolling stock pool. Currently, the long-distance segment is the only area of passenger railway in Poland not covered by any EU support programme for rolling stock.

3 Elimination of barriers to entry for new railway carriers

One of the basic problems of the international transport offer is its maladjustment to modern market needs. Trains run infrequently, tickets are much more expensive than domestic services, and there are no discounts available on international trains. The reason is that the organisation of connections is left to the incumbent railway carriers from individual countries and inflexible procedures for their cooperation (including archaic regulations on tariffs and ticket sales). The example of low-cost airlines shows that an effective instrument for changing this situation is opening the market to competition. In the case of commercial services, full deregulation of the market should be achieved. Where financial support (PSO) is required to maintain traffic, competitive tenders for carrier selection should be obligatory, in accordance with the provisions of the Fourth Railway Package. In the case of Poland, it is essential to review and clarify the rules for market access. The current regulation leaves room for misinterpretation and is commonly used to block the entry of new entrants to the market, which may exert positive pressure on the quality, scope and accessibility of services for passengers.



What can Germany do to boost European rail services?

1 Reduce track access charges for passenger trains

According to EU law, track access charges should generally only reflect direct costs (wear and tear costs); but Germany, for instance, makes use of an exemption and charges full costs for passenger trains (i.e. including infrastructure maintenance costs). The German track access charges are, as a consequence, five times as high as the mere direct costs would be (CERRE 2018). This results in very high access charges for train operators, accounting for around a third of total operation costs. The average costs per kilometre for long-distance trains rose by 18% between 2013 and 2018. For freight rail, Germany has already decided to halve its track access charges. The same approach to passenger rail could be a first step in incentivising more international services, and to make rail more competitive with other transport modes. The lost income for infrastructure managers would need to come from Germany's general budget.

2 Establish a competent national authority for long-distance rail

Germany is the only EU member state without a national contracting authority for rail transport. When Germany reformed its rail system in the 1990s, it established in each of the federal states (Bundesländer) at least one contracting authority responsible for organising and ordering regional rail passenger services, and for determining public service obligations. There are now 27 regional contracting authorities, but no such authority at federal level. Article 87e(4) of the German constitution obliges the federal government to guarantee non-regional services, and provides the legal basis for establishing a national contracting authority by law. Yet, after more than two decades, Germany has still not introduced such a law, meaning that all long-distance trains need to run solely on a commercial basis.

This has led to gaps in the national network of long-distance trains and raises the question of how Germany can implement its so-called 'Deutschlandtakt',

an integrated timetable for 2030 which includes routes not commercially viable. It also makes it more difficult to run international trains through Germany. Operating international trains is usually more costly because of higher coordination and administration costs, and the need to buy or lease interoperable rolling stock. In contrast to many other EU member states, Germany provides no support for long-distance trains in the form of public service obligations (PSOs) and also seems to object to other governments covering the German part of the route with PSOs, as a recent feasibility study on a Stockholm—Brussels night train revealed.

3 Electrify border crossings to Poland and Czech Republic

Most international long-distance trains today run on electricity, which is not only cleaner but also faster. Only 61% of Germany's railway network is electrified, and only 27 of its 57 border crossings into neighbouring countries are electrified. Most non-electrified border crossings are on the eastern borders: 13 into the Czech Republic and eight into Poland. The lack of electrification usually means that locomotives need to be changed at the border, adding to travel times, and that many faster trains cannot run on those sections. To better connect with the east, Germany should urgently electrify the following sections:

- Cottbus—Forst—Legnica: 138 km electrification would speed up services from Berlin to Wrocław and Krakow;
- Dresden—Görlitz—Zgorzelec: 95 km electrification would improve train connections between Dresden and Wrocław;
- Regensburg—Furth im Wald: 131 km electrification would speed up services from Munich to Prague to less than four hours;
- Nürnberg—Schirnding—Cheb: 140 km electrification would reduce travel time between Nuremberg and Prague to less than four hours.





What can France do to boost European rail services?

1 Initiate a national strategy for a modal shift from air to rail

Massive modal shift is no longer an option but a necessity if France is to reach its targets of CO₂ emissions. Yet, there is no long-term plan to reduce the number of flights taken for European travel. Such a strategy is much needed, as it would allow for long-term planning, better coordination with the ERA, and better coordination between long-distance and local trains.

With an extensive network of railways lines already in place, international connections do not require any major infrastructure works and could be created very quickly. What is lacking is an integrated strategy to promote train over air for domestic and European travel. France should set clear objectives in modal shift by 2030 and 2050, in accordance with national low carbon strategy (SNBC).

As long- and medium-distance train connections (both day and night) can be an important asset to reach French climate targets, France should create further incentives to boost this modal shift: introducing VAT on European flights and reducing VAT on train travel. Airport expansion projects in France should also be halted, as they undermine efforts towards low emission mobility.

2 Ease emergence of new players for long-distance connections

As the European rail market opens, private and 'historic' incumbents will have the opportunity to operate new European connections. This opening of the European train market will be an opportunity for new train companies to operate these trans-European connections. To encourage 'newcomers', France should: guarantee that the services of these private companies will be able to set up their businesses and operate without obstacles; set track access charges to its direct costs level; and guarantee that newcomers will have access to public infrastructure and tracks.

The opening of the market could also be an opportunity for incumbents such as SNCF. As has been done with Thalys or Eurostar, SNCF should initiate a partnership with other national and/or private companies to operate one or several of the European corridors that will be designed.

