

Special Report

EU transport infrastructures: more speed needed in megaproject implementation to deliver network effects on time



EUROPEAN
COURT
OF AUDITORS

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Executive summary

I EU co-funded transport megaprojects are large projects with a cross-border dimension. We call these “Transport Flagship Infrastructures” (TFIs) in this report. They are key links relevant for the completion of the EU transport network. TFIs cost more than €1 billion each and are expected to deliver a socio-economic benefit.

Since 2013, the EU’s plan has been to have the EU core transport network ready by 2030. The Treaty gives Member States responsibility for implementing projects in the transport network. The EU is contributing to the development of the trans-European network by identifying and supporting projects of common interest.

EU support for different elements of the TFIs assists the Member States in achieving these objectives while also creating EU added value.

II We assessed whether the European Commission has ensured that EU co-funded cross-border TFIs on the EU core transport network are well planned and efficient. To do so, we analysed whether the Commission has ensured that processes applied in Member States for delivering TFIs will lead to completed and operational core network corridors by 2030; whether the planning of TFIs is of good quality, robust and transparent; whether the implementation of TFIs is efficient; and whether the Commission’s supervision of EU co-funded investments in actions which are part of TFIs is adequate.

III We selected eight TFIs with cross-border impact on seven out of nine core network corridors. The audit involved 13 Member States and covered road and rail infrastructure, inland waterways, and combinations of rail and road, and maritime and rail infrastructure. Their total cost was €54.0 billion; the amount of EU co-funding allocated to the eight selected TFIs has been €7.5 billion to date, of which €3.4 billion have already been disbursed. We also audited 17 underlying actions which are part of these TFIs.

IV Overall, we have made the following observations.

- o It is likely that six of the eight TFIs analysed will not be able to operate at full capacity by 2030, including access lines, as planned in 2013. Since the TFIs and their access lines are key links in the core network corridors, it is therefore also unlikely that the connectivity of the EU core transport network will reach its full capacity by 2030, which implies that neither the EU transport network nor the expected network effects will be delivered by that time. Moreover, not all rail TFIs will be compliant with the minimum requirements of the TEN-T Regulation for rail freight by 2030.

Member States have different national priorities, which may or may not coincide with investments required on EU transnational corridors. Member States also have different procedures for carrying out works and different speeds of implementation. Support for and opposition to TFIs varies greatly and political priorities can change over time. The Commission is responsible for the sound financial management of the EU co-funding to support the construction of TFIs. To oversee the timely completion of the network by the Member States, the Commission has limited legal tools to enforce set EU priorities. However, it has not yet used those tools, apart from a few implementing acts, even where it is already known that certain corridors are unlikely to operate at full capacity by 2030. The delays in the construction and putting into operation of the TFIs put at risk the effective functioning of five of the nine TEN-T corridors.

- o We found that the planning of some key elements of the eight TFIs we looked at needs improvement and that there was a risk that traffic forecasts were over-optimistic. Half of the forecasts were not coordinated well. For the Lyon-Turin and Seine-Scheldt TFIs, previous freight traffic forecasts are much higher than current traffic levels. For the Brenner Base Tunnel, the three Member States have not yet performed a harmonised traffic study, and they have questioned each other's figures and methods, while the Commission did not perform its own independent needs analysis.

Cost-benefit analyses are carried out for constituent parts of TFIs. However, for all eight TFIs in our sample, none of these cost-benefit analyses were used properly as a decision-making tool for whole TFIs. There was no cost-benefit analysis covering all of the proposed work for an overall TFI before providing EU co-funding. In terms of stakeholder involvement, we found some good practices, but also cases where stakeholders could have been better included. The Commission is not visible enough in this process to promote the EU added value of TFIs.

- The implementation of TFIs is not efficient. The average construction time of the eight selected TFIs is 15 years. The practice of co-funding smaller parts of TFIs in artificial competition with other projects that are not part of a TFI leads to duplication of efforts, is inefficient, and risks a loss of oversight, while there are no competence centres within the Commission for steering and guiding project promoters so as to increase the efficiency and effectiveness of EU co-funding for TFIs.

Across all eight TFIs, changes in design and scope over time have to date led to cost increases of €17.3 billion (or 47 %) compared to initial cost estimates. There are also high levels of bureaucracy. For the 582 km long A1 motorway in Romania, a building permit is needed for each 7 km of motorway, and an environmental authorisation for each 26 km.

There have been very long delays: for the main parts of the TFIs, without taking into account the time needed for their connecting infrastructure, the average delay in entering into operation has been 11 years. This has significant consequences for safety, and puts the efficiency of EU co-funding at risk. We also noted that €1.4 billion of EU co-funding had already been withdrawn compared to the original allocations for 17 audited actions.

- The Commission's oversight of the completion of the core network corridors by the Member States is distant. To oversee progress, it uses an information system to coordinate and support the policy, and relies on the help of the European Coordinators, who have few resources and limited powers to allow them to perform effective supervision. Under shared management, where the primary responsibility for implementation lies with the relevant Managing Authority, we found cases of suboptimal use of EU money totalling €12.4 million and waste of €3.7 million of EU co-funding on the A1 motorway in Romania.

The Commission still links EU co-funding for projects exclusively to outputs. It does not collect information on the results and the degree of success of investments at TFI level (i.e. whether and when the TFI will achieve its expected results). There are no specific data collection procedures to independently assess whether construction specifications are appropriate for potential traffic levels on the TFIs before EU co-funding is committed. For Rail Baltica, our analysis suggests that for the mixed high-speed rail line, economic sustainability may be at risk, even for the full connection up to Warsaw. For the Fehmarn Belt fixed link, the Commission did not critically assess the very high cost of the German access line for the proposed high-speed rail line between Copenhagen and Hamburg, which may lead to cost per km of up to €46 million. All this significantly reduces the cost-effectiveness of

this upgraded access line. The part of this rail line that passes the Fehmarn Belt fixed link will be used by only 1 million passengers each year in each direction, which is far too few to be economically sustainable.

The Commission has recently started to use implementing decisions. These are a step forward to closer Commission oversight of the completion of core network corridors by the Member States, through the delivery of TFIs. However, these decisions do not yet include clear rules on the responsibility of all parties, including the Commission; they also have weaknesses in terms of tackling all critical issues, do not consider the anticipated results, and do not require an *ex post* evaluation in order to learn from past experiences.

V To support sound financial management when providing EU co-funding to TFIs, we recommend that the Commission should:

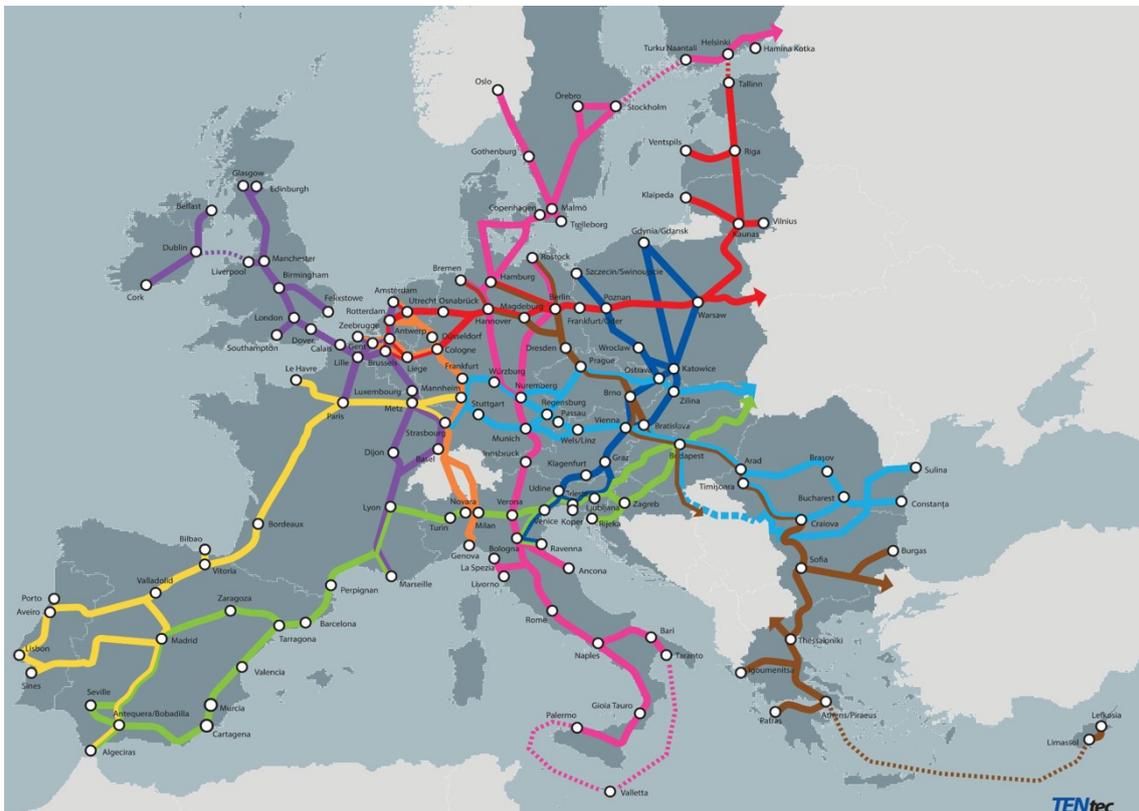
- (a) revise and apply the current tools to enforce the long-term planning;
- (b) require better analysis before deciding to provide EU co-funding for megaprojects (similar to TFIs);
- (c) strengthen its management practices in relation to EU co-funding for actions that are part of megaprojects (similar to TFIs) and
- (d) further develop the implementing decision tool by proposing such a decision for each cross-border TFI and strengthen the role of European Coordinators.

Introduction

Trans-European Networks for Transport: building a core network by 2030

01 The EU's Common Transport Policy, set out in the Treaty of Rome (1957), was established to create a common transport area across Europe. Since 2013, the priority operational objective is to build a “core network” by 2030, and a “comprehensive network” by 2050. Within the core network, there are nine corridors (see *Picture 1*); each one covers several modes of transport.

Picture 1 – The TEN-T core network corridors



Source: DG MOVE website : https://ec.europa.eu/transport/themes/infrastructure/ten-t_en.

02 According to the Treaty on the Functioning of the European Union¹, the Member States bear responsibility for implementing projects in the network. The way in which they do so is governed by the 2013 TEN-T Regulation². This Regulation confirms that decision-making on specific projects remains the responsibility of Member States. The role of the European Union is to contribute to the development of the trans-European network for transport by establishing guidelines; identifying and supporting projects of common interest; and implementing measures to ensure interoperability³. Such guidelines and projects require the approval of each Member State concerned. The role of the European Commission is to ensure that Member States implement the core network corridors on time.

03 The transnational corridors need to be completed as a matter of the highest priority. A 2015 study⁴, financed by the Commission to demonstrate the impact of completing the network, indicated that if the Member States and other stakeholders failed to implement it as the central element of the new TEN-T policy, the EU economy would forfeit potential growth of 1.8 %, and 10 million man-years of jobs would not materialise.

¹ Title XVI, Articles 170 to 172 of the Consolidated version of the Treaty on the Functioning of the European Union; OJ C 202/47 of 07.06.2016.

² Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU, OJ L 348, 20.12.2013, pp. 1-128.

³ "Interoperability" means the ability, including all the regulatory, technical and operational conditions, of the infrastructure in a transport mode to allow safe and uninterrupted traffic flows which achieve the required levels of performance for that infrastructure or mode.

⁴ Fraunhofer ISI, "Cost of non-completion of the TEN-T", Final Report, 15.06.2015.

Management and funding of TFIs at EU level

04 At EU level, responsibility for devising and implementing transport policy lies with the Commission; more particularly, with its Directorate-General for Mobility and Transport (DG MOVE). The Commission and the Member States are jointly responsible for ensuring that the core network corridors deliver their expected results. The Commission also may adjust supervision processes related to the management of EU co-funding towards TFIs to maximise the effectiveness of the core network corridors. The Commission is responsible for supervising the correct implementation of EU co-funded programmes, including EU support for TFIs (transport megaprojects with total costs of more than €1 billion).

05 Under shared management, a system under which responsibility for spending the budget is shared with the Member States, the Commission establishes guidelines for planning operational programmes (OP), and negotiates, approves and monitors the implementation of the OPs proposed by the Member States. The Directorate General for Regional and Urban Policy (DG REGIO) supports transport projects through the European Regional Development Fund (ERDF) and the Cohesion Fund (CF) and bears overall responsibility for the proper use of funds. At national or regional level, a managing authority is responsible for managing OPs, including project selection, monitoring and reporting on project implementation. Nevertheless, under the current legal framework, the European Commission is responsible for approving the EU's contribution to transport projects with a total eligible cost higher than €75 million (major projects).

06 In direct management, applications for EU co-funding are made through the Connecting Europe Facility (CEF) programme in response to periodic calls for proposals. These are evaluated by the Commission with the support of its Innovation and Networks Executive Agency (INEA), according to funding conditions and eligibility, selection and award criteria announced in the calls.

Audit scope and approach

07 The idea for an audit on transport infrastructure megaprojects was initially developed in the ECA. The importance of this topic was underlined by a request in 2017 from the European Parliament’s Conference of Committee Chairs for the ECA to perform an audit of investments in large transport projects (megaprojects of over €1 billion)⁵. The Commission already referred to such projects as being large projects with a cross-border dimension⁶.

For the purposes of this report, “transport flagship infrastructures” (TFIs) are any EU co-funded transport infrastructure with an estimated total cost of over €1 billion. For the selection of the audit sample, we also added the following characteristics:

- allocated or paid a significant amount of EU co-funding (we did not set a quantitative threshold);
- relevant for the completion of the transport network in the EU (in particular with regard to cross-border links);
- expected to deliver a transformational socio-economic impact.

08 We assessed whether the European Commission has ensured that TFIs are well planned and efficient. We analysed whether:

- (a) the Commission is ensuring that Member States’ processes for delivering TFIs will lead to completed and operational core network corridors by 2030;
- (b) the planning of TFIs is robust and transparent;
- (c) implementation of TFIs is efficient; and
- (d) the Commission’s supervision of EU co-funded investments in TFIs is adequate.

⁵ “To examine those projects under the aspects of cost/benefit, transparency, and to make a comparison between cost estimates at the start of the projects vis-à-vis actual costs at completion”.

⁶ COM (2016) 359 final of 01.06.2016 “Europe investing again – Taking stock of the investment plan for Europe and next steps”.

09 This audit task is particularly relevant and timely for a number of reasons. Previous ECA reports⁷ have already referred to the urgent need for revision of the TEN-T Regulation to make it more realistic. Alongside the shift towards low-carbon transport modes, TFIs are intended to address key missing links impeding the completion of the core network corridors.

10 We selected a sample of eight TFIs involving 13 Member States and included several kinds of transport infrastructure, but as rail and inland waterways are considered to be of vital importance for supporting the shift to low-carbon mobility, we focused more on those types of cross-border investments. *Annex I* to this report includes a short description of the selected TFIs. *Annex II* and *Annex III* provide key performance indicators on the evolution of costs and timelines for these TFIs.

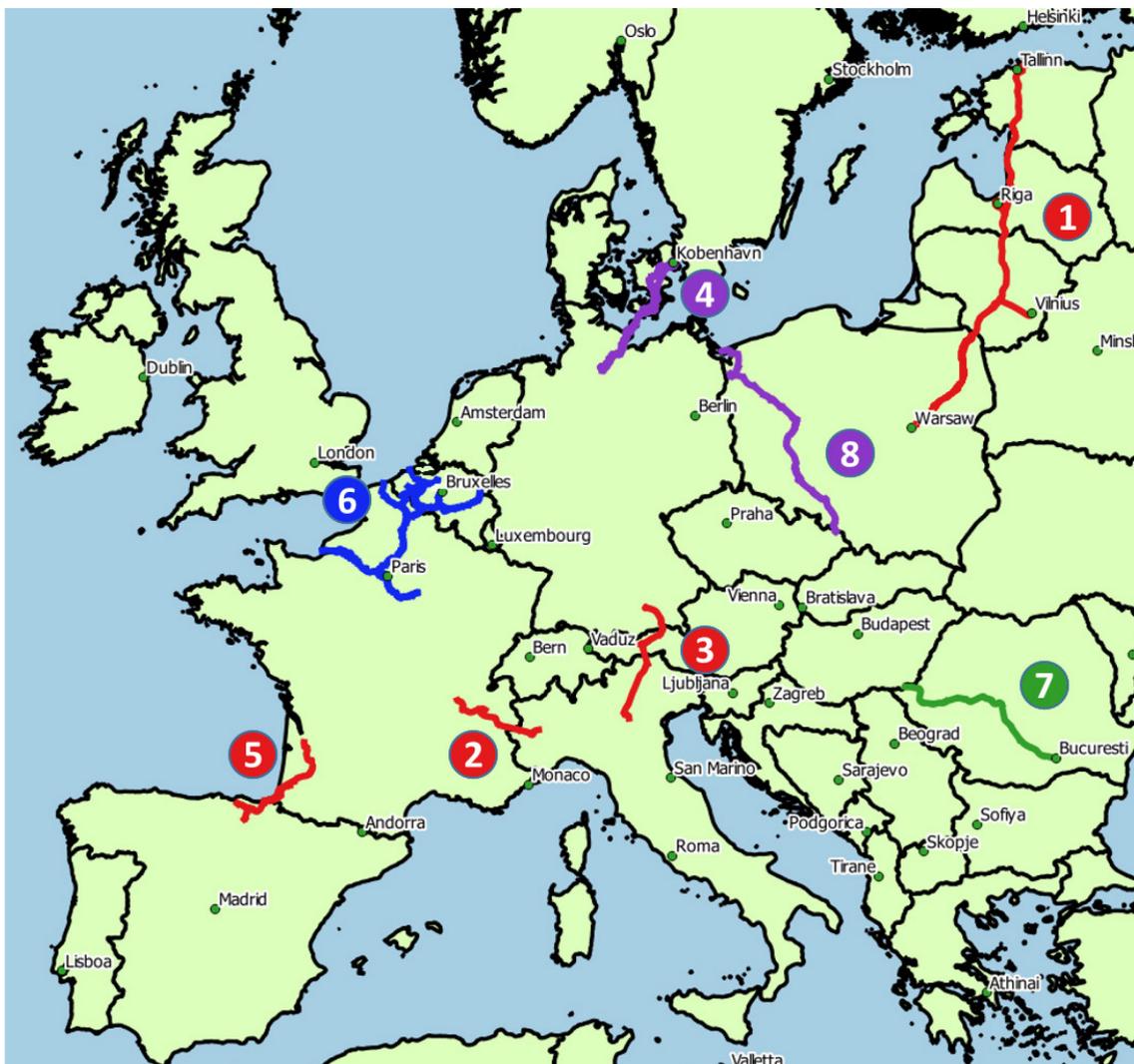
⁷ For example, recommendation 1 of the ECA special report 23/2016 (“Maritime transport in the EU: in troubled waters – much ineffective and unsustainable investment”) and recommendation 1 of the ECA special report 19/2018 on High Speed Rail (“A European high-speed rail network: not a reality but an ineffective patchwork”).

11 We audited the Commission's involvement in the planning, implementation and supervision of the EU co-funding of the following eight TFIs (see [Picture 2](#)):

- (1) **Rail Baltica**: a rail line connecting Estonia, Latvia and Lithuania to Poland and enabling a link to Finland (on the North Sea Baltic corridor);
- (2) the **Lyon-Turin link**: a cross-border rail link connecting France and Italy (on the Mediterranean corridor);
- (3) the **Brenner Base Tunnel**: a cross-border rail link connecting Austria and Italy (on the Scandinavian-Mediterranean corridor);
- (4) the **Fehmarn Belt fixed link**: a rail/road connection between Denmark and Germany (on the Scandinavian-Mediterranean corridor);
- (5) the **Basque Y and its connection with France**: a high-speed rail connection linking up Vitoria in Spain to Bordeaux in France (on the Atlantic corridor);
- (6) the **Seine-Scheldt link**: originally an inland waterway link between the rivers Seine and Scheldt, evolving into an inland waterway network in France and Belgium (on the North Sea Mediterranean and Atlantic corridors);
- (7) the **A1 motorway** in Romania (on the Rhine-Danube corridor);
- (8) the **E59 railway line** in Poland and its connection to the ports of **Szczecin and Swinoujście** (on the Baltic-Adriatic corridor).

To assess the sound financial management of the investments, we also analysed the additional ancillary infrastructure that needs to be completed before the TFI can be considered to be operating at full capacity. For example, we analysed the Munich-Verona stretch to assess whether the Brenner Base Tunnel, once operational, would be fully integrated as planned to improve the situation on the Scandinavian-Mediterranean corridor for both freight and passenger traffic.

Picture 2 – Overview of the TFIs selected for audit



Source: ECA. TFIs are coloured in the map according to the respective mode of transport. Red: rail; blue: inland waterway; green: road; purple: more than one mode of transport.

12 The eight TFIs in our sample are on seven of the nine core network corridors⁸. Four of the six TFIs in our sample benefiting from directly managed EU co-funding are on the list of 30 priority projects approved in 2004 by the European Parliament and the Council. This concerns the Brenner axis (Munich-Verona) rail link and the Lyon-Turin high-speed rail link, which appeared on the 1994 list, while the updated 2004 list also included the Fehmarn Belt fixed link and the Seine-Scheldt inland waterway connection. These TFIs were thus scheduled for completion by 2020. As all these TFIs are situated on the core network, their current deadline for completion is now 2030.

⁸ We did not audit infrastructures on the Orient East Mediterranean and the Rhine Alpine corridors.

13 At the time of the audit, the total estimated cost of the selected TFIs was €54.0 billion; the amount of EU co-funding allocated is €7.5 billion, and the amount already disbursed is €3.4 billion. *Table 1* gives an overview, based on the situation in 2019. While this amount of EU co-funding is significant, it is still relatively limited compared to total costs. However, with the current funding rate for the CEF and the Commission’s proposal for CEF 2, the maximum EU co-funding rate in direct management may be as high as 85 % of eligible costs when specific conditions are met (e.g. joint cross-border implementation, cohesion countries and enough funding availability). Under shared management, the maximum co-funding rate in this and previous multi-annual financing periods was 85 % of the total eligible costs, while for the next multiannual financial period a maximum co-funding rate of 70 % has been proposed (however, this rate may apply to a larger portion of the total costs).

