

Special Report

**The EU core road network:
shorter travel times
but network not yet fully functional**



EUROPEAN
COURT
OF AUDITORS

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Executive summary

I Sustainable and efficient transport is important in linking regions and countries, thus connecting markets and people and contributing to economic activity, development and growth. In this, roads play a significant role, as they account for the largest share of transport in the EU both for passenger and freight traffic.

II To give an impetus to the development of EU transport, in 2013 a Regulation on trans-European transport network (TEN-T) was adopted, which introduced the concepts of TEN-T "comprehensive" and "core" networks. The comprehensive network, to be finished by 2050, aims to ensure the accessibility and connectivity of all EU regions. The core network to be finished by 2030, consists of those parts of the comprehensive network which are of the highest strategic importance for achieving the TEN-T objectives.

III In order to help Member States develop their part of the TEN-T, in the 2007-2020 period the EU allocated approximately €78 billion for roads, out of which around €40 billion for TEN-T roads. Most of it has come from the European Regional Development Fund (ERDF) and the Cohesion Fund. Smaller amounts are also available from the Connecting Europe Facility (CEF).

IV In this audit we assessed progress towards completing a fully functioning TEN-T core road network and the Commission's role in achieving this objective.

V We decided to carry out this audit as it is relevant for a number of reasons: the road network carries the biggest share of inland traffic; the TEN-T core network should be completed by 2030; the Commission has started the review of the TEN-T Regulation and the EU has invested a lot of funding in roads.

VI The development of the TEN-T core road network is progressing. However, most central/eastern European Member States are still lagging behind. Since 2007, EU funding has contributed to this progress. As a result, in the programming period 2007-2013 around 2 400 km of new TEN-T roads were built and additional 2 000 km are expected to be built in the programming period 2014-2020. This has helped to bring positive results for those travelling on the network, such as shortened travel times and more kilometres driven on motorway.

VII The Commission has played an important role at strategy level: based on its proposal the comprehensive and core networks, including nine core network corridors,

were introduced. Furthermore, in the current programming period, the CEF funding focused on the core network, including cross-border sections. With regard to ESIF funding (ERDF and Cohesion Fund), the Commission has intervened at Member State level by requiring conditions to be met before granting EU funds and by negotiating partnership agreements and operational programmes to make Member States prioritise the TEN-T network.

VIII However, this action was not always translated into the same level of prioritisation when it comes to focus investment specifically in the core network. Out of available ESIF funding for 2014-2020, Member States only earmarked 34 % for the TEN-T core road network although in most of major beneficiaries the level of core network completion was low when their allocations were negotiated.

IX We found that seamless traveling along the TEN-T core road network was hampered by the fact that some cross-border sections were incomplete and there was an insufficiently coordinated approach to secure parking areas and alternative clean fuel infrastructure.

X We also found that shortcomings in the Commission's monitoring undermine its ability to take timely corrective action, if needed. The Commission's monitoring does not always cover the entire core network and it lacks intermediate targets that would allow it to assess progress accurately and make reliable forecasts as to its likely completion by 2030. Furthermore, the data are not timely; their reliability is affected by the lack of a uniform approach and there are no result indicators.

XI Insufficient maintenance by Member States puts the state of the core road network at risk in the medium to long term. National maintenance budgets are steadily decreasing rather than evolving in line with the increasing length of infrastructure and ageing of crucial links. Although this can have an impact on the full functionality of the core network by 2030, the Commission does not have tools to verify whether Member States have a solid system in place ensuring proper maintenance of their networks.

XII On the basis of these conclusions, we recommend that the Commission:

- Prioritises investment in the core network by ensuring that Member States have appropriate planning, indicating the schedule and budgetary availability, to have the entire TEN-T core network complete by 2030 while paying particular attention to cross-border sections;

- Enhances monitoring arrangements to be able to monitor progress in the development of the TEN-T core network and undertake corrective actions by introducing intermediate targets, systematic and uniform approach and a system to allow monitoring of results;
- Strengthens its approach to maintenance by taking appropriate measures to enhance long-term maintenance planning by Member States.

Introduction

Road transport in the EU

01 Sustainable and efficient transport is important in linking regions and countries, thus connecting markets and people and contributing to economic activity, development and growth. Cohesion and competitiveness also require seamless connections between all EU Member States. In this, roads play a significant role, as they account for the largest share of transport in the EU: according to Eurostat, roads carried 76.7 % in tonne-kilometres of all inland freight transport in the EU in 2017. Roads are even more important for passenger traffic: passenger cars accounted for 83.3 % in passenger-kilometres of inland passenger transport in the EU in 2017, and motor coaches, buses and trolley buses for a further 8.8 %¹.

Trans-European transport policy

02 To give an impetus to the development of EU transport infrastructure, in 1996 the Parliament and Council issued guidelines for the development of trans-European transport network (TEN-T)². The purpose of the guidelines was to facilitate the integration of road, air, rail, inland waterway and sea transport into a TEN-T that would contribute to the smooth functioning of the internal market and strengthen economic and social cohesion by ensuring sustainable mobility of people and freight. In order to achieve these objectives, the guidelines identified projects of common interest.

03 In 2013, the legislators adopted a TEN-T Regulation³, which introduced the concepts of TEN-T "comprehensive" and "core" networks, to be developed by Member States, and moved from an approach based on individual priority projects to that of a multimodal EU-wide network linking road, rail, inland waterway, maritime and air. The comprehensive network, to be finished by 2050, aims to ensure the accessibility and connectivity of all EU regions. The core network to be finished by 2030, consists of

¹ <https://ec.europa.eu/eurostat/statistics-explained/index.php>.

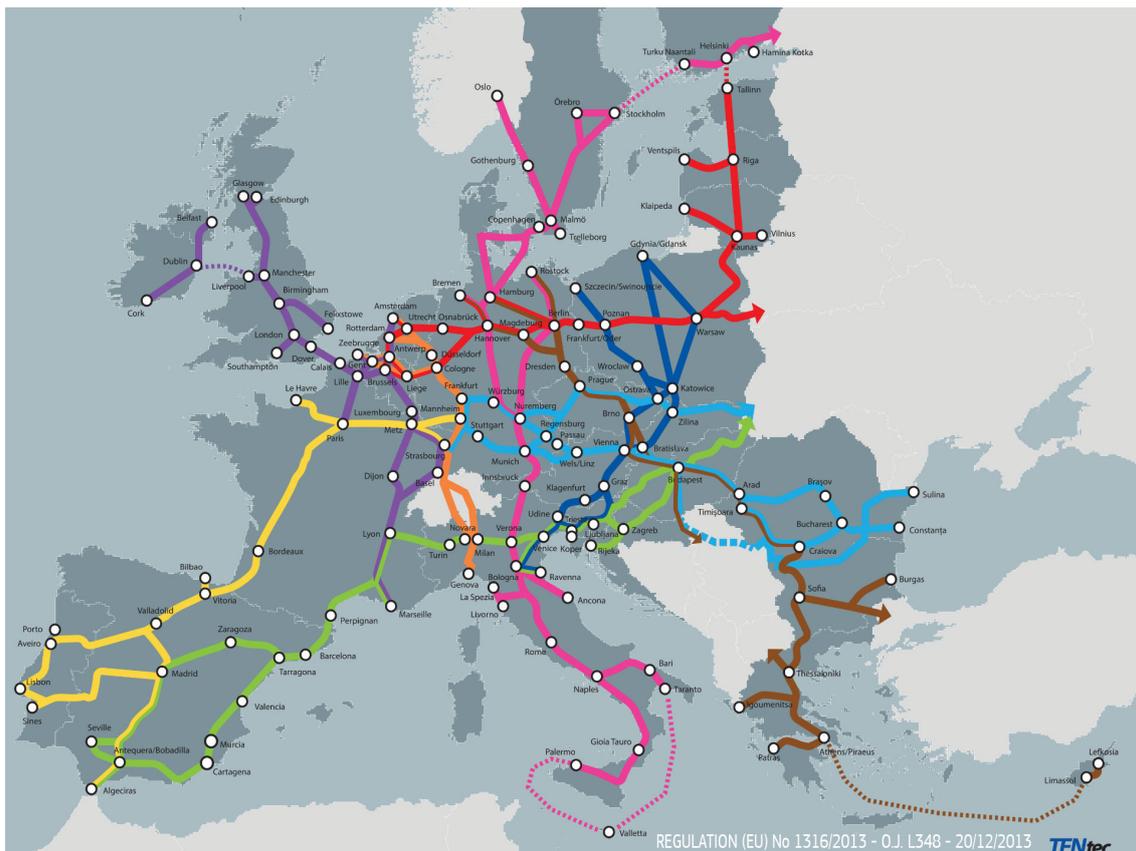
² Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network (OJ L 228, 9.9.1996, p. 1).

³ 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 (OJ L 348, 20.12.2013, p. 1).

those parts of the comprehensive network which are of the highest strategic importance for achieving the TEN-T objectives. To be considered complete, core network roads have to be of motorway or express road standard. The TEN-T Regulation also sets two additional technical requirements: availability of safe and secure parking areas and alternative clean fuel infrastructure as a substitute for fossil oil sources. The comprehensive network has a total length of approximately 136 700 km, of which the core road network makes up 49 700 km.

04 To ensure coordinated development of the core network regardless of national borders, there are nine core multimodal corridors covering the most important traffic routes across the EU. As regards roads, these core corridors (some of which overlap), represent approximately two thirds of the core road network (around 34 000 km) (see [Picture 1](#)).

