FIEC is the European Construction Industry Federation, representing via its 32 National Member Federations in 28 countries (25 EU, Norway, Ukraine & Turkey) construction enterprises of all sizes, i.e. small and medium-sized enterprises as well as "global players", carrying out all forms of building and civil engineering activities.

FIEC input to the future European Strategy for a Sustainable and Smart Mobility

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Key messages

- The quality of transport infrastructure and its further development must be at the core of the European Commission's Mobility Strategy to achieve an efficient, safe and sustainable transport system.
- Policies must be technology-neutral and promote the development of all kinds of transport infrastructure, be it rail, water or road.
- The TEN-T has to be a precursor for high-quality infrastructure by setting quality requirements, harmonising inspections and quality ratings and promoting innovative infrastructure.
- Investments in infrastructure have to be triggered by developing an appropriate understanding of low-carbon infrastructure in the EU Taxonomy, by introducing the earmarking principle in road pricing schemes and by making the forthcoming Multiannual Financial Framework a supporting instrument for the development of infrastructure.

The efficient, safe and sustainable mobility of the future will rely on the infrastructure we have already built, and we are building today. The EU has one of the densest transport infrastructure networks in the world. Most of this infrastructure was constructed in the 60s and 70s.[1] Now, it is ageing, and some structures are under pressure by an increase in traffic which was unforeseen or not taken into account at the time.

In recent years, a lack of proper maintenance has led to the deterioration of our infrastructure. Its vulnerability has been demonstrated by the collapse of bridges. As crucial connecting points, their misfunctioning in particular attracts attention. However, the state of the entire transport infrastructure is worrying. To name only a few examples:

- In Germany, 4% of the railway bridges are classified in the worst category, i.e. the bridge has to be demolished and reconstructed because the repair would be too expensive.[2]

[1] Some structures are even older. As a way of illustration, more than 45% of the railway bridges in Germany are older than 100 years.

[2] Although 4% appears to be a small number, does it mean that more than 1,000 bridges are in such a state. With bridges being essential links, their closure can have significant consequences on the functioning of railway traffic.

- In Spain, the lack of maintenance is having a negative impact on the road surface in Spanish road infrastructures. Specifically, for the network under the scope of the Ministry for Transport, Mobility and Urban Agenda, the resources allocated to conservation and road safety have been reduced by 76% between 2009 and 2019. Currently, reversing the situation requires investments of 7,500 million euros.[3]
- In France, at least 25,000 bridges are in a critical state to the point that they constitute a risk for their users and have deficiencies in terms of usability.[4] Also, regarding railway infrastructure, a speed limit is currently imposed on about 5,500 km of track because of the deteriorated infrastructure.[5]

The quality of transport infrastructure and its further development must be at the core of the European Commission's Mobility Strategy to achieve an efficient, safe and sustainable transport system. Importantly, policies must be technology-neutral and promote the development of all kinds of transport infrastructure, be it rail, water or road.

High-quality infrastructure increases the safety of users.

It is well known that while road user factors are still the leading cause of crashes, the condition of road infrastructure is an important cause of crashes leading to fatalities. In addition, road infrastructure plays an important role in the severity of accidents.[6] Importantly, infrastructure safety is not only about surfaces but also about structural health as tragically illustrated by the collapse of bridges. Maintaining the quality of infrastructure protects users.

The internal market is reliant on well-developed infrastructure.

The functioning of the internal market, the free movement of goods, persons and services, need reliable infrastructure to achieve their full potential. Studies are abundant which show that disruptions due to insufficient infrastructure quality result in considerable socio-economic costs through negative productivity impacts due to increased vehicle operation costs and time losses. Moreover, neglecting infrastructure today will result in higher costs tomorrow.[7] A well-developed infrastructure