Table 1 – Overview of the cost of the selected TFIs (in million euros)

TFI	Total estimated cost (in 2019 values)	Total EU support allocated at the time of the audit	Total EU support paid at the time of the audit
Rail Baltica	7 000*	789	80
Lyon-Turin rail link	9 630	1 224	621
Brenner Base Tunnel**	8 492	1 583	846
Fehmarn Belt fixed link	7 711	794	186
Basque Y and its connection with France	6 500	576	98
Seine-Scheldt link***	4 969	318	79
A1 motorway****	7 324	995	995
E59 railway line*****	2 160	1 175	453
TOTAL	53 972	7 454	3 358

* Costs include the provisions for risks of future cost increases as identified by the auditors. The official costs are stated to be €5.8 billion so far.

** The cost estimation including pre-valorised inflation amounts and risks until the expected end of the construction is €9.301 billion.

*** Figures refer to the main component of the Seine-Scheldt link (the Canal Seine Nord Europe) only.

**** Costs excluding the Bucharest-Pitesti section, for which no relevant cost evidence has been provided.

***** Costs excluding Świnoujście-Szczecin and Kędzierzyn Koźle-Chałupki sections.

Source: ECA.

14 Each TFI is made up of a number of constituent parts. For example, a high-speed rail line cannot be built in one go; instead, it will be split into individual sections which will be built as soon as all underlying project preparations are ready. For clarity, we refer to these underlying projects as “actions” in this report. Alongside the TFIs themselves, we also separately assessed 17 of these actions, all of which were part of the eight selected TFIs. We selected those actions that received the greatest amount of EU co-funding in the 2007-2013 and the 2014-2020 programme periods. Their estimated total cost is €12.1 billion; the amount of EU co-funding allocated to them is €5.9 billion, of which €1.9 billion has been disbursed already. This funding is a part of the overall amount of EU co-funding given in the previous paragraph. See [Annex IV](#).

15 We obtained our evidence from a number of sources. We carried out an in-depth analysis of the EU, national and regional long-term strategic transport development plans which were relevant to each TFI. We held evidence-gathering meetings with Commission staff, with European Coordinators, with representatives of Member States, regional and local authorities, and project promoters. We also obtained external support from experts in cost-benefit analysis and environmental evaluation, and we ran a series of analyses to assess the potential use of the TFIs to transport passengers and freight, according to a methodology which relies on Eurostat data and their visualisation tools.

Observations

The core network is unlikely to operate at full capacity by 2030, and the Commission has limited tools to ensure this

It is likely that six of the eight selected TFIs, with their connecting infrastructure, will not be able to operate at full capacity by 2030

16 Transport megaprojects, which we call “TFIs” in this report, are crucial for addressing bottlenecks and eliminating missing links on the EU core network corridors. Their completion will improve the EU’s connectivity and contribute to delivering the full benefits deriving from a well-functioning network. Even if corridors will not operate at full capacity by 2030, for example because of construction delays either on the TFIs or on their ancillary infrastructure, there may already be some positive effects from their ongoing implementation.

EU support for different elements of the TFIs assist the Member States in achieving these objectives while also creating EU added value.

TFIs are often large projects. Both this, and the fact that they often cross-border or have an impact across borders, renders their technical and financial planning and implementation particularly complex.

We examined how likely the eight TFIs in our sample are to deliver their full expected benefits by the 2030 deadline for completing the core network with common technical standards, as provided for in the TEN-T Regulation. To do so, we made a risk assessment, which included both the likelihood of delays in delivering the TFIs and the impact that such delays may have, if and when they occur, on the completion of the network.

We firstly assessed the state of progress of the eight selected TFIs themselves.

- For three of them, it is very unlikely that they will be ready by 2030 as planned in the TEN-T Regulation. These are the 297 km of line connecting the Basque Y to the French rail network; the A1 motorway in Romania; and the E59 railway in Poland. This is because they take a long time to build, and the works for certain sections have not even been planned yet.
- One other TFI (the Lyon-Turin link) is also unlikely to be ready by 2030 as currently planned, because the current deadline for completion is December 2029, which

leaves only a small margin for potential delays, while the EU co-funded action for this TFI was already affected by implementation delays after the completion deadline was set.

- The construction of the four other TFIs (Rail Baltica, the Fehmarn Belt link, the Brenner Base Tunnel and the Canal Seine Nord Europe, the main part of the Seine-Scheldt link) is currently likely to be completed ahead of 2030, with small buffers to accommodate potential further delays. The construction on Spanish territory of the Basque Y high-speed rail line (without the connection with France) also falls into this category. In the case of Rail Baltica, recent reports by the National Supreme Audit Institutions of the Baltic Countries have already highlighted risks of implementation delays, which may negatively impact the entry into operation of the TFI. Latvia's National Audit Office has highlighted risks of delays of between one and four years due to among other things, a late start and bureaucratic national procedures related to land expropriation. Similarly, for the Brenner Base Tunnel, the Austrian Court of Audit has indicated a potential delay of two more years, which would mean the Tunnel not entering into service before 2030.

17 However, this assessment applies only to the main infrastructure itself. Additional ancillary infrastructure also needs to be completed before the main infrastructure can be considered able to operate at full capacity and deliver its full network effects. We assessed the current state of planning of the connecting infrastructure, such as access lines connecting to existing conventional rail networks, multimodal terminals to support inland waterway and rail freight transport, and connections to the existing road network. Taking into account the time needed to complete transport infrastructures, we consider it unlikely that six of the eight TFIs will be operating at full capacity by the 2030 deadline set out in the TEN-T Regulation. For example, for the Brenner Base Tunnel (BBT), the German section of the northern access lines may only be able to operate at full capacity between 2040 and 2050 (the need for a new infrastructure is still being debated). Similarly, for the Lyon-Turin link, the strategy currently in force in France sets 2023 as a deadline for completing the planning of the national access lines, meaning the network benefits from the TFI will not materialise in full until after 2030.

18 Because these eight TFIs are key missing links, the delays in their construction and operation put at risk the effective functioning of five out of nine TEN-T corridors as originally planned. This means that the connectivity of the EU core transport network is unlikely to reach its full capacity by 2030, which implies that neither the EU transport network nor the expected network effects will be delivered by that time. See [Box 1](#) for an example.

Box 1 - A missing link hampering the corridor and the network

The alternative routes for traffic to and from the Iberian peninsula are currently insufficient to move freight via rail: the existing conventional line up to Bordeaux is too low in capacity and needs upgrading; the connection to the rest of the Spanish high-speed rail network (via Burgos) is unlikely to be finished by 2030 (the Burgos-Vitoria stretch is currently still in the study phase).

Even though the importance of the cross-border infrastructure from Vitoria (Spain) to Dax (France) has been reaffirmed by two French-Spanish summits (in November 2013 and June 2014), planning work on the French part of it (the “Grand Projet du Sud-Ouest”, or GPSO), which has been under discussion since the 1990s, will not begin before 2037 as the current government prioritises works on existing infrastructure over building new infrastructure. The Commission and the European Coordinator have made efforts to achieve an upgrade to the existing conventional line. However, from a corridor perspective, even after the works on the Basque Y on Spanish territory are completed (the latest official deadline is 2023), the agreed high-speed connection to France will not be in place for a very long time to come.

The Eastern Pyrenees crossing (between Perpignan and Figueiras) also faced operational problems: the project promoter filed for bankruptcy, as it had taken 22 months to put the line into operation once the works had been completed and as there were much fewer trains than originally expected. A joint venture of the Spanish and French infrastructure managers took over the exploitation of this line and the maintenance works to continue the limited rail service⁹.

This means that, for at least another two decades, freight going from or to the Iberian peninsula will largely continue to either use maritime transport or take the land route by road (which may hamper the reduction of carbon emissions in transport).

⁹ We reported on this during the high-speed rail audit: see paragraphs 58 and 81 of the ECA special report 19/2018 on High Speed Rail (“A European high-speed rail network: not a reality but an ineffective patchwork”).

19 For the railway TFIs in our sample, we also assessed whether, at the very least, the minimum requirements of the TEN-T Regulation for rail freight lines would be in place by 2030. These requirements are: (a) full electrification of the line tracks; (b) at least 22.5 tonnes axle load, 100 km/h line speed for trains of a length of 740 m on track gauge of 1 435 mm; and (c) deployment of the European Rail Traffic Management System (ERTMS). For Rail Baltica and three parts of three other TFIs (the Basque Y in Spain, the Fehmarn Belt in Denmark, and the Brenner Base Tunnel in Austria), it is likely that the rail lines will fulfil the conditions of the Regulation. Based on the information currently available, the German access lines for the Fehmarn Belt, the Italian access lines for the Munich-Verona connection and the E59 in Poland are unlikely to be fully compliant by 2030. *Table 2* shows the results of our analysis of the state of progress of the selected TFIs.

Table 2 – ECA assessment of state of progress of the selected TFIs

No.	Transport Flagship Infrastructure	Country	TFI itself operational by 2030?	TFI, including connecting infrastructure, operating at full capacity by 2030?	TEN-T requirements fulfilled by 2030 by the TFI and connecting infrastructure?
1	Rail Baltica	EE, LT, LV	Green	Yellow	Green
2	Lyon - Turin	FR	Yellow	Red	Yellow
		IT	Yellow	Red	Yellow
3	Brenner Base Tunnel	AT	Green	Red	Green
		DE	access lines only	Red	Yellow
4	Fehmarn Belt fixed link	IT	Green	Red	Red
		DE	Green	Red	Red
5	Basque Y / GPSO	DK	Green	Red	Green
		ES	Green	Red	Green
6	Canal Seine Nord Europe	FR	Red	Red	Yellow
7	A1 Motorway	FR	Red	Red	non-rail TFI
8	E59 railway line	RO	Red	Red	non-rail TFI
	Legend:		Low risk		
			Medium risk		
			High risk		

Source: ECA assessment.

The Commission has not yet used all of its limited legal tools to react

20 The EU's long-term transport network plan has been introduced through Commission White Papers¹⁰ and the TEN-T Regulation. The timely establishment and good functioning of the core network corridors are critical to the achievement of the EU's policy goals, and support the EU's wider priorities of stimulating growth and jobs and tackling climate change.

21 Commission White Papers are not binding on Member States, which have their own national priorities. And the TEN-T Regulation, although legally binding, contains provisions which allow Member States to diverge from the plan to be achieved by the 2030 deadline. The national priorities may or may not include investments required on EU trans-national corridors. For example, France's planning does not adhere to the 2030 deadline agreed in the Regulation (see [Box 1](#)). Germany's current infrastructure planning policy gives no specific priority to investments on core network corridors.

22 Although most TFIs are key missing links necessary to complete the EU's core network corridors, or to resolve problematic bottlenecks, the legislator has given no role to the Commission either in the needs-assessment processes or in decision-making, as far as individual projects are concerned.

23 The Member States also have different procedures for carrying out works (e.g. national rules for calls for tender and issuing permits). We also noted the following: the speed of implementation varies between Member States; support for and opposition to TFIs varies greatly; political priorities can change over time; and cross-border TFIs are not always equally supported by all Member States involved. This negatively impacts the implementation of key links in the network. For example, the Fehmarn Belt fixed link is an 18 km rail-road tunnel, part of a planned "Nordic triangle" uniting the Scandinavian Peninsula with the rest of continental Europe (see [Picture 3](#)). Both Denmark and Germany are financing, designing and building their rail access lines, while Denmark is also responsible for financing, designing and constructing the tunnel. The State Treaty signed by Germany and Denmark limits Germany's spending responsibility to financing the access lines on German territory. The fixed link is therefore a Danish project, and it does not appear in Germany's national infrastructure planning documents.

¹⁰ The future development of the common transport policy, [COM\(1992\)0494](#), 2.12.1992; European Transport Policy for 2010: Time to decide ([COM\(2001\)0370](#)), 12.9.2001; Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system ([COM\(2011\)0144](#)), 28 March 2011.

Picture 3 – The “Nordic triangle” of fixed links: Øresund bridge, Great Belt Bridge and Fehmarn Belt tunnel



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24 The Commission has limited powers to speed up the process and has recognised that national priority-setting does not favour cross-border constructions¹¹. The ECA also drew attention to this in 2018¹². But while the EU’s transport infrastructure policy is governed by Regulations, which have binding legal force, the Commission has no legal power to enforce EU priorities at Member State level¹³.

¹¹ Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the mid-term evaluation of the Connecting Europe Facility (CEF), SWD(2018) 44 final, COM(2018) 66 final of 14.2.2018. “National budgets will never give sufficiently high priority to multi-country, cross-border investments to equip the Single Market with the infrastructure it needs”.

¹² We informed on the GPSO issue in the HSR special report 19/2018 (Box 3, point 2).

¹³ See also the ECA special report 19/2018 (“A European high-speed rail network: not a reality but an ineffective patchwork”) paragraph 26.

25 The Commission nevertheless has an overall responsibility to ensure that Member States complete the core network corridors by 2030, so that they deliver their expected results in good time. To do so, beyond its facilitation tools (such as the work done by European Coordinators) and its responsibility to supervise EU co-funding to ensure sound financial management, the Commission has limited legal tools to enforce the delivery of the network by 2030. According to Article 56 of the TEN-T Regulation, the Commission may ask for reasons if there are significant delays in starting or completing work on the core network, and it must consult the Member States concerned to solve the problem causing the delay. It can also launch infringement procedures and it may adopt implementing acts (see paragraph [75](#)).

26 While the selected TFIs are highly suitable for the application of the Article 56 procedure (as they are key missing cross-border links needed to complete the network by 2030), the Commission has not yet taken any such formal action to induce the Member States to plan and implement these infrastructures more quickly. This is because it claims that it is premature to do so. It considers that the 2030 deadline is still a long way away. We do not share this optimistic view, given the time it takes to plan, build and operate such infrastructures.

The planning process for these multi-billion euro investments needs improvement

Traffic forecasts have a risk of being overly optimistic and half of them are not well coordinated

27 The quality of the traffic figures on cross-border infrastructure is limited, and particularly susceptible to over-optimistic forecasting. Traffic forecasts had not always been based on sound market-based assessments; nor had they been built on robust economic development scenarios. Instead, some forecasts were very simplistic, with growth rates remaining constant over time. They were not always updated, and were usually not revised to take into account delays occurring in the meantime.

28 Current traffic figures often differ significantly from those previously forecast. If current and future modal shift initiatives to accompany the operations on these TFIs do not deliver their expected results, future traffic figures may fall significantly short of these traffic predictions, which may thus prove to be overoptimistic. [Box 2](#) has some examples.

Box 2 - Significant differences between actual and forecast traffic levels

- (1) On the Lyon-Turin rail link, the latest Alpine Observatory data (2017) indicates that less than 3 million tonnes are transported on the existing conventional line each year. However, the most recent traffic forecast for 2035 is 24 million tonnes, or eight times the current traffic flow. This significant difference may be explained by the inadequacy of the existing conventional line and the fact that traffic can use other Alpine passes. Once the link is completed, a part of the current total traffic of 44 million tonnes (road and rail traffic combined) between France and Italy could potentially be shifted onto the new link. However, for such a shift to materialise, accompanying conditions will need to be met: resolving bottlenecks and building missing links at corridor level, and promoting multimodal traffic conditions to ensure seamless and interoperable railway traffic.
- (2) The Seine-Scheldt inland waterway link was approved on the basis that traffic levels on the Canal Seine Nord Europe by 2060 would be four times as high as the reference situation in 2030 without the Canal. To achieve this a significant increase in freight volumes on the axis across France and Europe is necessary. However, the statistics from the last decade do not suggest that this will occur¹⁴. In addition, two specific conditions are necessary, none of which seem particularly realistic in the light of industrial trends over time:
- a fourfold increase – from 2.3 million tonnes per year to 8.1 million tonnes per year – in traditional flows of construction materials moved by inland waterways using the Canal Seine Nord Europe over the 30 years following entry into service. For such a significant modal shift to come about, various accompanying conditions (e.g. tolling) would need to be put in place.
 - a massive diversion of containerised road traffic to waterways, resulting in 36 % of freight on the entire traffic axis being shifted onto the waterway. This would require the current proportion of freight carried by waterway on that axis to be multiplied by 38, or the share of container traffic volumes to be three times as high as it currently is for the entire Rhine river.

¹⁴ Pastori E, Brambilla M, Maffii S, Vergnani R, Gualandi E, Skinner I, 2018, Research for TRAN Committee – Modal shift in European transport: a way forward, European Parliament, Policy Department for Structural and Cohesion Policies, Brussels.

29 For traffic forecasts to be realised, infrastructural measures alone are not enough. Accompanying conditions to change user behaviour are also needed to ensure that the full benefits of a network materialise. Modal shift initiatives are currently hampered by a lack of interoperability and the absence of adequate and coordinated soft policies, such as road tariffs, environmental regulations, or “cross-financing”¹⁵. The Commission therefore proposed a new revision of the Eurovignette Directive, but this has not yet been adopted. For example, on the Munich-Verona connection, only Austria uses cross-financing from road to rail. Despite the European Coordinator’s efforts to make further progress in this field, Italy and Germany still do not use cross-financing, even though they committed to start doing so as long ago as 2009¹⁶.

30 In addition to the risk of overoptimism, traffic forecasts are, in half of the cases assessed, also poorly coordinated, even where the infrastructure crosses a border. In four out of eight selected TFIs¹⁷, the traffic forecasts were not coordinated between all entities across the borders. The forecasts also differed significantly, as they had been performed in different years, and considered different time frames, growth rates and capacity limits. **Box 3** has an example.

¹⁵ Cross-financing is a mechanism to stimulate more environmentally friendly modes of transport by subsidising them using revenue collected from other, less greener ones, through a carbon tax or congestion charge.

¹⁶ Memorandum of Understanding 2009, also signed by Bavaria, Tyrol, Autonomous province of Bolzano, Trento, Verona; railway companies (RFI, ÖBB, DB).

¹⁷ Brenner Base Tunnel, Basque Y and A1 Motorway and E59 Poland.

Box 3 - Traffic forecasts for the Brenner Base Tunnel

On the Munich-Verona stretch, which includes the Brenner Base Tunnel, the project partners (Austria, Germany and Italy, and their regions, as well as the EU) have not yet managed to complete a harmonised traffic study using consistent figures and methods. Since 1994, the three Member States have used various approaches, techniques and calculation methods to forecast freight and passenger rail and road traffic. They are currently trying to establish harmonised freight and passenger traffic forecasts, to be completed in 2020. Separate traffic studies have also been drawn up by regions (such as Tyrol).

The Member States have also questioned each other's methods. Austria has questioned Germany's traffic forecasting method used on one stretch, while Germany does not recognise Austria's data pertaining to its own section. A "scenario study" was undertaken by Germany and presented in early 2019, concluding that a four-track high-speed rail line would certainly be required in the long term. On top of that, Germany recently carried out a traffic study assessing an alternative with just an upgraded conventional (160 km/h) two-track line. This study concluded that this would not be a viable option. However, those exercises were not coordinated with the other Member States, who are building a tunnel for a 250 km/h high-speed rail line.

Beyond these national and regional differences, and even though EU co-funding has already been provided since 1986, the Commission has not produced an analysis of the potential traffic flows or collected specific data to support such an assessment.

Weaknesses in the cost-benefit analysis process affect the quality of decision-making

31 Cost-benefit analyses are tools used to improve the quality of decision-making. However, their effectiveness is highly dependent on the robustness of the methodology used and the values assigned to certain parameters. This can lead to significant differences in conclusions on the merits of a proposed piece of infrastructure. **Box 4** provides examples of such findings with regard to cost-benefit analyses.

Box 4 - Examples of findings concerning cost-benefit analyses

- (1) The current estimations for the access lines of the Fehmarn Belt do not take into account the modernisation of the Fehmarnsund bridge or additional regional noise-protection measures going beyond legal requirements. These new benefits and costs, unaccounted for in the initial decision-making, could bring the benefit-to-cost ratio down to below 1 (meaning that the costs for society are higher than the benefits). This would mean that the TFI could not lawfully continue to receive public funding in Germany (unless the German Parliament agreed to grant it a specific exemption).
- (2) After seven earlier joint cost-benefit analyses with positive outcomes on the Lyon-Turin link (e.g. between €12 billion and €15 billion in 2010), the Italian Ministry of Infrastructure re-assessed its merits in 2018. This re-assessment was never validated by France, and the Commission was not consulted. The re-assessment concluded that, on the basis of a new socio-economic analysis, the net present value of the investment fell somewhere between €-6.1 billion and €-6.9 billion, meaning that, again, the costs for society would be much higher than the benefits deriving from the construction. Several counter-analyses have been drawn up since then. These highlighted weaknesses in the methodology used for the previous analysis, and arrived at different figures in most cases.
- (3) Three different cost-benefit analyses were drawn up for Rail Baltica. Each of them contained a new traffic forecast based on a different methodology that was not always transparent. These changes make comparison between the studies complicated and have led opponents to criticise the project's level of estimated societal benefit. This could give external stakeholders the impression that the forecasts supporting the assessment of real needs for a TFI are unreliable.
- (4) Although the Brenner Base Tunnel, with total cost of €9.30 billion, has so far received around €1.58 billion of EU co-funding, neither Austria, Italy, Germany nor the EU has ever performed an overall strategic cost-benefit analysis of the whole 445 km Munich-Verona stretch in the context of the entire Scandinavian-Mediterranean corridor. Thus, there has so far been no thorough analysis of the tunnel's cost and benefits, including its access lines. In 2007, an analysis for the Brenner Base Tunnel calculated a benefit-to-cost ratio of 1.9, and we noted that, over time, costs and delays had increased and forecast traffic levels had decreased, negatively affecting the ratio. In 2019, a new cost-benefit analysis was produced with a wider scope. While the results of the cost-benefit analysis are positive, the study is not based on a harmonised traffic study between the Member States, and does not include the northern access lines in the German territory.

