



PROMOTING SUSTAINABLE ROADS THROUGH PUBLIC PROCUREMENT

ENCOURAGING INNOVATION AND SUSTAINABILITY IN THE ROAD INFRASTRUCTURE SECTOR WHILE MODERNISING PUBLIC TENDERING PROCESSES



Contents



1. Executive Summary	2
2. The Socio-economic importance of roads.....	3
3. The challenge: reconciling roads with sustainability while promoting innovation..	4
3.1 Recognising the road infrastructure industry contribution.....	4
3.2 An unsatisfactory regulatory context: old Directive 2004/17/EC.....	4
3.3 Towards a promising regulatory framework: new Public Procurement Directive 2014/25/EC.....	6
4. From theory to practice: ensuring that the new rules are a game changer for society as a whole.....	7
4.1 Ensure the “most economically advantageous tender” principle in the contract awarding.....	7
4.2 Use of certificates to assess sustainability performance.....	8
5. ERF’s commitment towards Sustainable Roads.....	10

1. Executive Summary



Public administrations spend € 2 trillion annually on **public procurement**, in other words, around 14% of EU GDPⁱ. Public authorities can be major drivers of innovation if they provide appropriate incentives for industry players to develop more durable solutions through the formulation of appropriate award criteria.

According to data from the International Transport Forum, EU and EFTA Member States spent approximately **€ 80 Billion on roads in 2013**. Against a backdrop of limited public spending, it is essential that every euro spent on road infrastructure yields the maximum possible socio-economic return. This also implies the ability for authorities to purchase innovative solutions which give a better long-term return and at the same time, provide industry players with the appropriate incentives to innovate.

Existing rules for public procurement to date have proved, however, to be a formidable barrier to the uptake of new products and innovative techniques that are both greener and more durable. Despite improvements in recent years, the vast majority of public tenders for road related services have been based on the principle of the '**cheapest initial price**', failing to provide an appropriate framework for the holistic assessment of solutions based on their environmental performance and their durability.

In this sense, the new EU legislation package for public procurement in force since April 2016 should represent a positive step forward. Aimed at supporting the uptake of greener and more innovative solutions, the new Directive intends to provide road authorities with a framework that moves away from the principle of the 'cheapest price' and encourages the evaluations of tenders based on **cost-effectiveness approach on the basis of life-cycle costing**.

The ERF fully supports the new EU rules on Public Procurement which it believes will allow road authorities to get better value for money, whilst at the same time, provide industry players with more incentives for the development of more innovative and sustainable products.

However, for theory to be put into practice, a common understanding needs to be developed on how to assess the sustainability performance of core elements of the road infrastructure (pavements, barriers, markings or signs) optimising and modernising tendering processes for road authorities.

In this sense, the ERF calls on all stakeholders involved in the road infrastructure sector to initiate a more structured dialogue in order to determine the best suitable paths that will allow for the realisation of the aforementioned objective in a reasonable timeframe.

ⁱ According to EUROSTAT, EU-28 GDP in 2015 was € 14,6 trillion: http://ec.europa.eu/eurostat/statistics-explained/index.php/File:GDP_at_current_market_prices,_2005_and_2013%E2%80%932015_YB16.png

2. The Socio-economic importance of roads

Roads are an asset for Europe. They provide access to services, promote trade, facilitate accessibility, and ultimately represent a sine qua non for Europe's continued socio-economic prosperity enabling greater regional cohesion. According to the latest European Commission statistics, roads are by far the most popular mode of transport for both passenger and inland freight transport. More specifically, 82.3 % of passenger journeys were completed using roads in 2013 and 71.9% of inland freight transport.ⁱ

Despite efforts at EU level to promote a modal shift over the last 15 years, the share of road transport has remained more or less stable and it will most likely remain the dominant form of transport for the foreseeable future. As such, it will continue to act as a major driver of economic growth, employment and competitiveness. According to Eurostat, road transport employs directly around 5 Million citizens, i.e. half of the total number of workers in the transport sector which is considerably higher than other modes.