Picture 1 – TEN-T core network corridors



Atlantic, Baltic-Adriatic, Mediterranean, North Sea-Baltic, North Sea-Mediterranean, Orient-East Mediterranean, Rhine-Alpine, Rhine-Danube, Scandinavian-Mediterranean

Source: European Commission.

05 At the end of 2019, the European Commission adopted the European Green Deal⁴, a programme to achieve no net emissions of greenhouse gases by 2050. To contribute to this carbon neutrality, the European Green Deal proposes shifting 75 % of inland freight that is now carried on roads to rail and inland waterways. In addition to the planned boost to the multimodal transport, the Commission plans to consider anew the question of effective road pricing and increase the production and deployment of sustainable alternative transport fuels.

EU funding for the road network

06 In order to help Member States develop their part of the TEN-T, EU funding is available through several instruments. EU grants for roads in the 2007-2020 period amount to approximately €78 billion and are used to finance newly built roads and reconstructed or upgraded roads. Most of it has come from the European Regional Development Fund (ERDF) and the Cohesion Fund, however their focus is different: while the Cohesion Fund exclusively targets the TEN-T, both core and comprehensive, the ERDF does not prioritise investments in the TEN-T. Smaller amounts are also available from the Connecting Europe Facility (CEF) (previously TEN-T Programme) to finance mostly the core network (see [Table 1](#)). The budget allocated to roads has decreased between the two programming periods due to the shift towards more sustainable modes of transport. At the time of the audit, the budget allocations for the 2021-2027 multiannual financial framework had not yet been adopted.

Table 1 – EU funding allocated to road projects, 2007-2020, (in million €)

Instrument	2007-2013	2014-2020	Total
ERDF and Cohesion Fund	46 544	29 282	75 826
TEN-T	524	NA	524
CEF	NA	2 060	2 060
Total	47 068	31 342	78 410

Source: ECA, based on Commission and INEA.

⁴ COM(2019) 640 final of 11 December 2019.

07 EU funding instruments are subject to different management procedures:

- (a) The ERDF and Cohesion Fund, are implemented under shared management. The Commission (Directorate-General for Regional and Urban Policy) negotiates, approves and monitors implementation of the partnership agreements and operational programmes (OPs) proposed by Member States, including the assessment of conditions that Member States have to fulfil to receive EU funding (ex-ante conditionality). At national or regional level, a managing authority is responsible for managing OPs, which includes project selection, monitoring and reporting on project implementation. In the case of major projects (those whose total eligible cost exceeds €75 million), the Commission approves individually the EU's contribution.
- (b) The CEF (also, formerly, the TEN-T Programme) is implemented by the Commission under direct management. The Commission issues calls for proposals to receive EU co-funding and evaluates them with the support of the Innovation and Networks Executive Agency (INEA), under the supervision of the Directorate-General for Mobility and Transport.

08 Besides grants, the EU supports development of the road network through financial instruments such as loans and guarantees to attract private investment in transport infrastructure, for example, the CEF Debt Instrument and the European Fund for Strategic Investments. In addition, the European Investment Bank provides loans for road transport projects.

Audit scope and approach

09 In this audit we assessed progress towards achieving the EU objective of completing a fully functioning TEN-T core road network and the Commission's role in this. To do this, we examined whether:

- (1) the EU helped completing the TEN-T core road network and achieving results for those traveling on the network;
- (2) the TEN-T network functioned as planned, and the Commission adequately monitored progress towards completion of the network and the contribution of Member States in maintaining roads.

10 We analysed the Commission's role and responsibilities in supporting the completion of the core road network by 2030. We assessed what the Commission has been doing at strategic level, how EU funding has been distributed and how the Commission has been monitoring implementation of the core network. We also held interviews with the European Commission: the Directorate-General for Mobility and Transport, the Directorate-General for Regional and Urban Policy, INEA, European Coordinators and Eurostat. We analysed the aggregated use of the ERDF and Cohesion Fund for the 2007-2013 and 2014-2020 programming periods, as well as CEF allocations, i.e. we did not audit individual projects.

11 To corroborate our findings at the Commission, we also visited four Member States: Bulgaria, The Czech Republic, Spain and Poland. Together, these Member States represent around 62 % of the total ERDF, Cohesion Fund and CEF funding allocated to road projects for the 2007-2013 and 2014-2020 periods and are crossed by six of the nine core network corridors (Baltic-Adriatic, North Sea-Baltic, Mediterranean, Orient-East Mediterranean, Atlantic and Rhine-Danube) that are to be completed by 2030. We also held interviews with Member State authorities (ministries in charge of transport and infrastructure investments, managing authorities, road infrastructure managers) and other stakeholders (various national and European associations).

12 We decided to carry out this audit as it is relevant for a number of reasons. The road network carries the biggest share of inland traffic. The TEN-T core network should be completed by 2030 and the Commission has started the review of the TEN-T Regulation planned for 2021 at the latest. Moreover, the EU has invested a lot of funding in roads: €78 billion since 2007 and negotiations concerning 2021-2027

programming period are on-going. In the recent years the ECA has examined numerous aspects of the TEN-T with particular focus on other modes of transport⁵.

⁵ Special report 19/2018 “A European high-speed rail network: not a reality but an ineffective patchwork”; Special report 13/2017 “A single European rail traffic management system: will the political choice ever become reality?”; Special report 23/2016 “Maritime transport in the EU: in troubled waters —much ineffective and unsustainable investment”; Special report 8/2016 “Rail freight transport in the EU: still not on the right track.

Observations

The development of the TEN-T core road network supported by EU funding and Commission action is making progress thereby achieving results for those traveling on the network

13 We reviewed progress in developing the TEN-T core network in the Member States. We examined whether EU funding and the Commission's involvement at strategy level contributed to this progress. Finally, we collected information on the results achieved so far in terms of kilometres driven on a motorway and reduced travel times on different sections of the core network.

The TEN-T road network is progressing, with central and eastern European Member States still lagging behind

14 According to Eurostat, the overall number of kilometres of motorways (including TEN-T) in the EU between 2007 and 2017 increased by around 3 100 km. The development of the road network is quite advanced in the nine core network corridors with the completion rate ranging from 70 % to almost 100 % (see [Table 2](#)).

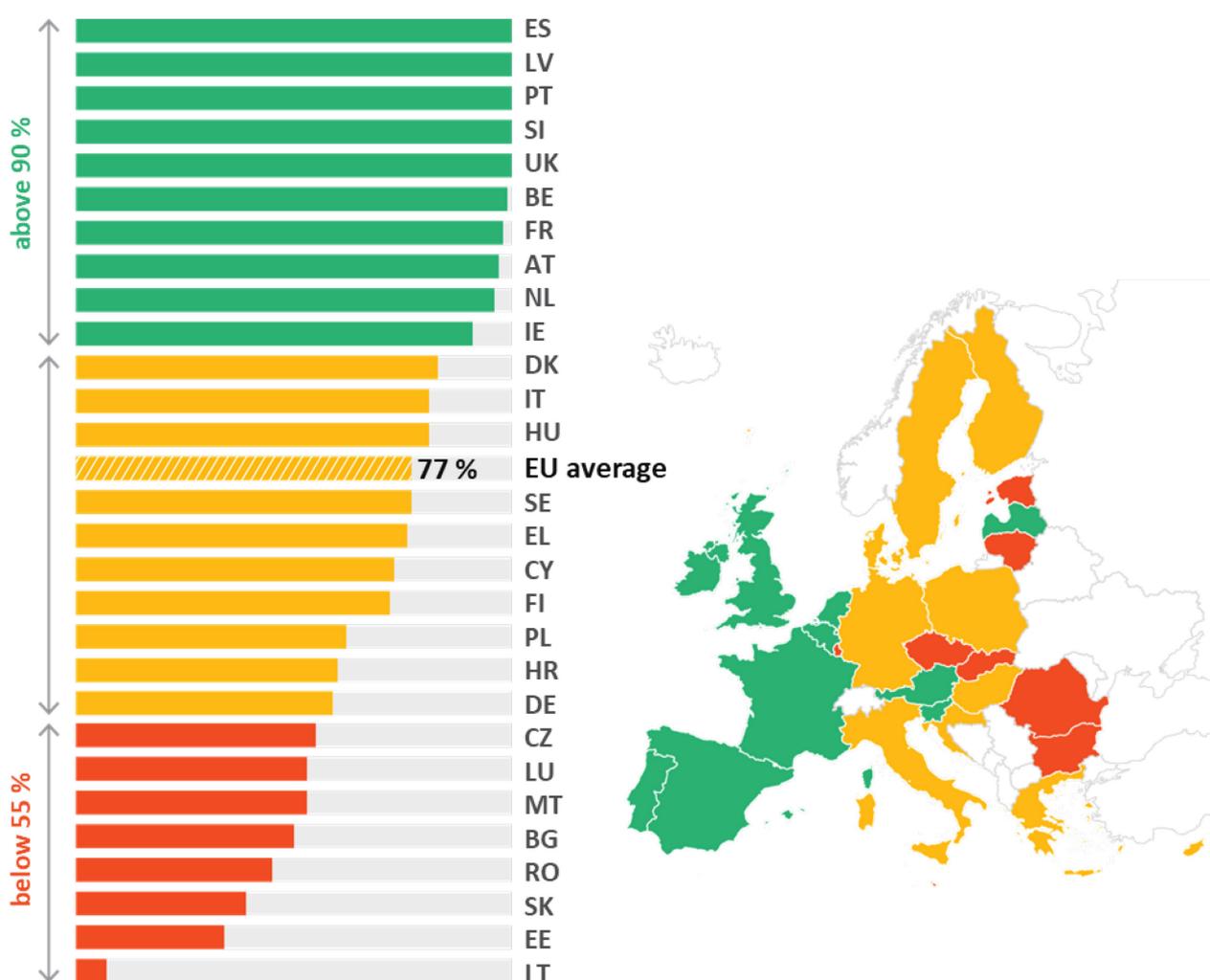
Table 2 – Status of completion of the nine core network corridors

Corridor	Total length (in km)	Completion status
Baltic–Adriatic	3 600	84.0 %
North Sea–Baltic	4 092	70.0 %
Mediterranean	5 500	98.0 %
Orient–East Mediterranean	5 400	88.2 %
Atlantic	4 535	99.8 %
Rhine–Danube	4 488	78.0 %
Rhine–Alpine	1 721	Largely fulfils standards
Scandinavian–Mediterranean	6 300	99.0 %
North Sea–Mediterranean	4 538	Compliant except for some last mile connections

Source: ECA, based on latest corridor work plans.

