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Progress report on the implementation of the trans-European transport network in 2018 and 2019

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1. INTRODUCTION

Regulation (EU) No 1315/2013 (hereafter TEN-T Regulation[1]) sets the guidelines for the development of the trans-European transport network (TEN-T). It provides the key legal basis for infrastructure-related measures for all forms of transport in the EU and aims at creating a multimodal network of rail, inland waterways, short sea shipping routes and roads which are linked to urban nodes, maritime and inland ports, airports and terminals across the EU. The TEN-T is hence the very basis for an infrastructural response to enable sustainable forms of transport, to provide for improved multimodal and interoperable transport solutions and for an enhanced intermodal integration of the entire logistic chain.

A smart, sustainable and fully interconnected European transport network is also a key condition for the completion and good functioning of the European single market and for linking Europe with the world's markets. It thus contributes to the European economic growth, jobs and competitiveness agenda. Moreover, through the development of cleaner modes of transport such as rail, inland waterways and short-sea shipping and the deployment of alternative fuels in road and maritime transport, the TEN-T also plays a central role for the achievement of the objectives of the European Green Deal[2] and of the Sustainable and Smart Mobility Strategy[3].

The TEN-T Regulation translates the overall purpose of a European multimodal transport system into four specific objectives: 1) contribution to the cohesion of the Union; 2) contribution to the efficiency of the transport network; 3) contribution to the sustainability of the transport network; 4) increased benefits for all users of the transport network. To reach these aims, the Regulation sets clear deadlines for the completion of the core network by 2030 and of the comprehensive network by 2050. This is combined with ambitious and binding infrastructure standards and requirements for all transport modes to achieve interoperability and quality of the network, for both the comprehensive and core network.

The financial instrument, the Connecting Europe Facility (CEF), set up through Regulation (EU) No 1316/2013[4], and its successor for the period 2021-2027 (Regulation (EU) No 2021/1153)[5], support the implementation of the TEN-T. Furthermore, substantial investments on the TEN-T are made at EU level through co-funding from the European Structural and

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1 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, p.1

2 COM (2019) 640 final

3 COM (2020) 789 final

4 Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010, OJ L 348, 20.12.2013, p. 129

5 Regulation (EU) 2021/1153 of the European Parliament and of the Council of 7 July 2021 establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014, OJ L 249, 14.7.2021, p.38

Investment Funds (ESIF) as well as through the various financial instruments of the European Investment Bank (EIB). However, the majority of investments is borne by Member States.

In order to report to European citizens and policy-makers on the effectiveness of the TEN-T policy, intermediate results need to be measured and reported. To this end, Article 49(3) of the TEN-T Regulation requires the Commission to publish every two years a progress report on the implementation of the trans-European transport network and present it to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. The present progress report is the third of such biennial reports.

This third progress report presents technical and financial data which reflects the status of the TEN-T network in 2018 and 2019. It thus gives an important insight in the progress made with regard to the TEN-T implementation, in particular at a crucial time when the TEN-T Regulation is under revision[6]. It is indeed important to know how much progress has already been made with regard to the technical compliance of the network when setting the objectives and targets and also new and more ambitious requirements for the future TEN-T Regulation. This progress report thus accompanies the legislative proposal of the Commission for the revised TEN-T Regulation.

The significant progress made on the TEN-T over the past years since the entry into force of the current Regulation in 2013, as demonstrated in this present report, gives in this regard a positive outlook and reaffirms the central role that TEN-T plays and will still have to play in view of the realisation of an efficient multimodal network that will benefit the EU economy and internal market and that will contribute to the European Green Deal objectives.

1.1. Main results

Based on the TENtec Information System[7], the state of implementation of the TEN-T infrastructure at the level of the core network corridors (CNC) in 2019 reaches between 70% and 99% of compliance of most (11 out of 14) of the available indicators for the requirements of the TEN-T Regulation. The remaining three requirements are compliant at rates between 16% and 53%.

As for the previous report, it has however to be underlined upfront that high compliance rates of the infrastructure network with the TEN-T standards do not necessarily reflect the reality in terms of quality or operational functionality of the transport network. Indeed, this analysis needs to be put in the context of partly limited technical TEN-T standards compared to the real needs on the ground. The legislative proposal for the revised TEN-T Regulation, supported by the analysis in its accompanying impact assessment, therefore seeks to improve the TEN-T standards and requirements as to better capture the actual potentials and limitations of the network and as to better reflect the real needs on the ground.