When one broadens the definition and includes industries that are related to road transport, then it is estimated that roads provide jobs for more than 14 Million people in Europe and directly contribute by 11% to the European gross national product.ⁱⁱ

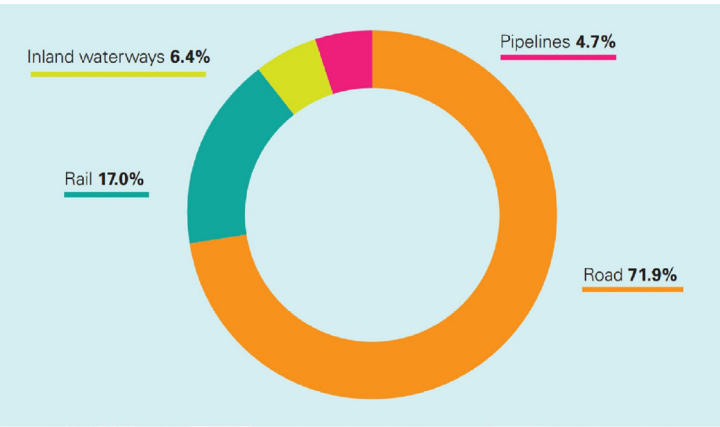
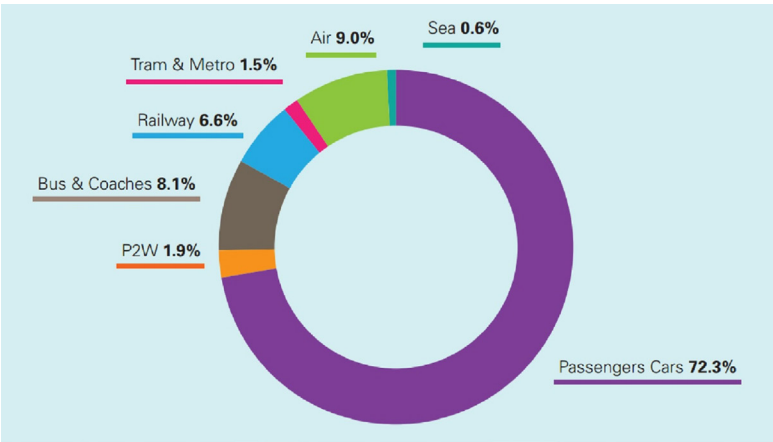


Figure 1: Inland transport modal split in EU 28 (% of tkm)

Figure 2: Passenger transport modal split in EU28, 2013 (pkm in %)



ⁱ ERF Statistics 2016 (pages 41 and 32 respectively): <http://www.erf.be/images/Statistics/ADprint-ERFSTATS2016.pdf>

ⁱⁱ <http://www.etrac.org/>

3. The challenge: reconciling roads with sustainability while promoting innovation



3.1. Recognising the road infrastructure industry contribution

Despite the obvious socio-economic benefits of roads, there is a growing need to reconcile road transport growth and legitimate societal aspirations for cleaner, safer and more efficient mobility.

According to the European Environmental Agency, statistics for transport can be clearly improved. Concretely, the sector accounts for more than 20% of greenhouse gas emissions generated in the European Union, approximately a third of all final energy consumption and considerable noise nuisance. Naturally, operations for constructing and maintaining roads necessarily involve the use of natural resources including the reallocation of land use.

With a near complete network, approximately 90% of the road works consist in maintenance and reconstruction whereas only 10% consist of building new infrastructure. In this sense, minimising the environmental impact of maintenance and reconstruction operations represents the main challenge in the coming years. Both industry and authorities need to promote innovation in the sector to develop better technologies for roads and its related equipment (markings, signs or barriers). This means assuring a regulatory and legislative framework that both encourages the development of more sustainable roads while providing incentives to modernise the road infrastructure industry.ⁱ

Recognising the challenge to provide more benefits to current and future generations, the road infrastructure sector has steadily taken steps to embrace environmental objectives. It has constantly developed on a voluntary basis new solutions that both make greater use of existing materials through recycling and, at the same time, have generated new technologies for construction processes able to extend the durability of the road network and reduce the use of virgin materials.

In this regard, the road infrastructure sector is actively working to prolong the life-cycle of the network and reduce the need for frequent maintenance interventions that automatically generate important benefits in terms of energy savings, noise reduction, CO₂ emissions or the use of raw materials linked to road construction and maintenance operations.