32 Member States are responsible for performing cost-benefit analysis (CBA) in line with international best practice, including the methodology recommended in the Commission's CBA guide. With the help of an external expert from the Free University of Brussels (VUB), we analysed the quality of the various cost-benefit analyses prepared for the eight TFIs across our sample. We established that cost-benefit analyses had not been used properly as a tool for decision-making for any of them. This is because:

- (a) no overall high level cost-benefit analysis, covering all of the proposed projects, including the accompanying infrastructure investments, and with the participation of as many national and regional stakeholders as possible, had ever been performed at the wider level of the whole TFI in addition to the more detailed, section-specific analysis. On the contrary, most of the cost-benefit analyses were only performed for small parts of the TFIs;
- (b) the cost-benefit analyses did not include a comprehensive analysis of the distribution of costs and benefits between the regions and countries involved;
- (c) no lessons from ex post evaluations of previous projects were integrated in the analysis, nor was there any external benchmarking to assess their quality.

33 The Commission and INEA take the costs and benefits of an action into account when EU co-funding is requested through direct management. Under shared management, only major projects with total eligible costs above €75 million and Cohesion Fund projects are assessed by the Commission.

34 In its proposals for the new regulations for the 2021-2027 period, the Commission has not included the current obligation for project promoters to submit cost-benefit analyses, even for multi-billion-euro TFIs. The Commission intends to maintain cost-benefit analyses in future as a potential requirement for receiving EU co-funding. Where applicable, this requirement will appear in the specific funding conditions for a given project. In our Briefing Paper issued in June 2019¹⁸, we considered this to present a risk to sound financial management.

¹⁸ "Delivering performance in Cohesion", ECA, June 2019, paragraphs 70 and 120 and Annex I points 8 and 14.

35 We already identified in previous reports¹⁹ weaknesses in the process for assessing the real need for EU co-funded transport infrastructure. Although the Commission funded a multimodal market traffic study covering the entire corridor, it has not required common traffic forecasts at an overall TFI level. In addition, the Commission does not collect traffic data on an ongoing basis. Only for one of the eight selected TFIs (the Lyon-Turin link) has it performed its own in-depth review of the project promoter's assumptions, independently of the Member States' assessments. This increases the risk of ineffective spending.

36 Moreover, on a section of the Fehmarn Belt link, a political decision taken at national level was supported only subsequently by a cost-benefit analysis. This was the decision to build a high-speed rail access line on German territory connecting Copenhagen and Hamburg. The political decision to build the line was taken in 2016, but it was confirmed only afterwards by a cost-benefit analysis in 2017.

37 For four of the TFIs in our sample (the Lyon-Turin link, the Seine-Scheldt link, the A1 motorway in Romania and the Fehmarn Belt link), our assessment of the impact and costs associated with environmental requirements benefited from the input of independent experts²⁰. These experts concluded that different EU, national, and sometimes regional, environmental requirements complicate and delay the planning and implementation of TFIs, while the most constraining factors still remain budgetary ones.

We also noted an example of good practice in the implementation of cross-border projects: allowing entities in one country to carry out works on the territory of another country in support of achieving a common policy objective. This is a positive practice that could be used as an EU-wide model. We found an example of this in the works on the "Lys Mitoyenne", a project which is part of the Seine-Scheldt link. Here, the partners are able to work and manage projects on each other's territories. The formal agreement allowing this was adopted by the Intergovernmental Conference in 2017, and it is currently under formal ratification, expected by 2020.

¹⁹ For example: (i) special report 19/2018 ("A European high-speed rail network: not a reality but an ineffective patchwork") paragraph 37 *et seq.*; (ii) special report 23/2016 ("Maritime transport in the EU: in troubled waters – much ineffective and unsustainable investment"); paragraph 43 *et seq.*; (iii) special report 21/2014 ("EU-funded airport infrastructures: poor value for money"): paragraph 22 *et seq.*

²⁰ University of Lyon, together with researchers from Antwerp, Milan, Bucharest and Berlin.

38 In addition, the environmental gains delivered by TFIs in terms of CO₂ emissions have to take into account the negative effects of construction, and the long-standing positive effects of operations, once the infrastructure is completed. In fact, the construction of new large transport infrastructures is a significant source of CO₂ emissions, while the environmental gains depend on the amount of traffic actually shifted from other, more polluting transport modes. Given that modal shift has been very limited in Europe in the last 20 years, there is a high risk of overestimating the positive multimodal effects of many of the TFIs. For example, the French infrastructure manager estimated in 2012 that constructing the Lyon-Turin cross-border link, together with its access lines, would produce 10 million tons of CO₂ emissions. According to its estimations, the TFI will not produce a net benefit in terms of CO₂ emissions until 25 years after the start of the works. But on the basis of the same traffic forecasts, our experts concluded that CO₂ emissions would not be offset until 25 years after the infrastructure enters into service. Moreover, that prediction depends on traffic levels: if traffic levels only reach half of the predicted level, it will take 50 years from the entry into operation of the infrastructure before the CO₂ emissions produced by building it are offset.

For some TFIs, stakeholder involvement helped to ensure acceptance

39 Stakeholder involvement is beneficial to all parties in the decision-making process. If it is launched early enough, in full transparency and using effective communication methods, project promoters can optimise the design while stakeholders are encouraged to support the TFI.

40 Unsuccessful stakeholder involvement procedures usually end up in national courts; this postpones the start of works. For example, for the Lyon-Turin cross-border rail section, more than 30 different court cases have been lodged against the TFI by associations or private citizens opposing it on environmental or procedural grounds.

41 The stakeholder involvement process is the responsibility of project promoters and Member States. The Commission is not directly involved, even though it is responsible for supervising the timely construction of the nine TEN-T corridors by the Member States. The Commission is not visible enough in the field. Many of the entities we met informed us that the Commission's presence at key meetings with stakeholders would have been beneficial in promoting the European added value of their TFIs. It could have resulted in a higher acceptance of the proposed infrastructures.

This said, we saw a positive example of EU involvement for Rail Baltica, where the Commission and the European Coordinator participated in public events related to the project (such as the Rail Baltica Global Forum), engaging with local and international stakeholders, being active in the media and being present at meetings of the Rail Baltica Rail Supervisory Board.

42 Among the TFIs selected for audit, we identified a number of good-practice examples where stakeholders had been well informed and allowed to provide their input, enriching the process further. These good examples include the Seine-Scheldt link, the Fehmarn Belt fixed link and the Italian part of the Brenner Base Tunnel. Similarly, the process for large investments used in France (the "*démarche grand chantier*") for the Lyon-Turin link and the Canal Seine Nord Europe, part of the Seine-Scheldt link, involved a series of initiatives to increase local stakeholder acceptance for large infrastructure works.

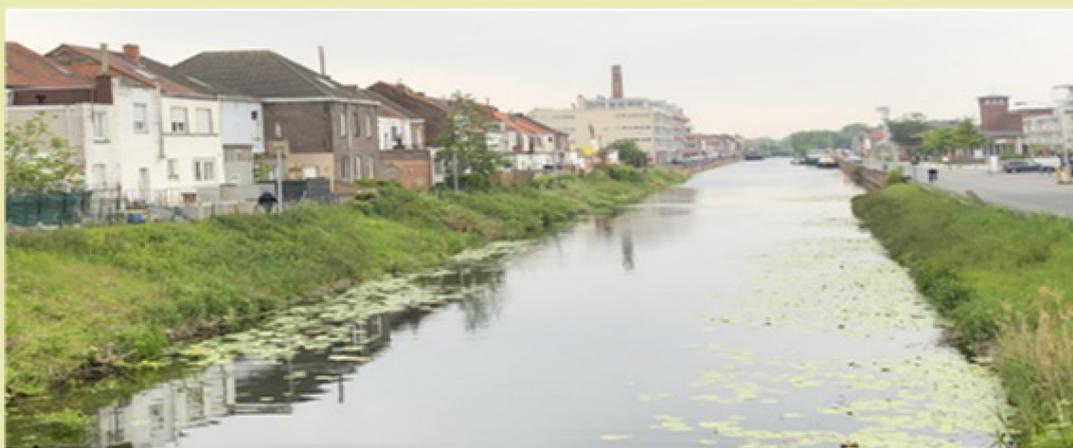
43 We also noted cases where the process could have been better: for the Basque Y, the A1 motorway in Romania and the E59 rail link in Poland, the process did not fully allow all stakeholders to have their opinions heard and heeded. **Box 5** contains both a positive and a negative example.

Box 5 – Different approaches to stakeholder involvement

- (1) For some parts of the Seine-Scheldt link, the Flemish authorities use the “complex projects procedure”, which allows stakeholders to be involved in every aspect of a TFI, from the initial idea to the implementation of works (e.g. alternatives, plans, building permits, market consultation). This was for example the case for the Bossuyt-Kortrijk canal, a vital connection between the Scheldt and Lys rivers in Flanders, which needs to be widened and deepened (see [Picture 4](#)). The project promoter proposed two design alternatives to the stakeholders; a third one, suggested by stakeholders during the discussions, was included in the decision-making proposal. The latter proposal incorporates environmental constraints, cultural heritage obligations, business needs, viability requirements for the local population and takes into account existing road configurations.

We consider this procedure to be an example of good practice, as it is transparent and open to all stakeholders, in particular to local residents and businesses. The decision-making timeline envisages a maximum of four years of analysis between the very first ideas and the actual decision. To ensure that the timeline is adhered to, the process does not allow previous steps to be challenged further once a decision has been taken on them.

Picture 4 – The “missing link” between the Scheldt and Lys rivers (section of the Bossuyt-Kortrijk canal) that requires widening and deepening



Source: ECA.

- (2) Other processes we saw limited the possibilities for stakeholders to provide input. For example, the Basque Y traffic prognoses and sustainability data had been challenged by academics from the Basque Country on multiple occasions since 2004. Even though the documents were publicly available, the central and regional governments did not reply to or consider the academics’ arguments.

44 Despite similar procedures for involving stakeholders, there may be very different outcomes across borders. For example, in the Fehmarn Belt link, the Danish NGOs were satisfied early in the process with how environmental matters were being handled. On the German side, however, opponents are continuing to explore all legal avenues to delay the works, mainly on environmental grounds. Such delays usually result in additional costs. For example, the contract signed by the Danish project promoter binds contractors through “stand-by fees”²¹, which function as a retainer to keep the contractor bound to the original tendering conditions. The longer a decision takes, the higher these fees will be. The stand-by fees due have already reached a substantial amount, in the millions of euros; the promoter has already indicated that these costs will be submitted for co-funding from the EU.

Low efficiency in implementing TFIs

TFI implementation duplicates effort and is inefficient, and an overview is lacking

45 The planning and construction of TFIs may take several decades. *Annex II* shows the planning dates and implementation timeline of the eight selected TFIs.

- The average originally estimated construction time (of the key part of the infrastructure) of the eight TFIs is 12 years.
- The actual construction period of all selected TFIs varies from 8 to 21 years; the average currently estimated construction time is 15 years.

46 Since the EU works on the basis of seven-year programme periods, it allocates EU co-funding to TFIs in numerous smaller parts, each of which is a specified and limited component of the overall TFI. Such “actions” include, for example, feasibility studies, technical studies, or construction works on a segment of a TFI. Each of these actions can then receive funding individually. One of the aims of segmenting large projects in this way is to maximise the absorption of EU co-funding. Setting specific funding priorities for such large projects over a longer period, while still adhering to the limit on available EU funds in each seven-year programme period, would have the

²¹ These are fees to be paid to the contractor as a cost for maintaining the economically advantageous priced bids upon which the major civil works contracts are based. These fees apply until the works can actually start.

advantage of speeding up the use of allocations and avoid artificial competition with other projects that are not part of a TFI.

47 Funding TFIs as consecutive actions works well, as long as their implementation remains efficient. However, the current practice multiplies efforts: as each small part of the TFI can be the subject of separate EU co-funding applications, the work involved in selecting and supervising them is duplicated. This leads to inefficiencies (losses of economies of scale and higher costs) as higher numbers of actions require more monitoring and payment reports to be drawn up and verified. The Commission recently moved towards a more integrated vision of project management (e.g. a single grant agreement for all the actions linked to the Seine-Scheldt TFI in the 2014-2020 programme period).

48 There is no competence centre within the Commission specifically dealing with investments of the magnitude of a TFI, to obtain an overview of their implementation. For shared management, there is a specific unit dealing with major projects, supported by staff with sectoral experience. But the threshold beyond which a project is considered to be “major” is €75 million, whereas TFIs, which have an overall value of at least €1 billion, are of an entirely different magnitude. This lack of a dedicated service within the Commission means that managing authorities, which can provide up to 85 % of EU co-funding for the construction of TFIs, do not have specific expert support to properly implement this kind of infrastructure.

There is also no service within the Commission that coordinates the actions of the various DGs and agencies involved in supporting the implementation of infrastructures on such a large scale. If such a centre existed, it could guide and steer project promoters on a continuous basis over the lifetime of a TFI, with the aim of increasing the efficiency and effectiveness of EU co-funding. Such a centre might, for example, provide advice on issues such as the number of stations (for passengers); the number and location of terminals; interoperability requirements; loading factors (for freight); and rules for tolling. It could also support the assessment of possibilities for blending support through the CEF, Cohesion policy and EIB instruments.

When building TFIs, there are cost increases and often high levels of bureaucracy at national level

49 Changes in the design and scope of TFIs often arise over time. These changes bring along cost increases, which may affect the EU budget over a longer period. As EU support is provided for actions that are implemented in seven-year periods, changes in design and scope of TFIs beyond the seven-year period imply that a higher total amount of EU co-funding will be necessary.

50 Although some TFIs have admittedly changed considerably in scope over time²², we compared the latest available cost estimates with the initially predicted costs of the eight selected TFIs, as these initial cost estimates were important in the decision to go ahead with construction. In addition, we wanted to highlight how TFIs changed, in terms of cost estimates and implementation delays until their actual realisation. To do so, we used the price deflator index at country level to enable meaningful comparisons to be made at constant prices and to take into account the different national inflation rates. All eight selected TFIs had increased in cost compared to initial estimates: increases of €17.3 billion were confirmed at the time of the audit. This represents an increase of 47 % on initial estimates, or an average of €2.2 billion per TFI. For example, the largest cost increase in our sample was on the Canal Seine Nord Europe (on the Seine-Scheldt link) with expected cost having increased by €3.3 billion or 199 % (see [Table 3](#)). Some of these increases occurred within a short period. For example, the cost of Rail Baltica is projected to increase by 51 % compared to estimates made eight years ago (to a large extent because of changes in the scope of the TFI) (see [Annex III](#)).

²² For example, the Lyon-Turin link was initially designed as a one tube tunnel in a first phase; later onwards, it was decided to build it as a twin-tube tunnel. Similarly, the Seine-Scheldt link was about building a canal to link two rivers; later onwards this developed into a much broader inland waterway network.

Table 3 – Cost increases per TFI (2019 values)

Transport flagship infrastructure	Original estimate (million euros)	Latest estimate (million euros)	Increase (million euros)	Increase in %
Rail Baltica	4 648	7 000*	2 352	51 %
Lyon-Turin	5 203	9 630	4 427	85 %
Brenner Base Tunnel	5 972	8 492	2 520	42 %
Fehmarn Belt fixed link	5 016	7 711	2 695	54 %
Basque Y and its connection with France	4 675	6 500	1 825	39 %
Seine-Scheldt link**	1 662	4 969	3 307	199 %
A1 motorway	7 244	7 324	80	1 %
E59 railway line	2 113	2 160	48	2 %
TOTAL			17 253	47 %

* Costs include the provisions for risks of future cost increases as identified by the auditors. The official costs are stated to be €5.8 billion so far.

** Figures refer to the main component of the Seine-Scheldt link (the Canal Seine Nord Europe) only.

Source: ECA.

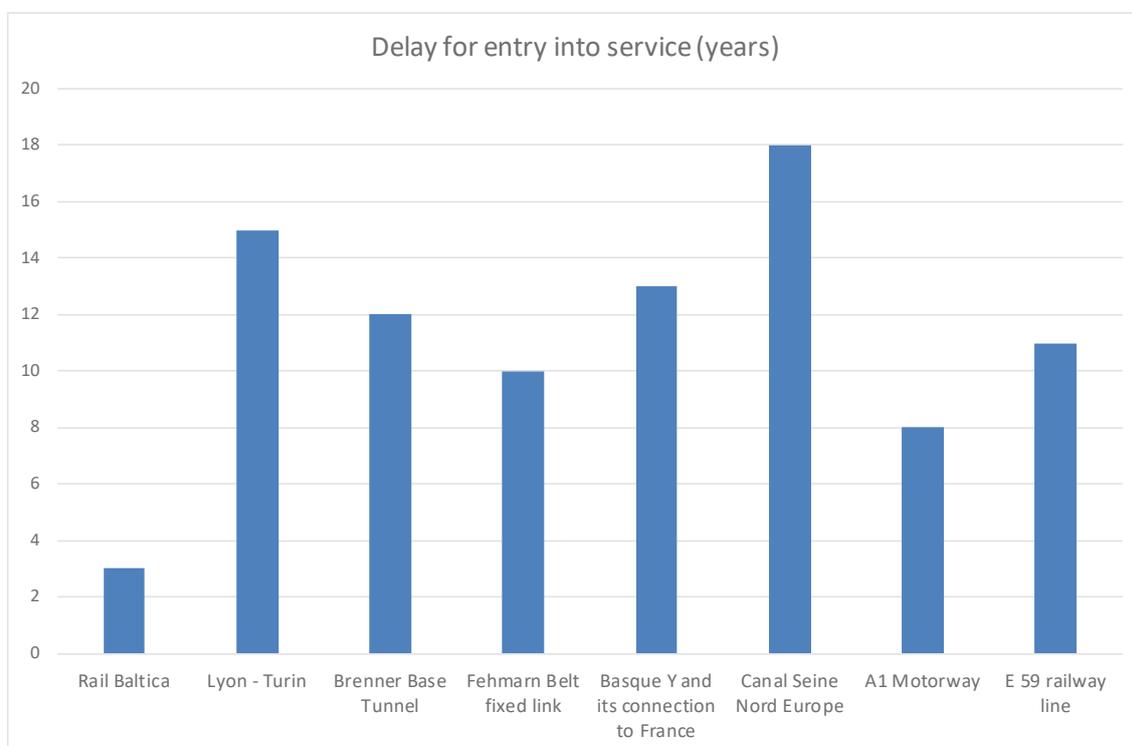
51 We also noted cases of high bureaucracy hindering efficient implementation. For example, in Romania, the 582 km-long A1 motorway is being planned and implemented in the form of a large number of small projects. Permits need to be obtained for each of these parts. We calculated that one building permit is required per 7 km of motorway, and one environmental permit per 26 km.

52 We noted an example of good practice in Italy, where an interministerial committee (the CIPE, “*Comitato Interministeriale per la Programmazione Economica*”) acts as a one-stop shop for project promoters. At the same time, the CIPE provides a long-term commitment to support the construction of the infrastructure, if financing needs to be split across multiple decisions.

Very long delays put the efficiency of EU co-funding at risk

53 For each TFI, we also compared the current expected completion date with the original one; without exception, we noted significant delays. For the A1 motorway and the E59 railway TFIs, we calculated the cumulative delay in entry into service over those sections for which reliable implementation time estimates exist²³. The average delay affecting the main construction element of each TFI was 11 years. The Canal Seine Nord Europe (delayed by 18 years already) part of the Seine-Scheldt TFI, the Lyon-Turin connection (15-year delay), the Basque Y (13-year delay) and the BBT (12-year delay) were the worst cases (see [Picture 5](#)).

Picture 5 – Delays in the completion of the TFIs in our sample



Source: ECA.

²³ For example, in the case of the E59 railway TFI, for the section Świnoujście-Szczecin a specific implementation timeline is still not in place.

54 If we also take into account the completion dates of the connecting infrastructure needed for the rail TFIs to be able to operate at full capacity, these delays are much longer.

- Given that the high-speed connection on the French side of the border linking Bordeaux to the Basque Y will not even be planned before 2037, the entry into operation of the Basque Y at full capacity will be delayed by at least 29 years.
- The German access lines leading to the Brenner Base Tunnel on the Munich-Verona connection could be delayed to between 2040 and 2050; this would prevent the TFI from fully delivering its benefits for another 20 years. In addition, the German regional authority is still assessing the need for new access lines.

55 The auditees cited political decision-making processes as a key factor behind these delays. Even if international agreements have been signed committing a Member State to build a TFI, political priorities may change as governments enter and leave office. The time needed for stakeholder involvement procedures and for seeking permits for planned works also contributes to delays.

56 Such delays have significant consequences. For example, traffic that will in future use the A1 motorway in Romania is currently still forced to use national two-lane roads. This situation produces significant negative impacts, such as daily traffic jams, bottlenecks and reduced road safety. By comparing the number and type of accidents over time, we noted that the number of accidents and casualties on these stretches is much higher than Romania's average, and 92 of them involved frontal collisions.

57 The underlying EU co-funded actions also suffer from slower-than-expected implementation. When comparing the initially expected completion date of the individual actions with their actual completion dates (for actions already completed) and with their currently expected completion dates as indicated by the project promoters (for actions still ongoing), we noted that only one of the seventeen co-funded actions (a part of Rail Baltica) is still expected to be completed by the original deadline. Some of these delays are considerable (up to 79 months for one of the actions on the A1 motorway). The average delay affecting each action compared to the initially planned completion date is 34 months (more than 68 % of the initially planned duration; see [Annex V](#)).

58 When a CEF action is not implemented according to the precise conditions set out in the grant agreement, or is not completed within the given time period, EU co-funding can be withdrawn. In such cases, under the “use-it-or-lose-it” principle, the funds are no longer earmarked for that specific action, and become available again for other infrastructure projects under the CEF programme. This has already happened to €1.4 billion of the initially allocated funds for the 17 actions in our sample (see [Annex IV](#)). For example, on the Seine-Scheldt link, €668.6 million have been withdrawn from the allocations for the two latest co-funded actions, mainly because of the long delay before an agreement was reached on the construction of the Canal Seine Nord Europe.

