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**COMMISSION DECISION**

**of 8.6.2021**

**on the financing of five pilot projects in the field of transport for 2021**

# COMMISSION DECISION

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## on the financing of five pilot projects in the field of transport for 2021

THE EUROPEAN COMMISSION

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union, amending Regulations (EU) No 1296/2013, (EU) No 1301/2013, (EU) No 1303/2013, (EU) No 1304/2013, (EU) No 1309/2013, (EU) No 1316/2013, (EU) No 223/2014, (EU) No 283/2014, and Decision No 541/2014/EU and repealing Regulation (EU, Euratom) No 966/2012<sup>1</sup>, and in particular Article 58(2), point (a), and Article 110 thereof,

Whereas:

- (1) In order to ensure the implementation of the pilot projects in the field of transport, as set out in the Annex to this Decision, it is necessary to adopt an annual financing decision for 2021. Article 110 of Regulation (EU, Euratom) 2018/1046 ('the Financial Regulation') establishes detailed rules on financing decisions.
- (2) It is necessary to allow for the payment of interest due for late payment on the basis of Article 116(5) of the Financial Regulation.
- (3) In order to allow for flexibility in the implementation of the pilot projects in the field of transport, it is appropriate to allow changes which should not be considered substantial for the purposes of Article 110(5) of the Financial Regulation,

HAS DECIDED AS FOLLOWS:

### *Article 1*

#### *Pilot projects in the field of transport*

The annual financing decision for the implementation of the pilot projects in the field of transport for 2021, as set out in the Annex, is adopted.

### *Article 2*

#### *Union contribution*

The maximum Union contribution for the implementation of the pilot projects in the field of transport for 2021 is set at EUR 7 400 000, and shall be financed from the appropriations entered in the following lines of the general budget of the Union:

- (a) budget line 02.200100.PP02 21 02: Pilot project - Enabling sustainable management and development of ports in the Rhine-Main-Danube basin - EUR 1 600 000;
- (b) budget line 02.200100.PP02 21 05: Pilot project - Sustainable rural mobility for Covid-19 resilience and support of ecotourism - EUR 1 000 000;

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<sup>1</sup> OJ L 193, 30.7.2018, p. 1.

- (c) budget line 02.200100.PP02 21 08: Pilot project - Single European Railway Area - Prototype Corridor Munich-Verona - EUR 600 000;
- (d) budget line 02.200100.PP02 21 09: Pilot project - IRS Smart Cities project: new railway station concept for green and socially inclusive smart cities - EUR 700 000;
- (e) budget line 02.200100.PP02 21 10: Pilot project - Effect of energy efficient and solar power generating vehicles on grid capacity and charging infrastructure - EUR 3 500 000.

The appropriations provided for in the first paragraph may also cover interest due for late payment.

*Article 3*  
*Flexibility clause*

Cumulated changes to the allocations to specific actions not exceeding 20% of the maximum Union contribution set in the first paragraph of Article 2 of this Decision shall not be considered to be substantial for the purposes of Article 110(5) of the Financial Regulation, where those changes do not significantly affect the nature of the actions and the objective of the pilot projects in the field of transport. The increase of the maximum Union contribution set in the first paragraph of Article 2 of this Decision shall not exceed 20%.

The authorising officer responsible may apply the changes referred to in the first paragraph. Those changes shall be applied in accordance with the principles of sound financial management and proportionality.

Done at Brussels, 8.6.2021

*For the Commission*  
*Adina-Ioana VĂLEAN*  
*Member of the Commission*

## ANNEX

**On the financing of five pilot projects in the field of transport for 2021****1. Introduction**

On the basis of the objectives given in the 2021 budget remarks<sup>1</sup>, the pilot projects (PP) in the field of transport to be financed and the budget breakdown for 2021 are as follows:

Legal basis

Article 58(2)(a) of the Financial Regulation
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Objectives pursued

Pilot projects serve as an instrument to allocate appropriations with the aim to test a novel policy idea in an area where the Union has competency but no relevant basic act exists that would allow the Union to spend any funding. In detail, see the relevant section '2021 specific budget remarks' below.
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Expected results

Pilot projects are activities of experimental nature pursuing optimal results in terms of feasibility and usefulness of a new initiative. In detail, see the relevant section '2021 specific budget remarks' below.
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**2. Procurement**

The global budgetary envelope reserved for procurement in 2021 is EUR 7 400 000.