15 The data aggregated by the Commission concerning the core network as a whole are subject to some limitations (see paragraph 48). Notwithstanding, the data shows significant differences in the Member States, in particular between western and central/eastern European Member States. The completion rates for individual Member States as of 2016 (latest aggregated data), vary from 7 % (Lithuania) and 34 % (Estonia) to around 100 % (e.g. Spain, UK), whereas the completion rate of the core network at EU level is 77 % (see [Picture 2](#)). We obtained more recent figures for the Member States visited: at the time of the audit the completion rate for Bulgaria it was 46 %, in The Czech Republic it was around 78 % and in Poland it was around 75 %.

Picture 2 – Completion of the TEN-T core road network by Member State as of 2016



Source: ECA, based on Commission data (Commission Delegated Regulation (EU) 2017/849, OJ L 128I, 19.5.2017, p. 1).

16 This gap between the level of core network development in western and central/eastern Member States was confirmed in 2017 by the Commission's seventh

report on economic, social and territorial cohesion, which indicated that many regions in central and eastern European Member States are not yet connected by an efficient road network and will only have better access to markets after the completion of the TEN-T network⁶.

17 This difference was also highlighted in a 2016 study by the European Parliament⁷ comparing TEN-T roads connecting 13 pairs of cities in the EU-15⁸ and central/eastern EU regions. The four pairs in the EU-15 were: Barcelona – Seville; Paris – Frankfurt; Cologne – Paris; and Munich – Verona, and the nine pairs in the central and eastern European Member States were: Zagreb – Bratislava; Warsaw – Prague; Zagreb – Lublin; Bratislava – Sofia; Budapest – Sofia; Budapest – Bucharest; Sofia – Constanta; Warsaw – Riga; and Vilnius – Lublin. The study concluded that there was a substantial difference in road speeds between them, with The Czech Republic, Slovakia and parts of Poland being far closer to the EU-15 averages than were the Baltic states, Romania and Bulgaria. The average speed for the four pairs in the EU-15 was 100 km/h, but for the nine pairs from the central/eastern EU it was 80 km/h. This could be attributable to the fact that the roads connecting each city pair in the EU-15 were almost always (98 %) motorways, while in the newer Member States the percentage was significantly lower (53 %).

18 Another factor came out of a 2018 survey by the World Economic Forum on the perceived quality of road infrastructure, using a scale from 1 (extremely poor) to 7 (extremely good). While the EU top ten included nine Member States from the EU-15, ranging from 5.34 in Luxembourg to 6.80 in the Netherlands, the eight lowest-ranking countries were in the central/eastern EU, ranging from 2.96 in Romania to 4.14 in Poland⁹.

⁶ European Commission, *My region, My Europe, Our Future. Seventh report on economic, social and territorial cohesion*, 2017, p. 40.

⁷ European Parliament, *Research for TRAN committee: Connectivity and Accessibility of Transport Infrastructure in Central and Eastern European EU Member States*, In-depth Analysis, 2016.

⁸ EU Member States before the 2004 accession.

⁹ https://ec.europa.eu/transport/facts-fundings/scoreboard/compare/investments-infrastructure/quality-roads_en

EU funding has contributed large amounts to the development of the TEN-T since 2007

19 As stated in paragraph 14, the overall number of kilometres of motorways (including TEN-T) in the EU increased between 2007 and 2017 by around 3 100 km to which EU funding contributed with large amounts. During the 2007-2013 and 2014-2020 programming periods, the total value of EU grants for road projects, both within and outside the TEN-T, has been around €78 billion. The bulk of this support has come from the ERDF and the Cohesion Fund for projects concerning either newly built roads or reconstructed/upgraded roads (see [Table 1](#)). [Annexes I](#) and [II](#) summarise the ESIF allocations for road investment by Member State and type of project for the 2007-2013 and 2014-2020 programming periods. During the current period, 21 Member States have allocated ERDF and/or Cohesion Fund support to road projects. Poland alone accounts for almost 50 % of those allocations.

20 Out of the €78 billion dedicated to roads, €39.1 billion in ESIF support has been allocated specifically to TEN-T roads since 2007:

- (a) during the 2007-2013 period, €21.3 billion was used to support the construction of 2 400 km of new TEN-T roads, mostly motorways, mainly in EU-12, where over the period almost all the new motorways were built with EU support. It was particularly noted in Poland and Romania which built 1 056 km (124 % increase in the total length of motorways) and 314 km (129 % increase) respectively with 85 % EU co-financing¹⁰. In addition to newly built TEN-T roads, the ERDF and the Cohesion Fund also supported the reconstruction of 28 600 km of roads, but no distinction was made at that time between the TEN-T and outside it;
- (b) during the 2014-2020 period, €17.8 billion have been allocated to around 2 000 km of newly built TEN-T roads and to 770 km of reconstructed TEN-T roads (including motorways). The major source of ESIF funding support to TEN-T roads is the Cohesion Fund (see [Table 3](#)).

¹⁰ *Ex post* evaluation of Cohesion Policy programmes 2007-2013, focusing on the European Regional Development Fund (ERDF) and the Cohesion Fund (CF), WP1: Synthesis report, August 2016.

Table 3 – New and reconstructed TEN-T roads to be supported by ESIF funding, 2014-2020 (in km)

	ERDF	Cohesion Fund	Total
Newly built	327	1 681	2 007
Reconstructed	127	643	770

Source: ECA, based on Commission's data¹¹.

21 However, at the time of the audit the completion rate of TEN-T road projects co-financed with ESIF in 2014-2020 programming period was still low. For newly built TEN-T roads, out of 2 007 km planned, 390 km have been completed so far. In case of reconstructed roads, it has been 387 km out of 770 km¹².

22 In the three Member States we visited in which the core network was not complete yet (Bulgaria, the Czech Republic and Poland), the ESIF funding has been contributing to progress in the 2014-2020 programming period (see [Box 1](#)).

Box 1

Contribution by ESIF funding to the development of the core road network in Bulgaria, the Czech Republic and Poland

In Poland, 30 projects, each receiving the 85 % of EU co-financing, in the TEN-T core road network have been approved for ERDF or Cohesion Fund support. Once completed, these projects will mean 947 km of newly built roads and around 50 km of reconstructed roads (compared to the total core network of 3 750 km).

In Bulgaria, road projects in the core network carried out with 85 % of EU co-financing, should result in 67 km of newly built roads on the most technically challenging part of the motorway linking Sofia with Greece (compared to the total core network of 1 512 km). In Bulgaria, an important progress was achieved in the 2007-2013 programming period, in which 264 km of core network roads were constructed.

In the Czech Republic, there are currently 13 road projects affecting the core network and receiving 85 % of EU co-financing. Two will deliver new motorway sections (total length 21.5 km), while 11 are projects to reconstruct 61.7 km of roads (compared to the total core network of 1 022 km).

¹¹ ESIF open data platform: <https://cohesiondata.ec.europa.eu/themes/7>.

¹² ESIF open data platform: <https://cohesiondata.ec.europa.eu/themes/7>.

23 In addition to the ESIF funding, the CEF instrument, which is open for all Member States and directly managed by the Commission, has also contributed to the development of the TEN-T core network. Grants for road projects account for approximately 10 % of the CEF Transport envelope, or around €2.1 billion. Out of the total amount, some €864 million is tied to specific road infrastructure investments, €599 million to alternative fuels infrastructure and approximately €31 million to safe and secure parking areas. The rest is being spent mainly on intelligent transport systems and other telematics applications.

24 Out of €864 million allocated to road infrastructure investments, around 97 % go to the core network and around almost 80 % (approximately €662 million) focus on sections of road that either cross or lead to a border. We found examples of this focus in the four Member States we visited, where the CEF is co-financing five such projects (see [Box 2](#)).

Box 2

Examples of CEF road projects focusing on cross-border sections in the Member States we visited

In Bulgaria, the CEF is co-funding modernisation of the I-8 trunk route from Kalotina to the Sofia ring road, which is part of the core network. It covers upgrading of 14.5 km of road along the cross-border section leading to Serbia. The total eligible costs are €83 million, including a maximum EU contribution of €20.6 million.

In Spain, the CEF is co-financing construction of a cross-border road link along the Atlantic corridor between Fuentes de Oñoro and Vilar Formoso (Portugal). The estimated total cost is approximately €28.1 million. EU support has been set at 10 %, or a total of around €2.8 million.

The Commission has played an important role at strategy level

25 The adoption by the EU of the TEN-T Regulation in 2013, based on the Commission's proposal, was a key strategic development in promoting the accessibility and connectivity of all EU regions, in particular by introducing the concepts of comprehensive and core networks with different implementation deadlines. This approach has been contributing to prioritise completion of the most important traffic routes as the core network, including nine core corridors, has to be finished by 2030.