59 There are further risks for some of the selected TFIs in the current period. In April 2019, INEA identified €784 million of EU co-funding at risk in two of the ongoing actions underlying the audited TFIs. Moreover, for the Brenner Base Tunnel, the main works and studies are still outstanding: €737 million of EU co-funding has not yet been used. This is 62 % of the allocated amount of €1.2 billion. As INEA acknowledges that further delays are possible, it may also become necessary to extend the implementation period of the actions underlying this TFI, if fund withdrawals in the future are to be avoided.

60 Allocating EU co-funding to TFIs upfront provides long-term certainty for project promoters. But it also implies that, if there are significant delays in implementing TFIs, large amounts of allocated EU funds will not be paid out for many years, when they could have been used to fund other, more mature infrastructure projects. In cases where these sums are only reallocated late in the funding process, their potential for re-use is limited. This problem is not satisfactorily resolved by the current arrangements for managing grant agreements²⁴. [Annex VI](#) indicates that for the completed actions, the amount actually paid after completion was only half the amount originally allocated.

²⁴ This issue was also highlighted by ECA’s special report 19/2019 “INEA: benefits delivered but CEF shortcomings to be addressed” (see paragraph 72).

The Commission's oversight of Member States' completion of the core network corridors has weaknesses, but a tool is available which it could build upon to improve performance

The Commission's oversight is distant, and EU co-funding for projects is only linked to outputs

61 The Commission oversees the completion of the core network corridors by the Member States, with the help of European Coordinators and using an information system to coordinate and support the policy (the "TENTec" system). The European Coordinators' role includes:

- analysing the core network corridors;
- preparing the (non-binding) work plan for their corridor;
- engaging with high-level decision-makers and local stakeholders to facilitate the implementation of TFIs;
- seeking approval from the Member States on the work plan;
- setting up and chairing Corridor Forum meetings; and
- publishing a two-yearly progress report on the development and implementation of the TEN-T.

Although they are responsible for long and complex corridors, the Coordinators have few resources and only informal powers at their disposal. This type of framework gives the Commission too distant a role in overseeing the timely completion of the network by the Member States.

62 The Commission recently suggested²⁵ that the role of these Coordinators be expanded: future applications for EU co-funding would need to be consistent with the corridor work plan and implementing acts, and take into account the opinion of the European Coordinator; the Coordinators should be allowed to closely follow the permit granting procedure for cross-border projects of common interest, and be able to ask the competent authority to report regularly on progress achieved.

63 Under shared management, where the primary responsibility for implementation lies with the relevant Managing Authority, we found several cases with issues that led to ineffectiveness. For example, in Romania, between Lugoj and Deva, one completed stretch of the A1 motorway, co-funded with €12.4 million of EU money, is currently not being used. Near Deva, two road sections, built in a timespan of just seven years, were wrongly interconnected. As a result, 800 metres of already constructed motorway had to be demolished in order to rebuild the connection correctly. In addition to the part that had to be rebuilt (estimated to involve €3.2 million of EU co-funding), the demolition works cost €0.9 million, of which the EU co-funded €0.5 million. The €3.7 million²⁶ of EU money spent this way can be considered wasted (see [Picture 6](#)).

²⁵ European Commission, *Proposal for a Regulation of the European Parliament and Council on streamlining measures for advancing the realisation of the trans-European transport network*, COM(2018) 277 final, 17.05.2018; and European Commission, *Proposal for a Regulation of the European Parliament and of the Council establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014*, COM(2018) 438 final, 06.06.2018.

²⁶ The €3.2 and €0.5 million of EU co-funding.

Picture 6 – The interconnection of the Lugoj-Deva and Deva-Orastie sections of the A1 motorway in Romania



© ziarulunirea.ro. Labels and alignments added by ECA.

64 There is no systematic mechanism for measuring results after a period of time has passed since a TFI commenced operations. This confirms that the Commission still links EU co-funding for projects exclusively to outputs. It does not collect information on the results and the degree of success of investments at TFI level (i.e. whether and when the TFI will achieve its expected results).

65 The Commission has no data on the effects of the co-funded constructions. Although most of the selected TFIs are still being built, some of them already promise to have a noticeable future impact. For example, on the Lys river, various widening and deepening works have already been done for the Seine-Scheldt link. The results at TFI level have not yet materialised, as the key section of the TFI (the Canal Seine Nord Europe) remains to be built. But the works have already had a positive socio-economic impact in Flanders: for example, a boom in the construction of real estate along the riverbank, leading to the urban regeneration of entire city districts in Kortrijk and Harelbeke.

66 The Commission does not take these aspects into account, as the INEA grant agreement milestones concern physical outputs only. It performs *ex post* evaluations in certain cases, for instance when provided for by the legislation, covering the network as a whole or selected transport major projects implemented under shared management. However, there is no systematic *ex post* evaluation of individual TFIs as a whole, even though they are multi-billion-euro investments. This makes it difficult to learn from past problems.

The Commission did not critically assess the long-term sustainability and the costs of TFIs

67 In previous performance audit reports²⁷, we concluded that when EU co-funding is available, this may in some cases induce project promoters to increase project specifications to a level beyond usual standards or to build bigger for no good reason. This leads to underutilisation of the infrastructure.

68 The Commission has no models or specific data-collection procedures in place to independently assess the potential for passenger and freight traffic using TFIs before committing EU co-funding to them. It also did not question the details of future construction standards against potential traffic flows when providing EU support to the TFIs. As there is no such specific data on potential traffic streams, we have based our judgements on Eurostat data, making assumptions on traffic levels where appropriate²⁸. We assessed the economic sustainability of the selected TFIs that had a high-speed rail component (Rail Baltica, Lyon-Turin link, BBT, Fehmarn Belt and Basque Y), by considering the expected number of passengers and the overall traffic potential. The total cost of these TFIs amounts to around €40 billion. For the first analysis, we took the number of future passengers declared by the project promoters; for the second analysis, we took the overall population living within a 60-minute catchment area along the lines. While these lines are admittedly envisaged as mixed-use lines, combining passenger and freight traffic, we compared these figures to an academic benchmark for passenger high-speed rail which indicates that, in order to be sustainable, such lines need to carry 9 million passengers per year. We can conclude that, for all TFIs assessed, the overall population living in such a catchment area is too

²⁷ For example special report 23/2016 “Maritime transport in the EU, in troubled waters - much ineffective and unsustainable investment”, paragraphs 52 to 55; special report 21/2014 “EU-funded airport infrastructures: poor value for money”, paragraphs 28 to 33.

²⁸ The estimation was made on the most likely ways that traffic will proceed once the infrastructures have been built, following the shortest route assumption.

limited to ensure long-term sustainability. We also found two examples of TFIs where the expected number of passengers falls significantly short of this benchmark of 9 million passengers per year.

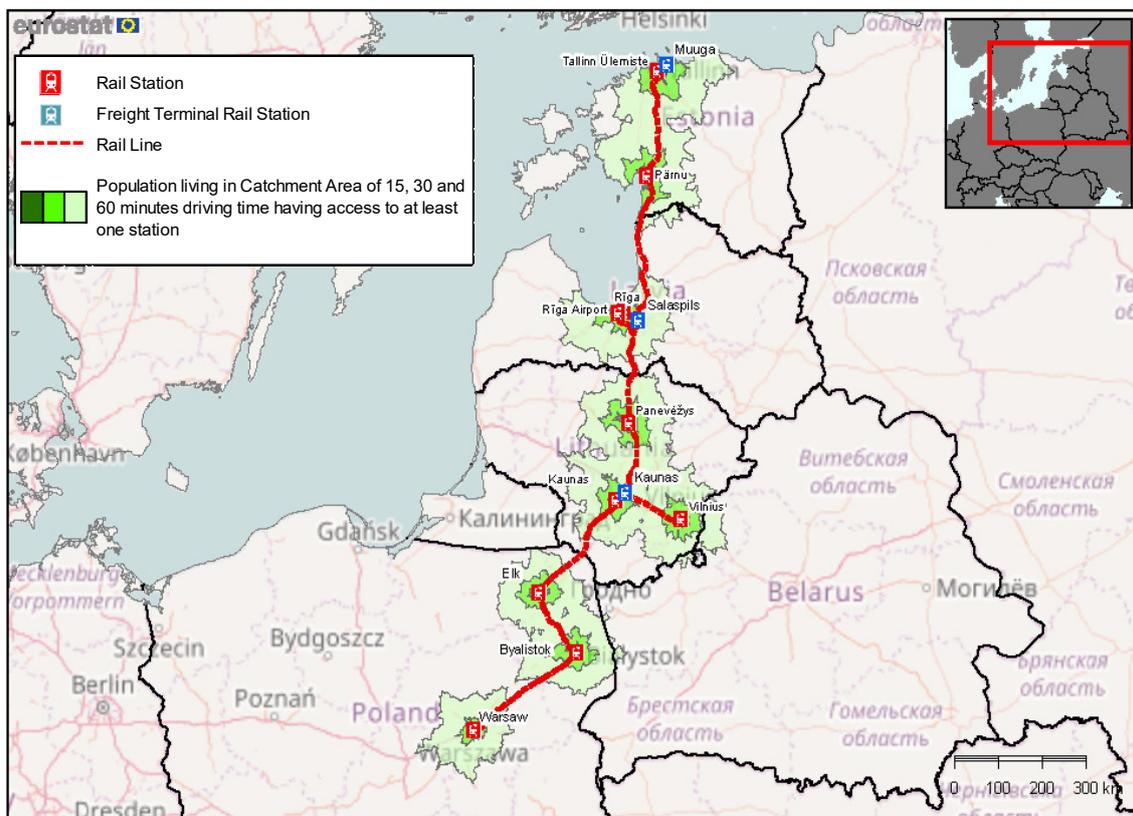
69 The first one is Rail Baltica, the long-term economic sustainability of which depends on it realising its potential for freight and passenger transport. The 2017 CBA for Rail Baltica projects rail freight traffic volumes of about 15 million tonnes in 2030 and up to 25 million tonnes of freight by 2055 (approximately one third of this is intra-Baltic traffic, one third is freight from Finland, and one third is transit traffic from neighbouring countries). Based on current maritime traffic levels in the area around the Baltic countries, we noted a maximum potential demand of 30 million tonnes of freight per year which could be shifted onto rail. However, no north-south rail freight traffic between Estonia, Latvia and Lithuania currently exists, and for a modal shift to occur, rail transport must be able to compete with road and maritime transport. This means that efficient multimodal connections and accompanying measures need to be put in place, such as road tolling policies, to achieve a more level playing field across the different transport modes, as well as a well-functioning, integrated infrastructure management model that renders the line attractive to customers using proactive commercialization efforts. The Baltic states have not yet agreed on the infrastructure management model. In addition, the Polish railway infrastructure manager has not taken measures to coordinate the potential increase in demand for rail freight transport generated by Rail Baltica on the Bialystok-Warsaw line with the other regional passenger and rail freight on that line.

70 As set out in paragraph 69, there is no north-south rail freight traffic yet in the Baltic states. An assessment of the passenger traffic part of the Rail Baltica line shows that it is not economically sustainable, with 4.6 million passengers per year by 2030, as indicated in the 2017 CBA for the greenfield investment in the Baltic states. In addition, our catchment area analysis indicates that the overall population living within 60 minutes' journey time of the TFI in line with the CBAs assumption is 3.8 million people, taking into account overlaps of people living in neighbouring catchment areas (see [Picture 7](#)). This is the lowest figure of any rail TFI we audited, if we take the line on its own. The project promotor and the Commission indicated that this investment concerns a fast conventional rail line that will have speed characteristics of up to 249 km/h, and that, therefore, this line cannot be benchmarked as a high-speed rail line. While indeed the definition of high-speed rail applies to new lines that have speeds of 250 km/h or more, we assessed this line as a high-speed rail investment for two reasons. Firstly, part of the line will use an upgraded conventional rail line on Polish territory (such lines are considered to be high-speed if their speed is 200 km/h or above). Secondly, Rail Baltica will be used as a mixed line, which usually has higher construction costs than a purely passenger line.

71 If we include the access line to Poland and perform a more general analysis, once the line up to Warsaw has been built and upgraded, the overall population living within the 60-minute catchment area will go up to 8.3 million. If we compare this to our benchmark²⁹ of 9 million passengers per year, economic sustainability may be at risk even for the full connection up to Warsaw.

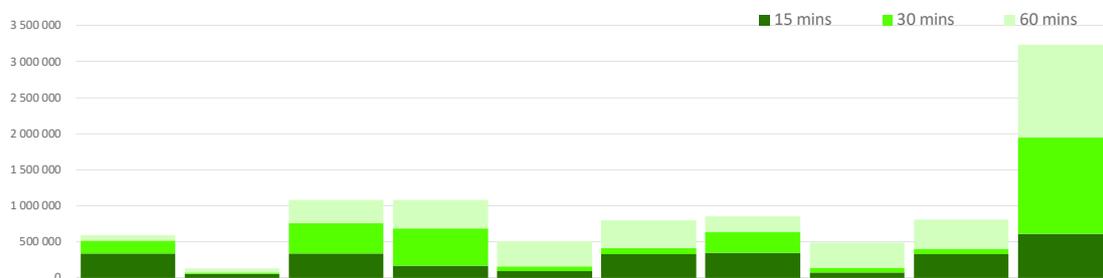
²⁹ Special report 19/2018 on high-speed rail (“A European high-speed rail network: not a reality but an ineffective patchwork”).

Picture 7 – Catchment area assessment for Rail Baltica



Cartography: Eurostat — GISCO, 01/2020

Source data: © EuroGeographics © OpenStreetMap Contributors © DG MOVE



Catchment Area	Tallinn	Pärnu	Rīga	Rīga Airport	Panevėžys	Kaunas	Vilnius	Elk	Byalistok	Warsaw
15 minutes	336 000	55 000	336 000	168 000	97 000	326 000	348 000	70 000	325 000	611 000
30 minutes	514 000	71 000	764 000	685 000	154 000	410 000	642 000	137 000	405 000	1 941 000
60 minutes	594 000	130 000	1 075 000	1 083 000	511 000	798 000	850 000	483 000	806 000	3 238 000

Source: Map Eurostat; data added by ECA.

72 Secondly, the passenger number forecasts on the high-speed rail line between Copenhagen and Hamburg using the Fehmarn Belt fixed link indicate that the rail part of this TFI will not be economically sustainable. Despite the fact that 7.7 million people live in a 60-minute catchment area along the line and that passengers may use dedicated parts of the line (eg. Hamburg-Lübeck or Ringsted-Copenhagen), the forecasts predict that only 1 million passengers will use the fixed link in both directions each year, even 10 years after opening. This is far lower than the benchmark figure of 9 million passengers per year. Rail freight services will also be operating as this line has been designed as a mixed line. Up to 73 freight trains per day are estimated to pass the fixed link when operating at full capacity. However, no substantial multimodal shift will

take place through the construction of this infrastructure as the freight trains will stop using the current route passing the “Great Belt” (a “displacement” effect, see [Picture 3](#)).

73 In addition, we assessed the construction costs of the German access line with high-speed rail standards as it is currently planned. The original plan was to upgrade the existing line to a speed of 160 km/h (in line with the TEN-T regulation, which envisaged building only a conventional railway line). However, amendments after consulting local stakeholders resulted in the planning of a new mixed-use access line (including, among other things, new alignments, additional stations and a new freight terminal). A political decision was then taken to build a line with a design speed of up to 200 km/h for passenger trains. Based on the cost figures for the 88 km long line between Lübeck and Puttgarden (entry to the Fehmarn Belt fixed link) and the distances on the line, this high-speed line, as currently designed, will cost €26 million per km. The cost of the regional requirements on noise protection which go beyond standard requirements are €1.185 million. This is more than half of the total construction cost of the whole line. The cost of the planned Fehmarnsund bridge³⁰, replacing the existing one, which would currently not yet be needed, is €549 million. If we include these costs in the total (neither measure has yet been decided upon), the cost per km of the line rises to €46 million. This would lead to an overall total cost of more than €4 billion for the German access line. Compared to very high-speed lines we have previously audited, which operate at a speed of 250 km/h or more³¹ this cost per km is very high, given that this is not a very densely populated area, the engineering requirements for construction of the line are limited and the maximum speed of the line is 200 km/h. Under similar geographical constraints, the corresponding figure for the upgrading of the Ringsted-Rødby section of the Danish access line to the Fehmarn Belt fixed link (likewise from 160 km/h to 200 km/h) is €11 million per km, less than a quarter of the cost for the German access line. Furthermore, the upgrade of the German access lines to high-speed standards leads to a travel reduction of only 5 minutes (from Lübeck to Puttgarden compared to the original planning) for passenger traffic. As a result, all these changes entail very high additional costs which together with low passenger numbers (see paragraph [72](#)) significantly reduce the cost-effectiveness of this upgraded access line.

³⁰ The latest plans announced by the Region of Schleswig-Holstein indicate that this plan for a new bridge will be replaced by a (normally more expensive) rail-road tunnel similar to the fixed link.

³¹ Special report 19/2018 “A European high-speed rail network: not a reality, but an ineffective patchwork”, Table 5.

74 The design of the German access line was decided upon by the Region of Schleswig-Holstein after a consultation of local stakeholders. The Commission did not participate in this, and has not been involved in the decision-making. To date, EU co-funding for studies alone has amounted to €38.6 million. To stay in line with the principle of sound financial management when EU co-funding is applied for in future, these figures should make the Commission reflect at the decision-making stage, and carry out a dedicated assessment, on whether a lower-speed line with lower costs would in fact be sufficient to cover the mobility needs of the population.

A tool to build upon for future investments: the implementing decision

75 The Commission has recently started to use implementing decisions as a tool to strengthen its oversight of the completion of the core network corridors by the Member States. These decisions are adopted in agreement with the Member States concerned, and they reflect the Member States' commitment to comply with a commonly agreed timeline for finalising the outputs. This timeline contains a number of key milestones, and decisions contain an obligation for Member States to write an annual report. Implementing decisions have so far been used for Rail Baltica, the Seine-Scheldt link and the Evora-Mérida rail connection between Spain and Portugal (a TFI which was not in our sample).

76 We consider implementing decisions a positive step as they allow the Commission to oversee more closely the delivery of TFIs by Member States, and because they confirm in precise terms the expected outputs and scope of the TFI and cover complementary actions needed for it to start operations. These decisions include the connections to existing and new rail/road terminals for Rail Baltica, and the construction of multimodal terminals for the Seine-Scheldt link. In addition, they provide the possibility for European Coordinators and the Commission to be present as observers at meetings of project promoters' decision-making bodies.

77 However, we noted the risk that implementing decisions may not be sufficient to effectively ensure the timely delivery and entry into operation of TFIs, for the following reasons.

- (a) These decisions cannot be taken without the agreement of the Member States and they do not impose specific obligations or responsibilities on any party, nor do they describe the financial consequences if the commitments are not honoured. They also do not allow the Commission to take action if there are delays, or if accompanying measures are not taken.
- (b) These decisions do not specify the anticipated results of the TFI and still have weaknesses in tackling issues that need political agreement at Member State level.
 - (i) The Rail Baltica implementing decision stipulated that Estonia, Latvia and Lithuania had to decide by 30 June 2019 how the completed infrastructure would be managed, including a mechanism for distributing future earnings and benefits between the partners. Despite the Commission's efforts towards agreeing such a mechanism, no such decision was taken by the deadline.
 - (ii) Although the implementing decision for the Seine-Scheldt link clarified the scope of the TFI, it stopped short of setting a precise milestone for the timely completion of the key missing waterway link to the port of Zeebrugge, for which a firm construction decision has been delayed for many years by the regional government because of local opposition. This limits the potential for deep-sea containers to use inland waterway routes.

78 Implementing decisions also contain no provisions encouraging lessons to be learned from past experiences, as no *ex post* evaluation practices have been made mandatory.

Conclusions and recommendations

79 It is likely that six of the eight analysed TFIs will not be able to operate at full capacity by 2030, including access lines, as planned in 2013. Since the TFIs and their access lines are key links in the core network corridors, it is therefore also unlikely that the EU core transport network will reach its full capacity by 2030, which implies that the expected network effects of the EU transport network will not be delivered by that time.

80 Only Rail Baltica and three parts of three other TFIs are likely to meet the minimum requirements of the TEN-T Regulation by 2030. The main reasons for these poor results are that the Member States have their own priorities and different procedures, as well as different speeds of implementation, while cross-border TFIs are not always equally supported. Moreover, the TEN-T Regulation, although legally binding, contains provisions which allow them to diverge from the plan to be achieved by the 2030 deadline. The Commission has limited legal tools to enforce established EU priorities, but it has not yet used them, except for adopting a few implementing acts (see paragraphs [16](#) to [26](#)).

Recommendation 1 – Revise and apply the current tools to enforce long-term planning

In the context of the revision of the current legislation, the Commission should put forward proposals to:

- (a) include better enforceable legal tools, including an extension of the perimeter for adopting implementing acts, so as to address any significant delays in starting or completing work on the core network;
- (b) reassess the relevance of the technical requirements of the core and comprehensive network, taking into account the remaining time frame and lessons learnt from the problems observed in relation to the delivery of past and ongoing projects;
- (c) introduce provisions to strengthen the coherence between national transport plans and the TEN-T commitments, in order to ensure the proper enforcement and implementation of the TEN-T regulation.

The Commission should also:

- (d) follow-up on its “streamlining proposal”³², by supporting the Member States in their planning and procurement and in setting up of one-stop shops to reduce administrative burden. For cross-border TFIs, it should promote the use of common tendering procedures.

Time frame: For (a) to (c), by 2022, in the context of the revision of the TEN-T Regulation. For (d), from the entry into effect of the relevant legislation.

81 Even though TFIs are multi-billion euro investments, the planning of some key elements needs improvement. Traffic forecasts risk to be overly optimistic. Half of them are not well coordinated. They are not based on sound economic assessments, and they are sometimes very simplistic. Previous freight traffic forecasts are much higher than current traffic figures. For such forecasts to be achieved, successful modal shift initiatives will need to be put in place. The Commission has not conducted its own needs analysis, independently of the Member States’ assessments, before committing EU co-funding to actions that are part of these infrastructures.

³² Proposal for a regulation of the European Parliament and of the Council on streamlining measures for advancing the realisation of the trans-European transport network. 17.5.2018. COM(2018) 277 final.