2.1

02.200100.PP02 21 02	Pilot project - Enabling sustainable management and development of ports in the Rhine-Main-Danube basin
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General description of the contracts envisaged (*study / technical assistance / evaluation / survey / IT / communication services/etc.*)

Study
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Implementation

DG MOVE.D.3
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<sup>1</sup> <https://eur-lex.europa.eu/budget/data/General/2021/en/SEC03.pdf>

## 2021 specific budget remarks

The ports on the Rhine-Main-Danube basin are significant nodes in the logistics and transport chains that form the economic backbone of the Danube region. While efficient ports are vital to the socio-economic development of their hinterland, the related ship traffic, the handling of cargo in the ports and the land-based hinterland connections can impact negatively the environment (e.g.. pollution, CO2), the people and the economic potential of the port itself. Ports are also affected by environmental impacts (e.g. climate change i.e. extreme weather events, sea level rise, floods and droughts). Increasing environmental and climate awareness creates new challenges for the sustainable development of ports.

These challenges require the ports to identify and implement new environmentally friendly and sustainable solutions including energy efficiency improvements, environmental strategies and monitoring tools supporting the transition to renewable energy and zero-emissions, as well as full compliance with relevant Union environmental and climate legislation. Having in mind one important goal of the European Green Deal, the shift of cargo to inland waterway transport and rail, inland and sea-river ports in the Rhine-Main-Danube basin will become a focal point for sustainable development of the TEN-T Rhine-Main-Danube corridor.

To best manage the challenges in an effective way, a two-phase approach is envisaged:

- Phase 1 – pilot project (PP) – addressing environmental impacts stemming from the port activities of selected river and sea ports in the Rhine-Main-Danube basin by developing and implementing specific tools (Environmental Management Systems - EMS) and by defining a port specific action plan for sustainable port operations.

- Phase 2 – potentially, a preparatory action (PA) – building upon the findings of the pilot project and enabling the wide-scale roll out of an integrated “Green Danube Ports Action Plan” as part of a new preparatory action. To this end, the recently established coordination and collaboration platform, the Rhine-Main-Danube basin Ports Network (DPN) could function as a multiplying governance structure.

In the pilot project, seven selected river and sea-river ports portraying a representative sample of the about seventy ports of the Danube region will jointly address their environmental responsibilities through the development and implementation of EMS, as well as the elaboration of port specific action plans creating a nucleus for wide-scale roll-out of environmentally sustainable port management and operations.

While each EMS is unique to an organisation's culture, structure, activities and environmental priority issues, within the project, the Plan-Do-Check-Act Model and the eco-management and auditing should be transferred from the beneficiary partners of the pilot project to other Rhine-Main-Danube basin ports as well as to identified target groups (users of the port, cargo owners, logistic service providers, general public). Therefore, an accessible generic framework supporting the planning of sustainable port operations, facilitating the mitigation of potential risks and encouraging port authorities and port and terminal operators to engage with sustainability agendas and plan their port operations and future capacity expansions and emerging port infrastructure project in a sustainable and smart manner will be defined. The elaborated port-specific action plans of the seven model ports should serve as good practices for the followers. Some of the measures proposed in the action plans will be of commercial relevance and even be bankable. Their implementation with the help of loans should be considered. Financing

by financial institutions like EIB, EBRD but also new means of finance (energy contracting, crowd funding) will be investigated.

#### Additional information

Overlaps with existing financing options should be avoided, notably:

- TEN-T Programme financing of a series of studies to promote the development of an eco-efficient port engineering and operation system in the Romanian Port of Giurgiu. The studies contribute to the realisation of the “Waterway axis Rhine/Meuse-Main-Danube” (TEN-T Priority Project 18).

- Activities under the Interreg Danube Transnational Programme:

<http://www.interreg-danube.eu/about-dtp/programme-presentation>

It should however be noted that activities eligible to be financed under previous and existing programmes cannot be financed through this pilot project.

Synergies with the pilot project ‘Capacity for the greening of European sea ports’ could be developed.