3.2. An unsatisfactory regulatory context: old Directive 2004/18/EC

As stated previously, public administrations spend € 2 trillion annually on public procurement, which is around 14% of EU GDP.ⁱⁱ

In other words, public authorities can be described as major consumers of goods and services. As such, public procurement can act first, as an important vehicle for achieving both a more resource-efficient society through the purchase of more cost-effective, quality products and second, a driver for innovation and sustainability thus contributing towards enhancing Europe's competitiveness and boosting economic growth in line with Europe 2020 Strategy.

i ERF Discussion Paper "Sustainable Roads and Optimal Mobility" (2010): Sustainable Roads were defined as those effectively and efficiently planned, designed, built, operated, upgraded and preserved, by means of integrated policies respecting the environment and still providing the expected socio-economic services in terms of mobility and safety

ii Data according to the EC: https://ec.europa.eu/growth/single-market/public-procurement_en

While the road infrastructure industry has been developing more sustainable and innovative solutions, limitations placed upon public authorities by the previous legal and regulatory framework governing public procurement rules, have proved to be a formidable obstacle to the uptake of these new technologies and practices.

First of all, traditional rules of public procurement (Directive **2004/18/EC**)ⁱⁱⁱ have given too much weight on the 'cheapest price' as the sole criterion for awarding contracts, while largely disregarding other elements such as environmental performance, durability or innovation. In practice, this has led to what has been coined as the 'dictatorship of the lowest price' for the majority of tenders linked to road construction and maintenance.

Moreover, the lack of multi-annual contracting practices within many public administrations has proved a major obstacle for the purchase of more durable products available on the market. Like in many other fields (e.g. electrical appliances or passenger cars), it often pays off to buy something that is more expensive in the short-term, but which will nevertheless prove good value for money a few years down the line, given that it will not need to be replaced or repaired so frequently. Naturally, the same principle applies to different technologies linked to roads and road equipment. Given, however, that many road authorities can only plan their maintenance activities on an annual basis, the trend of the 'dictatorship of the lowest price' is only reinforced.

The short term planning has not only prevented the market uptake of new technologies and products by public authorities, but it has also acted as a major disincentive for the industry to continue investing in more innovative technologies.



Figure 3: Road construction in Germany

ⁱⁱⁱ Directive 2004/18/EC of the EP and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32004L0018&from=en>

3.3. Towards a promising regulatory framework: new Public Procurement Directive 2014/24/EC

Recognising the need for a more modern legal framework for public procurement in the transport sector, the European Union adopted in 2014 a comprehensive set of reforms crystallised in Directive 2014/24/EC.^{iv}

The new set of rules seeks to modernise the whole framework for public procurement in order to allow governments to adapt their tendering processes to current needs to facilitate acquisition of greener and more innovative products and services. In addition, an updated set of rules will also permit to address new challenges (i.e. climate change, connectivity, limitation of natural resources, globalization, etc). Public procurers will act then as “*intelligent*” customers facilitating the achievement of **Europe 2020** objectives while boosting economic growth and jobs creation.

By encouraging public authorities to modify the philosophy of the purchasing approach, it provides at the same time incentives to industry to invest in research and innovation. The combination of these two elements will benefit the whole of society by optimising public resources and delivering to citizens better and more durable roads.

In this sense, the new Directive calls on the award of contracts under the most economically advantageous tender (i.e. the MEAT principle) in article 67. Specifically, MEAT principle should be identified by using a “*life-cycle costing*” approach to ensure the best-value for money-invested (**article 67**). To identify the most economically advantageous tender, public authorities can then evaluate the performance of a product over its whole life-cycle and thus, take into account important elements such as maintenance costs, environmental impact, energy efficiency, reliability, etc. At the same time, this clause implies a drive to move away from the old purchasing model based on the lowest initial price.