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6 Commission Proposal of 14 December 2021 for a Regulation of the European Parliament and of the Council on Union guidelines for the development of the trans-European transport network, amending Regulation (EU) 2021/1153 and Regulation (EU) No 913/2010 and repealing Regulation (EU) 1315/2013, COM(2021)812

7 https://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/site/index_en.htm

For instance, the compliance rates for the railway infrastructure network on the CNC in 2018 and 2019 look quite promising since compliance is already reached to a large extent in terms of electrification (90%), track gauge (84%), freight line speed (86%) and freight axle load (90%), whereas freight train length (53%) and especially ERTMS deployment (16%) are still lagging behind. However, a line may be fit for 740 m train length but does not have enough sidings to ensure full interoperability in practice. This is an important aspect that the TEN-T revision has looked at.

Similarly, the network can only deliver up to its full potential if the rail freight system also addresses the real needs of the market. Indeed, the current requirements of the TEN-T Regulation might not be sufficient to support multimodal transport: semi-trailers are a de-facto standard for long-distance freight transport on road, accounting for more than 95% of traffic. However, there is currently no requirement on the TEN-T rail network to enable the circulation of semi-trailers of the P400 dimension[8]. The circulation of P400 intermodal loading units on standard wagons is currently not possible on a significant portion the TEN-T (40% of the CNC network only allows for P400 standard and above). Given the prevalence of semi-trailers in road transport, a significant potential for further modal shift remains thus untapped. For this reason, the present report also presents the status of the network with regard to the P400 requirement in 2019, even though this is not (yet) a formal requirement of the TEN-T Regulation of 2013.

As for roads, the compliance with the criteria of express road/motorway is almost completely reached (99%). However, as stated above, it is important to keep in mind that the definitions of road categories in the TEN-T Regulation are different from the UNECE/EUROSTAT/ITF ones, hiding the fact that roads can be of insufficient quality, especially with regard to the aspect of road safety or the availability of sufficient safe and secure parking and rest areas. In addition, parts of the network may not have been maintained properly for a certain period, rendering a nominally compliant road not up to operational and safety standards. These are other aspects that the revision of the TEN-T Regulation has looked at.

The inland waterways are almost fully compliant with respect to River Information System (RIS) implementation (94%) and the CEMT requirement of class IV or higher (96%). Both permissible draught of 2.5 m or more and permissible height under bridges of 5.25 m or more are already at a high 84% and 83% of compliance. This however should not hide the fact that where compliance is nominally achieved, there are exemptions on short distances with nonetheless serious impacts on the navigability of a wider section. It is certainly true that local waterway sections on the TEN-T which do not have sufficient draught and height under bridges may prevent inland navigation from ensuring efficient, reliable and punctual services. However, the specificities and hydro-morphology of inland waterways have not sufficiently been taken into account in the definition of the TEN-T standards, leading to the establishment of standards that might not be realistic in the entire flow of rivers. The situation of the Danube, for example, is a case-in-point.

Finally, 88% of the ports are connected to rail, while the rail connection of airports lags a bit behind at 70%. Once again, the good data sometimes may hide a less positive situation for

[8] In accordance with UIC leaflet 596-6, the "P400" classification refers to semi-trailers with a total height of up to 4.0 m and width of 2.6 m to be transported on pocket wagons.

some of these nodes, especially for ports: in a number of cases, the existing rail connection is not sufficient in capacity or quality terms or simply does not go to the first and last mile. This is another limitation of a standard that is being addressed by the TEN-T revision.

Next to the state of the technical implementation of the TEN-T, the present report also analyses the efforts of financial investments made on the TEN-T as a whole. In the course of 2018 and 2019, the total investment made on the TEN-T network was almost EUR 111 billion, and thus a remarkable EUR 20 billion of investments more than in 2016 and 2017. This clearly shows the steady progress made by Member States in the implementation of projects of common interest on the trans-European transport network.

Out of the EUR 111 billion of total investments, the majority has been made by national resources (EUR 93.5 billion, i.e. 84%); EUR 4.6 billion EUR were granted through the Connecting Europe Facility (CEF)[9], EUR 26.4 billion were co-funded through the European Structural and Investment Funds (ESIF) and EUR 7.7 billion were financed through EIB loans. Out of the EUR 93.5 billion of total investments reported by Member States, the majority has been invested on the core network (72%). Similarly, most funds have been attributed to TEN-T railways (including ERTMS) (42%).

1.2. Scope and methodology

Article 49(3) of the TEN-T Regulation lays down the scope of the Commission's reporting obligation. It defines that every two years the Commission should analyse the development of the trans-European transport network in terms of its compliance with the technical requirements of the Regulation and make available information on the use of various forms of financial assistance for all transport modes as well as other elements of the core and comprehensive network in each Member State.