## 2.2

02.200100.PP02 21 05	Pilot project - Sustainable rural mobility for Covid-19 resilience and support of ecotourism
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General description of the contracts envisaged (*study / technical assistance / evaluation / survey / IT / communication services/etc.*)

Study
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#### Implementation

DG MOVE.B.4
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#### 2021 specific budget remarks

Across the Union, rural villages and regions suffer from chronic isolation, resulting in loss of cultural and economic dynamism, aging population, and a strong mobility dependence on individual transport. The COVID19 crisis has severely weakened these areas and created enormous challenges - inter alia for the European tourism sector. Pre-crisis trends show that there is a strong and growing demand for rural sustainable touristic destinations. Rural areas have significant natural, human, economic and cultural potential and their development supports regional growth. Offering sustainable rural transport solutions, whilst at the same time supporting the sustainability of tourist destinations away from mainstream pathways is a win-win situation, contributing to the reduction of negative transport-related consequences of tourism as well as promoting

more sustainable mobility alternatives for citizens in rural areas. Insufficient sustainable mobility choices often disincentivise tourists from choosing rural tourist destinations thus preventing the development of sustainable tourism. Insufficient connection to local public transportation networks also discourages the efforts of the local providers to offer sustainable and low-carbon destinations and activities.

The Union policy process of sustainable mobility in rural areas is still at an early stage of development. The pilot project will therefore draw on the success story of Sustainable Urban Mobility Plans (SUMP) in the urban context and establish a rural equivalent of integrative sustainable rural mobility plans including both the needs of local populations and tourists. The pilot project will also build on the good practices identified through SMARTA and SMARTA 2 concerning sustainable shared mobility solutions interconnected with public transport and supported by multimodal travel information services. It will have a broader focus than the previous projects and would be complementary, focusing on interconnecting mobility needs, and extending to rural tourism mobility. A particular focus will be on the recovery of rural and remote areas in the post COVID-19 period. Building on SUMP's guiding principles, the pilot project should identify the respective 'functional rural areas' based on actual flows of people and goods as well as with the aim of interconnecting and promoting local sustainable tourism destinations. This twofold orientation will create synergies between mobility needs of local populations and tourists. Improving sustainable mobility solutions in the high season will create jobs for locals (both in the transport and in the touristic sector) and it will create seasonal income that will be able to finance permanent sustainable mobility solutions. At the end of the pilot project period, the assessment should include levels of utilisation and user satisfaction as well as reduction in the emissions of greenhouse gases.

The pilot project will look at how to best organise and develop rural areas with their mobility solutions to connect with neighbouring urban agglomerations. This includes the mobility behavioural impact of changed labour markets, including companies' mobility plans and cross-border aspect, the impact of digitalisation as well as the European Green Deal and its impact on sustainable smart mobility in rural areas as well as tourism. Possibilities with links to other ongoing projects can be found by focusing on interoperability, inter-connectivity, inter-modality (including walking and cycling), sustainable regional development, cohesion, employment, just transition, digitalisation, research and development and innovation. Another link to existing European goals would be further research into establishing a European multimodal transport information, management and payment system. To further support rural tourism in Europe, the pilot project should work towards the development of an app or a website providing recommendation of ecotourism based on the current location and supplied with information about distance and facilities in each ecotourism region.

The pilot project should promote:

carpooling, car sharing and e-bike sharing interconnected with public transport,

demand-responsive vehicles, receiving bookings via phone calls as well as digitally and pooling similar journey request to save energy and offer door-to-door transportation,

further digital and organisational solutions to increase frequency of passage in mountainous regions with dispersed villages,

The pilot project will support local authorities and sustainable rural tourism providers to connect their tourist destinations to existing sustainable mobility networks and to adapt

public transportation offers to tourists' needs (time scheduling, frequencies, lines and modes coherence and information, possibility to buy inter-modal day tickets). The pilot project should support the identification and promotion of activities and destinations that can be done using sustainable mobility. For local sustainable tourism providers, the pilot project will make available Union financing to invest in sustainable mobility infrastructure connecting their destinations to local transport network such as the new cycling and hiking tracks in combination with public transport and Union financing for e-bikes.

#### Additional information

The proposal concerns rural areas, sustainable tourism and mobility. Nevertheless, the following part should be removed in view of the proper implementation of the project and in consideration of the reduced amount available: "For local sustainable tourism providers, the PP will make available EU financing to invest in sustainable mobility infrastructure connecting their destinations to local transport network".