26 In order to facilitate coordinated implementation of the corridors, nine European Coordinators (each of whom oversees implementation of one corridor) appointed by the Commission published corridor work plans¹³ and monitored their implementation. The work plans were regularly updated and accompanied by an indicative list of planned projects showing estimated cost, planned completion date and transport mode. Although not legally binding, work plans were agreed by all Member States along the relevant corridor.

27 In addition to the framework set by the TEN-T Regulation, the Commission is involved at strategic level in Member States benefitting from the ESIF funds (21 out of 28 Member States) (see paragraph 07). In the four Member States we visited, in the process of negotiating and approving partnership agreements and operational programmes for 2014-2020 programming period, the Commission made substantial comments to make Member States prioritise the TEN-T in their planning. For example:

- (a) In Bulgaria, the Commission noted that the analysis of the draft partnership agreement did not demonstrate sufficient concentration and prioritisation of the EU transport investments for the next programming period and that the partnership agreement had to further indicate that the key priority investment was the completion of the motorway between Sofia and the Greek border on the core network. The completion of this motorway was then set as a key priority in both the partnership agreement approved in October 2015 and the relevant 2014-2020 transport OP.
- (b) In Poland, when negotiating the partnership agreement with the national authorities, the Commission pointed out that the draft partnership agreement allowed all types of roads for secondary connectivity without any prioritisation, including connectivity in rural areas, which was not in line with the Commission's position. Therefore, the Commission concluded that local roads can normally only be financed from ERDF if they “assure direct connectivity with the TEN-T” or “link directly to the core and comprehensive network”.
- (c) The Commission asked the Czech Republic to strengthen the link between the national transport strategy and the partnership agreement by including explicit reference to completion of the core network corridors.

¹³ Article 47 of the TEN-T Regulation.

Reduced travel times and more kilometres on motorway

28 The data we obtained during the audit at the Commission and in the four Member States visited showed that there had been some general improvements in travel times between 2012 and 2019. We analysed four routes: Madrid–Warsaw, Tallinn–Vienna, Bucharest–Paris and Burgas–Berlin. These routes cross all four Member States we visited and cover large parts of the core network on the south-north and west-east axis (see [Picture 3](#)).

Picture 3 – Four routes analysed (2019)



- Bucharest - Paris
- Burgas - Berlin
- Madrid - Warsaw
- Tallinn - Vienna
- All other corridors

Source: Eurostat.

29 We noted increases in the number of kilometres driven on motorways, which leads to time savings and contributes to enhance safety and quality of travelling. The

greatest increases was on the Tallinn–Vienna route, where the number of kilometres of motorway increased by 190 %, from 200 km in 2012 to 580 km in 2019 with time savings of 8 % (see [Table 4](#)).

Table 4 – Increased kms of motorway and reductions in travel times between 2012 and 2019

	Total journey 2019 (km)	Change in length of motorway (km)	Change in length of motorway	Total time 2019 (minutes)	Time saved (minutes)	Time saved
Bucharest–Paris	2 322	312	17.0 %	1 291	33	2.5 %
Burgas–Berlin	2 039	339	30.0 %	1 232	33	2.6 %
Madrid–Warsaw*	2 920	400	17.0 %	1 485	104	6.5 %
Tallinn–Vienna	1 706	380	189.0 %	1 070	93	8.0 %

* Since the main criterion was the fastest route, in this case the itinerary was different in 2012 and 2019.

Source: ECA, based on Eurostat calculation.

30 The information we collected on our visits to the four Member States also indicates that the completion of sections belonging to the core road network has helped to reduce travel times. For example:

- (a) In Bulgaria, the total motorway network has nearly doubled from 418 km in 2007 to 757 in 2018, largely thanks to EU support. For the period 2007-2013, the EU co-funded with a rate of 85 % the completion of 264 km of motorways on the core network, including the completion of two motorways: one linking Sofia to Burgas and another one reaching the border with Turkey. According to the Bulgarian authorities, the completion of the first motorway shortened the travel time between Sofia and Burgas by approximately 90 minutes because the average speed went up from 68 to 105 km/h. With the completion of the other motorway, the journey from Sofia to the Turkish border was likewise shortened by around 90 minutes.
- (b) In Spain, following completion of the five missing stretches of the core road network, the authorities reported improvements in the level of service (increased capacity), average speed (reduced travel times) and road safety in these sections. The time savings reached in these sections between 2004 and 2017 ranged from 15 % to 38 %.

- (c) In Poland, the indicators show that connectivity is generally improving: the average travel time between 18 major cities decreased from 4.3 hours in 2013 to 4.1 hours in 2018.

However, certain key factors hamper full functionality of the TEN-T core road network

31 We reviewed whether there are key factors that hamper full functionality of the TEN-T core road network. To be fully functional, the EU core network must be complete in terms of road-class and technical requirements and well maintained. Its funding should be a priority and the Commission should play a key role in coordination to avoid potential obstacles and in monitoring progress towards completion of the network. To that end, we assessed whether parts of the infrastructure were missing and whether EU funding for 2014-2020 was allocated in line with TEN-T policy objectives, in particular, in view of completing the core network. We also reviewed whether the Commission's monitoring allowed it to follow the progress and make reliable forecast as to its likely completion by the 2030 deadline and take corrective action if necessary. We also reviewed whether Member States' maintenance budgets allowed ensuring the long-term functioning of the core road network.

Most ESIF funding for 2014-2020 was allocated outside the TEN-T core road network

32 In 2013, the TEN-T Regulation introduced the concept of a core network within the TEN-T network, to prioritise the completion of the most important routes in terms of traffic. We found that in the 2014-2020 period, while the limited CEF allocation for roads almost exclusively targeted the core network (see paragraph 23), most of the ESIF funding available for road projects has been allocated outside the TEN-T core road network, namely 65.7 % (see [Table 5](#)). However, at the time of negotiating allocations for 2014-2020, the completion rate of the core road network in most of central/eastern Member States did not exceed 55 %. [Annex III](#) shows the share of ESIF road funding allocated to the core and comprehensive networks in each Member State for the 2014-2020 period and their status of completion in 2013.

Table 5 – ESIF allocations to road projects, 2014-2020

Road networks	Allocations (as share of total allocations to roads)	Allocations (in billion €)
Core network	34 %	10.1
Comprehensive network	27 %	7.7
Outside the TEN-T network	39 %	11.5

Source: ECA, based on Commission data.

33 This was noticeable in the Czech Republic, which allocated only 15 % to the core network while most of its ESIF support went outside the TEN-T. We also noted positive examples of Croatia and Bulgaria which allocated 83 % and 78 % respectively of their support on investment in the core network (see [Table 6](#)). For the full picture see [Annex III](#).

Table 6 – ESIF allocations to roads (2014-2020) and completion status of the core road network in 2013

Member State	Allocations to the core network	Allocations to the comprehensive network	Allocations outside the TEN-T	Completion of the core road network in 2013
Bulgaria	78 %	0 %	22 %	45 %
Croatia	83 %	0 %	17 %	60 %
Czech Republic	15 %	22 %	63 %	55 %
Poland	32 %	32 %	36 %	33 %

Source: ECA, based on Commission data.

34 There is also a clear difference between ERDF and the Cohesion Fund in the way they are used to finance road projects (see paragraph [06](#)). While Cohesion Fund allocations to roads exclusively targeted the TEN-T (57 % the core and 43 % the comprehensive network), ERDF mostly supported road projects outside the TEN-T. In particular, ERDF allocations to projects within the core road network were 11 % of total allocations to roads (see [Table 7](#)).

Table 7 – ERDF and Cohesion Fund allocations to road projects, 2014-2020

	Core network	Comprehensive network	Outside TEN-T
Cohesion Fund	57 % (€8.4 billion)	43 % (€6.3 billion)	0 %
ERDF	11 % (€1.7 billion)	10 % (€1.4 billion)	79 % (€11.4 billion)

Source: ECA, based on Commission data.

35 Finally, the TEN-T Regulation requires the core road network to be constituted of either motorways or express roads, leaving the choice to the Member States. In this framework it is important to reiterate what the Court expressed in the previous special reports¹⁴. As the cost of motorway construction is significantly higher than for express road (express roads could be an average of 43 % cheaper than motorways), the decision related to the road class must be based on a sound cost-benefit analysis, taken individually for each project rather than a systematic decision taken for all road network in the Member State. We noted different approaches to this issue in the Member States we visited: whereas the Czech Republic and Spain decided to build exclusively motorways, Poland and Bulgaria use both types of road (see [Table 8](#)).

Table 8 – Core road network by road class (completed and planned) in four Member States visited as of 2019

Member State	Motorway	Express road	Core road network total length
Bulgaria	1 120 km (74 %)	392 km (26 %)*	1 512 km
Czech Republic	1 000 km (98 %)	23 km (2 %)	1 023 km
Poland	1 910 km (51 %)	1 840 km (49 %)	3 750 km
Spain	5 914 km (99.5 %)	26 km (0.5 %)	5 940 km

*Note: an indicative value as there was no final decisions for some core network sections at the time of the audit.

Source: ECA, based on data provided by the national authorities.

¹⁴ Special report 5/2013: “Are EU Cohesion Policy funds well spent on roads? Special report 9/2018: “Public-Private Partnerships: widespread shortcomings and limited benefits.