82 For all eight TFIs in our sample, cost-benefit analyses were not used properly as a tool for decision-making at an overall TFI level. Although there were detailed cost-benefit analyses for specific sections, there were none for any of the TFIs as a whole, covering all of the proposed work, including required accompanying infrastructure investments, and involving as many national and regional stakeholders as possible.

83 Our assessment of stakeholder involvement procedures brought to light a number of good practices which could be replicated in future. However, we also identified procedures that could be improved to ensure real stakeholder involvement in decision-making. The Commission is not involved in these processes, and it is not visible enough at key meetings, meaning that it misses a key opportunity to promote the EU added value of TFIs (see paragraphs [27](#) to [44](#)).

Recommendation 2 – Require better analysis before deciding to provide EU co-funding for megaprojects (similar to TFIs)

Before providing EU funding to support actions that are part of wider megaprojects, the Commission should:

- (a) for direct management, require a sound, comprehensive and transparent overall socio-economic cost-benefit analysis for individual megaprojects as a whole (similar to TFIs as defined in this report), in addition to the detailed section-specific ones. Such CBAs should look at a higher strategic level than the individual project or section being implemented and also cover ancillary infrastructure; and
- (b) for shared management expenditure, advocate to managing authorities the adoption of the same requirements before providing EU support to megaprojects.

Time frame: New requirements to be defined by the end of 2021 and applied as from then.

84 Efficiency in implementing TFIs is generally low. The average construction time of the eight selected TFIs is 15 years. Taking into account the ancillary infrastructure needed to make a TFI operational at full capacity, the actual construction time is much longer.

85 EU co-funding for TFIs is provided through numerous actions. This duplicates efforts, is inefficient, and does not ensure an overview of implementation. Setting specific funding priorities for such large projects over the MFF period, while still adhering to the limits on available EU funds in each seven-year period, would have the advantage of speeding up the use of allocations and avoid artificial competition with other projects that are not part of a TFI. There is also no dedicated service focusing exclusively on TFIs within DGs MOVE or REGIO, or within INEA or the managing authorities, to guide and steer project promoters so as to increase the efficiency and effectiveness of EU co-funding. Changes in the design and scope of the audited TFIs have so far led to cost increases of €17.3 billion (at the time of the audit, an increase of 47 % on the initially estimated costs). TFIs were also affected in some cases by a high level of bureaucracy at national level.

86 All TFIs examined had delays (an average delay of 11 years in the main part of each TFI entering into operation). These have far-reaching consequences, such as traffic jams, bottlenecks and reduced road safety along the A1 motorway on the Romanian road, where the number of accidents and casualties is much higher than the national average. For the audited actions, there were also various cases of delayed implementation. Some of these delays are considerable (up to 79 months for one of the actions on the A1 motorway, or 263 % of the initially planned time frame). The average delay is 34 months (more than 68 % of the initially planned time frame). For the 17 actions we audited, these delays resulted in €1.4 billion of EU co-funding support being withdrawn from the original allocations (see paragraphs [45](#) to [60](#)).

Recommendation 3 – Strengthen the Commission’s management of EU co-funding for actions that are part of megaprojects (similar to TFIs)

When providing EU co-funding for actions that are part of megaprojects (similar to TFIs), the Commission should:

- (a) prioritise actions that are part of megaprojects which are missing links and bottlenecks that have been established as key priorities in the Corridor Work Plan;
- (b) steer the selection of actions that are part of megaprojects so as to increase the management efficiency and avoid artificial competition with other projects. To ensure coherence and consistency, the Commission should promote, for each megaproject, a single grant agreement per multi-annual financing period. Such an agreement should include all actions which are mature enough to be implemented in full within the multi-annual financing period;
- (c) address the weaknesses identified in the TFI implementation by the Member States and increase the effectiveness of EU co-funding; make early and proactive use of all available tools to ensure timely completion of the network, and set up dedicated competence centres to assess the quality of the documents prepared by project promoters and to coordinate efforts in steering and guiding them.

Time frame: By the end of 2020, once the new MFF has been adopted.

87 The Commission’s oversight of the completion of the core network corridors by the Member States exhibits a number of weaknesses. The Commission appointed European Coordinators, who are using non-binding work plans and corridor forum meetings with limited resources, and it uses an information system to oversee the completion of the core network corridors. This gives it a distant role. In shared management, this did not prevent a suboptimal use of EU money of €12.4 million and waste of €3.7 million on the A1 motorway in Romania, because one stretch built is not used, and two parts were wrongly connected. The Commission still links EU co-funding for actions exclusively to outputs. It does not systematically collect information on the results and the degree of success of investments at TFI level (i.e. whether and when the TFI will achieve its expected results).

88 The Commission has no models or specific data-collection procedures to independently assess the level of passenger and freight traffic which will use a TFI before deciding to commit EU co-funding to actions that are part of it. It also did not question the details of future construction standards against potential traffic flows when providing EU support to those actions. Our analysis suggests that potential freight and passenger traffic levels put at risk the economic sustainability of the Rail Baltica line, even for the full connection up to Warsaw. We also noted very high costs for building the German access line for the proposed high-speed rail line between Copenhagen and Hamburg, mainly caused by the costs for the additional noise protection requirements and for a new Fehmarnsund bridge. Moreover, we observed limited economic sustainability, as the rail part of this TFI that passes through the Fehmarn Belt fixed link will be used by only 1 million passengers each year in both directions.

89 The Commission has introduced a new tool: the implementing decision. This allows the Commission to follow TFI implementation more closely and is therefore a step towards more effective oversight of the Member States' completion of the Core Network Corridors. However, these decisions cannot be taken without the agreement of the Member States concerned; they do not clarify the rules and the responsibilities of all parties including the Commission; and they have weaknesses in tackling all critical issues, including anticipated results. Moreover, implementing decisions do not require a mandatory *ex post* evaluation so that experiences can be learned from (see paragraphs [61](#) to [78](#)).

Recommendation 4 – Build on the experience of implementing decisions, and strengthen the role of the European Coordinators

The Commission should take the following actions:

- (a) further develop the new implementing decision tool, by proposing such an implementing decision for each cross-border TFI to be co-funded in the 2021-2027 period. These decisions should clarify the rules and the responsibilities of all parties including the Commission; they should include a statement of expected results (e.g. modal shift, traffic forecast objectives) and milestones, and a commitment on the part of all Member States to share *ex post* evaluation results with the Commission;
- (b) after the new legal base suggested in [Recommendation 1 \(a\)](#) is adopted, also propose an implementing decision for each TFI with “cross-border impact”;
- (c) propose strengthening the role of the European Coordinators by enhancing the enforcement of the Corridor Work Plans; by allowing their presence at key meetings of management boards; and by improving their role in terms of communication of the TEN-T policy objectives.

Time frame: (a) for those TFIs selected in this audit, by the end of 2021, and follow the same approach for future cross-border TFIs, and for (b) and (c), by 2022, in the context of the revision of the TEN-T Regulation.

This Report was adopted by Chamber II, headed by Mrs Iliana Ivanova, Member of the Court of Auditors, in Luxembourg at its meeting of 25 March 2020.

For the Court of Auditors

Klaus-Heiner Lehne
President

Annexes

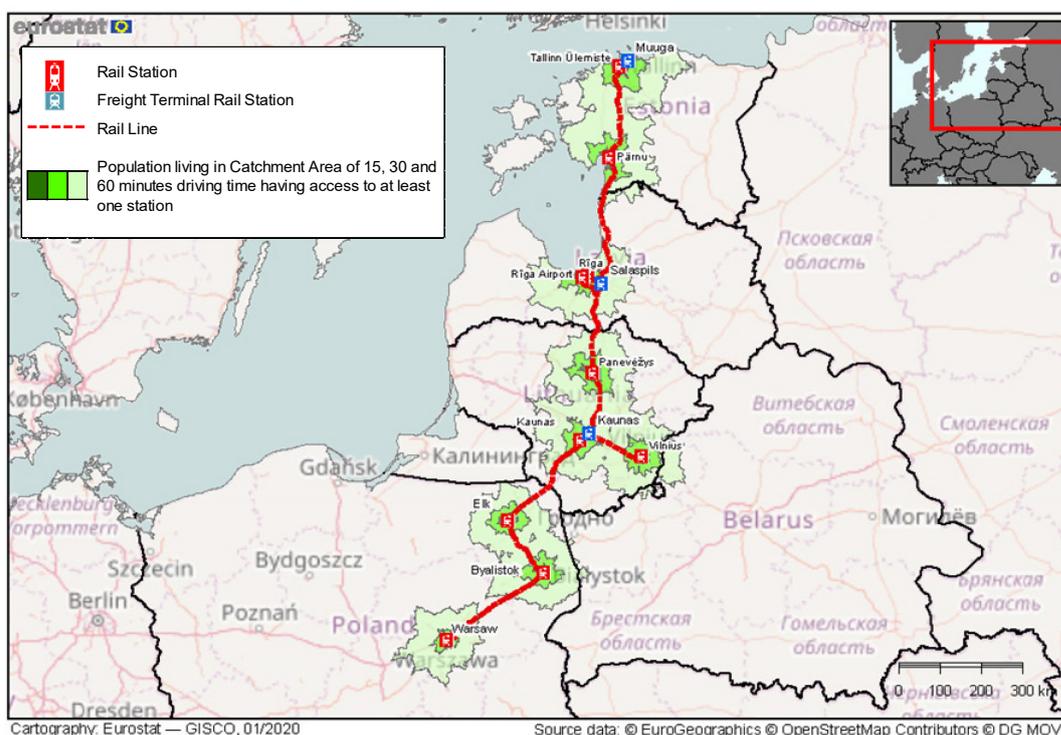
Annex I - Overview of the selected TFIs

1. Rail Baltica

01 Rail Baltica is a greenfield rail transport infrastructure project, connecting the Baltic states with Poland and the European rail network on one side, and enabling a link to Finland on the other (an underwater tunnel to link the line to Helsinki has not yet been planned). Rail Baltica is part of North Sea Baltic TEN-T corridor, and represents a “missing link” in the network (see [Picture 1](#)).

02 The Rail Baltica will be built at standard EU gauge of 1 435 mm, which differs from the gauge used for the conventional rail network in the Baltic States (1 520 mm). The length of the newly built electrically powered railway will be 870 km, with a maximum design speed of 249 km/h for passenger trains and 120 km/h for freight trains. The overall population living in a 60-minute catchment area from the TFI is 3.8 million people in the Baltic states. Once the line up to Warsaw has been built and upgraded, the overall population living in the 60 minutes catchment area goes up to 8.3 million.

Picture 1 – Catchment area of the Rail Baltica TFI



Source: Eurostat.

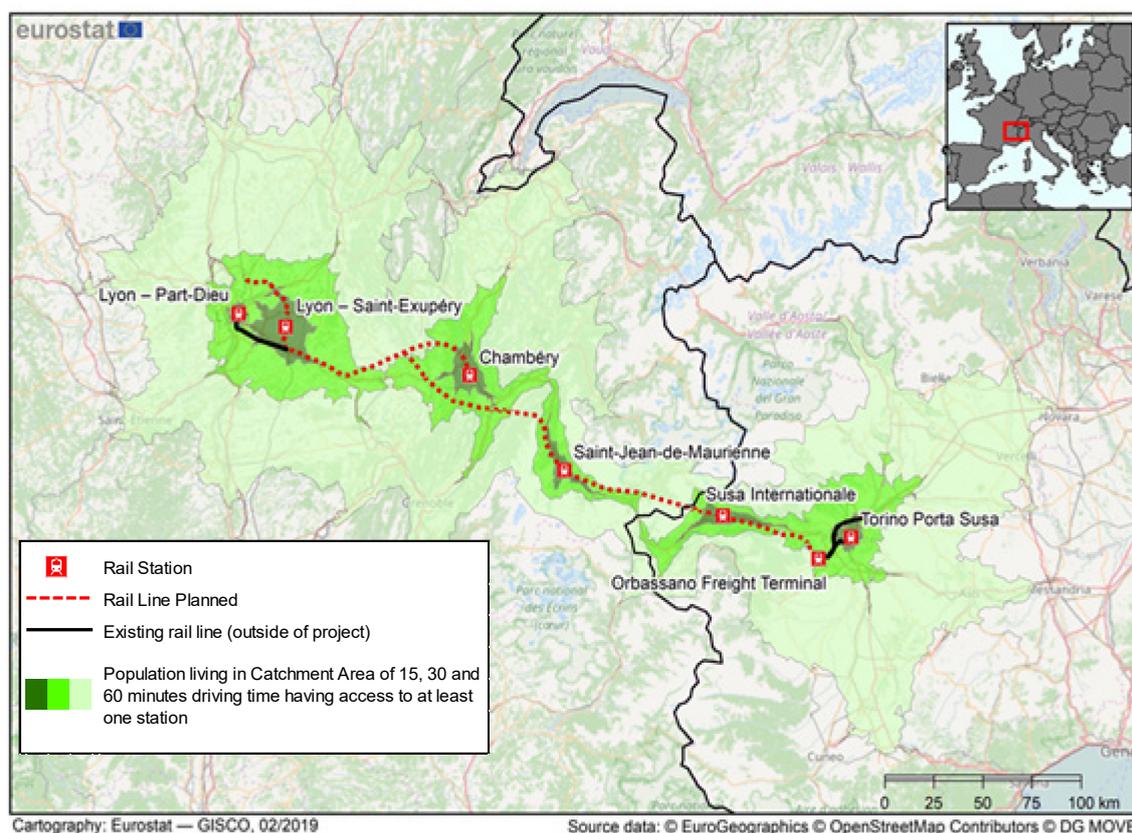
2. Lyon-Turin rail link

01 The Lyon-Turin TFI is a 65 km cross-border rail link between France and Italy on the TEN-T Mediterranean corridor.

02 The cross-border two-tube railway tunnel (the base tunnel itself), which is under construction, is 57.5 kilometres. When considering access lines, the total expected length of the railway line between Lyon and Turin is 270 kilometres (see [Picture 2](#)).

03 This rail link will connect the French and Italian rail networks and will be used for both passenger traffic as well as rail freight traffic. The overall population living in a 60-minute catchment area from the TFI is 7.7 million people.

Picture 2 – Catchment area of the Lyon-Turin TFI



Source: Eurostat.

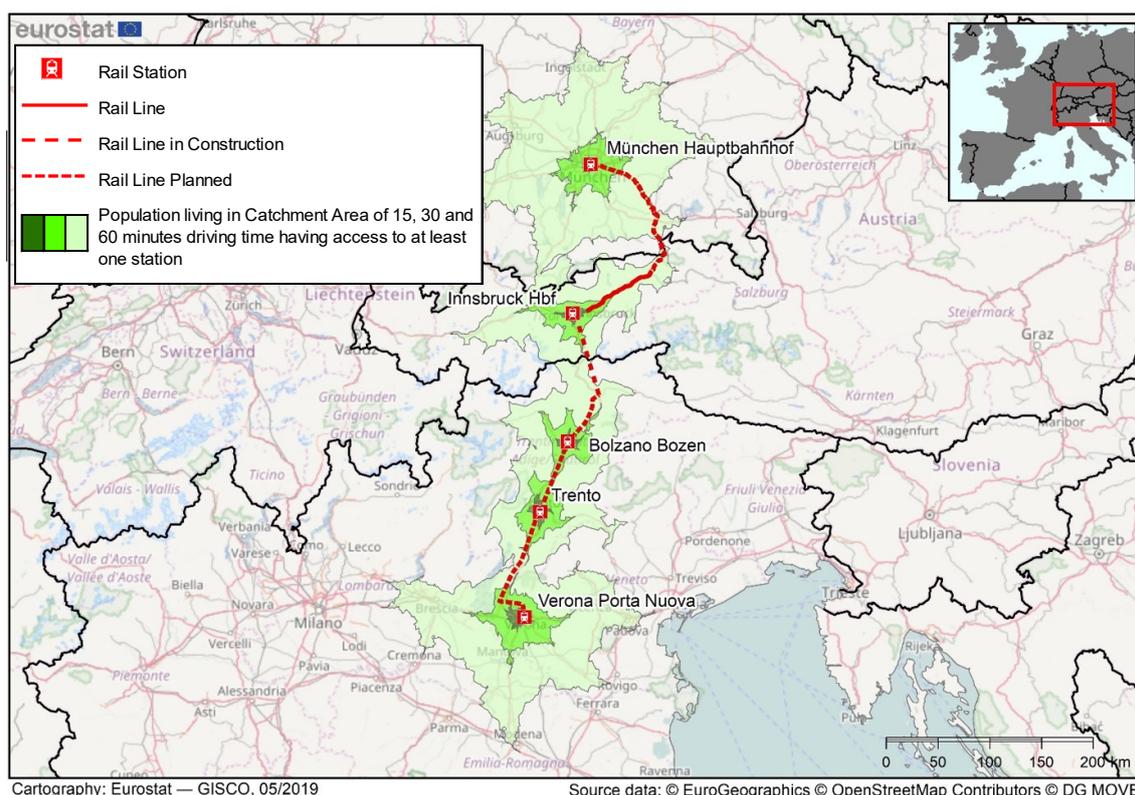
3. Brenner Base Tunnel

01 The Brenner Base Tunnel is a cross-border two-tube railway tunnel under construction between Austria and Italy, located on the Scandinavian-Mediterranean EU core network corridor. When finished, it will have a total length of 64 km.

02 The TFI also includes access lines that need to be built to complete the 445 km Munich-Verona section of the rail corridor (see [Picture 3](#)). These lines go to the south (Italy) and the north (Austria and Germany) of the tunnel. Each national infrastructure manager is responsible for building these access lines.

03 The tunnel will be used for both freight and passenger traffic. The overall population living in a 60-minute catchment area from the TFI is 7.9 million people.

Picture 3 – Catchment area of the Brenner Base Tunnel TFI



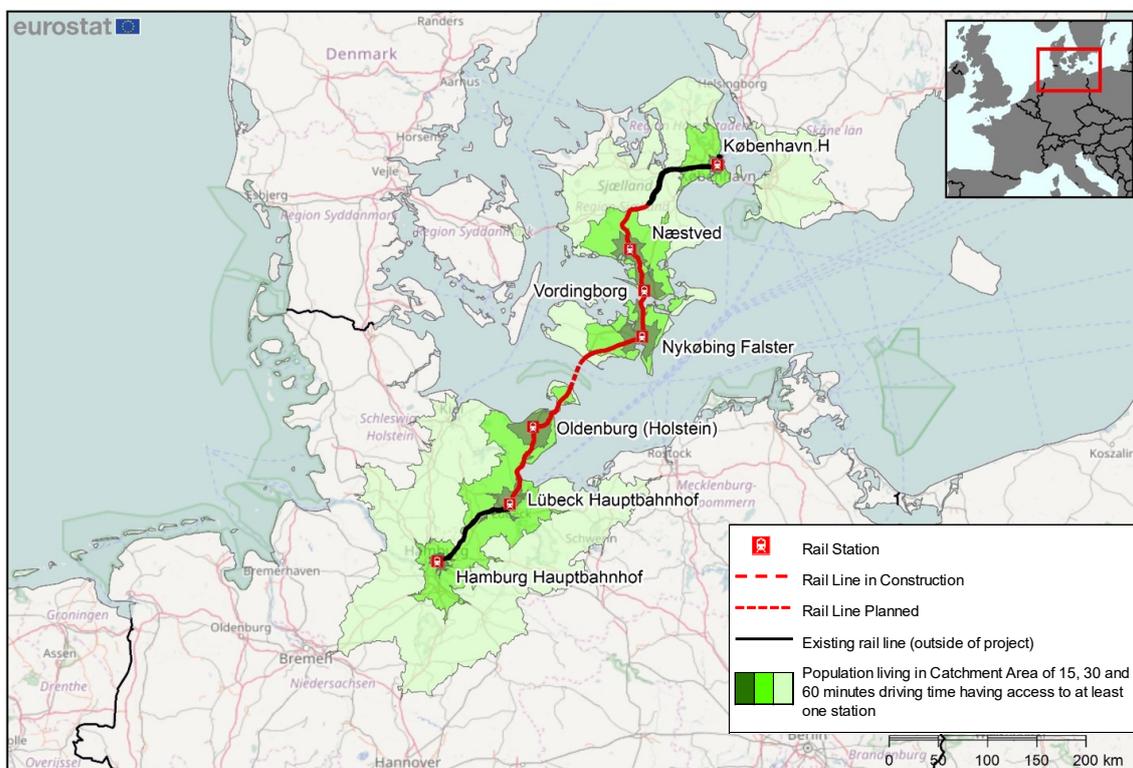
Source: Eurostat.

4. Fehmarn Belt fixed link

01 The Fehmarn Belt fixed link is an 18 km rail-road tunnel connecting Scandinavia with the rest of continental Europe. It is part of a planned “Nordic triangle” uniting the Scandinavian Peninsula with the rest of continental Europe (see [Picture 4](#)).

02 The four-lane motorway and a double-track mixed railway line (for both passenger high-speed and freight) will fill a currently missing link on the Scandinavian-Mediterranean TEN-T Corridor. The overall population living in a 60-minute catchment area from the TFI is 7.7 million people.

Picture 4 – Catchment area of the Fehmarn Belt TFI



Cartography: Eurostat — GISCO, 05/2019

Source data: © EuroGeographics © OpenStreetMap Contributors © DG MOVE

Source: Eurostat.

03 The TFI also includes the development of the access lines in both Denmark and Germany. This concerns the upgrade to double-track configuration (design speed 200 km/h) of a 115 km section of railway in Denmark leading up to the Fehmarn Belt, and the partial upgrading to an electrified double-track line (33 km – conventional railway) and new construction (55 km - operational speed 200 km/h) of rail lines in Germany.