#### 2.3

02.200100.PP02 21 08	Pilot project - Single European Railway Area - Prototype Corridor Munich-Verona
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General description of the contracts envisaged (*study / technical assistance / evaluation / survey / IT / communication services/etc.*)

Survey

#### Implementation

DG MOVE.C.4

#### 2021 specific budget remarks

This pilot project intends to provide support, knowledge and, in a later stage, invaluable lessons to accelerate the ongoing completion of the Single European Railway Area. The pilot project should identify and address shortcomings within the rail ecosystem by analysing one select route with a holistic approach centred on cross-border operations.

The route for the pilot project should be the one between Munich and Verona. Three Member States (DE/Bavaria, AT/Tyrol and IT/Veneto) would be involved along the line that includes one of the flagships of the TEN-T infrastructure cross-border construction projects: the Brenner Base Tunnel.

The holistic approach should ensure that all aspects and needs are identified and considered on an equal footing. The aim is to cover the entire transport chain, ranging from customers, to transport operators, to railway undertakings, as well as infrastructure managers and regulatory bodies.



The main goal is to establish a joint set of rules for the corridor infrastructure spanning three jurisdictions and eliminating the ensuing obstacles for rail traffic. Today, this type of joint arrangements are not foreseen by legislation. The actions required to prepare for this, and which could benefit other European infrastructure, should include:

Obligatory requirements to engage in collaborative decision-making in rail traffic operations and to engage in binding performance agreements between all stakeholders in a (multimodal) rail freight transport.

Strategic allocation of rail infrastructure capacity for different types of traffic (i.e. several years in advance), in this case in particular for international rail freight traffic, taking into account the overall needs and requirements from Italy, Austria and Germany, and the alternative road transport transiting the Alps.

Capacity management and traffic management at the level of the proposed corridor, e.g. by ensuring governance or appointing a supra-national entity in charge of defining and imposing such rules and procedures in a binding manner.

Requirements for joint decision-making by rail regulatory bodies as concerns international traffic going beyond the provisions on cooperation between regulatory bodies defined in Article 57 of Directive 2012/34/EU.

Joint centralised and automated traffic management, including interfaces with interlocking/signalling system, on networks of different rail infrastructure managers.

The methodology that emerges over the course of the work will be closely documented so the output will go beyond producing a recipe to optimise the pilot route in order to provide a European best practice guideline potentially applicable throughout the entire Single European Railway Area.

#### Additional information

In its current form, the proposal consists of identifying the needs of users both in passenger and freight rail transport, of defining and implementing solutions on the Brenner route (Munich–Verona) and of disseminating the lessons learned in a best practice guideline for implementation elsewhere. In order to make the project implementable, there should be a change of focus on regulatory and operational measures to optimise the performance of a cross-border European rail infrastructure and operations with a specific corridor as a pilot but with the ultimate goal of developing solutions for the entire EU rail network, in particular lines included in the TEN-T networks and the EU rail freight corridors. The proposal needs to be modified in order to focus specifically on a set of actions, which are not covered by existing EU legislation. It could be a genuine pilot in establishing a joint set of rules for the corridor infrastructure spanning 3 jurisdictions and eliminating the ensuing obstacles for rail traffic. Currently there is no legislative provision on this type of joint arrangements. The actions required to prepare for this, and which could benefit other European infrastructure, include:

- Obligatory requirements to engage in collaborative decision making in rail traffic operations and to engage in binding performance agreements between all stakeholders in

a (multimodal) rail freight transport. This would require changes to Regulation (EU) No 913/2010 of the European Parliament and of the Council<sup>2</sup> or to Council Directive 92/106/EEC<sup>3</sup>.

