

3.2. Priorities for the objectives of ensuring sustainable and efficient transport systems in the long run, with a view to preparing for expected future transport flows, by supporting innovation and new technologies for all modes of transport

### **3.2.1. Deployment of innovation and new technology actions in all transport modes, according to the TEN-T Guidelines, Art.33 (a to d).**

#### **Priority open to all Member States**

##### General Objective

New technologies and innovative solutions should be deployed on the core network with particular emphasis along the core network corridors.

##### Specific Objectives

In order for the core network<sup>1</sup> to keep up with innovative technological developments and deployments, the aim shall be in particular to:

- (a) support and promote the decarbonisation of transport through transition to innovative and sustainable transport technologies;
- (b) make possible the decarbonisation of all transport modes by stimulating energy efficiency, introduce alternative propulsion systems, including electricity supply systems, and provide corresponding infrastructure. Such infrastructure may include equipment and tools necessary for intelligent and sustainable integration with electricity grids and other facilities necessary for the energy supply, may take account of the infrastructure-vehicle interface, may include intelligent platforms needed for interoperability and may encompass telematic applications;
- (c) improve the safety and sustainability of the movement of persons and of the transport of goods;
- (d) improve the operation, management, accessibility, interoperability, multimodality and efficiency of the network, including through multimodal ticketing and coordination of travel timetables;

Studies and works are eligible. Priority is given to studies with integrated deployment.

#### D) Overview

The general objective is to support the deployment of a sustainable and efficient transport system and to promote the decarbonisation of all transport modes along the core network corridors. This aim may be achieved through the implementation of new technologies and innovative technological and organisational systems, based on a market-oriented approach. In order to clearly define the market-oriented approach, the expression of "market-sided innovation" has been introduced since 2008. Here, business persons are in the driving seat, who are undertaking a dual optimisation process during the studies with pilot deployment, i.e. on the new technology & equally important on the business-client relation. A real-life trial, and not just a demo, should take place. Consequently, the key objective of the trial is to prepare the wide-scale roll-out into the market by moving towards viability, i.e. by bringing unit costs down and improving the understanding of the needs of the clients.

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<sup>1</sup> Regulation (EU) No 1316/2013, Annex I, Part I.1."CEF, Horizontal Priorities"

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Transport infrastructure and related infrastructure, facilities, vehicles (only the innovative parts of vehicles) and services as described in Article 33 (a to d) of the TEN-T Guidelines may be supported. Each innovation topic must be in-line with the policy framework established by the EC, for example for actions on alternative fuels the "Clean Power for Transport: a European alternative fuels strategy"<sup>2</sup>.

This part of the call is only open to actions (studies and works) located on the core network as specified in the maps of the TEN-T Guidelines, with particular emphasis along the 9 core network corridors as listed in Annex I, part 1.2 of the CEF Regulation.

In the context of this priority, innovation means the implementation of a new or significantly improved product (good or service), which is ready for deployment advanced technology, ready for deployment but while a market-orientated solution is still being sought. The earlier development and demonstration phases of this product a technological solution are considered as research activities which are not covered by these priorities.

Innovation of operational processes may be funded under this call, including fleet management, load and fuel management, multimodality and interoperability.

EU support is also available for the improvement and deployment of telematics applications, coming to support decarbonisation of transport, i.e. telematics should be a secondary element within the transport solution, with a view for example to enable roaming functionality, interoperability, multimodality and compatible ticketing systems.

Priority will be given to projects of high EU added value, which can for instance be demonstrated by including results from projects funded under the European Commission's Research and Innovation Framework Programmes. In such cases the project's title and EC reference number should be inserted in the proposal.

## II) Action Types

Actions to be selected under this priority will concern works and studies (with and without pilot deployment activities<sup>3</sup>). Priority is given to studies with pilot deployment (real-life trials).

- Studies without pilot deployment (feasibility studies), should include a cost-benefit analysis, in particular comparing the standard case(s) with the innovative solution. Should such a feasibility studies have already been carried out, the outcomes which serve as a basis will have to be described in the other types of applications.

- Studies with pilot deployment should concern a real-life trial (rather than just a demonstration). A dual optimisation should take place: (1) the optimisation of the technology to bring unit costs down, and (2) the optimisation of the business-client relation to better

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<sup>2</sup> COM(2013)17 of 24 January 2013

<sup>3</sup> Defined in section 6.2.4

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understand the client's needs and address it appropriately. At the end of the trial, as part of the study, an analysis must be made, showing how to scale-up the trial to mass application, in the form of a business plan. In fact, on the basis of the resulting optimal solution, the roll-out of the innovation onto, at least, a significant part of a corridor in at least 2 EU Member States should be elaborated.

Finally, such documentation which is a deliverable of a trial would facilitate and accelerate the evaluation of a bank, such as the European Investment Bank, on whether private investments may come in at the end of the trial. In this respect, attention should be given to the opportunities offered by the new financial instruments provided by CEF and EFSI (Juncker Plan) and to constituting viable partnerships and consortia suitable to receive such type of financing.

- Works should address the roll-out of the innovative solution onto a significant part a core network corridor and should take place in at least 2 EU Member States.