Barriers for seamless travel on the core road network

Some cross-border sections are incomplete

36 The TEN-T Regulation¹⁵ defines “cross-border section” as “the section which ensures the continuity of a project of common interest between the nearest urban nodes on both sides of the border of two Member States or between a Member State and a neighbouring country”. In line with this definition, a cross-border section may describe a longer stretch of the network, rather than a few kilometres on either side of the border.

37 Cross-border sections need to be given particular attention as gaps in the cross-border infrastructure lessen the intended impact of the EU-wide network. Relevant corridor work plans identified several incomplete cross-border sections, both between Member States (for example between Poland and Slovakia in Baltic-Adriatic corridor) and concerning sections leading to a border with a non-EU country (for example extension of the Hungarian M3 motorway to Ukrainian border in the Mediterranean corridor).

38 In addition, we noticed that in the four Member States we visited several cross-border sections are missing and in some cases there is a particular risk that they will not be complete by 2030:

- (a) In the Czech Republic, four out of seven cross-border sections are already complete but the other three (with Poland, Slovakia and Austria) are missing and at risk of non-completion by 2030. These stretches cover altogether 154 km (out of total core network of 1 022 km). Two projects are not scheduled to start until 2027. Taking into account that the average time needed only for preparation of motorway construction project (including all necessary permits) is 13 years¹⁶, these projects are very unlikely to be completed by 2030.
- (b) In Bulgaria, only one out of six cross-border sections on the core network is currently complete (with Turkey), and two others are in construction (with Serbia and Greece). Of the remaining three, one is shared with a non-EU country (North Macedonia) and two with Romania (see **Box 3**). In the latter case the projects are under preparation but at the time of the audit there was no approved timeline and secured funding for their completion. The cross-border section with North

¹⁵ Article 3(m) of the TEN-T Regulation.

¹⁶ Audit Conclusion 17/05 Construction, Modernization and Overhaul of motorways, https://www.nku.cz/assets/kon-zavery/K17005_en.pdf.

Macedonia is not prioritised in key transport strategic documents. Therefore, there is a risk they will not be finished by 2030.

Box 3

The Danube bridge

The bridge over the river Danube between Bulgaria and Romania on the Orient–East Mediterranean corridor (Vidin–Calafat) was built with the support of EU funding. While it has been operational since 2013, it is still not accessible using TEN-T compliant roads on either side of the border. The situation impairs seamless travelling on this corridor. It is currently longer for a passenger car to travel from Sofia to Bratislava via a route on the corridor than through another country (Serbia), even allowing for time spent at external border control. According to Eurostat, the latter takes 25 % (171 minutes) less time on approximately the same distance of around 1 000 km in case of both routes.

- (c) In Poland, the situation is more advanced as out of ten cross-border sections with the neighbouring countries, six are already completed and three more are planned to be finished by 2023 (with Lithuania, Slovakia and the Czech Republic). Only for a section to the Belarus border, the date of completion is not confirmed;
- (d) Also in Spain, out of five cross-border sections, four are already complete and the remaining one with Portugal on the Atlantic corridor is under constructions and is expected to be completed in 2020.

Insufficiently coordinated approach to secure parking areas and alternative fuels infrastructure hamper seamless travel

39 The TEN-T Regulation¹⁷ requires “the development of rest areas on motorways approximately every 100 km [...] to provide appropriate parking space for commercial road users with an appropriate level of safety and security”. However, the regulation does not explain what constitutes safe and secure parking or provide a framework which would allow the determination of sufficient parking availability. As a result, so far Member States have applied their own criteria to classify parking areas as safe and secure.

¹⁷ Art. 39(2)(c) of the TEN-T Regulation.

40 In February 2019, therefore, in cooperation with stakeholders from the road sector, the Commission published the Study on Safe and Secure Parking Places for Trucks¹⁸. The study highlighted the lack of a comprehensive database and the existence of different classification schemes. To remedy this situation, the study proposed an EU standard for truck parking areas. The standard focuses on security (at bronze, silver, gold and platinum levels) and basic service requirements (showers, electricity, food, etc.) that must be present to obtain security certification. While the study provides useful guidelines for the sector, the standard is not legally binding and Member States can still define their own criteria for safe and secure parking.

41 Furthermore, the study revealed that out of 300 000 parking spaces available across the TEN-T core network only 7 000 spaces (in 57 parking areas in a handful of countries) are considered “safe and secure” (see [Picture 4](#)). It also pointed out a general shortage of approximately 100 000 parking spaces, even before taking account of safety and security. We found this is confirmed for example by the Orient-East Mediterranean corridor work plans, which reports that in some countries on the corridor there are long distances where suitable parking is not available.

¹⁸ Study on Safe and Secure Parking Places for Trucks. Final Report. European Commission, February 2019.

Picture 4 – Certified secure parking on the TEN-T core network



Source: European Commission, Study on Safe and Secure Parking Places for Trucks, p. 20.

42 The TEN-T Regulation likewise does not set clear requirements for alternative fuel infrastructure, only requiring that facilities be made available. More detailed minimum requirements are given in Directive 2014/94/EU¹⁹, which states that alternative fuels infrastructure must be developed and implemented through national policy frameworks by the end of 2020 or 2025, depending on the type of fuel. This should include recharging points for electric vehicles and refuelling points for natural gas (liquefied natural gas - LNG and compressed natural gas - CNG) and (optionally) hydrogen. Since Member States plan individually their national targets for each fuel, based on the number of vehicles in circulation in their territory, at present one type of fuel infrastructure may be widely available in one country along a TEN-T core network corridor but scarce in the next, which has an impact on international seamless travelling.

43 For example, even if, according to the Commission, the North Sea–Baltic corridor is compliant in terms of alternative clean fuels infrastructure, not all types of fuel are

¹⁹ Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure (OJ L 307, 28.10.2014, p. 1).

actually available along the entire corridor. Of the eight Member States on the corridor, one has not set national targets and three others have not yet built any LNG infrastructure. In addition, the fact that hydrogen infrastructure targets are non-mandatory may exacerbate the situation. Three out of eight Member States have set no targets and only four are developing hydrogen filling stations. In consequence, an LNG- or hydrogen-powered lorry has difficulty travelling from one end of the North Sea–Baltic corridor to the other as there is no refuelling infrastructure available along the entire corridor.

Shortcomings in the Commission’s monitoring framework undermine its ability to take corrective action

There are no intermediate milestones that would allow the Commission to monitor progress properly and take corrective action

44 The TEN-T Regulation sets clear targets and deadlines for full implementation of the TEN-T: the core network is supposed to be completed by 2030 and the comprehensive network by 2050. If there is significant delay in starting or completing work on the core network, the TEN-T Regulation authorises the Commission to ask the Member State concerned for an explanation²⁰ in order to resolve the problem that caused the delay.

45 However, the regulation does not establish intermediate milestones, overall or by transport mode, with which the Commission might regularly monitor progress towards completion of the two networks. This makes it difficult in practice for the Commission to take corrective action, if needed, before the final deadline for completion of each network. The Commission has not yet asked any Member State for explanation, even though in some Member States progress has been relatively slow and there is a risk that they will not complete their core network on time.

46 The Commission has started the review of the implementation of the core network in April 2019 with public consultations, in accordance with the TEN-T Regulation²¹. This gives the Commission an opportunity to take action to remedy shortcomings highlighted in this report.

²⁰ Article 56 of the TEN-T Regulation.

²¹ Article 54 of the TEN-T Regulation.

The Commission's tools to monitor progress towards completion of the core road network are not fully effective

47 The Commission has put in place some tools to monitor progress towards completion of the core road network and its compliance with the technical requirements set in the TEN-T Regulation. These tools, which are defined in the TEN-T Regulation, are the following:

- (a) progress reports on the implementation of the TEN-T network, to be published by the Commission every two years and submitted to the European Parliament and the Council. It reports the core road network's compliance with the EU-wide motorway / express road criterion, and the use of EU financial support to implement the network²². The Commission adopted the first progress report in June 2017²³, and expects to publish next by mid-2020;
- (b) the interactive geographical technical information system for the Trans-European transport network, known as TENtec, to which Member States should annually transmit data²⁴, and which serves as a basis for the progress report and other policy documents;
- (c) and, for each of the nine core corridors²⁵, corridor work plans submitted by each European Coordinator together with an indicative list of planned projects indicating the estimated cost and the planned end date.

48 We noted, however, that these tools are not fully effective. Not all of them report on the entire core network: corridor work plans, while quite detailed in terms of implementation, cover around 68 % of it. Furthermore, the data are not timely; their reliability is affected by the lack of a uniform approach and there are no result indicators.

49 The information recorded in the Commission system is not up-to-date. The latest available data date back to 2016 even though Member States are expected to transmit data to TENtec on an annual basis. However, the transmission procedure is not clear as

²² Article 49(3) of the TEN-T Regulation.

²³ Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Progress report on implementation of the TEN-T network in 2014-2015, 19.06.2017, COM(2017) 327 final.

²⁴ Article 49 (1) of the TEN-T Regulation.

²⁵ Article 47 of the TEN-T Regulation.

no deadline is fixed for Member States to send data covering a defined time period, nor for the Commission to process the data and make it available in the system.

50 Furthermore, we noted that lack of uniform approach affects reliability of the data which the Commission publishes and uses to underpin its progress reports and other policy documents²⁶:

- (a) there is no uniform methodology for defining road sections as “completed” and “to be upgraded”. Member States do not use the terms in the same way, which undermines data reliability and comparability concerning the completion rate. Some sections which are already complete in terms of road class may be considered by a Member State as needing an upgrade in the future while another Member State may report 100 % compliance (see **Box 4**);
- (b) the content of corridor work plans is not sufficiently standardised to ensure data comparability, in particular in relation to the availability of alternative fuels and safe and secure parking areas as some report compliance in percentage while others give a concrete figure or do not report on it at all.