- Strategic allocation of rail infrastructure capacity for different types of traffic (i.e. several years in advance), in this case in particular for international rail freight traffic, taking into account the overall needs and requirements from Italy, Austria and Germany, and the alternative road transport transiting the Alps. Currently it is not possible to implement this and it would require changes either to Regulation (EU) No 913/2010 or to Directive 2012/34/EU of the European Parliament and of the Council<sup>4</sup> as regards the management and allocation of infrastructure capacity.
- Capacity management and traffic management at the level of the proposed corridor, e.g. by ensuring governance or appointing a supra-national entity in charge of defining and imposing such rules and procedures in a binding manner.
- Requirements for joint decision-making by rail regulatory bodies as concerns international traffic going beyond the provisions on cooperation between regulatory bodies defined in Article 57 of Directive 2012/34/EU.
- Joint centralised and automated traffic management, including interfaces with interlocking/signalling system, on networks of different rail infrastructure managers, which may require changes to Directive (EU) 2016/798 of the European Parliament and of the Council<sup>5</sup>.

Thus, the actions proposed would be complementary to the ongoing work covering the Munich–Verona Corridor in the context of Scandinavian-Mediterranean rail freight corridor and Scandinavian-Mediterranean core network corridor. It would also complement the “Issues Logbook” initiative of the Commission, which aims to identify interoperability barriers negatively affecting cross-border rail traffic and to address them with solutions, which can be implemented in the short term. This fine-tuning of the approach is required to make the tasks more specific as otherwise the action could overlap with existing legal acts, including notably:

- Regulation (EU) No 913/2010 which establishes rail freight corridors, including a governance structure involving most stakeholders active in international rail freight transport and with some competences in consulting applicants, and basic functions regarding the management of rail capacity and traffic, the coordination between rail and

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<sup>2</sup> Regulation (EU) No 913/2010 of the European Parliament and of the Council of 22 September 2010 concerning a European rail network for competitive freight (OJ L 276, 20.10.2010, p. 22).

<sup>3</sup> Council Directive 92/106/EEC of 7 December 1992 on the establishment of common rules for certain types of combined transport of goods between Member States (OJ L 368, 17.12.1992, p. 38).

<sup>4</sup> Directive 2012/34/EU of the European Parliament and of the Council of 21 November 2012 establishing a single European railway area (OJ L 343, 14.12.2012, p. 32).

<sup>5</sup> Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (OJ L 138, 26.5.2016, p. 102).

terminals and the monitoring of performance of rail freight services.

- Regulation (EU) No 1315/2013 of the European Parliament and of the Council<sup>6</sup> which establishes ‘core network corridors’ covering the most important long-distance flows in the core network and intends to improve cross-border links within the Union. Article 46(2) of that Regulation authorises European Coordinators to set up working groups focusing on modal integration, interoperability and the coordinated development of infrastructure in cross-border sections. Such a working group has already been set up for the Munich–Verona section in the form of the Brenner Corridor Platform and thus cannot be supported through the pilot project.

## 2.4

02.200100.PP02 21 09	Pilot project - IRS Smart Cities project: new railway station concept for green and socially inclusive smart cities
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General description of the contracts envisaged (*study / technical assistance / evaluation / survey / IT / communication services/etc.*)

Study

## Implementation

DG MOVE.C.4

## 2021 specific budget remarks

The pilot project is intended to develop a shared methodology for transforming existing stations, or designing new ones into socio-technical systems operating simultaneously as city’s greening engines for the surrounding environment, and new urban hubs aggregating multiple services fully integrated with energy-efficient and socially- inclusive mobility.

The pilot project is meant to contribute to the achievement of a climate-neutral society, as well as to the implementation of the UN Sustainable Development Goals concerned with sustainable, smart and inclusive cities, transport and infrastructure, resources management, climate mitigation and adaptation, reduction in the emissions of greenhouse gases, health, environmental protection and biodiversity regeneration, sustainable land use, and gender equality. As such it can furthermore contribute to the research and innovation activities of the Shift2Rail Joint Undertaking, or its successor in the context of infrastructure, digital and multimodality.

Railway stations connect multimodal mobility services and the rest of the urban environment. In most cases they also are nodes of the transportation, energy, telecommunications, water distribution and waste disposal infrastructure networks, with a high density of installed technical equipment. As such, they have a big unexploited potential both as new urban vital centres and as installations of advanced engineering

<sup>6</sup> 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).

solutions for environmental protection, sustainable solutions concerned with mobility, collaborative economy, and social services, contributing to pursue the objectives of the European Green Deal in terms of: mobilisation of the industry for a circular economy, clean and affordable energy supply, smart and resource-efficient building, zero urban pollution ambitions, respecting ecosystems and biodiversity, implementing the Farm to Fork Strategy, etc, in organic connection with smart and multimodal mobility (rail, e-mobility, car sharing, bike-sharing, etc.). Moreover, stations can give a response to health crises (e.g. COVID19) and natural disasters (due to climate change), as they can be readapted or converted to temporary reception facilities, shelters, hospitals, and any other typology that needs availability of big spaces.