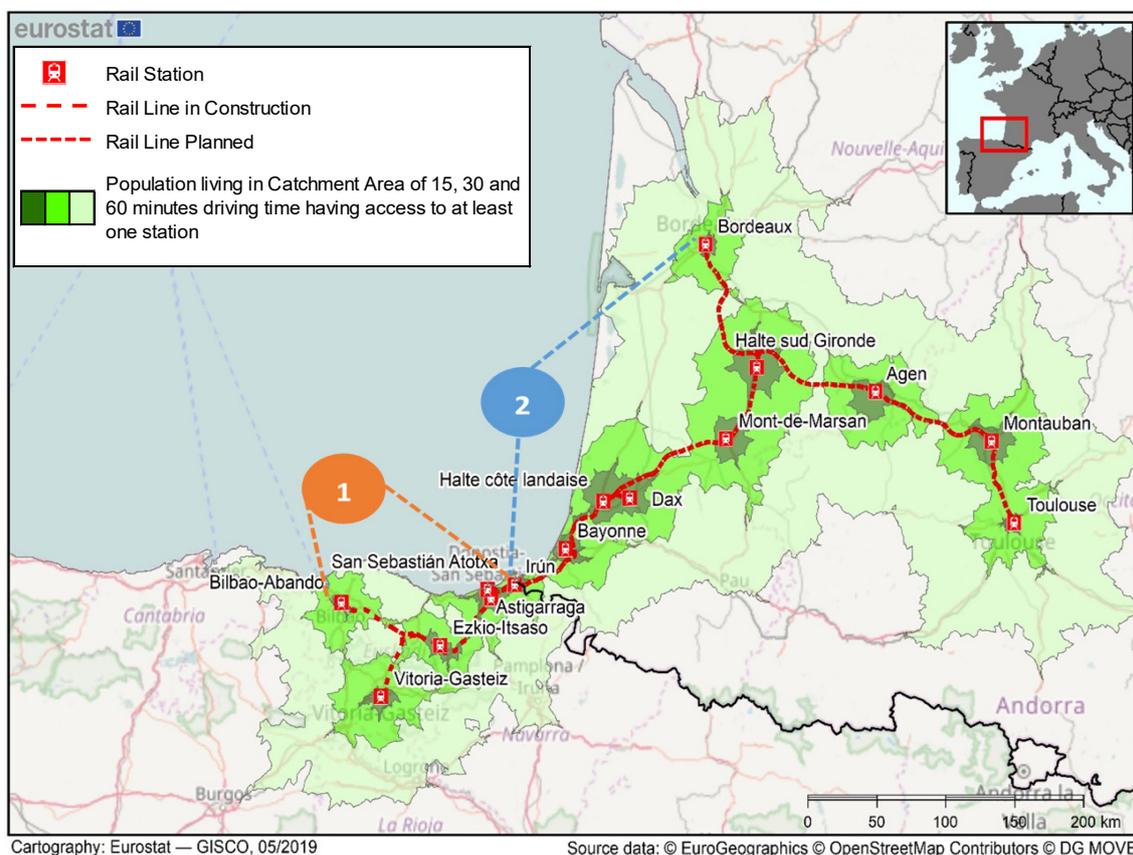
5. Basque Y and its connection with France on the Atlantic corridor

01 The Basque Y is a newly built high-speed rail connection between Spain and France running through the Basque Country. It is a roughly Y-shaped standard-gauge line, 175 km long, with an operational speed of 250 km/h (section 1 in [Picture 5](#)).

02 The Basque Y will be connected to the French high-speed rail network by the Grand Project Sud-Ouest (GPSO) using the Atlantic Corridor. The GPSO is currently planned to be a newly built partially mixed standard-gauge high-speed rail line with a length of 504 km and an operational speed of 320 km/h for passenger traffic and 220 km/h for freight (section 2 in [Picture 5](#)). The part that concerns Bordeaux to Hendaye via Halte Sud Gironde (see 2 on the picture), which has been assessed in the context of this audit, is 279 km long.

03 The line will be used for both passengers and freight traffic. The overall population living in a 60-minute catchment area from the TFI is 6.8 million people.

Picture 5 – Catchment area of the Basque Y with its connection with France



Source: ECA on Eurostat map.

6. Seine-Scheldt link

01 The Seine-Scheldt inland waterway link, on the North Sea Mediterranean Corridor, is an upgrade to a 1 100 km inland waterway network around the basins of the Seine and Scheldt rivers primarily to ensure, by 2030, that the main itineraries are at least of EMCT class Va³³ (thus allowing larger vessels to use the waterways) under good navigation conditions (see [Picture 6](#)).

02 The key engineering part of the infrastructure is a new 107 km canal in France between Compiègne and Aubencheul-au-Bac, Cambrai (the “Canal Seine Nord Europe”).

Picture 6 – Seine-Scheldt Inland Waterway Link



Source: TFI project promoters. The sections marked in colour are those for which EU co-funded actions have been planned under the current multiannual programming period.

³³ The Classification of European Inland Waterways is a set of standards for interoperability of large navigable waterways, with regard to tonnage, length, breadth, draught and air draft for internal waterway transport. It was created by the European Conference of Ministers of Transport in 1992.

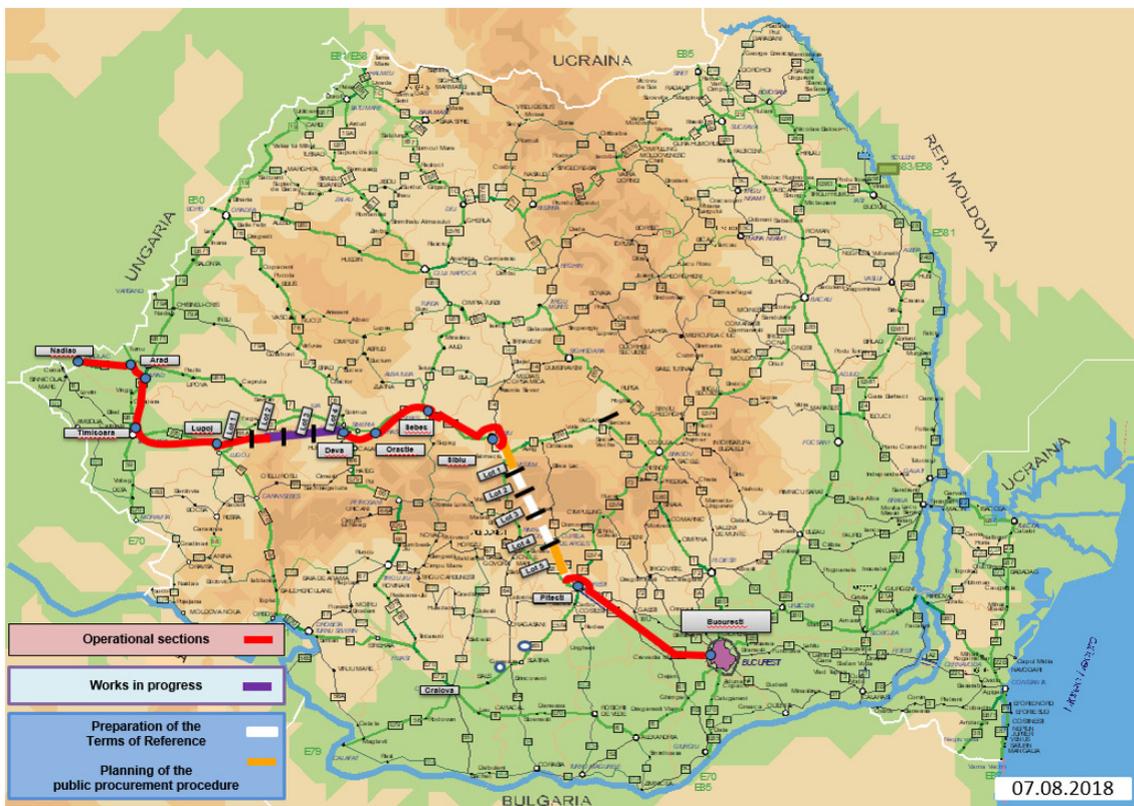
7. The A1 motorway in Romania

01 The A1 motorway between Bucharest and Nadlac is part of the strategic European “Rhine-Danube” Corridor (see [Picture 7](#)).

02 This corridor provides the main east-west link, and it is the transport backbone linking central and south-eastern Europe via Hungary.

03 The motorway is 582 km long, and will be used by both passenger and freight traffic.

Picture 7 – The A1 motorway in Romania



© Compania Nationala de Administrare a Infrastructurii Rutiere.

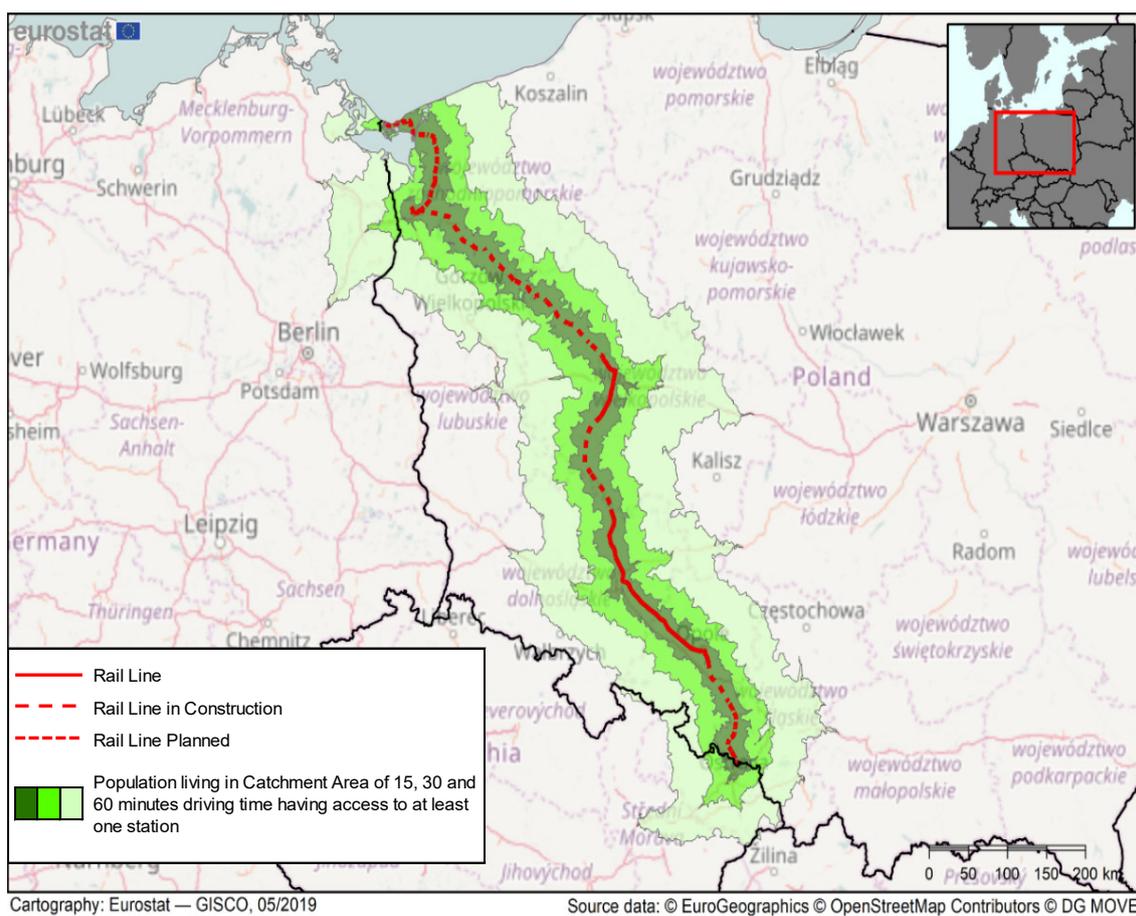
8. The E59 railway line in Poland and its connection to the ports of Szczecin and Świnoujście

01 The E59 railway line in Poland, which is 678 km long, is located on the TEN-T Baltic-Adriatic core network corridor.

02 The line runs from the ports of Szczecin and Świnoujście in northwest Poland, via the regional capitals of Poznań, Wrocław and Opole, to the Chałupki border crossing with Czechia in the South (see [Picture 8](#)).

03 The TFI is an upgrade of an existing conventional railway line which is used for both passenger and rail freight traffic.

Picture 8 – The E 59 railway line and its connection to the ports of Szczecin and Świnoujście



Source: Eurostat.

Annex II - Key performance indicators on the evolution of timelines of completion of TFIs

TFI	Planned start of construction (A)	Initial foreseen opening date (B)	Foreseen construction period in years (B-A)	Actual (or latest estimated) start of construction (C)	Current opening date (latest estimation) (D)	Latest estimated construction period (D-C)	Notes
Rail Baltica	2016	2026	10	2016	2029	13	(1)
Lyon-Turin	2008	2015	7	2015	2030	15	(2)
Brenner Base Tunnel	2007	2016	9	2015	2028	13	(3)
Fehmarn Belt fixed link	2012	2018	6	2020	2028	8	
Basque Y and its connection with France	2006	2010	4	2006	2023	17	
Canal Seine Nord Europe (a main component of the Seine – Scheldt link)	2000	2010	10	2020	2028	8	
A1 Motorway	2005	2030	25	2009	2030	21	(4)
E59 railway line	2008	2030	22	2009	2030	21	(5)
AVERAGE			12			15	

Notes: (1) The latest estimated opening date includes a risk-buffer calculated by the project promoter on the official opening date of 2026. (2) Columns A and B refer to a first construction phase (out of the two initially envisaged) for the TFI. (3) Risk of an additional delay of up to 2030. (4) Figures excluding Bucharest-Pitesti and Pitesti-Sibiu sections; without reliable evidence on the initially and currently foreseen completion dates, the year 2030 has been retained in compliance with the TEN-T regulation. (5) Figures excluding Świnoujście-Szczecin and Kedzierzyn Kozle-Chalupki sections; without reliable evidence on the initially and currently foreseen completion dates, the year 2030 has been retained in compliance with the TEN-T regulation.

Source: ECA.

Annex III - Key performance indicators on the evolution of costs of construction of TFIs*

TFI	Initial cost estimation (billion euros)	Value year of initial estimate	Re-indexing factor (1)	Initial cost estimation (billion euros; 2019 values)	Current cost estimation (billion euros; 2019 values)	Cost increase (billion euros; 2019 values)	Notes
Rail Baltica	3.8	2011	1.22	4.6	7.0**	2.4	
Lyon-Turin	3.8	1998	1.37	5.2	9.6	4.4	(2)
Brenner Base Tunnel	4.5	2002	1.33	6.0	8.5	2.5	(3)
Fehmarn Belt fixed link	4.4	2008	1.14	5.0	7.7	2.7	
Basque Y and its connection with France on the Atlantic corridor	4.2	2006	1.11	4.7	6.5	1.8	(4)
Canal Seine Nord Europe (a main component of the Seine – Scheldt link)	1.2	1993	1.38	1.7	5.0	3.3	(5)
A1 Motorway	5.0	n/a	n/a	7.2	7.3	0.1	(6) (7)
E59 railway line	1.8	n/a	n/a	2.1	2.2	0.1	(6) (8)
TOTAL				36.5	53.8	17.3	47 %

Notes: * Although some of the so called TFIs have changed considerably their scope over time, we compared the latest available cost estimations with the initially predicted costs of the eight selected TFIs as we wanted to highlight how TFIs change in cost estimates from the first ideas in the political debate to the actual realisation. ** Costs include the provisions for risks of future cost increases as identified by the auditors. The official costs are stated to be €5.8 billion so far (1) This factor is computed using the GDP price deflator (as collected in the European Commission's AMECO database; values updated in November 2019) to enable a meaningful comparison at constant prices. (2) The cost figures for the original design refer to a first phase of the cross-border section (1-tube tunnel). (3) The cost estimation including pre-valorised inflation amounts and risks until the expected end of the construction is €9.301 billion. (4) All figures refer only to the Spanish Basque Y section of the so-called TFI. (5) Initial cost estimations converted in euros from the original figure of 7.0 billion French francs. (6) Aggregate figures from the various stretches, which are being planned and realised in different years. (7) Figures exclude the Bucharest-Pitesti section. The cost increases are linked to the stretches Pitesti-Sibiu and Deva-Lugoj (lots 2-3-4). These stretches have not been completed yet, and thus the cost figures are still subject to significant changes. (8) Figures exclude the Świnoujście-Szczecin and Kedzierzyn Kozle-Chalupki sections.

Source: ECA.

Annex IV - Overview of the selected underlying actions audited, and their details (figures in million euros)

TFI	Action	Title	Latest maximum eligible cost	Latest EU co-funding allocated	Latest EU co-funding paid
Rail Baltica	2014-EU-TMC-0560-M	Development of a 1 435 mm standard gauge railway line in the Rail Baltic/Rail Baltica (RB) corridor through Estonia, Latvia and Lithuania	536.72	442.23	24.86
	2015-EU-TM-0347-M	Development of a 1 435 mm standard gauge railway line in the Rail Baltic/Rail Baltica (RB) corridor through Estonia, Latvia and Lithuania (Part II)	153.17	130.19	20.48
	2016-EU-TMC-0116-M	Rail Baltic / Rail Baltica – 1 435 mm standard gauge railway line development in Estonia, Latvia and Lithuania (Part III)	129.97	110.47	6.92
Lyon-Turin link	2007-EU-06010-P	New Lyon-Turin Rail Link - Franco-Italian Common Part of the International Section (Studies and Works)	489.66	235.62	235.62
	2014-EU-TM-0401-M	Section transfrontalière de la section internationale de la nouvelle liaison ferroviaire Lyon-Turin - Tunnel de Base du Mont-Cenis (TBM) (<i>Cross-border section of new international Lyon-Turin rail connection – Mont-Cenis Base Tunnel</i>)	1 915.05	813.78	210.06
Brenner Base Tunnel	2014-EU-TM-0186-S	Brenner Base Tunnel – Studies	605.70	302.85	133.04
	2014-EU-TM-0190-W	Brenner Base Tunnel – Works	2 196.60	878.64	311.10

Fehmarn Belt Fixed Link	2007-EU-20050-P	Fehmarnbelt fixed rail/road link	419.38	181.37	181.37
	2014-EU-TM-0221-W	Fehmarnbelt Tunnel - fixed rail and road link between Scandinavia and Germany	1 472.50	589.00	11.40
Basque Y and its connection with France	2007-EU-03040-P	High-speed railway line Paris-Madrid: section Vitoria-Dax	45.78	11.44	11.44
	2014-EU-TM-0600-M	Atlantic Corridor: Section Bergara-San Sebastian-Bayonne. Studies and works and services for follow-up works. Phase 1	1 147.44	459.30	183.55
Seine-Scheldt link	2007-EU-30010-P	Seine-Scheldt inland waterway network - cross-border section between Compiègne and Ghent	320.82	97.14	97.14
	2014-EU-TM-0373-M	Seine-Escaut 2020	1 464.78	634.14	156.55
A1 motorway Romania	2010RO161 PR010	Construction of Orastie-Sibiu motorway	360.35	306.00	306.00
	2017RO16 CFMP012	Construction of Lugoj – Deva Motorway lot 2, lot 3 and lot 4 (section Dumbrava – Deva) – phase 2	516.70	395.00	88.40
E59 railway line	2007PL161 PR001	Modernisation of E59 railway line on the Wroclaw-Poznan section, stage II, Section: Wroclaw - border of Lower Silesia province	188.93	160.59	160.59
	2015-PL-TM-0125-W	Poprawa dostępu kolejowego do portów morskich w Szczecinie i Świnoujściu (<i>Construction of rail connection between the ports of Szczecin and Świnoujście</i>)	141.06	119.90	32.42
TOTAL			12 104.61	5 867.59	2 354.944

Annex V - Overview of implementation delays for the selected actions

Project Code	Project Title	Project completed? (Yes / No)	Initial Start Date (Grant Agreement)	Original End Date	Actual End Date	Initial timeline (in months)	Real timeline (in months)	Delay (in months)	Delay of initial project duration (%)
2014-EU-TMC-0560-M	Development of a 1 435 mm standard gauge railway line in the Rail Baltic/Rail Baltica (RB) corridor through Estonia, Latvia and Lithuania	No	01/03/2015	31/12/2020	31/12/2022	69	95	26	37.68
2015-EU-TM-0347-M	Development of a 1 435 mm standard gauge railway line in the Rail Baltic/Rail Baltica (RB) corridor through Estonia, Latvia and Lithuania (Part II)	No	16/02/2016	31/12/2020	31/12/2023	58	94	36	62.07
2016-EU-TMC-0116-M	Rail Baltic / Rail Baltica – 1 435 mm standard gauge railway line development in Estonia, Latvia and Lithuania (Part III)	No	06/02/2017	31/12/2023	31/12/2023	82	82	0	0.00
2010RO16 1PR010	Construction of Orastie-Sibiu motorway	No	20/06/2011	18/12/2013	31/12/2019	29	102	73	251.72
2017RO16 CFMP012	Construction of Lugoj – Deva Motorway lot2, lot3 and lot4 (section Dumbrava – Deva) – phase 2	No	27/11/2013	27/05/2016	31/12/2022	30	109	79	263.33
2014-EU-TM-0186-S	Brenner Base Tunnel – Studies	No	01/01/2016	31/12/2019	31/12/2021	47	71	24	51.06

2014-EU-TM-0190-W	Brenner Base Tunnel – Works	No	01/01/2016	31/12/2019	31/12/2021	47	71	24	51.06
2007PL161 PR001	Modernisation of E59 railway line on the Wrocław-Poznań section, stage II, Section: Wrocław - border of Lower Silesia province	Yes	01/01/2009	30/06/2015	31/12/2018	77	119	42	54.55
2015-PL-TM-0125-W	Poprawa dostępu kolejowego do portów morskich w Szczecinie i Świnoujściu (<i>Construction of rail connection between the ports of Szczecin and Świnoujście</i>)	No	30/08/2016	31/12/2020	30/06/2022	52	70	18	34.62
2007-EU-06010-P	New Lyon-Turin Rail Link - Franco-Italian Common Part of the International Section (Studies and Works)	Yes	01/01/2007	31/12/2013	31/12/2015	83	107	24	28.92
2014-EU-TM-0401-M	Section transfrontalière de la section internationale de la nouvelle liaison ferroviaire Lyon-Turin - Tunnel de Base du Mont-Cenis (TBM) (<i>Cross-border section of new international Lyon-Turin rail connection – Mont-Cenis Base Tunnel</i>)	No	01/01/2014	31/12/2019	31/12/2021	71	95	24	33.80
2007-EU-30010-P	Seine-Scheldt inland waterway network - cross-border section between Compiègne and Ghent	Yes	01/01/2007	31/12/2013	31/12/2015	83	107	24	28.92
2014-EU-TM-0373-M	Seine-Escaut 2020	No	01/01/2014	31/12/2019	31/12/2022	71	107	36	50.70

2007-EU-20050-P	Fehmarnbelt fixed rail/road link	Yes	01/06/2008	31/12/2013	31/12/2015	66	90	24	36.36
2014-EU-TM-0221-W	The Fehmarnbelt Tunnel - The fixed rail and road link between Scandinavia and Germany	No	01/01/2017	31/12/2019	31/12/2020	35	47	12	34.29
2007-EU-03040-P	High speed railway line Paris-Madrid: section Vitoria-Dax	Yes	01/01/2008	31/12/2013	31/12/2015	71	95	24	33.80
2014-EU-TM-0600-M	Atlantic Corridor: Section Bergara-San Sebastian-Bayonne. Studies and works and services for follow-up works. Phase 1	No	01/01/2014	31/12/2019	31/12/2023	71	119	48	67.61

Source: ECA. The column "Actual End Date" indicates the latest amended grant agreement date or the current expected completion date as indicated by the project promoters.