²⁶ https://ec.europa.eu/transport/facts-fundings/scoreboard/compare/investments-infrastructure/ten-t-completion-roads_en

Box 4

Examples of unreliable data due to non-uniform methodology

- (a) Bulgaria: According to the latest Commission data (Commission Delegated Regulation (EU) 2017/849), the 2016 completion rate of the core network was 50 % while at the time of the audit visit (May 2019), the Bulgarian authorities reported a completion rate of 46 %.
- (b) Latvia: According to the latest Commission data (Commission Delegated Regulation (EU) 2017/849), the 2016 completion rate of the core network was 100 % while according to the 2014 data in the Third Work Plan for the North Sea–Baltic corridor, it was 8 % for the Latvian section. The 2017 corridor study update gave a rate of 36 %. The national road authority website shows work still ongoing on the core road network²⁷ which shows that the core network is not yet complete.
- (c) Germany: Although the completion rate for Germany for 2016 is given as 59 %, relevant corridor work plans indicate that German road sections are complete.

51 The shortcomings listed above do not allow the Commission to adequately monitor the actual progress towards the completion of the core road network. In consequence, it is difficult for the Commission to make reliable forecasts regarding the likelihood of its completion by 2030 and taking timely corrective actions, based on the TEN-T Regulation, if necessary (see paragraph 44).

52 In addition, for the Member States allocating ESIF funding to roads, the Commission is regularly informed about the progress of their transport-related OPs through annual implementation reports, monitoring committee meetings or on-the-spot visits. OPs also include a number of output and result indicators in relation to co-financed road sections.

53 As regards indicators, we noted that the Commission’s monitoring tools focus on output indicators while not providing any information on the results achieved in the sections of the network already completed. For example, no information such as time savings or higher average speed, is included in the progress report, nor in any of the nine corridor work plans, even though some data are already available at the Commission level (see paragraph 28).

²⁷ <https://lvceli.lv/>

54 No common result indicators for roads were set as regards EU funding either. Member States established their own result indicators specific to road projects, such as road saturation in Bulgaria, equivalent straight-line speed in the Czech Republic and the synthetic road transport accessibility indicator in Poland. However, they are not comparable and cannot be aggregated neither for the EU as a whole nor at corridor level.

55 The Commission has proposed a set of common output and result indicators for ESIF support for the 2021-2027 programming period, including specifically roads (such as “users of newly built, reconstructed or upgraded roads” and “time savings due to improved road infrastructure”), which is a step forward to enhance the Commission’s monitoring of results at EU level. However, they refer to roads in general, and not specifically to TEN-T roads. At the time of drafting, this legislation had not yet been approved²⁸.

Insufficient maintenance by Member States puts the state of the core road network at risk in the medium to long term

Although maintenance is mainly in the remit of Member States, it is also tackled in EU legislation

56 The goal of maintenance is to preserve rather than upgrade an asset²⁹. Financing and managing of road maintenance, including the core network, is the responsibility of Member States. Although EU funding cannot be used for maintenance (only to reconstruct or upgrade roads), this issue is also covered in EU legislation, as explained below.

57 The TEN-T Regulation covers maintenance as follows: “The trans-European transport network shall be planned, developed and operated in a resource-efficient way through development, improvement and maintenance of existing transport infrastructure [...]” and “roads shall be adequately maintained [...]”³⁰.

²⁸ Proposal for a Regulation of the European Parliament and of the Council on the European Regional Development Fund and on the Cohesion Fund, COM/2018/372 final.

²⁹ The Directorate-General for Regional and Urban Policy: Maintenance of road transport infrastructure. Discussion paper, 24/04/2013.

³⁰ Article 5(1)(a) and article 17(2). See also article 10(1)(e): “In the development of the comprehensive network general priority shall be given to measures that are necessary for

58 The *ex ante* conditionality of the ESIF funding procedure requires the Commission to assess the issue of maintenance with the Member States benefiting from ESIF. Under relevant *ex ante* conditionality, comprehensive transport plans or frameworks which have to be provided to the Commission must include the necessary measures for, among other things, improving or maintaining the quality of infrastructure in terms of safety, security, efficiency and climate/disaster resilience, as well as the quality of services and continuity of traffic flows. The Commission intervened in this context in the four Member States we visited, for example asking Poland to provide more focus on maintenance (which resulted in a reference in the Polish transport plan to the specific legislation on financing land transport infrastructure) and insisting that the partnership agreement in Bulgaria refer to the need for effective road infrastructure maintenance and the generation of financial resources through a charging system.

59 The above procedure only covers Member States benefitting from ESIF funding for roads while the Commission does not have a tool to address the maintenance issue in other Member States. On the other hand, while the new motorways are being constructed in the Cohesion Member States including Poland, the Czech Republic or Bulgaria covered by this audit, the road network constructed in other Member States in previous decades – also using EU funding – already requires or may soon require important structural maintenance. The issue concerns not only roads but also other structural elements, such as bridges and tunnels.

60 Maintenance is also tackled as part of the revised road infrastructure safety management directive which enters into force at the end of 2019³¹. The directive refers to the trans-European road network as defined in the TEN-T Regulation. It requires Member States to carry out “network-wide road assessments” and lay down some indicative elements for these assessments, among others referring to operational characteristics and maintenance. A first assessment must be carried out by 2024 at the latest, following it up at least every five years. This information could be used by the Commission to collect information on the full functionality of the core network.

[...] improving or maintaining the quality of infrastructure in terms of safety, security, efficiency, climate [...].”

³¹ Directive (EU) 2019/1936 of the European Parliament and of the Council of 23 October 2019 amending Directive 2008/96/EC on road infrastructure safety management (OJ L 305, 26.11.2019, p. 1).

61 For the 2021-2027 programming period, an enabling condition referring to “Comprehensive transport planning at the appropriate level” would require Member States benefitting from ESIF funding for roads to provide information about the availability of budgetary and financial resources to fund planned investments and cover the operating and maintenance costs of existing and planned infrastructure. If this condition is adopted and properly implemented, it is a step forward as these Member States would have to apply it throughout the programming period; otherwise, expenditure relating to the specific objective concerned could not be included in their payment applications.

National maintenance budgets have been steadily decreasing rather than evolving in line with the increasing length of infrastructure and the ageing of crucial links

62 According to the Commission, maintenance must be planned appropriately, on the basis of asset management principles, to ensure cost-effectiveness and to optimise infrastructure life expectancy³².

63 Within the EU, Member State spending on road maintenance in absolute terms has been declining. According to the OECD, the EU average dropped almost by half between 2007 and 2017. The Commission acknowledged the issue in a recent report on current trends and issues for transport in the EU: “road infrastructure across the EU has been degrading because of too little road maintenance. Maintenance budgets have often experienced severe cuts and have not evolved in line with the increasing length of infrastructure and the ageing of crucial links. This has led to a worsening of the state of roads in many EU countries and has generated higher risks of accidents, congestion, increased noise and a reduced service to society”³³.

64 In three of the four Member States we visited we noted a significant decrease in funding for maintenance between 2007 and 2017 (see [Table 9](#)). In Poland, the budget dropped by two thirds, and in Bulgaria by more than a half. In Spain, it dropped by 50 % between 2008 and 2017, taking into account that around 300 million euro from the maintenance budget has been taken in recent years to pay the concessionaires of motorways not subject to a direct toll by users. Only in the Czech Republic the budget

³² Directorate General Internal Market, Industry, Entrepreneurship and SMEs, Discussion paper on infrastructure maintenance, Brussels, 19/03/2019.

³³ European Commission, Transport in the European Union Current Trends and Issues, March 2019, p. 13.

increased, although at the same time more kilometres of road have been put into operation.

Table 9 – National road maintenance budgets, 2007-2017 (in million euro)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Bulgaria	215	203	69	100	71	103	96	93	93	93	-
Czech Republic	590	611	578	670	570	571	513	587	684	767	721
Poland	1 515	2 004	2 340	2 636	2 679	428	438	383	416	419	517
Spain*	983	1 106	1 325	1 103	851	650	661	601	535	551	563

Note: *The Spanish figures relate exclusively to the maintenance budget for the State Roads Network.

Source: ECA, based on OECD data (for Bulgaria, Czech Republic and Poland) and national data for Spain.

65 This is reflected in the quality of the infrastructure. Out of the four Member States we visited, data obtained during the audit show that only in Spain is the state of the network considered generally good, although recent budgetary restrictions are delaying certain maintenance tasks. In Poland, almost 40 % of the network requires repairs, 14 % of them urgently. In Bulgaria, 32 % of roads are in a bad state and 27 % in average condition. The Czech Republic indicated serious problems with the state of two key motorways. However, none of the four Member States we visited had a long-term asset management strategy yet, and only Poland is now launching such a project. Currently maintenance is usually budgeted by responsible authorities annually, on the basis of two or three-year estimates focusing on the most urgent sections or structural elements.

66 Although this can have an impact on the full functionality of the core network by 2030, currently the Commission does not have adequate information, neither at the level of the core network nor of the nine core corridors. Member States are not formally required to report on their maintenance planning system. Therefore, there is no thorough analysis of the overall state of core network infrastructure.

Conclusions and recommendations

67 Overall, we conclude that the development of the core road network is progressing and achieving results for those traveling on the network. EU funding and the Commission's actions contributed positively to these results. However, some key factors hamper full functionality of the TEN-T core network.