[3] La Asociación Española de la Carretera audita el estado de la red viaria. July 2020. URL : http://94.23.80.242/~aec/rueda-prensa-28-7/NP%20Auditoria%20estado%20carreteras%20AEC%202019-2020_OK.pdf
[4] Sénat: SÉCURITÉ DES PONTS : ÉVITER UN DRAME. 2019. URL : https://www.senat.fr/rap/r18-609/r18-6091.pdf
[5] Rapport au Premier Ministre. Rapport de la mission conduite par Jean-Cyril Spinetta. L'avenir du Transport ferroviaire. 2018. URL : https://www.fntp.fr/data/decryptages/rapport-spinetta-ce-quil-dit-de-letat-du-reseau-ferre
[6] E.g. European Parliament: EU Road Surfaces: Economic and Safety Impact of the Lack of Regular Maintenance. Study. 2014.
[7] Ibid.

in the internal market is more important than ever with the EU having to recover from an unprecedented economic crisis.

High-quality infrastructure reduces the environmental impact of the transport system.

When addressing the environmental impact of the road transport system, the focus is on the vehicles. While the main environmental damage does indeed stem from the vehicles, well-maintained and well-constructed infrastructure can significantly reduce the environmental impact of the transport system by reducing vehicles' fuel consumption[8] and making the use of sustainable transport modes more attractive by increasing their reliability. Moreover, regular maintenance operations avoid the necessity of temporary closures of road infrastructure leading to congestion.

At the same time, the development of new infrastructure is still necessary. Although the transport infrastructure network is basically well developed, shortcomings still exist. This is particularly true for Central and Eastern European countries and peripheral regions in general. The TEN-T network is far from being completed. New infrastructure is also needed in urban areas to increase the share of low-emission transport modes. Also, new road infrastructure can help to mitigate the environmental impact of vehicles.[9]

Against this background, FIEC identifies six key actions for the European Commission, which will ensure that transport infrastructure fulfils its role when it comes to achieving an efficient, safe, and sustainable mobility system.

1) The TEN-T as a precursor for high-quality infrastructure

The TEN-T comprises the most important infrastructures in the EU. Its completion and the quality of its infrastructure are vital for the functioning of the internal market. Therefore, FIEC calls upon the European Commission to present an ambitious proposal for a revised Regulation, especially regarding the maintenance of the TEN-T infrastructure. While the completion of the TEN-T remains a priority, it is also about guaranteeing the quality of the parts that have already been constructed.[10]

[8] De Bortoli, Anne : Pour un entretien routier durable. Prise en compte des conséquences de l'interaction chaussée -véhicule dans l'aide à la décision des politiques de resurfaçage – illustration par un cas autoroutier français. 21.12.2018. URL:https://www.lvmt.fr/wpcontent/uploads/2018/12/Teaser_th%C3%A8se_A_de_Bortoli_ENPC.pdf.

- Full version: https://hal.archives-ouvertes.fr/tel-02162111v1/document.

And: According to the Spanish Road Association, the maintenance deficit has increased emissions by a minimum of 25 million tons of CO_2 in a decade.

[9] By using pavement that reduces rolling resistance or by strategic planning, i.e. construct a motorway around a city to reduce congestion within the latter.

[10] ECA: The EU core road network: shorter travel times but network not yet fully functional. Special Report. 2020.

Uniform quality is necessary for the entire TEN-T, i.e. the core and comprehensive network, to achieve a truly European transport network which is functional, safe and sustainable.

This can only be achieved by an **effective management** of the network's quality and regular maintenance or reconstruction if necessary. For an effective management, sufficient **knowledge about the state of the entire network** needs to be acquired to target interventions.

More precisely, one should first aim at an **inventory** of structures and their characteristics (type, technology, materials, age, functionality). Second, regular **standardised inspections** should determine the state of the structures according to a **harmonised classification system**. The state of the structures should then be recorded in a **common European database** which should be updated after new inspections or works on the network. According to the state of the concerned structure and its functionality, remedial action should be taken.[11] Road and railway infrastructure, including bridges and tunnels, on the TEN-T should meet the highest requirements in terms of quality.