The present biennial report is the third report responding to this reporting obligation. A first implementation report for the reporting years 2014-2015 has been adopted in June 2017[10]; a second implementation report for the reporting years 2016-2017 has been adopted in August 2020[11].

Whereas the first report of 2014-2015 suffered from a variety of constraints in terms of data availability and methodological limitations, both the 2016-2017 report and the present report for 2018-2019 follow the same methodological approach. The present report represents an analysis of the implementation of the TEN-T technical parameters on the basis of information transmitted by the Member States on the progress made with regard to the implementation of projects of common interest. Member States report this information in particular through the upload of data in the interactive geographical and technical system for the trans-European transport network (TENtec). To this aim, TENtec defines a set of key performance indicators

[9] This amount refers to the estimated contributions of CEF during 2018 and 2019 for projects that were running during those two years.

[10] Progress report on the implementation of the TEN-T network in 2014-2015, Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2017)327 final, 19.6.2017

[11] Progress report on the implementation of the TEN-T network in 2016-2017, Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2020)433 final, 26.8.2020

(KPIs) on the basis of transport infrastructure requirements foreseen in the TEN-T Regulation.

As for the previous report, the data set for the technical parameters for 2018 and 2019 is however limited to the network of the core network corridors (CNC)[12] and thus does not cover the entire comprehensive network. Nevertheless, the data for the CNC network already gives an important indication of the progress made on the TEN-T as it covers around 80% of the core network. In addition, investments (both at EU and at Member State level) are anyhow concentrated on the core network corridors in these first years since the deadline for their completion is 2030 and not 2050 as for the comprehensive network.

Even if this report follows the methodology of the past report, one major difference has however to be highlighted which challenges the data comparability to some extent. Indeed, for the present report, the geographical scope of the compliance analysis is wider than for the past report since it is now based on the extended corridor network due to the amendment of corridor alignments under the new CEF II Regulation[13]. At the same time, the UK has been excluded from the analysis. Therefore, the compliance rates of this report may vary to the ones calculated for the previous TEN-T implementation report, covering the years 2016 and 2017. At the same time, the widened scope of analysis allows for a more comprehensive analysis of the progress on the ground.

In addition, it should be underlined that a full compliance with the TEN-T requirements might not necessarily guarantee the absence of operational shortcomings or capacity bottlenecks on the ground. Therefore, the European Commission undertakes detailed studies for all nine core network corridors as well as the two horizontal priorities (ERTMS and Motorways of the Sea), which analyse the infrastructure in much more detail, i.e. not only in terms of statistical compliance but also based on qualitative assessments in a wider network perspective. Based on that analysis, shortcomings and bottlenecks are reflected in the corresponding work plans of the European Coordinators for the nine core network corridors, ERTMS and Motorways of the Sea.

Finally, this report presents an indication of national budgets and co-funding and financing from various EU sources for investments made on the entire TEN-T network infrastructure (i.e. both on core and comprehensive network) during the period 2018 and 2019, mainly ESIF (European Regional Development Fund (ERDF), Cohesion Fund (CF)), CEF and EIB loans. These data have been reported directly by Member States through a unified survey exercise as for the previous report[14]. With regard to EU co-funding and co-financing, the data have been collected from the European Climate, Infrastructure and Environment Executive Agency (CINEA), the Directorate-General for Regional and Urban Policy (DG REGIO) and from the European Investment Bank (EIB).

[12] Planned sections are excluded from the compliance analysis calculation.

[13] Regulation (EU) 2021/1153 of the European Parliament and of the Council of 7 July 2021 establishing the Connecting Europe Facility

[14] Only works projects either EU co-funded or not and over one MEUR have been reported.

2. STATUS OF TEN-T IMPLEMENTATION: TECHNICAL PROGRESS MADE ON THE TEN-T NETWORK IN 2018 AND 2019

The TEN-T Regulation establishes the comprehensive and core network based on a transparent and objective methodology[15]. The core and comprehensive network are associated with defined technical requirements and priority targets. The progress made with regard to the realisation of the TEN-T needs to be benchmarked with these technical standards with the help of key performance indicators.

2.1. Key Performance Indicators in the TENtec information system

The TENtec information system links geographical information and technical parameter data of the TEN-T infrastructure and enables the user to easily compile information and create reports and maps, covering the TEN-T core and comprehensive network and other thematic data layers. The TENtec database incorporates the data collected from the Member States, corridor studies and other data collection activities to provide the Commission with the means of identifying critical issues such as bottlenecks and issues related to interoperability across borders. A selection of TENtec compliance maps for the main technical parameters (key performance indicators) is provided as Annexes to this report.