68 The completion of the TEN-T core road network is progressing. However, most central/eastern European Member States are still lagging behind. Between 2007 and 2017 around 3 100 km of motorways (mostly TEN-T) were built in the EU, to which EU funding has contributed large amounts since 2007, with over €40 billion allocated to the TEN-T network. As a result, in 2007-2013 programming period around 2 400 km of new TEN-T roads were built and an additional 2 000 km are expected to be built with 2014-2020 programming period EU support. This has helped to bring some positive results for those travelling on the network, such as shortened travel times and more kilometres driven on motorway (see paragraphs [14-24](#) and [28-30](#)).

69 The Commission has played an important role at strategy level: based on its proposal the core and comprehensive network as well as nine core network corridors were introduced. Furthermore, the CEF funding focused on the core network, including cross-border sections. With regard to ESIF funding, the Commission has intervened at Member State level using ex-ante conditionality procedure and by negotiating partnership agreements and operational programmes with Member States to prioritise the TEN-T network (see paragraphs [25-27](#)).

70 However, this action was not always translated into the same level of prioritisation when it comes to focus investment specifically in the core network. Out of available ESIF for 2014-2020, Member States earmarked 66 % outside the TEN-T core road network. This happened despite the fact that in Member States receiving the most ESIF support for roads, the level of core network completion was low at the time when allocations were negotiated at EU level (see paragraphs [32-35](#)).

71 We noted another obstacle for seamless traveling along the TEN-T core road network: some cross-border sections are incomplete and there is an insufficiently coordinated approach to secure parking areas and alternative fuel infrastructure (see paragraphs [36-43](#)).

Recommendation 1 – Prioritise investment in the core road network

The Commission should:

- (a) ensure that Member States have appropriate planning to have the entire TEN-T core network complete by 2030, indicating the schedule and budgetary availability. A particular attention should be paid on cross-border sections, especially in Member States which are not progressing in these areas.

Timeframe: 2021 revision of the TEN-T Regulation

- (b) take the appropriate steps so that Member States prioritise the available Cohesion Fund and ERDF for roads on investment in the core network with a view to completing it by 2030, especially in Member States where progress has been limited so far.

Timeframe: when adopting PAs and OPs for 2021-2027 programming period

72 Shortcomings in the Commission's monitoring undermine its ability to take timely corrective action, if needed. The Commission's monitoring does not always cover the entire core network and it lacks intermediate targets that would allow it to assess progress towards the completion of the core network over time and make reliable forecast as to its likely completion by 2030. Furthermore, the data are not timely, their reliability is affected by the lack of a uniform approach and there are no result indicators (see paragraphs [44-55](#)).

Recommendation 2 – Enhance monitoring arrangements

The Commission should enhance its monitoring system to be able to monitor progress in the development of the TEN-T core network and undertake corrective actions provided for in the TEN-T Regulation. The monitoring framework should cover the entire core network and include the following elements:

- (a) Intermediate targets to assess progress made by Member States;
- (b) A systematic and uniform approach with fixed deadlines for Member States to provide data on completion of the core network and for the Commission to process and publish them; the system should be designed to allow monitoring of the results, such as time savings, average speed and capacity in order to help assessing the impact of the EU core network.

Timeframe: 2021 revision of the TEN-T Regulation

73 Insufficient maintenance by Member States puts the state of the core road network at risk in the medium to long term. National maintenance budgets are steadily decreasing rather than evolving in line with the increasing length of infrastructure and ageing of crucial links. Although this can have an impact on the full functionality of the core network by 2030, the Commission does not have tools to verify whether Member States have a solid system in place ensuring proper maintenance of their networks (see paragraphs [56-66](#)).

Recommendation 3 – Strengthen approach to maintenance

In order to ensure full functioning of the core road network in the medium to long term, the Commission should take appropriate measures in the revision of the TEN-T regulation to enhance long-term maintenance planning by Member States which provides information on financing resources required to cover long-term maintenance costs of the existing and planned infrastructure.

Timeframe: 2021 revision of the TEN-T Regulation

This Report was adopted by Chamber II, headed by Ms Iliana Ivanova, Member of the Court of Auditors, in Luxembourg at its meeting of 11 March 2020.

For the Court of Auditors

Klaus-Heiner Lehne
President

Annexes

Annex I ERDF and Cohesion Fund final allocations to road projects 2007-2013, in million euro

	Total Roads	Motorways	Motorways TEN-T	National roads	Regional / local roads
Belgium	40.3	0	0	0	40.3
Bulgaria	1 050.7	0	673.3	334.6	42.9
Czech Republic	3 835.8	257.4	1 326.0	883.4	1 369.0
Denmark	0	0	0	0	0
Germany	2 008.7	147.1	339.9	311.9	1 209.8
Estonia	318.6	0	273.2	45.4	0
Ireland	64.0	42.1	0	21.9	0
Greece	5 086.1	96.6	3 870.1	362.0	757.4
Spain	3 168.5	863.8	823.8	152.0	1 328.9
France	201.2	162.1	0	0	39.1
Croatia	35.1	0	0.3	34.7	0.1
Italy	1 235.5	437.7	0	345.2	452.7
Cyprus	82.3	60.3	0	0	22.0
Latvia	639.3	323.6	315.7	0	0
Lithuania	827.8	0	423.7	281.3	122.8
Luxembourg	0	0	0	0	0
Hungary	3 187.4	0	1 068.1	1 373.9	745.4
Malta	94.7	0	72.3	14.0	8.4
Netherlands	24.5	0	0	0	24.5
Austria	0	0	0	0	0
Poland	16 736.0	1 846.4	8 526.3	2 291.0	4 072.3
Portugal	804.7	0	396.9	8.6	399.2
Romania	3 925.1	0	1 784.3	472.1	1 668.7
Slovenia	443.2	24.0	179.1	120.2	119.9
Slovakia	2 031.9	332.7	1 020.2	473.6	205.4

Finland	28.6	0	0	18.0	10.6
Sweden	18.8	0	0	2.6	16.2
United Kingdom	246.1	0	190.1	11.1	44.9
CB	409.1	4.4	9.8	1.1	393.9
EU	46 543.8	4 598.2	21 292.9	7 558.6	13 094.1

Note: CB refers to European Territorial Cooperation.

Note: In grey visited Member States.

Source: ECA, based on Commission data. TEN-T financing is not included in this table.

Hungary	1 343.0	160.0	500.0	103.5	40.0	67.3	160.0	312.1
Malta	52.3	0	0	0	0	0	52.3	0
Netherlands	0	0	0	0	0	0	0	0
Austria	0	0	0	0	0	0	0	0
Poland	14 596.2	4 362.2	4 332.7	1 760.8	684.1	70.1	606.4	2 779.9
Portugal	56.9	0	0	0	40.9	0	0	16.0
Romania	3 714.8	1 988.4	464.2	17.9	30.8	65.5	82.2	1 065.6
Slovenia	132.0	0	63.5	68.4	0	0	0	0
Slovakia	1 842.9	1 078.6	209.4	0	186.8	0	0	368.2
Finland	22.9	0	0	0.7	6.3	1.1	0	14.9
Sweden	6.8	0	0	0	0	0	0	6.8
United Kingdom	119.1	0	0	0	0	0	110.5	8.6
EU	29 282.0	8 945.5	6 630.9	2 489.3	2 094.3	216.0	2 207.3	6 698.6

Note: In grey visited Member States.

Source: ECA, based on Commission data. CEF financing is not included in this table.

Annex III ESIF funds allocations to road networks for the period 2014-2020

Member State	Core network	Comprehensive network	Outside TEN-T network	Status of completion of the core road network in 2013
Belgium	0 %	0 %	100 %	99 %
Bulgaria	78 %	0 %	22 %	45 %
Czech Republic	15 %	22 %	63 %	55 %
Estonia	50 %	50 %	0 %	34 %
Greece	7 %	42 %	51 %	76 %
Spain	1 %	1 %	98 %	100 %
Croatia	83 %	0 %	17 %	60 %
Italy	0 %	0 %	100 %	77 %
Cyprus	50 %	50 %	0 %	73 %
Latvia	28 %	28 %	44 %	88 %
Lithuania	42 %	24 %	34 %	7 %
Hungary	18 %	43 %	39 %	81 %
Malta	50 %	50 %	0 %	53 %
Poland	32 %	32 %	36 %	33 %
Portugal	0 %	0 %	100 %	100 %
Romania	55 %	13 %	32 %	41 %
Slovenia	0 %	48 %	52 %	100 %
Slovakia	58 %	11 %	31 %	39 %
Finland	0 %	0 %	100 %	71 %
Sweden	0 %	0 %	100 %	71 %
UK	47 %	46 %	7 %	100 %
EU	34 %	27 %	39 %	74 %

Note: In grey visited Member States.

Source: ECA, based on Commission data.

Abbreviations and glossary

CEF (Connecting Europe Facility): A mechanism, which since 2014 has provided financial aid to three sectors: transport, energy, and information and communication technology. For transport, the priorities are intermodal transport corridors and cleaner transport.

Cohesion Fund: An EU fund for reducing economic and social disparities in the EU by funding investments in Member States where the gross national income per inhabitant is less than 90 % of the EU average.

Direct management: A method of implementing the EU budget directly by the Commission's departments.

ERDF (European Regional Development Fund): An EU fund that strengthens economic and social cohesion in the EU by financing investments to reduce imbalances between regions.

ESIF (European Structural and Investment Funds): The five main EU funds which together support economic development across the EU. 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).

European Green Deal: It is a new EU growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use.