For road infrastructure, the application of the revised Directive 2008/96/EC (RISM) could in principle be advantageous. However, its application is not entirely sufficient to guarantee the safety and functionality of the TEN-T:

1. It is unclear whether the network-wide assessment provided for in the Directive also considers the surface of the road infrastructure.
2. In any case, the RISM Directive only provides for a visual inspection of the infrastructure concerned, not an examination of its structural stability. However, for bridges and tunnels it is common practice to go beyond a visual inspection when assessing structural stability.[12]
3. Although the European Commission is developing a guidance for the network-wide assessment, there is no binding common approach which entails the risk of non-comparable data and non-comparable safety ratings.
4. Also, the RISM Directive does not harmonise follow-up actions (targeted inspections and remedial action).

Therefore, the TEN-T Regulation should go beyond the provisions of the RISM Directive.

[11] E.g. a moderately damaged structure with a high socio-economic value will be prioritised over a highly damaged structure with a low socio-economic value.

[12] Examinations for bridges and tunnels usually include the following methods: tapping of concrete surfaces to determine cavities, checking the tightness of fasteners (screws, bolts), measurement of deformations (e.g. deflection) for possible conclusions on losses of load-bearing capacity, chemical investigations, audit the concrete strength using a rebound hammer or through drill core extraction and subsequent laboratory investigation etc.

The forthcoming Regulation should introduce quality requirements for the surface of road infrastructure and the structural stability of bridges and tunnels and contain a common European approach for inspections and quality ratings of the TEN-T infrastructure as well as a common language for remedial actions to be applied on the entire TEN-T core and comprehensive network to ensure a uniform quality of the network. Accordingly, the Tentec should be extended and reflect the newly introduced quality requirements.

Moreover, a harmonised TEN-T-wide assessment resulting in safety ratings should also be conducted for railway infrastructure, in particular for railway bridges and tunnels. Similar to road infrastructure, the TEN-T Regulation should also prescribe a minimum level of railway infrastructure quality which should be integrated in the Tentec.

The TEN-T should also be best in class in terms of innovative infrastructure. This means that the TEN-T road infrastructure should be adapted progressively to meet the requirements for new mobility patterns such as autonomous vehicles. Moreover, innovation and digitalisation can also play an important role in monitoring the quality and safety of the infrastructure by making infrastructures smarter, better observing their condition, and thus promoting targeted maintenance measures. This entails the promotion of concepts like "smart bridges" where digital twins are created from the information acquired through inspections and sensors. A long-term objective should be the creation of digital twins for the most critical structures on the network.

Enforcement & completion

While harmonising network assessments and setting common quality requirements is a first important step, enforcement of follow-up action is essential. As a way of illustration, the current TEN-T Regulation already contains the obligation for Member States to maintain the quality of infrastructure.[13] Although, Member States clearly have not fulfilled this obligation and no corrective action has been taken by the European Commission. Adequate and regularly updated data on the state of infrastructure would certainly help the European Commission in the enforcement of such a provision. Finally, the TEN-T is far from being completed. A first important step would be that the European Commission makes use of its monitoring competences contained in the provision.[14]

[13] See Article 10.
[14] See Article 56.

2) Enforcement of the RISM Directive

Although shortcomings exist, the RISM Directive could be a main driver to increase the quality of road infrastructure. Therefore, the European Commission must strictly enforce the Directive's provisions. The most important aspect will be to **ensure that the findings of the network-wide road safety assessment lead to effective actions at Member State level.**

In the long term, the RISM Directive must be further developed and establish a common, binding methodology for a safety assessment resulting in standardised safety ratings and effective inspections, including for bridges and tunnels. Also, a common language for "maintenance" needs to be found to better compare Member States actions in this area.

3) Ensure an appropriate understanding of low carbon infrastructure in the EU Taxonomy

The EU Taxonomy which is currently being developed through delegated acts is the key classification system when it comes to environmental sustainability. Initially designed for financial products and reporting duties, DG FISMA is currently exploring whether/how the Taxonomy could be used in other legislation such as public procurement or EU funding.[15]

The EU Taxonomy also covers the construction of low carbon infrastructure. Regrettably, as it currently stands, the EU Taxonomy falls short of the potential for the construction of new infrastructure and the upgrade or maintenance of existing infrastructure to mitigate climate change. The reduction in emissions does not only stem from the vehicles, but also from infrastructure itself.