Annex VI - Overview of changes in original allocations for the 17 audited actions (figures in million euros)

A. For the six completed actions:

Transport Flagship Infrastructure	Original allocation	Latest allocation	EU co-funding to action at closure	Total changes from original allocation	Total changes from latest allocation
Rail Baltica	NA	NA	NA	-	-
Lyon-Turin link	1 671.8	1 401.0	235.6	436.2	165.4
Brenner Base Tunnel	NA	NA	NA	-	-
Fehmarn Belt	338.9	204.80	181.3	157.60	23.50
Basque Y and its connection with France	70.0	56.4	11.4	58.6	45.0
Seine-Scheldt link	420.2	176.6	97.1	323.1	79.5
A1 motorway	363.0	363.0	306.0	-*	-*
E59 railway line	160.6	160.6	160.6	-	-
TOTAL	2 024.5	1 362.4	992.1	975.4	313.28

* Reduction not linked to implementation aspects (due to ineligible expenditure).

Source: ECA.

B. For the 11 ongoing actions:

Transport Flagship Infrastructure	Original allocation	Latest allocation	EU co-funding to action at closure	Total changes from original allocation	Total changes from latest allocation
Rail Baltica	743.9	682.9	Ongoing	61.0	Ongoing
Lyon-Turin link	813.8	813.8	Ongoing	0	Ongoing
Brenner Base Tunnel	1 181.5	1 181.5	Ongoing	0	Ongoing
Fehmarn Belt	589.0	589.0	Ongoing	0	Ongoing
Basque Y and its connection with France	459.3	459.3	Ongoing	0	Ongoing
Seine-Scheldt link	979.7	634.1	Ongoing	345.5	Ongoing
A1 motorway	395.0	395.0	Ongoing	0	Ongoing
E59 railway line	119.9	119.9	Ongoing	0	Ongoing
TOTAL	5 282.1	4 875.5		406.6	

Abbreviations and glossary

Action: For the purposes of this report, this relates to a smaller part of a TFI which has been EU co-funded, either via grant agreements or through Operational Programmes. These actions concern, for example, a feasibility study, technical studies, or works.

Catchment area: The estimated area of influence related to the infrastructure built. For the purposes of this report, we defined a 15, 30 or 60 minutes travel time zone along the TFI, and calculated the number of persons living in that area to assess the potential for passenger traffic development of the infrastructure.

CEF (Connecting Europe Facility): A mechanism, which since 2014 has provided financial aid to three sectors: transport, energy, and information and communication technology. In these three areas, the CEF identifies investment priorities that should be implemented in the coming decade. For transport, the priorities are interconnected transport corridors and cleaner transport.

CF (Cohesion Fund): A fund, which aims to improve economic and social cohesion within the European Union by financing environment and transport projects in Member States whose per-capita GNP, is less than 90 % of the EU average.

DG MOVE: Directorate-General for Mobility and Transport of the European Commission.

DG REGIO: Directorate-General for Regional and Urban Policy of the European Commission.

EAV (EU added value): The value resulting from an EU intervention, which is additional to the value that would have been otherwise created by Member State action alone.

ERDF (European Regional Development Fund): An investment fund whose objective is to reinforce economic and social cohesion within the EU by remedying regional imbalances by providing financial support for the creation of infrastructure, and by providing productive job-creating investment, mainly for businesses.

ESIF (European Structural and Investment Funds): Over half of EU funding is channelled through the five European structural and investment funds. The European Commission and EU Member States jointly manage them. They include the European Regional Development Fund (ERDF); the European Social Fund (ESF); the Cohesion Fund (CF); the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF).

GPSO (Grand Projet du Sud-Ouest): This is a partially mixed high-speed rail line on UIC gauge from Bordeaux to the French-Spanish border. The line would have a length of 279 km, with operational speed 320 / 220 km/h, and a total cost estimated at €13.6 billion, excluding VAT. The line had been planned earlier, but these plans have been postponed.

INEA (Innovation and Networks Executive Agency): The successor of the Trans-European Transport Network Executive Agency (TEN-T EA), which was created by the European Commission in 2006 to manage the technical and financial implementation of its TEN-T programme. The INEA commenced operations on 1 January 2014 to implement parts of the following EU programmes: the Connecting Europe Facility (CEF); Horizon 2020; and legacy programmes (TEN-T and Marco Polo 2007-2013).

TEN-T (Trans-European Transport Networks): A planned set of road, rail, air and water transport networks in Europe. The TEN-T networks are part of a wider system of Trans-European Networks (TENs), which also includes a telecommunications network and an energy network.

TFI (Transport Flagship Infrastructure): For the purposes of this report: any EU co-funded transport infrastructure with an allocated total eligible cost above one billion euros. In addition, the following characteristics apply: a significant amount of EU co-funding has to be allocated or paid (without a quantitative threshold); the TFI should be relevant for the transport network in the EU (in particular regarding cross-border links), and it is expected to deliver a transformational socio-economic impact.

REPLIES OF THE COMMISSION TO THE SPECIAL REPORT OF THE EUROPEAN COURT OF AUDITORS

“EU TRANSPORT INFRASTRUCTURES: MORE SPEED NEEDED IN MEGAPROJECT IMPLEMENTATION TO DELIVER NETWORK EFFECTS ON TIME”.

EXECUTIVE SUMMARY

Common Commission reply to paragraphs I to IV

The completion of the trans-European transport network is a high priority for the Union. As agreed by Member States through the adoption of Regulation (EU) No 1315/2013, the deadline for achieving the core network is 2030. This European wide network will connect the national transport networks and make them more interoperable. To achieve this, important bottlenecks and key missing links have to be addressed, especially where cross border connections do not exist or are no longer able to cater for modern transport solutions. In certain cases, this requires important investments, which are necessary to provide for a coherent and fully functional network. Cost-benefit analysis and traffic forecasts have been taken into account before taking such important decisions. Through the implementation of these major infrastructure projects, more environmentally friendly transport modes (rail and inland waterways) become real options for passenger and freight traffic.

The Commission notes that good progress has been achieved towards the completion of the TEN-T core network, thanks to the work of Member States and infrastructure managers, together with the support of the Commission. Having set a common deadline for all Member States has proven to create a momentum, leading in many cases Member States to plan their works accordingly. Through the network effects from this coordination, projects will achieve higher benefits.

The Commission has put many efforts to ensure that the cross border projects considered in this report are being realised. They are all very complex projects, needing the close and continuous cooperation between Member States. Commission interventions, which are not necessarily only of legal nature, have often been decisive to ensure that these projects are going to be implemented. For instance the European Coordinators have been working continuously with the partners from the different Member States and been directly involved in the supervisory boards of the joint entities of the cross border projects. Given the sensitive political context in which such major investments are carried out, the activities of Coordinators by meeting ministers, stakeholders, project managers etc. are essential. The Council has recognised “the important role of the European Coordinators in facilitating timely and effective implementation of the multimodal Core Network Corridors”.¹

The EU financial support provided to the projects has been decisive also for the long-term engagement and creating a stable environment for the project implementation. The Connecting Europe Facility has been a crucial tool for the implementation of the cross border projects, as recognised by many of the entities responsible for the projects audited in this report. Cohesion Fund and ERDF have allowed implementation of transport infrastructure projects to strengthen the economic, social and territorial cohesion. At the same time, the Commission has ensured and monitored that the funding rules for the respective EU funds are correctly applied.

¹ “Council conclusions on the progress of the Trans-European Transport Network (TEN-T) implementation and the Connecting Europe Facility (CEF) for transport”, 5 December 2017

The Commission is therefore of the opinion that without the enforcement of the TEN-T framework, the EU financial support and its political interventions, the projects concerned would probably never take place.

The Commission recognises that such major infrastructure projects take a long time. This is true for all transport infrastructure investments of such size, but even more understandable for the cross border projects assessed in this audit (involvement of several Member States, budgetary discussions, technical complexity of realisation of tunnels or green-field projects, administrative complexity of permit granting procedures, etc.). As projects mature during the preparatory steps, it is normal that they evolve in terms of scope, alignment, technical parameters, etc., based also on the valuable input received during the public consultations. It is equally normal that these adaptations of the project lead to changes in socio-economic costs and benefits. The assessment of any deviations in cost and of the timely implementation should therefore be made only as from the final investment decision and not at an earlier stage.

The Commission underlines that the cross border projects are on their way to be realised by 2030. Further efforts are needed. The Commission will continue to engage closely with the relevant parties. It has planned to propose a revision of the TEN-T regulation in 2021; this will be the occasion to take stock of the progress achieved and if necessary adjust the tools in order to achieve the objective of a fully functioning and interoperable TEN-T network by the deadlines set.

Finally, the Commission notes that the concept of “TFIs” (or “megaproject”), which is used in this report, does not find any correspondence in any basic act, ongoing and upcoming programmes or in any operational definition at EU level.

OBSERVATIONS

16. The Commission acknowledges that there is a high risk for some of the TFIs as referred to by the ECA (hereinafter referred to as ‘TFI’), not to operate at full capacity in 2030, which is however not a requirement of the TEN-T regulation. The Commission underlines that most of the ‘TFIs’ will be operational by that time and that the TEN-T requirements will be fulfilled. This will constitute a major improvement for the EU transport system.

With regard to paragraphs 16, 17 and 19 as well as Table 2, the Commission assesses the state of play of the audited projects as follows:

Rail Baltica:

The Rail Baltica project is expected to be completed, compliant with the TEN-T requirements and operating at full capacity before 2030, including the “access lines” in Poland, see also replies to paragraphs 69-71.

The Latvian national audit compared the initial 2014 Grant Agreement (GA) timeline (in which land acquisition in Latvia was scheduled to last until 12/2019) to the date communicated in 2019 (12/2022). In the meantime, the 2014 GA was extended and the new deadline for land acquisition in Latvia is 12/2022. Instead of constituting a delay, the new deadline reflects updates to the land acquisition plans with the focus on priority areas in which contracts for construction have been signed, while phasing other expropriation measures until after a municipal reform.

Lyon-Turin:

According to current planning the 57,5 km long cross border section including the Lyon-Turin Tunnel will be completed before the deadline of 2030 and compliant with the TEN-T requirements.

The Italian access lines will be fully compliant with TEN-T standards by 2030 with the construction of the new access line between Avigliana and Orbassano and the upgrade between Bussoleno and Avigliana.

On the French side the existing conventional line, currently serving as access line, is today compliant with most of the TEN-T parameters. The requirements which are not fulfilled refer to speed (certain sections allow for 90 km/h instead of 100 km/h because of the the gradient of 25‰) and ERTMS for which the French National Implementation Plan envisages its establishment by 2030.

Brenner Base Tunnel (BBT):

The current official opening date for BBT is 2028.

The ERTMS equipment of the existing northern access lines is one of three measures that are part of the starter package for the “Digitale Schiene Deutschland Programm” as of 2020, for which implementation work has already started and budget foreseen.

In addition, the Brenner Corridor Platform working group infrastructure has compiled information that also shows that the access routes in Germany and Italy will be fully compliant with the TEN-T Regulation by 2030. Furthermore, it confirms the implementation of ERTMS on the existing access routes in Germany by 2027.

Fehmarn Belt:

The planned date for opening of the Fehmarn Belt Link and its access routes is 2028.

Regarding the German access routes to the Fehmarnbelt: the start of the construction works are planned for 2021/22 with an estimated construction time of 5.5 years. Thus, works shall be done by 2028 at the latest leaving 3 years of margin to meet the deadline of the TEN-T regulation. In addition, the official planning for the Fehmarn Sound crossing also foresees the opening in 2028 so that the access routes to the tunnel will be available in full capacity when the tunnel opens.

Thus, the access routes to the tunnel will be available in full capacity and compliant to TEN-T requirements when the tunnel opens.

Basque Y:

The Commission confirms that on the French side, the new alignment from the border towards the French high-speed network will be delayed. However, the Commission is negotiating with France the upgrade of the existing line between Bordeaux and the border, connecting with the Y Basque, to be ready at the same time as the Basque Y. The Commission considers that the key question is to ensure that the line’s capacity increases gradually on the French site in order to cope with the traffic increase, in particular as regards freight traffic.

The Basque Y will be compliant with the TEN-T requirements before 2030. The Commission has been insisting that the upgrade of the existing line on the French side should lead to compliance with the requirements as well.

Seine- Scheldt:

The Canal Seine-Nord Europe itself is expected to be in service by end 2028.

All the planned constructions and upgrades planned for the Seine-Scheldt network to reach its expected functionalities will be completed by 2030, in line with the June 2019 Implementing Decision. This includes in particular the main itineraries linking the Seine basin to the Scheldt basin. Out of the network of around 1100 km, only for one peripheral section of around 30 km (Bray-Nogent), the planning foresees 2032 as completion date.

The Seine-Scheldt link to Zeebrugge is currently under study, an investment plan is expected by December 2023 according to the Implementation Decision. A link is planned to be in place before the end of 2030.

A1 Motorway Romania:

The remaining section of the Romanian A1 motorway (Sibiu-Pitesti) is supposed to be constructed in the current (2014-2020) and the next financing period.

E59:

The E59 is an already existing and operational infrastructure. There are no green field projects involved in E59. The line is undergoing upgrades only. These upgrades are planned to be completed by the 2030 at the latest, including the outermost sections, as indicated by the responsible authorities in Poland.

Also for E59, the TEN-T requirements will be met before 2030.

18. The Commission acknowledges that there are risks of delays in the construction of some ‘TFIs’ or their ancillary infrastructure. However, this will not put at risk the effective functioning of the TEN-T corridors. The corridors will be functional in 2030 and already benefit from the realisation of the different projects. This will have already very positive network effects in 2030.

Box 1. A missing link hampering the corridor and the network

The Commission considers that the fact that one stretch is under study phase in 2019 does not hamper the completion of the project by the deadline of 2030. The Basque Y is highly likely to be finished by 2030. France indeed postponed the new high-speed line between Bordeaux and Dax and then from Dax to the border until after 2037. As a second best option however, the European Commission is engaged into discussions with the French authorities and with SNCF Réseau to get the existing line upgraded, on time for the start of operations of the Basque Y. This will allow for a well-functioning cross-border connection of sufficient capacity.

Moreover, the Commission invites the Court to consider that the international section between Perpignan and Figueras is currently managed by LFP Perthus (co-owned by France and Spain). The number of trains is growing and is expected to be multiplied by five by 2026 given the ongoing adaptation of the Spanish network to UIC gauge (Valencia-Tarragona-Barcelona).

The combination of the construction of the Basque Y and the upgrade of the existing line between Bordeaux and the border will allow for more capacity and easier operations for freight.

25. The Commission believes that it has appropriately used the existing tools and resources to foster the completion of the projects and support Member States towards this goal (financing decisions, INEA, Coordinators, participation in the supervisory boards, Corridor Forum meetings, Corridor Work Plans, reporting to the Parliament, conferences, bilateral meetings, multilateral meetings, implementing decisions, etc.). The actions taken until now by the Commission go well beyond the provisions of Article 56.

26. The Commission has not yet used the Article 56 procedure as it considers that there are other more effective tools to “induce the Member States to plan and implement these infrastructures more quickly”, for example, the work of the Coordinators, implementing decisions, etc.

27. The Commission underlines the complexity of these cross-border projects in terms of size, technical, financial, planning, political and public opinion aspects/factors.

With reference to the conclusions drawn within Box 2, the Commission considers that infrastructure projects such as the Canal Seine-Nord Europe or the Lyon-Turin rail tunnel are game changers. The analysis should not be only based on existing inland waterways and rail traffic as there is currently little or no traffic due to the conditions of the infrastructure (Canal Seine-Nord Europe does not exist yet and the existing rail link for the Lyon-Turin is not suited for the transport of rail goods).

See Commission reply to Box 2.

Box 2 - Significant differences between actual and forecast traffic levels

While the Commission acknowledges the need to address a number of accompanying measures to ensure the optimal use of the newly built infrastructure, it considers that “*the significant differences between actual and forecast traffic levels*” is not a problem per se and on the contrary, in several cases, the forecasted traffic levels have been calculated in a conservative way.

31. The Commission agrees that cost-benefit analyses (CBA) depend on the methodology used and on assumptions made. The fact that several CBAs have been prepared for each of the projects, shows the continuous use of the tool. The Commission considers it natural that CBAs’ results evolve in line with the changes to the projects (scope, technical requirements, etc.) based on previous analyses.

Box 4 - Examples of findings concerning cost-benefit analyses

With reference to this section, the Commission notes the following:

(1) An updated CBA including all elements of the final project will be required when submitting an application for EU co-funding, which shows that CBAs have been properly used in the decision-making.

(2) In the Commission’s view, the re-assessment from 2018 should not be considered as a CBA. Its methodology was questioned in the context of Italian debate in view of non-respect of the Italian guidelines.

(3) For Rail Baltica, the Commission considers that although three different analysis concerning the cost and benefit of Rail Baltica have been conducted, the three studies had very different scopes and served a different purpose. COWI (2007) was an early pre-feasibility study, detailing several options to strengthen rail connectivity between Baltic States and beyond – with one option being a new standard (1435mm) gauge connection. Given this scope, the study was not a standard CBA and detailed traffic forecasts and CAPEX calculations were not performed. AECOM (2011) and EY (2017) studies, on the other hand, can be considered as cost-benefit analyses, however, it must be emphasized that each had a different scope and purpose. AECOM served to establish the initial CBA-based feasibility for Rail Baltica and substantiate early political decision-making, EY (2017) was required to reflect new developments including agreement on the route alignment including line integration in Riga city and Kaunas-Vilnius link. All studies have been conducted in a transparent manner and are publicly available.

(4) As regards the Brenner Base Tunnel (BBT), the Commission considers that the cost-benefit analysis of 2019 builds in parts on the German Scenario study published earlier in 2019. All scenarios analysed under the cost-benefit analysis point to a positive ratio above the figures indicated in the analysis of 2007. With regard to the missing traffic study, the Commission notes that currently the efforts by the three Member States to produce a common traffic forecast are ongoing and results are to be expected in 2020.

In conclusion, the Commission considers that the examples cited by the ECA show the systematic use of CBAs at all important stages of the projects.

32. The Commission does not have access to detailed information regarding the analysis of these external experts and the tools that they used for their assessment. Therefore, the Commission and stakeholders are not in a position to assess the findings.

Since the TFI concept does not have any correspondence in the EU legal framework, analysis carried out so far could not coincide exactly with the concept as defined by the ECA.

The Commission considers that CBAs have been properly used as a tool for decision-making. As an example, for Rail Baltica, the subsequent cost-benefit analyses have served as basis for decision-making on the project. In this case, the costs were broken down per country, but the benefits can only materialise through the project as a whole.

33. Under shared management, for transport networks under Thematic Objective no 7, only major projects above €75 million of total eligible cost are assessed by the Commission.

34. The Commission underlines that as far as the Cohesion Policy for the 2021-27 programming period is concerned, the Member States are responsible for selection and approval of all operations co-financed by the funds, irrespective of the financial amounts they represent. In doing so, the Managing Authorities have to ensure that all operations comply with applicable eligibility rules for the concerned expenditure as well as with quality standards clearly indicated in Article 67 of the Common Provision Regulation proposal (see in particular Article 67.3, sub-paragraphs (c) (d) and (e)), and namely that operations have to:

- ensure that selected operations present the best relationship between the amount of support, the activities undertaken and the achievement of objectives;

- verify that the beneficiary has the necessary financial resources and mechanisms to cover operation and maintenance costs and ensure their financial sustainability;

- ensure that selected operations falling under the scope of Directive 2011/92/EU of the European Parliament and of the Council are subject to an environmental impact assessment or a screening procedure and that the assessment of alternative solutions has been taken in due account.

These provisions are applicable to all operations, therefore the wording is purposefully general to allow for adjusting administrative burden to the type and size of operations. Specific application of these conditions will be done on a case-by-case basis in the context of defining selection criteria.

Based on the experience in 2014-2020 period, the Member States established and/or further developed national economic appraisal frameworks, including Cost-Benefit Analysis for larger investments where relevant. For larger projects, the Commission expects the Member States to continue with appropriate quality standards as indicated in international best practice on CBA and the CBA Guide 2014-2020, beyond the legislative provision in case the final provisions do not include the explicit requirement for a CBA.

In addition, the Commission intends to further promote the CBA also to smaller projects. In order to facilitate this process, the Commission is going to publish a simplified Cost-Benefit Analysis vademecum presenting a “ready-to-use” tool reflecting international best practice in applying the CBA principles to various projects, also at smaller scale.

35. Traffic forecasts are part of the cost-benefit analysis, which are performed for all projects that are co-funded. Since the TFI concept does not have any correspondence in the EU legal framework, analysis carried out so far could not coincide exactly with the concept as defined by the ECA.

38. The Lyon-Turin base tunnel will be in operation for much longer than 50 years.

40. Proper public consultation is one of conditions for investments to bring optimal socio-economic benefits, also in terms of ensuring that all stakeholders’ views and interests are properly accounted for. This ensures that projects optimise social welfare also in relation to territorial and social, environmental and economic dimensions. This process is indeed challenging, and may lead to delays on projects.