Ex-ante conditionalities (replaced by enabling condition for 2021-2027): are conditions, based on pre-defined criteria established in the Common Provisions Regulation, which are regarded as necessary prerequisites for the effective and efficient use of the EU funding for all ESIF funding. When preparing ERDF and Cohesion Fund OPs under the 2014-2020 programme period, Member States have to assess whether these conditions are fulfilled. If they have not been fulfilled, action plans needed to be prepared to ensure fulfilment of the conditions by 31 December 2016.

INEA: the Innovation and Networks Executive Agency 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).

Operational Programme (OP): The basic framework for implementing EU-funded cohesion projects in a set period, reflecting the priorities and objectives laid down in partnership agreements between the Commission and individual Member States. The projects within an OP must contribute to a certain number of objectives specified at the EU level of the OPs priority axis. OP funding may come from the ERDF, CF and/or ESF. An OP is prepared by the Member State and has to be approved by the Commission before any payments from the EU budget can be made. OPs can only be modified during the programme period if both parties agree

Partnership agreements: Agreements entered into between the European Commission and each Member State for the 2014-2020 programme period. They set out the national authorities' plans on how to use funding from the ESIF and outline each country's strategic goals and investment priorities, linking them to the overall aims of the Europe 2020 strategy for smart, sustainable, and inclusive growth.

Shared management: A method of implementing the EU budget in which the Commission delegates implementation tasks to the Member States, while retaining final responsibility.

TEN-T (Trans-European Transport Networks): A set of planned road, rail, air and water transport networks in Europe. The infrastructure development of the TEN-T is closely linked with the implementation and further advancement of EU transport policy.

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

“THE EU CORE ROAD NETWORK: SHORTER TRAVEL TIMES BUT NETWORK NOT YET FULLY FUNCTIONAL”

EXECUTIVE SUMMARY

I. Developing the multimodal TEN-T core network by 2030 remains a task of high importance. Thanks to the efforts from the Commission and Member States, there has been already considerable progress in doing so since the adoption of the TEN-T regulation in 2013, also regarding road transport infrastructure. However, the further development of the road network must also take into account the primary priorities related to the transport decarbonisation, digitalisation and safety. The Cohesion Fund and ERDF may support investments in road infrastructure, including the road core network, when this is justified in view of the objectives set out in the Treaty, the goals of the European Green Deal and the socio-economic and territorial characteristics of the Member States and regions concerned.

VIII. The Treaty establishes the ERDF and the Cohesion Fund, among others, to promote harmonious development by supporting actions aimed at strengthening economic, social and territorial cohesion (Art.174 TEU).

The scope of the ERDF support is therefore broader than the (core) TEN-T network. The Cohesion Fund supports projects in the field of environment and Trans-European networks in the area of transport, covering both the core and comprehensive networks.

Under shared management, the Commission is not in charge of selecting projects for ERDF and Cohesion Fund support. These powers lie with the Managing Authority, in line with Article (67) of CPR.

See also Commission replies to paragraph 32.

XII. The Commission accepts the recommendations and refers to its replies to recommendations 1 to 3.

INTRODUCTION

06. Pursuant to Article 176 of the Treaty on the Functioning of the European Union, “*the European Regional Development Fund is intended to help to redress the main regional imbalances in the Union through participation in the development and structural adjustment of regions whose development is lagging behind and in the conversion of declining industrial regions.*” Therefore, ERDF aims to support only those TEN-T investments that best contribute to the socio-economic development of disadvantaged regions (e.g. TEN-T sections in urban nodes).

OBSERVATIONS

32. Core TEN-T roads constitute only approx. 1% of all paved roads in the EU, which explains earmarking 79% of the ERDF road allocation to non-TEN-T roads.

Over 57% of the Cohesion Fund road allocation was earmarked to core TEN-T, whereas 43% to comprehensive TEN-T. Taking into account the length difference between the core and comprehensive road TEN-T (comprehensive TEN-T being by 75% longer than the core), the average

intensity of the Cohesion Fund support to the core road TEN-T was over twice as large as to the comprehensive TEN-T (i.e. EUR 169 thousand/km, vs. EUR 72.4 thousand/km).

Moreover, EU funds are not the only source to finance core TEN-T investments. In accordance with the principle of additionality, contributions from ESIF must not replace public or equivalent structural expenditure by a Member State.

33. In the Czech Republic, indeed only 15 % of ESIF funding has been attributed to the core network while most of ESIF support went outside the TEN-T. Several important major projects on TEN-T core network initially envisaged for ESIF support have not been finally financed by ESIF and were withdrawn by the Czech authorities, because of issues of compliance with EU environmental acquis.

Please see also the Commission's reply to paragraph 32.

38 a) The sections in question will be subject to scrutiny and focus during the forthcoming negotiations with the CZ authorities on post 2020 programmes. The Commission will give priority to those sections concerned, subject to the level of their preparedness and funds available for the road sector.

b) Bulgaria has recently published its 2030 Strategy which envisages the completion of the TEN-T core road network by 2030, therefore putting a high priority to these sections. These sections will be further discussed as part of the upcoming post 2020 programming negotiations with Bulgaria.

Box 3 – The Danube bridge

Bulgaria is currently working on a Vidin – Botevgrad speedway funded by the national budget.

The Commission is aware of the situation and underlined the underdeveloped key connections in the north of the country in the country report 2019, including in Annex D of the report. This point will form part of the upcoming post 2020 programming negotiations with Bulgaria.

39. A delegated power to enshrine standards for safe and secure parking space is currently in discussion before the co-legislator¹. An agreement on the new legislation was reached by the co-legislator in December 2019 and is now in the procession of adoption by the two Institutions (adoption foreseen in July 2020).

43. Directive 2014/94/EU does not include binding requirements for Member States to install hydrogen-refuelling infrastructure. The development and marketing of the vehicles concerned was - and still is - less advanced than is the case for vehicles powered by other alternative fuels covered by the Directive.

54. In the current programming period, result indicators are defined at the country level to better tailor the monitoring framework to particular challenges and objectives identified in individual operational programmes.

55. Developing TEN-T roads is not a self-standing objective of ESIF but one of the tools to deliver the cohesion policy-goals. Thus, the system of ESIF result indicators should take this into account.

¹ Revision of Regulation (EC) No 561/2006 on the harmonisation of certain social legislation relating to road transport and amending Council Regulations (EEC) No 3821/85 and (EC) No 2135/98 and repealing Council Regulation (EEC) No 3820/85

64. Bulgaria has indicated to the Commission that it plans to reinvest the revenues from the traffic charges and tolls in the development and maintenance of the road infrastructure. They also count on the revenues from the toll taxes on the heavy road transport vehicles collectable from 2020 and which are expected to aid the completion of the core road network in Bulgaria.

CONCLUSIONS AND RECOMMENDATIONS

70. Please see the Commission's reply to paragraph 32.

Recommendation 1 – Prioritise investment in the core road network

a) The Commission accepts the recommendation.

b) The Commission accepts the recommendation.

The delivery of the TEN-T network is shared between the Member States and the Commission. EU grant financing is available for targeted support from the CEF, CF and ERDF.

For the Cohesion Fund and ERDF, programming for 2021-2027 will be done in line with the thematic concentration requirements of the cohesion policy legislation and based on Annex D of the 2019 European Semester Country reports.

A key objective is to reduce regional imbalances in the development of a sustainable and smart European transport system. Priorities in this context will include e.g. decarbonisation, digitalisation and safety aspects.

In the context of the approval of the programmes, investments into roads can be included when justified in view of the green objectives of the EU and the socio-economic and territorial characteristics of the Member States and regions concerned. This support includes, but is not limited to projects on the core TEN-T road network.

Recommendation 2 – Enhance monitoring arrangements

a) The Commission accepts the recommendation.

The Commission will propose to include intermediate targets for the core network corridors in the corridor work plans, which cover nearly all cross border sections.

b) The Commission accepts the recommendation.

Recommendation 3 – Strengthen approach to maintenance

The Commission accepts the recommendation and will consider it in the context of the forthcoming revision of the TEN-T Regulation, as announced.

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 Ladislav Balko, supported by Branislav Urbanic, Head of Private Office and Zuzana Frankova, Private Office Attaché; Pietro Puricella, Principal Manager; Aleksandra Klis-Lemieszonek, Head of Task; Marjeta Leskovar, Fernando Pascual Gil, Svetoslav Hristov, Zuzana Gullova and Valeria Rota, Auditors. Zuzanna Filipski and Petra Karkosova provided linguistic support.



From left to right: Pietro Puricella, Zuzana Gullova, Svetoslav Hristov, Ladislav Balko, Fernando Pascual-Gil, Aleksandra Klis-Lemieszonek, Branislav Urbanic, Marjeta Leskovar.

Timeline

Event	Date
Adoption of Audit Planning Memorandum (APM) / Start of audit	23.1.2019
Official sending of draft report to Commission (or other auditee)	16.1.2020
Adoption of the final report after the adversarial procedure	11.3.2020
Commission's (or other auditee's) official replies received in all languages	24.3.2020

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Roads play a significant role in EU transport, accounting for the largest share of passenger and freight traffic. We assessed progress towards achieving the EU objective of completing a fully functioning TEN-T core road network and the Commission's role in this. We found that the development of the TEN-T core road network supported by EU funding and Commission action is making progress thereby achieving results for those traveling on the network. However, certain key factors hamper full functionality of the TEN-T core road network. We recommend that the Commission prioritises investment in the core network, enhances its monitoring arrangements and strengthens its approach to maintenance.

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



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