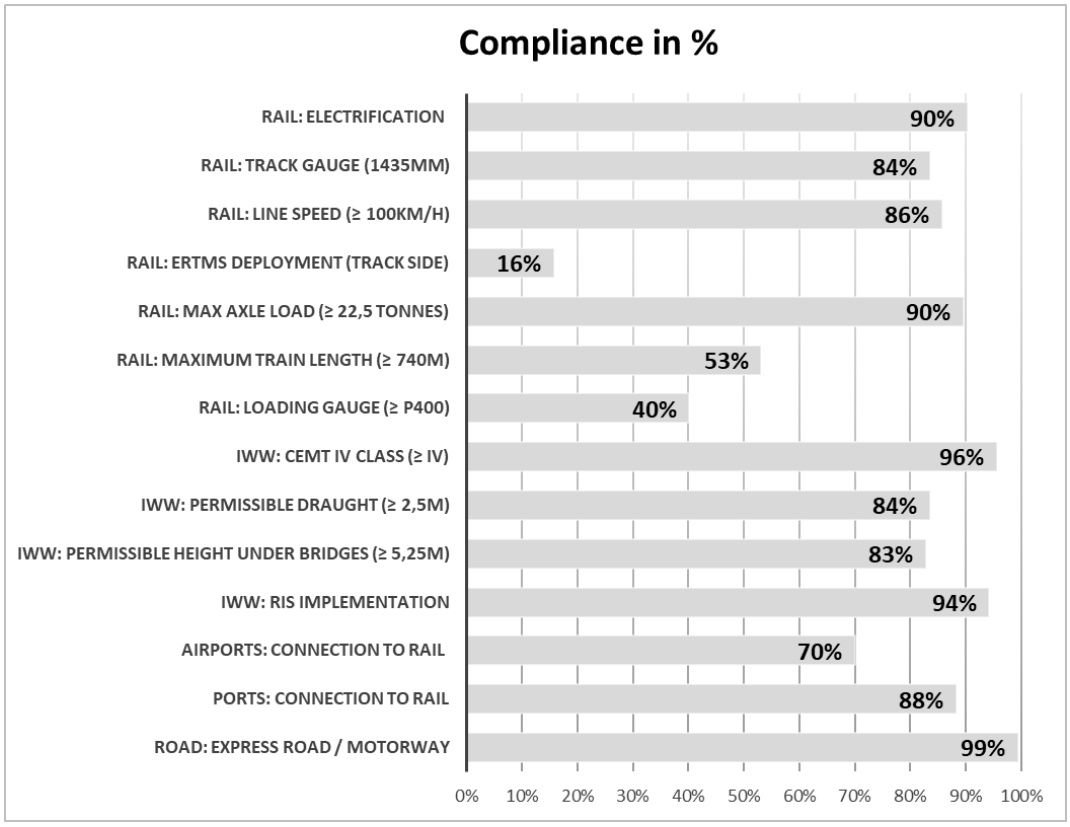
2.2. Technical implementation of the TEN-T network by KPI

Based on the TENtec Information System, the state of implementation of the trans-European transport network in 2018/2019 in terms of its compliance with the requirements of the TEN-T Regulation reaches between 70% and 99% for most (11 out of 14) of the available indicators at core network corridor (CNC) level (see Figure 1).

However, even in cases where the situation has further improved since 2017, a high compliance percentage may hide a less positive situation on the ground because the criteria of the TEN-T Regulation are not sufficiently developed and specified (see section 1.2 above).

[15] The planning methodology for the trans-European transport network (TEN-T), SWD(2013) 542 final

Figure 1: Compliance in % for core network corridor (CNC) network



Source: TENtec

Railways

The TEN-T Regulation defines various requirements for the railway infrastructure of the trans-European transport network at CNC level (see Figure 1). As regards the ***electrification*** requirement, compliance of the CNC network is already at a high 90% per 2019 data and has thus slightly improved compared to the situation in 2017. Certain isolated networks mainly in Ireland, the Baltic States, Spain and Portugal are exempted from this requirement though.[16] Nevertheless, the entire CNC rail network is already electrified in Portugal.

The rail ***track gauge*** of the CNC network is compliant at a high 84% per 2019 data[17]. The three notable exceptions remain the Iberian gauge still predominant in the Iberian Peninsula, the Irish gauge still the only gauge in Ireland and the broad gauge still the almost only gauge in the Baltic States and in Finland.

[16] Exemption from certain requirements for isolated networks according to Article 39(2)(a), (i) to (iii), of Regulation (EU) 1315/2013.