All these goals will be integrated and achieved within the project proposals developed for stations with a common methodology.

The model is aimed to develop a new concept analysis that should represent a paradigm shift in designing all the social activities connected with the railway stations in all the areas in which they operate, broadening its original purpose and functions as a simple departure/arrival point of rail transportation. The new railway station can be not only a less energy-wasting, less polluting facility, but in fact a greening plant in the city that contributes a net positive balance to the environment.

At the same time, it can become a dense node of economic and social activities inherently integrated with energy- efficient mobility solutions, multiplying opportunities and solutions for economic growth, collaborative economy, and social inclusion.

In order to achieve an adequate level of interoperability of the transportation networks in the Union, a certain degree of standardisation of the essential features of the railway stations is required and, as a consequence, most of the fundamental elements of the railway station design and operation can contribute to deliver innovation to a greater extent. For this reason, the new railway station concept design, operation and management must be conducted according to a common European-wide framework or methodology that, while enabling a sufficient latitude to accommodate specific local conditions or prevailing opportunities, may still guarantee the necessary degree of harmonisation and common objectives.

Furthermore, the Union needs to establish methods and tools to better assess the impacts – in all their dimensions – of innovative patterns affecting urban planning practices and urban mobility in general. A common methodology to streamline and coordinate these instruments will help decision-makers to develop policies in support of the participation from public and private actors to the implementation of innovative and coordinated solutions for mobility. Therefore, the resulting methodology should incorporate business modelling principles, behavioural- economic models and co-design approaches targeted at incorporating the inception into the design of the technical infrastructure. The inclusion of the socio-economic drivers of mobility, climate-friendly and social-inclusive behaviours and businesses will drive and complement the innovation brought in the stations and their surrounding areas, while providing economic actors with incentives for investments at the same time.

Bringing together station managers and railway operators, mayors and local administrations, public and private transport operators, Union institutions, citizens' representative bodies, NGOs, and research institutions around a common plan targeted to the urban environment surrounding and including the public stations will streamline

public interventions and private investments, while providing an institutional framework to the model that will be created.

The pilot project will be developed through the implementation of at least four ‘Living Labs’ in four different Member States. It will follow an applied research pathway mixing fundamental research with the design and creation of new models that would be scalable and applicable to real contexts.

On the one hand, the pilot project’s partners will cooperate in order to know, understand, and explain which operative options can make railway stations and their surrounding neighbourhoods becoming the primary driver of sustainable practices of mobility, logistics and work, and resilient infrastructures able to readapt when necessary. Successively, taking advantage of the outcomes of basic urban research, the project will investigate how stakeholders can fully benefit from the new model proposed which aims to create value for stakeholders and citizens.

Living Labs will be developed in the following way:

(1) Conducting workshops with committed stakeholders to establish a working methodology and management structure for the pilot, and to launch the project co-design activities in open collaboration and interface with the Shift2Rail Joint Undertaking or its successor.

(2) Conducting workshops to assess under-developed railway stations potential as multi-service, mobility-hub, urban greening infrastructures, with respect to their possible contribution to the UN Sustainable Development Goals and the European Green Deal’s objectives.

(3) Developing methodological criteria and defining quantitative and qualitative deliverables for the co-design and the transformation of railway stations into multi-service, mobility-hub, urban greening infrastructures, while ensuring adequate evaluation of the results achieved once the plan is implemented compared to the initial expectations.

(4) An open and constantly upgrading approach to the management of the stations will empower citizens to co-develop alternate mobility solutions for social inclusion, collaborative economy, and e-and smart-mobility and implementing it more flexibly. The coherent adoption of the model should help local and national administrations achieving the following objectives:

- fostering territorial cohesion through public transport and alternative mobility solutions
- decarbonisation of mobility and urban energy sources
- defining mechanisms to ensure implementation of the circular economy principles within the each and every businesses and services operated in station and in uninterrupted continuity with its surrounding environment
- promoting new partnerships, especially between public administrations, large industrial groups, local institutions and SMEs while integrating citizens and collaborative small-sized solutions into the overall planning and policy-making process
- understanding how these infrastructures can be helpful for the community in case of

emergency, sanitary crisis or natural disaster.