The future mobility strategy should consider this potential and DG MOVE should ensure an appropriate understanding of low carbon infrastructure as the EU Taxonomy might be applied in future key legislation. A well-designed EU Taxonomy could help in fostering investments in infrastructure.

4) Road pricing – earmarking

While the Transport White Paper 2011 recognises the importance of infrastructure-use charges as an additional source of funding for investments in transport infrastructure[16], the European Commission's proposal for amending the "Eurovignette Directive" fell short of introducing mandatory earmarking of the revenues generated. Importantly, the European Parliament integrated mandatory earmarking in its 1st reading position. Both institutions should defend the principle in eventual interinstitutional negotiations with the Council.

[15] Cf. European Commission Consultation on the Renewed Sustainable Finance Strategy.
[16] Cf. Transport White Paper.

The introduction of infrastructure charges should not be an end in itself, but goal-oriented, towards the development of sustainable, well-maintained infrastructure. To be effective, any road pricing scheme should contain the **earmarking principle**.

At the same time, and as proposed by the European Parliament, greater transparency with regard to the use of tolls and user charges levied is essential to increase the public acceptance of such schemes.

5) Ensure investment in transport infrastructure and maintenance in the next MFF

Investments in infrastructure are investments in a sustainable recovery. With the most important part of the next Multiannual Financial Framework being proceeded with under shared management, the European Commission should use all its competences to ensure appropriate investments in infrastructure to ensure a sustainable recovery and make the EU Budget a supporting instrument of the mobility strategy:

<u>European Structural and Investment Funds</u>

When assessing partnership agreements and operational programmes in the context of the ESI Funds, the European Commission should, besides ensuring appropriate investment in new transport infrastructure, continue to require appropriate maintenance measures within transport plans to preserve the quality of the infrastructure.

<u>Recovery and Resilience Facility</u>

The same should be the case when assessing the national recovery and resilience plans Member States submit to benefit from the Recovery and Resilience Facility. The Commission being tasked with assessing these plans, it should ensure that due consideration is given to investments in infrastructure and maintenance operations.

<u>Connecting Europe Facility</u>

The European Commission's leverage under a direct management regime is much higher. The key infrastructure instrument is in principle the Connecting Europe Facility. However, the programme is not only poorly financed, but its priorities do not necessarily correspond to the transport network's primary needs. While in cohesion countries the focus is rightly on closing missing links and eliminating bottlenecks, in non-cohesion countries CEF projects will mainly target the roll out of intelligent transport solutions and the deployment of alternative fuels.

In order to implement the TEN-T's potential future infrastructure requirements calls for proposals should also have safe infrastructure as a funding objective and co-fund, for example, innovative maintenance solutions such as the deployment of digital solutions to help monitoring the state of infrastructure.

6) Swift implementation of infrastructure projects

The realisation of infrastructure projects is not only a question of financial resources, but also of their implementation. Often resources are available but cannot be translated into actual projects due to administrative delays: The most striking example is Italy, where projects with a value above € 100 million take on average more than 16 years to be realised with most of the time being spent before the actual construction.

In the context of the economic crisis, more speed is required as the next two years will be decisive to bring the European economy back on track. This is a way of reviving the economy by public tendering. With EU competences being limited when it comes to the length of procurement procedures it is mostly up to the Member States to ensure a rapid implementation of available funds. The rapid reconstruction of the bridge in Genoa has shown that efforts at the political level can accelerate procedures.

However, regarding the TEN-T the European Commission has some potential means at its disposal to ensure a swift implementation of infrastructure projects:

Article 56 of the TEN-T Regulation confers on the European Commission the right to enquire about delays on the completion of the TEN-T. **FIEC calls upon the European Commission to make use of this possibility.**

Moreover, the enforcement of the forthcoming **Directive on streamlining measures for advancing the realisation of the TEN-T** will be key. Therefore, **we call upon the European Commission to enforce the foreseen duration of permit granting procedures and interpret derogations in a restrictive manner.**