[17] As per 2017 data, the network was already compliant to 86% with the track gauge requirement. However, this difference in overall percentage is to be explained by the different network basis that has been applied for the current report (i.e. extended CNC network, exclusion of UK) and should thus not be regarded as a decline of compliance. This applies for all requirements.

As regards ***line speed***, the requirement of the TEN-T Regulation is of 100 km/h or more for freight and mixed lines. The CNC network is compliant with this requirement already at 86% per 2019 data. Outages remain persistent mainly in parts of Latvia, Poland, Slovenia, Romania, Bulgaria and Greece.

ERTMS deployment remains the biggest challenge in terms of the TEN-T parameters with slower progress than anticipated. The trackside deployment on the CNC network scores relatively low at 16% per 2019 data, but has improved compared to the situation in 2017[18].

Even if the ERTMS trackside deployment is still suffering from delays in the short-term, it is now taking momentum, and the mid and long-term forecast is rather positive. The vast majority of the CNC sections planned to be deployed by 2023 under the European Rail Traffic Management System European deployment plan[19] are either already in operation or contracted. Furthermore, as regards the 2030 target, a third of the CNC network is either commissioned or contracted.

ERTMS is being deployed across the European Union, however the biggest progress has been achieved in Austria, Belgium, Czech Republic, Italy, Luxembourg, Poland, Spain and Slovenia. More and more Member States are opting for ERTMS as a single system, meaning that they plan to deploy ERTMS on their entire network (i.e. also outside the TEN-T network) and decommission their national class B systems. This goes in line with new provisions provided for in the legal proposal of the revised TEN-T Regulation.

For freight ***axle load***, the compliance versus the parameter of 22.5 or more tonnes per axle is now at a high 90% compliance per 2019 data (compared to 81% per 2017 data). Progress still needs to be made particularly in Hungary and Romania.

The compliance versus the parameter of 740 m or longer sidings for trains (***train length*** parameter) is at an average 53% per 2019 data and has thus significantly improved compared to 2017 (43%). The parameter is mainly met already in France, the Benelux, Denmark and Germany, but also in the Baltic States and Finland. Even though the situation has improved since 2017, it still needs to be underlined that there are differences here and there between nominal compliance and the actual operational possibilities. For example, a line may be fit for 740 m trains while it does not have enough sidings to turn that possibility into reality.

Last but not least, the present report integrates a new key performance indicator with regard to the ***loading gauge*** – a parameter that provides for the possibility to run freight trains loaded with intermodal loading units classified as P400 (or above) on standard pocket wagons. This parameter is not a formal requirement of the current TEN-T Regulation, but has been proposed by the Commission in the context of the revision of the TEN-T Regulation. The compliance of the CNC network with the loading gauge requirement is at a low level of 40% as per 2019 data. Countries which need major upgrades of tunnels to meet this requirement are France, Italy, Spain, Portugal as well as Finland, Slovakia, Romania and Bulgaria.

[18] The compliance with regard to ERTMS deployment was at 11% in 2017. However, this figure was related to the CNC network without the CEF II extensions and including UK still.

[19] Commission Implementing Regulation (EU) 2017/6 of 5 January 2017 on the European Rail Traffic Management System European deployment plan, 6.1.2017, OJ L 3, p. 6

Inland Waterways

The TEN-T Regulation builds upon the following requirements for inland waterways (see Figure 1): CEMT IV class, permissible draught of at least 2.50 m, a permissible height under bridges of at least 2.5 m and the implementation of the River Information Services (RIS). Compliance versus the parameter of CEMT class IV or higher is at a very high 96% per 2019 data. The main shortfall is the Sava River in Croatia. Compliance of a minimum of 2.5 m of permissible draught is also at a high 84% per 2019 data. Outages are mainly in Germany, Czech Republic and Croatia. Compliance of a minimum of 5.25 m of permissible height under bridges is at a high 83% per 2019 data with outages mainly in Germany. In terms of RIS implementation, compliance is at a very high 94%. Especially Italy, Slovakia, Hungary, Portugal and Spain have to still make progress with regard to the implementation of RIS.

Airports

As far as airports are concerned, the TEN-T Regulation defines that only the core airports that are marked with an asterisk in Annex 2 of the Regulation (i.e. 38) are falling under the obligation of Article 41(3), i.e. to be connected with the railway and road transport infrastructure of the trans-European transport network by 2050 (except where physical constraints prevent such connection) and to be integrated into the high-speed rail network wherever possible, taking into account potential traffic. In this regard, the compliance rate is at 70% per 2019 data (see Figure 1). Airports not yet compliant are scattered across the EU. However, even for airports which are formally compliant, the railway connection might not be of sufficient quality. There are for instance several airports across Europe which have a high air passenger volume, but are only connected by light rail, or if by heavy rail, only to the nearest centre. However, in order to grasp the full benefits of rail connectivity of an airport, a rail connection is needed that also serves long-distances. These quality gaps clearly indicate a common need to strengthen efforts for achieving full airport connectivity, also interconnecting well with the high-speed rail network, through the TEN-T revision.