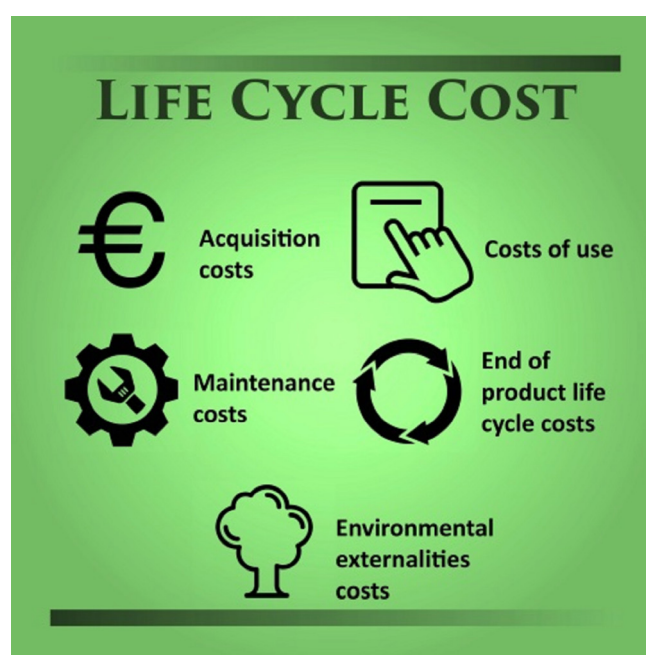


Figure 4: Key elements in the new Directive 2014/24/EC

^{iv} Directive 2014/24/EC of the EP and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024&from=EN>

4. From theory to practice: ensuring that the new rules are a game changer for society as a whole

As the association representing the road infrastructure industry, the ERF welcomes the new legislative proposals adopted by the European Union. Elements introduced by the new Public Procurement Directive represent a true opportunity to bridge the gap between policy and development of a more sustainable, intelligent and safer road network. In other words, it provides road authorities and industry players with an improved framework for collectively achieving the political objectives set out at European and International levels to improve mobility by road.

Nevertheless, the great challenge remains: how to crystallise the good intentions moving from theory into practice? How to transform these general clauses into a format that it is beneficial for all the parties including public authorities, industry and, consequently, society as a whole? Which are the immediate steps to be taken by both parties (i.e. industry and administrations)?

A successful implementation of the Directive will offer two positive aspects. On the one hand, a real opportunity for road authorities to deploy a legal framework promoting smarter purchasing. On the other hand, industry will be able to enjoy further incentives to continue investing in research and innovation. Above all, the main beneficiary will be the society as new procurement rules ensure optimisation of public money while promoting greener, safer and more intelligent mobility.

The ERF has identified two key elements for a successful deployment of the new Public Procurement rules in the road infrastructure market.

4.1. Ensure the “*most economically advantageous tender*” principle in the contract awarding

The ERF supports the **MEAT principle** as a tool to improve performance of materials and services provided by the road industry and consequently to offer better solutions while optimising public funding.

The lifespan of a road is around 30 years so the new procurement strategy can offer a medium and long term vision as demanded by the sector. This step ahead will facilitate integration with the novel Road Infrastructure Management approach whose objective is to think, plan and act on the basis of

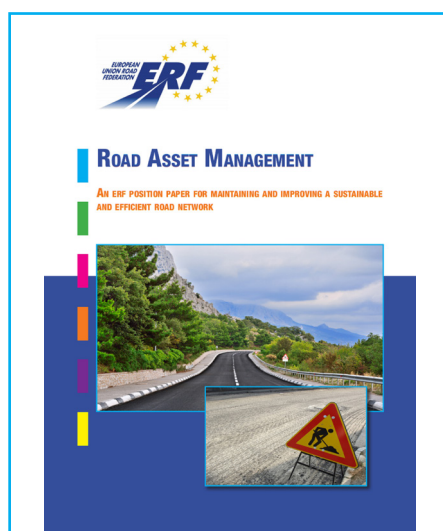


Figure 5: Road Asset Management approach to optimise the infrastructure

long-term decisions optimising performance of roads, minimising costs and contributing to achieve other political objectives while modernising the network.ⁱ

Future tendering processes can help ensure that the best performance proposal is selected according to qualitative, technical, and social/sustainable elements. Some practical examples that can be used by authorities are the following:

- Greater use of performance-based contracts with enforcement incentives and equivalent penalties to contractors for not meeting performance
- Applying incentives for more durable materials by awarding points related to how often traffic has to be disrupted for maintenance
- Linking tendering practises to employment and also providing points linked to transport of materials, e.g. higher points for use of Euro V and VI vehicles
- Design-build-operate contracts or public-private partnerships whereby the concessionaire both builds the road and has a duty to keep it operating with minimal disruptions for a period of e.g. 30 years

4.2. Use of certificates to assess sustainability performance

One of the common methods that enable authorities to purchase innovative and greener products is the use of certificates that allow a manufacturer to declare the performance of his product(s) based on objective and verifiable criteria. The aim should always be for a road with the best sustainability performance over its whole life.

The following tools available to date are:

European research projects: EC-funded actions are a valuable tool for developing independent methodologies for assessing the life-cycle of roads. In fact, the ERF has been involved in three important initiatives which have resulted in the development of such methodologies.