The Commission notes that even the most professional involvement of stakeholders does not necessarily prevent appeals against permits in front of administrative courts.

41. Whenever stakeholders are approaching the Commission on specific TEN-T projects, the Commission takes particular care in explaining the EU dimension of the project. This was the case for Rail Baltica, but was also the case for other ‘TFIs’ (BBT, Fehmarn Belt, Seine-Scheldt and other).

43. For the A1 Motorway in Romania, the Commission notes that the stakeholder consultation helped to ensure the project compliance with EU environmental legislation. However, the Commission recognises that the necessary project modifications were incorporated late and as a practical result, the project suffered from additional delays.

44. It is to be noted that these costs entail keeping a certain organisation in place that provides relevant services and prepares the timely start of enabling works.

45. The Commission notes that almost all infrastructure projects of such magnitude take several decades to be implemented, regardless of EU funding.

The Commission also notes that the TFIs audited are among the most complex and technically challenging for the implementation. As usual for infrastructure projects of this size, an initial estimate is made and this initial estimate is then updated during the implementation.

As an example of not EU-financed projects, the construction of the Gotthard tunnel took more than 15 years.

46. The Commission considers that setting a specific funding priority for the 'TFIs' will be equivalent to earmark funds for these projects. The current Connecting Europe Facility (CEF) regulation and the proposal for CEF II regulation do not provide any differentiation of project distinguishing between flagship and non-flagship ones. For these reason, any dedicated funding priority exclusively open for these kind of projects would go against the provisions of the CEF Regulation.

Furthermore, the Commission considers that the current practice of competitive calls provides strong incentives to project promoters to progress on their projects and ensures good quality project preparation and implementation.

47. The Commission considers that it is for project promoter to define the best scope of their project from various angles (geographical, technical, timeline etc.) and to organise the sequencing.

The Commission highlights the low administrative cost of the CEF programme, recognised by several audits.

While the Commission welcomes indeed an integrated project vision, it is for the project promoters to submit their application in the competitive environment of the call for proposals. Having a single grant agreement in place for a TFI does not prevent delays and change of scope.

48. Procedures are in place to provide an appropriate overview; in addition, the Commission will continue to offer project development assistance to beneficiaries and project promoters via InvestEU Advisory Hub (to start functioning as of 2021 under the new legislative framework for Multiannual Financial Framework 2021-2027).

49. For all major infrastructure projects, there is an initial phase during which the feasibility of the initial idea is assessed. Usually, different options are assessed and it is therefore normal that the design and the scope evolve, in particular after public consultations or as a consequence of environmental impact assessments. Changes in design and scope do not bring only additional costs but also additional benefits.

50. The Commission considers that changes in scope, alignment, additional elements etc., make it very challenging to compare cost estimations made at different stages of the projects.

As regards Annex III, the Commission considers that any calculation of cost increases should fully take into account the above-mentioned factors.

When referring to the selected TFIs, the Commission cannot reconcile the figures provided, mainly because of the changes in the scope.

As regards the following projects, the Commission considers that the following should be taken into account:

Rail Baltica:

The cost increase calculated by the Court derives to a large extent from the additional costs for Rail Baltica line integration in Riga city and the Kaunas-Vilnius link, which will also bring benefits.

Lyon-Turin

Lyon-Turin base tunnel will be built as a 2-tube tunnel. The original estimation refers to a 1-tube tunnel.

Brenner Base Tunnel

The original estimated costs of ca. € 6 billion should not be compared with the latest estimate for reasons of changed project content (additional infrastructures), changes in the regulatory environment (additional requirements from the environmental impact assessment) and additional costs for test operation and commissioning that were not included in the original figures.

Fehmarn Belt:

The original estimate was stated in the Act of Planning passed in Danish Parliament in 2008 at € 6.2 billion (2008 price level), and not € 5.016 billion as indicated in the Table 3. This estimate is equivalent to € 6.7 billion (2019 price level).

Seine- Scheldt:

The first relevant cost estimate could be fixed only in 2006 after the feasibility studies; therefore, the initial estimate should be the one of 2007 (€ 4002 million).

51. The Commission notes that it is the responsibility of the project promoter to organise the project in appropriate sections. The example mentioned concerns national responsibilities.

With reference to the A1 Motorway in Romania, in the opinion of the Commission the tendered parts (lots) of the motorway sections are proportional to the capacities of major European construction companies. The Commission considers that dividing projects into parts may sometimes contribute to its timely delivery, for example when a permit is pending on one section and the works can already start on a different section.

53. The Commission is managing efficiently the EU co-funding, taking into account the actual progress of each individual Action.

54. The Commission notes that a ‘TFI’ can be fully in service even if the related access lines are not immediately at their maximum capacity. From a network perspective, removing the cross-border bottlenecks is the main priority.

With reference to the ‘TFIs’ mentioned in this section, the Commission has the following information:

Basque Y:

The GPSO (high speed line between Bordeaux and Toulouse and between Bordeaux and Dax) has indeed been postponed unilaterally by France until after 2037. That is why a second best option is being discussed between the Commission and France i.e. the upgrade of the existing line between Bordeaux and the border, so that a higher capacity cross-border connection is indeed in place by 2030, comprised of the Basque Y connected to an improved conventional line Bordeaux-border.

Brenner Base Tunnel (BBT):

In conformity with the TEN-T regulation and the ERTMS deployment plan, the BBT and its access lines equipped with ERTMS are currently planned to be ready by 2030. In order to fully exploit the capacity of BBT, the Commission has co-financed the studies for the northern and southern access

lines. The Commission considers that even without these upgraded access lines, the Brenner Base Tunnel will provide benefits as of the moment when it enters into function.

55. The Commission notes that such circumstances are beyond its control. In many cases, the involvement of the Commission (e.g. through grant agreements, implementing decisions, the work of the Coordinators etc.) has precisely been the stabilising factor ensuring the implementation in the long run.

56. The Commission notes that the circumstances referred to by the Court are beyond its control. Road safety can be also increased by administrative measures (speed limits, speed traps etc.) on existing roads.

58. It is essential to note that funding infrastructure projects involves a level of risk in that not all funds may be used by the given Action (in which case funding is reallocated to other projects). For large infrastructure projects, securing the EU funding at an early stage has an undeniable leverage effect in prioritising and financing at the local/national level. Without this upfront EU funding 'safety net', the implementation of these complex cross-border projects could be at risk. A case in point is the EU funding to the Canal Seine-Nord Europe which, although reduced in 2019, has - together with the implementing decision - had a decisive factor in securing the French government's financial commitment to the Canal.

59. The figures date back to April 2019 in the context of an analysis of the spending profile by the end of 2018. Since then INEA with the support of the Commission has worked with the project promoters to mitigate the risks, in particular by elaborating possible additional extensions, which would enable the projects to absorb the funding.

As to the figures of the Brenner Base Tunnel, Annex IV shows that more than € 430 million has already been paid, which include interim payments reimbursing costs incurred until the end of 2018 and further pre-financing in 2019.

The Commission and INEA are managing the CEF budget efficiently. Funding not needed in certain ongoing CEF Actions is reallocated to other CEF Actions through new calls for proposals. This is good management of the CEF funds.

60. See Commission reply to paragraph 59.

The Commission observes that providing long-term certainty for project promoters via allocating EU co-funding upfront means that the same money cannot be given to other projects. The Commission optimises the use of EU co-funding through the application of the 'use it or lose it' approach.

The Commission notes that the Financial Regulation allows individualising commitments up to the year n+1, meaning that 2020 commitments have to be committed to an individual Action at the very latest by end of 2021.

Reply to heading above paragraph 61: The Commission does not consider its oversight to be distant. It exercises close and appropriate oversight.

61. The European Coordinators participate as observers in the governance structure of the relevant projects. In particular, the Commission Implementing Decision for Rail Baltica C(2018)6969 provides for the European Coordinator an observer role in the governance structure of the project (observer status in the Joint Venture Supervisory Board) and for participation in the Ministerial Task Force meetings. This is also the case for other TFIs (Lyon-Turin, Canal Seine-Nord Europe, Brenner Base Tunnel). Moreover, for Rail Baltica, the rules of procedure of the Ministerial Task Force provide that the European Coordinator chairs the meetings.

63. The delay in putting to use the Lugoj-Deva stretch of the motorway results from the construction of additional animal passes by the Romanian authorities, in order to mitigate the impact of the

motorway on a Natura 2000 protection area. Once these works are completed, this road section will be put in use.

Similarly, as concerns the connection of the two sections: Lugoj-Deva and Deva-Orastie in Deva, the construction of temporary roads was necessary in order to connect the newly built motorway section (Deva-Orastie) with the already existing road. These “slip roads” had to be removed once this connection was completed. This is a standard procedure applied when a certain section of a new motorway is completed. Therefore, the Commission does not consider the co-funding of the related cost of €3.7 million to be “wasted money”, as confirmed through exchanges with the Member State.

Common Commission reply to paragraphs 64 and 65:

The grant agreement addresses the construction of the physical infrastructure and indeed payments are linked to physical outputs. The Commission considers that result indicators for major infrastructure projects, lasting over several decades, cannot be used for the timely disbursement of EU co-funding.

The Commission strives to obtain data as regards impacts of projects achieved (increase of traffic, economic impact for different actors, impact on congestions, emissions etc.).

It is more for the project promoters to collect and publish the data on results and impacts of the investment. The Commission is publishing data at EU level (see “EU transport in figures – statistical pocketbook” with yearly editions).

The closure of projects in shared management always involves verification that they have been opened to commercial use, and their contribution to the attainment of specific output and result indicators of the Operational Programme under which the projects are co-financed.

66. The Commission recalls that the TFIs are still in a building phase and there is still ample time to plan for ex post evaluation.

See also Commission reply to paragraphs 64 and 65.

Common Commission reply to paragraphs 67 and 68:

The Commission uses data provided by Member States and project promoters. The Commission does not believe that a project promoter has any interest in artificially increasing the potential use (and with this the costs to provide sufficient capacity) for an infrastructure project in order to obtain EU co-funding.

In shared management, investments presented as major projects need to satisfy the geographical requirements and be located on the TEN-T network, but they also need to satisfy criteria related to affordability, cost efficiency and cost-benefit analysis with appropriate level of option analysis. Traffic modelling is usually required to arrive at these estimates (mainly, but not exclusively, for road projects).

The approach used to estimate demand and potential benefits based on a catchment area of 60 minutes along the lines is too limited. This does not sufficiently take into account the network effect of the ‘TFIs’. Indeed, such ‘TFIs’ are strategic segments of longer corridors and traffic will be originated also further away than the physical location of the project. For example, the Lyon-Turin link should not be considered solely as the link between the two cities, as it is a part of the wider passenger link between the Paris and Milan areas. In the same sense, the Fehmarn Belt gives access to Frankfurt, Düsseldorf, Stockholm, etc.

The Commission disagrees with the application of the benchmark from the paper of De Rus et al. 2007 (as quoted in the mentioned Special report 19/2018) to the audited projects, which are mixed passenger and freight lines, while the benchmark applies to pure passenger high-speed lines.

Common Commission reply to paragraphs 69, 70 and 71:

The Commission notes that the 2017 CBA concluded that the Rail Baltica TFI is economically sustainable, based on combined freight and passenger traffic. The Commission considers that the project should be assessed against this scenario as it corresponds to the way it is implemented, and not against separate freight or passenger benchmarks in isolation.

Rail Baltica has the potential to become the new artery of Baltic (and Finnish) traffic flows, introducing completely new dynamics and possibilities of passenger and trade flows in the Baltics. It will reduce North-South bound travel time significantly. The current situation of limited north-south rail traffic, which has historic and structural/organisational reasons, cannot be extrapolated to the future Rail Baltica.

The Commission also refers to its replies on paragraph 68 related to the fact that the 60 minutes catchment area is a limited benchmark. It was compiled to assess pure passenger high-speed lines with speeds in the order of 300 km/h, while the Rail Baltica TFI is designed as a fast conventional, mixed traffic line. The parameters chosen for the Rail Baltica TFI do not lead to any significant increase of costs by providing for freight use in addition to passenger use, while ensuring additional income and benefits. The cost of construction per km of the Rail Baltica TFI (roughly €6.7 million/km) is substantially lower than those used to compile the benchmarks used by the ECA.

The Commission is in close contact with the Polish infrastructure manager which has demonstrated that all necessary measures are taken to ensure sufficient capacity for all types of passengers and freight traffic on the Warsaw-Bialystok section and beyond.

Common reply for paragraphs 72 and 73:

Those potential costs relate mainly to extra noise protection, requested by citizens following public consultations.

For the German access lines, the decision to increase the speed from 160 km/h to 200 km/h was taken only after the regional planning process, which decided on the alignment and is the biggest single cost driver. The pure speed increase resulted in additional costs of €110 million. The additional noise protection measures are not a direct consequence of the increase in speed for the line. The costs for the Fehmarnsund bridge are also not caused by the speed increase but by the need to create the necessary capacity for the estimated (mixed) traffic volumes on the line following the Fehmarn Belt crossing.

Furthermore, there are other important cost drivers that are not related to the speed increase, but to other operational requirements, which need to be taken into account. The project of 2018 contains several elements that were not foreseen in 2008 and that are completely unrelated to the increase in speed. These are notably the freight terminal in Lübeck and the converter station in Genin, which account for € 126 million alone. Further new features of the line are exclusively linked to freight traffic, in particular parking tracks for freight trains to allow regional and long distance passenger trains to overtake them.

77. Related to point (b), the Commission would like to note the following:

- (i) For Rail Baltica, on infrastructure management a new deadline has been set, as further analysis was necessary for the best solution to be agreed on.
- (ii) The Seine-Scheldt link to Zeebrugge is currently under study, an investment plan is expected by December 2023 according to the Implementation Decision. A link is planned to be in place before the end of 2030.

The Commission notes that the Seine-Scheldt Implementing Decision has been instrumental in the French parties reaching a financing agreement on the Canal Seine-Nord Europe, which was urgently needed. Therefore, considering its solid leverage effect on securing the implementation of the main missing link (Canal Seine-Nord Europe), without which an investment decision on

implementing the Zeebrugge connection would be even more difficult to ensure, the implementing decision has actually promoted as much as is possible the implementation of relevant sections.

79. The Commission refers to its replies to paragraphs from #16 to #18.

80. The Commission refers to its replies to paragraphs from #25 to #26.

Recommendation 1 - Revise and apply the current tools to enforce long-term planning

The Commission accepts recommendations 1a), 1b) and 1c). The exact content of the Commission's proposal will however depend on preparatory steps, including an impact assessment, the outcome of which cannot be prejudged yet.

The Commission partially accepts recommendation 1d).

On point d), the legislative procedure is currently ongoing and it is not possible to pre-empt the results. The Commission will support the Member States in their implementation of the future legal act once adopted.

81. The Commission refers to its replies to paragraph 27 and Box 2.

82. Since the TFI concept does not have any correspondence in the EU legal framework, analysis carried out so far could not coincide exactly with the concept as defined by the ECA. The Commission considers that CBAs have been used properly as a tool for decision-making.

The Commission also refers to its replies to paragraphs from #31 to #38.

83. The Commission refers to its replies to paragraphs from #40 to #44.

Recommendation 2 – Require better analysis before deciding to provide EU co-funding to megaprojects (similar to TFIs)

The Commission does not accept the recommendation as it refers to a high-quality strategic cost-benefit analysis “at wider megaproject level” which does not correspond to any existing legal definition.

Under CEF, applications for works projects must include a socio-economic cost-benefit analysis showing positive results, which in the case of high-speed rail usually consider different alternatives. The Commission recommends to applicants to use the common methodology used for the Cohesion policy.

For shared management, the Commission will advocate the use of appropriate appraisal methodologies (such as CBA) for large-scale investments on TEN-T corridors when considered necessary to ensure compliance with Article 67 of the CPR proposal and taking into account the level of analysis which is necessary and appropriate for each considered investment in line with international best practice and in order to enable informed policy choices vis a vis the specific investments to be made, as well as the need for having optimal investment choices.

However, the Commission reiterates that the criteria to be considered during the selection of individual operations are established at the level of the programmes, under the responsibility of the managing authorities and following the requirements set out in Article 67 of the CPR proposal. The Commission may be involved in the definition of those criteria through its participation in the work of the monitoring committee, solely in its advisory role.

84. The Commission refers to its reply to paragraph #45.

85. The Commission considers that the size, scope and budget of Actions is fit for purpose.

Specific earmarking of EU budgets for specific large projects is not foreseen in the CEF legal basis, and would anyhow not speed up their implementation. A phased approach allows to contain the risk of losing commitment appropriations in case of delay of the project.

The Commission underlines that changes in design and scope are not the only cost driver and they bring also additional benefits.

In 2018, the Commission contracted a review “Assessment of Unit Costs (Standard Prices) of rail projects” of all rail investments (including EU-financed) over the period 2000-2020 that showed the level of cost variations of much smaller magnitude than for ‘TFIs’ included in the ECA sample; over 50% of projects had a range of +10% of cost overruns/savings.

The Commission also refers to its replies to paragraphs from #46 to #51.

86. The Commission refers to its replies to paragraphs from #53 to #60.

Recommendation 3 - Strengthen the Commission’s management of EU co-funding to actions that are part of megaprojects (similar to TFIs)

The Commission does not accept the recommendation as neither the TFI nor the megaprojects concepts have a legal basis allowing the Commission to decide on specific funding priorities in the context of the Calls for proposals.

With regard to paragraph (a), in the CEF II proposal, a better link was already established between the Corridor Work plan and the CEF project selection, allowing for an enhanced prioritisation of the EU funding. The proposal is still pending adoption by the co-legislators.

With regard to paragraph (b), the Commission underlines the fact that in direct management the EU support to Actions part of ‘TFIs’ is already organised along a very limited number of grant agreements, sometimes a single one. Under the competitive calls for proposals, it is for project promoters to present mature actions contributing to the realisation of the overall project, in line with the progress and maturity achieved. Not having more than one grant agreement may be detrimental to the successful and timely implementation of the project. Competitive calls and the “use it or lose it” principle are providing incentives for project promoters to present good and mature proposals and to use of funds in a timely manner.

For shared management, the Commission reiterates that the criteria to be considered during the selection of individual operations are established at the level of the programmes, under the responsibility of the Managing Authorities. In doing so, the Managing Authorities have to make sure that all operations comply with quality standards clearly indicated in Article 67 of the CPR proposal and applicable eligibility rules for the concerned expenditure.

With reference to paragraph (c), procedures are in place to provide an appropriate overview and therefore the Commission does not consider it necessary to establish a dedicated competence centre.

In addition, the Commission considers that it has already offered advisory tools to beneficiaries and programme authorities. Technical Assistance will continue to be available to the Member States for the preparation of their projects via InvestEU Advisory Hub, including JASPERS. Financial support from the programmes will be available to support project preparation, tendering and implementation.

The Commission also underlines that ex post evaluations and studies have been systematically performed and followed up by means of the already existing structures and procedures. Furthermore, blending between the three financing mechanisms (CEF, ERDF and Cohesion Fund, and EIB instruments), is already facilitated. The proposed CPR for post-2020 also envisages this mechanism.

87. The Commission refers to its replies to paragraphs from #61 to #67.

88. The Commission refers to its replies to paragraphs from #68 to #72.

89. The Commission refers to its reply to paragraph 77.

Recommendation 4 – Build on the experience of implementing decisions, and strengthen the role of the European Coordinators

The Commission partially accepts recommendation 4 a). The Commission intends to adopt implementing decisions for major cross-border projects but not make it a condition for EU co-funding regardless of management mode.

The Commission does not accept 4 b). The Commission does not consider that the extension of the perimeter of Implementing Acts should include the adoption of implementing decisions for projects “with cross border impact”.

The Commission accepts recommendation 4 c). The exact content of the Commission’s proposal will however depend on preparatory steps, including an impact assessment, the outcome of which cannot be prejudged yet.

Audit team

The ECA's special reports set out the results of its audits of EU policies and programmes, or of management-related topics from specific budgetary areas. The ECA selects and designs these audit tasks to be of maximum impact by considering the risks to performance or compliance, the level of income or spending involved, forthcoming developments and political and public interest.

This performance audit was carried out by Audit Chamber II Investment for cohesion, growth and inclusion spending areas, headed by ECA Member Iliana Ivanova. The audit was led by ECA Member Oskar Herics, supported by Thomas Obermayr, Head of Private Office and Emmanuel Rauch, Principal Manager.

Luc T'Joen was the Head of Task, and the audit team was composed of Milan Smid, Erki Must, Guido Fara, Manja Ernst, Katarzyna Solarek, Andras Feher, Sabine Maur-Helmes, and Richard Moore.



From left to right: Thomas Obermayr, Guido Fara, Emmanuel Rauch, Katarzyna Solarek, Erki Must, Manja Ernst, Milan Smid, Luc T'Joen, Richard Moore, Sabine Maur-Helmes, Oskar Herics and Andras Feher.

Timeline

Event	Date
Adoption of Audit Planning Memorandum (APM) / Start of audit	24.10.2018
Official sending of draft report to Commission (or other auditee)	04.12.2019
Adoption of the final report after the adversarial procedure	25.3.2020
Commission's (or other auditee's) official replies received in all languages	29.4.2020

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We audited the Commission's management of eight cross-border transport megaprojects in thirteen Member States. These are key missing links for connecting national networks to create seamless European transport corridors. The total estimated cost of the selected TFIs was €54.0 billion, of which the EU has paid €3.4 billion to date.

We found that the core network is unlikely to be operational by 2030, as was planned in 2013. The delays in the construction and putting into operation of these megaprojects put at risk the effective functioning of five out of nine TEN-T corridors. We found examples of poor planning and inefficient implementation. While the Commission's oversight of the timely completion of the network has weaknesses and is distant, the Commission has a tool that can be built upon to improve performance.

To improve the sound financial management of these multi-billion euro investments, we make a number of recommendations to support the long term planning, management and supervision of these multi-billion infrastructure investments.

ECA special report pursuant to Article 287(4), second subparagraph, TFEU.



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