Ports

The TEN-T Regulation lays down the requirement for maritime ports to be connected by rail (see Figure 1). 88% of all TEN-T ports on the CNC network are compliant with this requirement as per 2019 data. Outages concern only eight ports, with three of them located in Italy. It needs however to be underlined that this TEN-T standard only refers to a connection by rail and does not state anything about the quality of such rail connection. Therefore, there might be still limitations, e.g. with regard to the last mile connection of a port, even if formally speaking that port is compliant with the TEN-T standard.

Roads

For roads, the main indicator calculated is the total number of kilometres compliant with motorways/expressways road types (see Figure 1). The results show that compliance is reached at 99%. In future, it will however be also important to evaluate the deployment of alternative fuel infrastructure on the roads. To this aim, a new layer has been introduced into the TENtec system that will allow the monitoring of the existing electric recharging and refuelling stations for CNG/LNG and hydrogen on the TEN-T road network including a gap analysis for electric charging stations. No data can however be provided yet for 2019.

3. STATUS OF TEN-T IMPLEMENTATION: PROGRESS IN FINANCIAL INVESTMENTS MADE ON THE TEN-T NETWORK IN 2018 AND 2019

In the course of 2018 and 2019, the total investment made on the TEN-T network was almost EUR 111 billion, and thus a remarkable EUR 20 billion of investments more than in 2016 and 2017. This clearly shows the steady progress made by Member States in the implementation of projects of common interest on the trans-European transport network (see Table 4).

Out of the EUR 111 billion, EUR 7.7 billion were invested through EIB loans[20]. EUR 26.4 billion were co-funded by the European Structural and Investment Funds (ESIF, notably European Regional Development Fund (ERDF) and Cohesion Fund (CF)) whose investments thus almost tripled compared to 2016 and 2017[21]. EUR 4.6 billion EUR were invested through the Connecting Europe Facility (CEF)[22] (see Table 4).

In this context, it has to be underlined that, when EU co-funding is involved, the co-funding rate ranges between 20% and 85%. This means that the balance and thus the major part of investments was mobilised by national resources, i.e. EUR 93.5 billion[23]. This amount for investments reported by Member States thereby only includes investments related to works or other assets and/or mixed projects (but no studies alone) on the core or comprehensive TEN-T network. Under works, all projects which contribute to the objectives of Article 4 of the TEN-T Regulation (i.e. cohesion, efficiency, sustainability, increasing the benefits for its users) have been reported. In addition, only works that lead to new infrastructure developments or are related to upgrading/rehabilitating existing infrastructure are counted. Maintenance costs have been excluded. Finally, it includes all projects above EUR 1 million that run in 2018 and 2019 regardless of their start date.

Out of the EUR 93.5 billion of total investments reported by Member States (which includes the EU co-funding part wherever relevant), the majority has been invested on the core network (72%). Most funds have been attributed to TEN-T railways (including ERTMS) (42%) and TEN-T roads (including ITS) following second with 38% (see Table 1).

[20] compared to EUR 11.5 billion of investments through the EIB in 2016 and 2017
[21] compared to EUR 9.8 billion of investments by ESIF in 2016 and 2017
[22] compared to EUR 3.1 billion of investments by CEF in 2016 and 2017
[23] compared to EUR 80.2 billion of national investments in 2016 and 2017

Table 1: TEN-T Expenditure 2018+2019 in MEUR

EU27	***TEN-T expenditure per transport mode in 2018-2019***		
Transport Modes	***Comprehensive Network***	***Core Network***	***TOTAL TEN-T Network***
TEN-T Railways *(incl. ERTMS)*	8.576	30.781	**39.357**
TEN-T Roads *(incl. ITS)*	15.223	20.098	**35.321**
TEN-T Inland Waterways *(incl. RIS)*	n/a	3.221	**3.221**
TEN-T Ports *(incl. VTMIS)*	1.131	4.101	**5.232**
TEN-T Airports *(incl. ATM)*	1.456	8.930	**10.386**
Total	*26.386*	*67.130*	***93.517***

Source: Member States' survey 2020/2021

CEF (Connecting Europe Facility)

The Connecting Europe Facility (Transport) spent grants of a total amount of EUR 4.6 billion in 2018 and 2019 for 544 projects (see Table 2). Even though the number of projects funded has declined compared to the previous reporting period (793 projects in 2016 and 2017), the overall amount allocated to projects has increased. In this context, it has to be reminded that the UK is no longer included in the statistics of this present report (see section 1.2).