(5) Organising a final conference presenting the pilot project's results in every living lab and showcasing the attained models of transformed railway stations.

#### Additional information

While the concept as such is not included in the Shift2Rail (S2R) Programme, there are synergies with ongoing S2R activities, notably TD 3.11 - Future Stations Demonstrator, circular economy, flow management and multimodality (which would connect with Innovation Programme 4). In order to ensure complementarity and avoid duplication of efforts with both S2R and the UIC study, the proposal could focus on the role of stations in light of new emerging policies and challenges, such as the Green Deal and the post-COVID-19 travel patterns and behaviours.

The outcomes of the project may contribute to a European standard approach to smart rail stations (as part of the smart cities) and consequently be a useful input for the successor of Shift2Rail under Horizon Europe. The new concept aims at contributing to make cities more sustainable and address social inclusion issues, ensuring at the same time the highest possible standards in terms of health in the aftermath of the COVID-19 breakout. It is proposed to address the needs of various groups of citizens (including those with reduced mobility) and develop synergies with relevant activities of existing partnerships.

#### 2.5

02.200100.PP02 21 10	Pilot project - Effect of energy efficient and solar power generating vehicles on grid capacity and charging infrastructure
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General description of the contracts envisaged (*study / technical assistance / evaluation / survey / IT / communication services/etc.*)

Study

#### Implementation

DG MOVE.B.4

#### 2021 specific budget remarks

As expanding the charging infrastructure and increasing grid capacity are important issues for the European Green Deal to succeed, this can be improved from the demand side by increasing both the energy efficiency and on-board power generation to vehicles. Study programmes do mention both energy efficiency of vehicles and innovations on grid/charging infrastructure utilising smart charging solutions. However, no studies have linked the combination of energy efficiency on vehicle-level, on-vehicle energy generation and the impact on charging infrastructure and tested this in real-life using pilot projects. The European Green Deal has announced that 1 million charging stations are needed to keep up with the introduction of electric vehicles. Focusing on energy

efficiency and on-board solar power generation might offer less energy demand on this charging infrastructure. Policy can then be adapted to fit this opportunity. Early studies show promising results. An increase of 20% to 40% of the vehicle efficiency for vehicles decreases energy demand of these vehicles by almost 60%. Additionally, a grid operator in the Netherlands has shown that investments in charging infrastructure for electric vehicles might drop by over 30%. This is a result of self-charging energy-efficient vehicles able to charge at a fast charging rate even on 220 – 230 V grids. Energy flow models of research and technology organisation could be used to determine this effect in greater detail.

The goal of this pilot project is to assess the energy efficiency of personal vehicles, public transport vehicles and delivery vehicles (in terms of kilometres driven per kWh consumed), and the potential for on-board solar power generation by experimenting with real-life use cases. This pilot project will be one of the first experiments with on-board solar generation on a larger scale over different modalities and locations. The resulting charging requirements of each vehicle could provide evidence for strengthening Union policy on reducing emissions from transport further and faster. Such adapted policy moreover will stimulate the development of Union value chains for on-board solar power generation, which in turn has the potential to increase employment opportunities.

A comparative study will be conducted on charging needs of high and low energy efficient vehicles. The vehicles aim to have comparable specifications in terms of person capacity, load or volume. Besides energy efficiency, energy generating vehicles and non-energy generating vehicles will be assessed as well. Energy generation potential on vehicles differs per location, therefore different locations in the Union will be evaluated with a special focus on southern and eastern countries in the Union.

Finally, it will be assessed how specifically the quantity and spacing of elements in the charging infrastructure could be decreased. In conclusion, this pilot project should be able to yield insights into the effect of vehicle efficiency and on-board solar power generation which can provide added value to the drafting of Union policies to enable electric vehicles and stimulating Union value chains and employment in this field.

#### Additional information

This proposal can be implemented as in the above ‘2021 specific budget remarks’.