In summary, for the innovative actions four types are envisaged: (A) Studies without pilot deployment, (B) Studies with regional or local pilot deployment in at least one EU Member State and (C) Studies with deployment on a scale of a core network trajectory/corridor of at least 500 km serving at least two EU Member States or achieving coverage of minimal density of at least 2 complete EU Member States. Type (D) actions are works and applicable to roll-outs on the core network in at least 2 Member States.

For types (C) and (D) the roaming/cross-border functionality and interoperability of solutions, including cross-borders, should be addressed.

### III) Individual Budgets

As an indication of total project sizes it is advised to aim for the eligible budgets at (a) up to EUR 2.0 million for type A, up to EUR 20.0 million for type B and up to EUR 50 million (indicative maximum) for type C. In case more than EUR 50 million is required for an action, it shall be carefully examined whether the action is of the type D (= works) Total project sizes should normally be at least 1.0 M€ to achieve an adequate European dimension.

Mobile equipment is only eligible for support within studies. It must also be secondary to the infrastructure part of the action. In order to ensure the infrastructure nature of the innovative CEF actions, a capping of 10% of the EC grant shall in principle be applicable to mobile equipment used in an action. Exceptions to this capping may be made on a case-by-case basis. Furthermore, the eligible costs of mobile equipment must only relate to the financial difference between a usual, conventional solution and the use of a new technology (e.g. the additional financial effort between a diesel propulsion and a fuel-cell hydrogen propulsion). It will be evaluated individually and applicant(s) shall provide thorough financial information substantiating the unit costs presented. The subsidized mobile equipment must remain for at least 5 years registered and operated in an EU Member State.

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The interface between infrastructure and vehicles is always fully eligible for EC financial support (e.g. the telematics link, the charging cable, adaptors, etc)

For type D actions (works) with its low EC funding rate and limited maximum amount, it is recommended to also consider the new financial instruments available under the CEF and EFSI (Juncker Plan) managed by the European Investment Bank (EIB). Here an application may be made at any time and in addition to the EC grant. For EIB support the conditions published by the EIB apply.

#### IV) Delimitation to other Priorities of the Work Programme

In general innovation on transport infra-structure for the long distance is a primary element. Telematics, logistics, vehicles, etc, covered by other TEN-T/CEF priorities as their main subject, can only be secondary elements of an innovation action. As an example, in case an action introduces an alternative fuel solely inside an urban node, it should be submitted to the Urban Nodes Call. As a further example, in case an alternative fuel is introduced for 2 ports together with taking up a shipping service between the ports, this application should be submitted to the Motorways-of-the-Sea call, as the primary element is the logistics chain. All telematics actions having the telematics component as their primary element should refer to the appropriate telematics call for mode of transport concerned (eg RIS, ITS, ERTMS); for example a pure road ITS application should be submitted to the road ITS call. Under the innovation calls, single ticketing would only be eligible if being part of an innovative solution encompassing more elements, for instance also alternative fuels.

#### V) Detailed Topical Specifications and Restrictions

The following detailed topical specifications and restrictions are done to focus the available resources on a subset of the very wide range of legally allowed innovation and new technology topics for transport, thereby setting temporary political priorities to address the present innovation requirements of the EU. **In case there are no specifications or restrictions mentioned for a topic, the full legally possible range of Art. 33 applies**

All specifications and restrictions only apply to the current work programme and call, as follows:

- Actions (studies & works) supporting the decarbonisation of transport by the roll-out of alternative fuels distribution infrastructure. This encompasses the use of electricity, hydrogen, biofuels, synthetic fuels (preferably from biomass), compressed or liquefied natural gas (CNG and LNG), preferably pure bio-methane or blended with bio-methane), as well as liquefied petroleum gas (LPG, preferably biodiesel with bio-LPG), or other innovative systems. Infrastructure may also include emission reduction, smart metering and energy storage equipment. Scrubbers are excluded, even if part of mobile infrastructure. Actions may include transportation of alternative fuel units, such as fuel-containers, to hinterland locations, e.g. to supply satellite terminals or to be placed directly at the end-consumer, to enable cost-efficient, multi-modal alternative fuel supply chains. Such units would be regarded as mobile infrastructure.

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- Mono-modal gas terminals are eligible for all modes of transport, except if located in maritime ports.
- Multi-modal gas terminals are eligible for all modes of transport, including if located in maritime ports.
- Maritime ports excluded here may refer to the Motorways-of-the-Sea call.
- Actions (studies & works) for the improvement and deployment of interoperable infrastructure/vehicle interfaces that will support the use of alternative fuels, including telematics applications or energy demand management systems when required. Such applications should demonstrate their potential or actual contribution to interoperability, multimodality and overall efficiency of the network.
- To facilitate the deployment of a European network of alternative fuels, studies with pilot deployment may be implemented in the form of a grant scheme by public operators only, or by consortia led by public operators. They may support via joint grant schemes or joint procurement, the installation of refuelling/charging stations accessible to public or private economic operators. Such activities can be divided in several phases to address the needs progressively over a time period and/or by location. This should aim at stimulating the deployment of interoperable infrastructures within the network. Such a progressive approach should enable action owners to size the financial support to market price developments in a timely manner. For such actions, the planned number of refuelling/charging stations accessible to the public, of users and of emission savings in particular, will have to be forecasted.

In addition, any combination of the above specific subjects may be addressed in an innovative action as long as there is a significant part of the innovative solution is addressing the transport infrastructure.