The major part of CEF funding (around 81%) has been invested in sustainable transport infrastructure projects: around 69% has been invested in rail infrastructure projects and around 12.8% for inland waterways and maritime transport infrastructure.

Table 2: CEF Transport Funding 2018+2019 in MEUR

CEF Transport Funding 2018+2019		**Number of projects**
per transport mode	***in MEUR***	
Air	391	169
Inland Waterways	262	40
Maritime	334	85
Rail	3.184	161
Road	469	88
Other*	0,5	1
Total in MEUR	4.641	544

Source: CINEA. Only including projects with beneficiaries from the 27 Member States without UK.
** Intermodal ticketing system*

ESIF (European Structural and Investment Funds)

EUR 26.4 billion (declared expenditure) have been invested on the TEN-T in 2018 and 2019 by the European Regional Development Fund (ERDF) and the Cohesion Fund (CF), together representing around 68% of all EU-supported TEN-T investments (including EIB loans) (see Table 3). Around 69% of the ESIF funds were invested in the upgrade and/or construction of the road network of the TEN-T.

It needs to be noted that the reported Cohesion Fund share does not take into account the part of Cohesion Fund allocation transferred to support transport projects on the core network under the CEF[24]. It is also noted that cohesion policy support is not allocated on an annual basis but programmed for a seven-year period. The amounts reported for 2018-2019 are expenditure incurred by the beneficiaries, certified and declared to the Commission during the reporting period.

[24] Part of the Cohesion Fund allocation (EUR 11,305,500,000) was transferred to finance transport projects on the transport core network or transport projects relating to horizontal priorities in the Member States eligible for financing from the Cohesion Fund under the CEF.

Table 3: ERDF+CF (declared expenditure) 2018+2019 in MEUR

ERDF + CF (declared expenditure*) 2018+2019	
per transport mode	***in MEUR***
Air	330
Inland Waterways + Inland Ports	137
Seaports	392
Rail	7.179
Road	18.283
Multimodal	57
Total in MEUR	26.377

Source: DG REGIO, https://cohesiondata.ec.europa.eu/d/3kkx-ekfq

**Expenditure incurred by the beneficiaries, certified and declared to the Commission. Figures are cumulative.*

EIB (European Investment Bank)

The European Investment Bank (EIB) invested in 2018 and 2019 around EUR 9 billion in the transport infrastructure sector in the framework of its strategic transport project portfolio. The major part of these transport infrastructure investments (85%) has been made on TEN-T, representing 49 operations with EIB loans for a total of EUR 7.7 billion signed in 2018 and 2019 (see Table 4). With those investments, the EIB mobilised total investments of EUR 61 billion (total project costs).

Table 4: TEN-T expenditure per funding/financing source by Member State in 2018+2019 in MEUR

TEN-T expenditure per funding/financing source by Member State in 2018+2019 in MEUR*					
Member States	**National budgets incl. EU funds received (2018+2019)**			**EIB loans (2018+2019)**	**Total in MEUR**
		CEF funding	**ERDF+CF declared expenditures**		
AT (Austria)	**3 995**	182		159	**4 154**
BE (Belgium)	**1 917**	165		458	**2 375**
BG (Bulgaria)	**622**	36	456	7	**629**
CY (Cyprus)	**44**	1	48	4	**52**
CZ (Czech Republic)	**1 812**	224	1 908	445	**2 353**
DE (Germany)	**28 322**	708		458	**28 780**
DK (Denmark)	**1 532**	81		374	**1 906**
EE (Estonia)	**228**	17	519		**519**
EL (Greece)	**819**	99	676	209	**1 028**
ES (Spain)	**5 808**	122	960	223	**6 031**
FI (Finland)	**1 427**	42		185	**1 612**
FR (France)	**10 369**	321	3	394	**10 763**
HR (Croatia)	**599**	42	397	30	**629**
HU (Hungary)	**2 150**	498	1 680	250	**2 400**
IE (Ireland)	**1 377**	23		323	**1 700**
IT (Italy)	**13 794**	289	777	634	**14 428**
LT (Lithuania)	**328**	56	780		**780**
LU (Luxembourg)	**329**	8			**329**