- *LCE4ROADS*ⁱⁱ has developed a set of sustainability indicators that allows authorities to determine the sustainability during construction and rehabilitation of both asphalt and concrete pavements. The indicators were initially developed within the research consortium and were subsequently validated through a CEN Workshop Agreement that gathered both industry and road authorities.
- *QUIEST*ⁱⁱⁱ has developed a methodology for assessing the performance of noise reducing devices taking into consideration the products entire life-cycle. It is worth noting that the Italian Ministry, in line with the provisions of the new Directive, has begun to award points for the sustainability of noise barriers in tenders based on the methodology developed by the QUIEST Project.

i ERF Position Paper for maintaining and improving a sustainable efficient road network: http://www.erf.be/images/Road-Asset-Management-for_web_site.pdf

ii <http://www.lce4roads.eu/>

iii <http://www.quiest.eu/>

- *SustainEuroRoad*^{iv} is currently developing a specific software (inspired by SEVE in France) based on the methodology of LCA to determine the best environmental technique and the associated benefits in terms of energy, CO₂, and preservation of natural resources during road construction operations.

Standardisation:

CEN standards: the road infrastructure sector has long relied on performance based standards as a tool for assessing the performance of solutions. However, life-cycle and environmental considerations do not, as a general rule, form part of such standards.

As a result of work carried out at CEN TC 350 'Sustainability of construction works', manufacturers can make use today of EN 15804 to make an Environmental Product Declaration. However, there is a need to tailor the general provision of EN 15804 to the specificities of road infrastructure through Product Category Rules in order to arrive to an independent assessment method that is acceptable to industry and authorities alike.

European Assessment Documents: Given that the development of sustainability criteria via CEN may prove to be a formidable challenge, alternative solutions in the shorter term could be through the development of assessment methods via the European Organisation for Technical Assessment (EOTA). This would allow manufacturers to develop in cooperation with Technical Assessment Bodies an independent methodology for assessing the sustainability of certain road elements. Here, the potential involvement of industry associations should be examined.

Green Public Procurement (GPP) criteria: the European Commission has been actively developing in recent years GPP criteria for several sectors including road infrastructure. In 2016, DG Environment unveiled its latest GPP criteria for Road Design, Construction and Maintenance^v. While, in principle supportive of the process, the ERF would like to emphasise the need for better coordination between different European Commission's DGs on such matters and most importantly, a better consultation of the needs of both road authorities and manufacturers when such criteria are being extended to the other elements of the infrastructure.

^{iv} <http://sustainableroads.eu/>

^v [http://ec.europa.eu/environment/gpp/pdf/GPP%20criteria%20Roads%20\(2016\)%20203.pdf](http://ec.europa.eu/environment/gpp/pdf/GPP%20criteria%20Roads%20(2016)%20203.pdf)

5. ERF's commitment towards Sustainable Roads



A main objective for the new public procurement rules is to guarantee a level playing field for all actors involved, promote innovation, sustainability and deliver better value for money for Europe's citizens.

In order however to ensure that the new rules are indeed a game changer, a stronger cooperation between different stakeholders is needed, e.g. industry, administrations and standardisation bodies.

For its part, the ERF Working Group on Sustainability will intend to contribute to this objective through two main actions:

- Firstly, as a European organisation representing the road infrastructure industry, the ERF intends to understand how Member States are using the tools provided in the new Directive 2014/24 to facilitate the uptake of greener and more innovative solutions. This action will entail amongst others the identification of good practices for different infrastructure elements and enhance cooperation in those areas where further efforts are needed
- Secondly, the ERF will raise awareness of solutions that have already been developed through different European research collaborative initiatives and which are ready for market implementation.

This will represent a first contribution towards the implementation of EU policy for a greener transport system from the infrastructure perspective. At the same time, ERF will approach key stakeholders both from public administrations and industry to explore a common understanding on how to best make use of the new regulatory framework together with the innovations brought about in the market.

About the Authors

The European Union Road Federation (ERF) is a non-profit European association representing private and public entities linked to road infrastructure. It acts as a European platform for dialogue, expressing the road sector's ideas and opinions on mobility issues and promotes research into viable, efficient and sustainable transport.

The current Position Paper has been elaborated by the ERF Working Group on Sustainability. This WG represents the industry commitment towards a better performance during road construction and maintenance in terms of energy consumption, GHG emissions and natural resources used amongst other elements.

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