It is quite possible to ‘start small’, operating only on the sections where infrastructure and rolling stock are compatible (Paris—Berlin, for example) and gradually extend the lines to reach full potential, such as Paris—Warsaw.

3 Invest in night train rolling stock

Night trains can be a positive alternative to intra-European flights. They can serve both domestic and international destinations. However, night trains in France have been on a downslide for several years. The French government has recently announced that two new national train lines will be reopened. This trend should be continued as the number of night trains gradually increases and night train lines extended to international destinations.

For the night train renaissance, France should invest €150 million each year in rolling stock, as the current stock is aging and far too limited. This investment will incentivise industries to produce new high-quality wagons designed for the night trains.

At night, some of the French track capacity is reserved for maintenance work and cannot be used. This challenge can be overcome by starting with a small number of routes, providing alternative routes when needed and/or subsidising SNCF Réseau so that maintenance work during the night can be ‘un-optimised’: that is, take place over a longer period but without stopping traffic at night.





What can Spain do to boost European rail services?

1 Refurbish, upgrade and finalise cross-border connections between Spain, Portugal and France

Cross-border connections between Spain and its neighbouring countries need an urgent upgrade to allow smooth, fast and convenient passenger trips between major southern European cities. In the Basque country, the rail lines between Hendaye and Irun should be quickly refurbished to avoid unnecessary stop-overs and guarantee the integration of French high-speed network (Paris—Bordeaux—Hendaye) with the Spanish high-speed line in construction between Donostia/Bilbao and Vittoria (known as Basque Y) and then towards Madrid and other Spanish cities.

In Central Pyrenees, the historical line between Pau (Nouvelle Aquitaine) and Zaragoza (Aragon) via the monumental Canfranc International station, should be relaunched by building the missing 30 km between Bedous (France) and Canfranc (Spain). This final work will increase freight and passenger connectivity, improve cross-border security and boost the economy of isolated regions highly dependent on tourism, agriculture and industry.

On the Atlantic side, the cities of Lisbon and Madrid, as well as Santiago de Compostela (Galicia) and Porto, need to be integrated into a high-performance network, based on the upgrade of outdated rail tracks. This connection would ensure the better cohesion and connection of geographically remote and peripheral cities and regions with the rest of the European capitals.

2 Relaunch night train services and long-distance conventional lines

Most of the night time and conventional trains between major southern European cities (such as Madrid—Paris, Barcelona—Paris, Madrid—Barcelona, Madrid—Lisbon) have been abandoned in the last decade due to aggressive and unfair competition from low-cost airlines and long-distance buses. However, the climate crisis is pushing citizens towards low-carbon transport such as rail.

Spanish citizens deserve affordable night trains and renovated long-distance trains that allow them to save time, carbon and money, avoiding expensive night hotels at origin and destination. Relaunching cross-regional train lines is also a way to support safe, inclusive and sustainable tourism in Mediterranean countries dramatically affected by the Covid crisis and related lockdowns.

3 Increase the use of the network by opening the market and levelling the playing field

Spain has the longest high-speed network in Europe (2,675 km) but it is the least used, with only 13 billion passenger-kilometres in 2018. As a comparison: France transported 49 billion passenger-km on a high-speed network of almost equal length (2,548 km). When looking at passenger and freight rail together, use intensity of the Spanish rail network (34 trains per day per route km) is also very low compared to the rest of Europe (146 in the Netherlands, 96 in the UK, 78 in Germany, 43 in France).

As a large part of the high-speed infrastructure has been financed by the EU, the poor performance of rail in Spain is clearly an inefficient use of public money that should be solved by appropriate regulation and incentives. The new law for sustainable mobility in the making is a unique opportunity to reverse those negative trends and fix historical pitfalls. The opening of the network to new rail operators planned in 2021 should also contribute to increasing the number of passengers without building any new infrastructure. Finally, the rules for transport operators should be fair between air, road and trains, by integrating the environmental and social externalities and incentivising cleaner alternatives.



References

BMVI (2020). Trans-Europe Express 2.0. https://www.bmvi.de/SharedDocs/EN/Documents/K/innovative-rail-transport-overnight-21-09-2020.pdf?__blob=publicationFile

CERRE (2018). Track Access Charges—Case Study Germany. https://cerre.eu/sites/cerre/files/180509_CERRE_TrackAccessCharges_CaseStudy_Germany_Final.pdf

European Commission (2018). Comprehensive analysis of the existing cross-border rail transport connections and missing links on the internal EU borders. <https://op.europa.eu/en/publication-detail/-/publication/e68ec381-62f7-11e8-ab9c-01aa75ed71a1/language-en>

European Commission (2019). Remaining Challenges for EU-wide integrated ticketing and payment services. <https://op.europa.eu/en/publication-detail/-/publication/af05b3eb-df43-11e9-9c4e-01aa75ed71a1>

European Court of Auditors (2018). A European high-speed rail network: not a reality but an ineffective patchwork. ECA Special Report. <https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=46398>

Eurostat (2020). Air passenger transport between the main airports (data sets: avia_par_fr; avia_par_pl; avia_par_de; avia_par_es; avia_par_b). <https://ec.europa.eu/eurostat/web/main/home>

Independent Regulator's Group (IRG) (2020). 8th IRG-Rail Market Monitoring Report. <https://irg-rail.eu/irg/documents/market-monitoring>

International Railway Journal (2020). Spain urged to rebalance high-speed and suburban rail development. 7 August 2020. <https://www.railjournal.com/passenger/high-speed/spain-urged-to-rebalance-high-speed-and-suburban-rail-investment/>

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