LV (Latvia)	**286**	20	482		**481**
MT (Malta)	**72**	29	58		**72**
NL (The Netherlands)	**3 872**	154		852	**4 724**
PL (Poland)	**7 047**	1 177	12 487	2 248	**14 735**
PT (Portugal)	**387**	39	173	40	**427**
Regional - EU Countries				28	**28**
RO (Romania)	**1 133**	19	2 686		**2 686**
SE (Sweden)	**4 255**	66	3	78	**4 332**
SI (Slovenia)	**479**	81	212		**479**
SK (Slovakia)	**499**	143	2 025	294	**2 319**
TC**			46		**46**
Total in MEUR	**93 501**	4 641	26 377	7 693	**110 796**

Source: Member States' survey 2020/2021, DG REGIO, INEA, EIB

**** rounded figures***

****TC stands for programmes implemented under the European territorial cooperation objective/goal, which had no access to the Cohesion Fund and covered regions from different Member States**

N.B.: Not all ERDF/CF declared expenditures have been entirely included in the total national budget figures, notably for the Member States CY, CZ, EE, LT, LV, PL, RO and SK. Therefore, the remaining differences for these countries are allocated to their total amounts.

4. CONCLUSION

During the years 2018 and 2019 important steps forward have been made towards the realisation of the trans-European transport network, both with regard to the technical compliance as well as the financial investments made on the network.

In terms of compliance with the requirements of the TEN-T Regulation, the network of the core network corridors reaches in 2019 between 70% and 99% for most (11 out of 14) of the available indicators. It needs however to be reminded that the current definition of the compliance parameters is sometimes not sufficiently developed and specified to properly account for the actual operational possibilities of the network. This being said, the rather good compliance data goes hand in hand with the fact that the highest share of total investments (EUR 93.5 billion) reported by Member States has been invested on the core network (72%). Most funds have been attributed to TEN-T railways (including ERTMS) (42%) in order to catch up with the compliance gaps.

In terms of investments, the report shows that the huge investment needs for the realisation of the TEN-T infrastructure network can only be met by a sound mix of funding and financial instruments. The reporting years 2018 and 2019 were successful in that regard, by having shown an increased funding in particular through ESIF, as well as a wide-spread use of other funding and financing means (in particular CEF and EIB loans).

The present report presents the status of the TEN-T implementation as of 2019. There are thus ten years ahead for the completion of the core network and 30 years for the comprehensive network. It goes without saying that further progress is thus undoubtedly to be expected during the years to come, considering also that steady progress could already be illustrated throughout the past three reporting periods.

An important key to achieve the ambitious goals is the continuous monitoring of the maturity of the project pipeline. To this aim, the eleven European Coordinators do their utmost efforts in ensuring a sound, mature and visible TEN-T project pipeline which counts today for almost 4000 project investments that are regularly being monitored in terms of their progress. At the same time, the Directive on streamlining measures for advancing the realisation of the TEN-T network[25] just entered into force in July 2021; it can thus be expected that this will further accelerate the progress of TEN-T implementation. The Commission plans to have exchanges of views with the Member States in 2022, to identify best practices and ensure an effective implementation of the Directive.

Finally, and most importantly, the Commission adopted a legal proposal for a revised TEN-T Regulation. The proposal addresses the many challenges and shortcomings that the current report tried to illustrate. Indeed, the development and better specification of the technical requirements of the network is key in order to increase the efficiency of the network on the ground. Next to it, a strengthened role of the European Coordinators and a better alignment of national transport and investment planning with TEN-T priorities will hopefully give another push for the timely realisation of the TEN-T.

[25] Directive (EU) 2021/1187 of the European Parliament and of the Council of 7 July 2021 on streamlining measures for advancing the realisation of the trans-European transport network (TEN-T), 20.7.2021, OJ L 258, p.1

5. ANNEXES

- Compliance Map: Railways – Electrification – Status 2019
- Compliance Map: Railways – Track Gauge (1435mm) – Status 2019
- Compliance Map: Railways (freight & mixed lines) – Line Speed – Status 2019
- Compliance Map: Railways – ERTMS Deployment (track side) – Status 2019
- Compliance Map: Railways (freight & mixed lines) – Max. axle load – Status 2019
- Compliance Map: Railways (freight & mixed lines) – Max. train length – Status 2019
- Compliance Map: Railways – Loading Gauge – Status 2019
- Compliance Map: Inland Waterways – CEMT class – Status 2019
- Compliance Map: Inland Waterways – Permissible draught – Status 2019
- Compliance Map: Inland Waterways – Permissible height under bridges – Status 2019
- Compliance Map: Inland Waterways – RIS Implementation – Status 2019
- Compliance Map: Roads – Express Roads / Motorways - Status 2019