

The Connecting Europe Facility – Digital (#CEF2digital) the EU tool to digitally connect citizens

Fields marked with * are mandatory.

Introduction

The Connecting Europe Facility – Digital (#CEF2digital) - the EU tool to digitally connect citizens

The achievement of the digital single market relies on universal access to reliable, affordable, high and very high capacity networks. The Communication on “Connectivity for a Competitive Digital Single Market – Towards a European Gigabit society” ([the Gigabit Society Strategy](#)) sets out strategic connectivity objectives for 2025, which Member States are working on.

With its proposed budget of 3 billion euro, CEF2 Digital will support the Member States during 2021-2027 to trigger the necessary digital infrastructure investments to reach these strategic objectives. The programme will contribute to a balance between rural and urban developments by complementing the support provided for the deployment of very high capacity networks by other programmes, in particular the European Regional Development Fund, and the InvestEU Programme.

The [draft CEF2 Regulation](#) has been subject to political agreement on its main substantive points between the European Parliament and the Council of the EU. In particular, CEF2 Digital, with grants with different co-funding rates, will enable the Commission to co-fund projects of common interest (PCI) in the area of digital connectivity infrastructure “that are expected to make an important contribution to the Union's strategic connectivity objectives and/or provide the network infrastructure supporting the digital transformation of the economy and society as well as the European Digital Single Market” (Art. 8), such as:

- uninterrupted coverage with 5G systems of all major transport paths, including the trans-European transport networks;
- the deployment of and access to very high-capacity networks, including 5G systems, capable of providing Gigabit connectivity in areas where socio-economic drivers are located;
- the provision of very high-quality local wireless connectivity in local communities that is free of charge and without discriminatory conditions;
- the deployment of new or significant upgrade of existing backbone networks including submarine cables, within and between Member States and between the Union and third countries;

- digital connectivity infrastructure requirements related to cross-border projects in the areas of transport or energy and/or supporting operational digital platforms directly associated to transport or energy infrastructures.

In order to ensure that the implementation of the CEF 2 Digital programme addresses the most urgent strategic needs in the Member States, the Commission seeks the views of all citizens and stakeholders regarding which investments in these different categories should be prioritised, as well as how the programme should best be designed to improve the business case for investments in digital infrastructure deployments, where relevant in synergy with other infrastructure investments.

The Commission is therefore interested in your views about possible strategic co-funding actions that should be supported with priority by CEF2 Digital in 2021-2027, in particular:

- 1. Cross-border 5G corridors along transport routes**
- 2. Connectivity for 5G smart communities in Europe**
- 3. Backbone networks of strategic importance (Terabit connectivity to HPC/ EU cloud federation / Submarine cables)**
 - 3.1 Terabit connectivity for High Performance Computing (HPC)*
 - 3.2 Energy efficient inter-connections of an EU cloud infrastructure federation*
 - 3.3 Submarine cables of strategic importance*
- 4. Synergy actions (Transport – Energy – Digital)**
 - 4.1 Operational Digital Platforms*
 - 4.2 Cross-sector programmes*

The Commission invites citizens, legal entities and public authorities to submit their answers by 11 September 2019. The Commission will assess and summarise the results in a report, which will be made publicly available on the website of the Directorate General for Communications Networks, Content and Technology. The results will also be reflected in a Roadmap for the Implementation of CEF2 Digital in autumn 2019.

Thank you for your contribution!

About you

- * I am giving my contribution as
- Academic/research institution
 - Business association
 - Company/business organisation
 - Consumer organisation
 - EU citizen
 - Environmental organisation
 - Non-EU citizen
 - Non-governmental organisation (NGO)
 - Public authority
 - Trade union
 - Other

* First name

* Surname

* Email (this won't be published)

* Organisation name

255 character(s) maximum

* Language of my contribution

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- Lithuanian
- Maltese
- Polish
- Portuguese
- Romanian
- Slovak
- Slovenian
- Spanish
- Swedish

* Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
-

Medium (50 to 249 employees)

- Large (250 or more)

Transparency register number

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Check if your organisation is on the [transparency register](#). It's a voluntary database for organisations seeking to influence EU decision-making.

* Country of origin

Please add your country of origin, or that of your organisation.

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- Bosnia and Herzegovina
- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- Brunei
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- Burkina Faso
- Burundi
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- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- China
- Christmas Island
- Clipperton
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- Comoros
- Congo
- Cook Islands
- Costa Rica
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- Guyana
- Haiti
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- Nepal
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The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

Anonymous

Only your type of respondent, country of origin and contribution will be published. All other personal details (name, organisation name and size, transparency register number) will not be published.

Public

Your personal details (name, organisation name and size, transparency register number, country of origin) will be published with your contribution.

I agree with the [personal data protection provisions](#)

Do you agree to be contacted by the European Commission services for possible follow-up questions to your response / information provided.

- Yes
 No

1. Cross-border 5G corridors along transport routes

Description of the action:

5G is expected to be a major enabler of connected and automated mobility (CAM) in Europe, for all forms of transport, including roads, railways and inland waterways. Thanks to its ultra-reliability and low latency for the critical exchange of data between any types of vehicles, mobile users, transport infrastructures and core networks, 5G will contribute to enhance road safety, reduce CO2 emissions and traffic congestion, as well as empower innovative digital ecosystems around vehicles. For these reasons, and considering as well the impact of 5G on the competitiveness of the telecom and automotive industries in Europe, the Commission's 5G Action Plan of September 2016 has set as a strategic connectivity objective the deployment of 5G infrastructure along main transport paths in

Europe by 2025. This is part of a broader CAM strategy for investment as part of the 2018 3rd mobility package.

The action foresees support for the deployment of 5G coverage along cross-border transport corridors (road, rail or inland waterways), allowing for 5G-connected mobility between EU Member States. In addition, CEF Transport will invest in automated mobility.

The maximum co-funding rate foreseen is 50%, for actions with a strong cross-border dimension. An additional 10% can be added to the EU funding rates in the case of cross-sector synergy projects (see below “Synergy actions” (Transport – Energy – Digital)).

The draft CEF2 Regulation recognises that actions implementing uninterrupted coverage with 5G systems of all major transport paths, including the trans-European transport networks are among the strategic digital projects of common European interest that can be supported by the programme.

1. Do you agree that the EU should prioritise financial support from the programme for efforts in Member States to improve the business case for investments in such strategic digital infrastructure deployments?

- Yes
- No

2. Are you interested in investing in this area, or otherwise directly involved?

- Yes
- No

3. In which geographic corridor(s) and by when (2021-2027) would your organisation be interested to intervene? Is the corridor on the list of Appendix V of the Regulation? With which role could you participate? How would your investment relate to investments in roads and/or railways under the transport section of CEF?

North Sea - Baltic corridor: we are in a unique position in terms of synergies in cross-border transport and digital infrastructure and subject to financing considerations could implement "backbone" core networking and possibly infrastructure for other related services along the railway and railway infrastructure objects during implementation. In addition 5G may form part of the Future Railway Mobile Communications System (as an evolution from the currently used GSM-R (2.5G)) and so railways are a key sector and potential area for Early Deployments.

4. What are the actors whose involvement you consider essential for the participation in a 5G corridor project? What forms of cooperation among them do you anticipate? Upon completion of such project, under which business model would your entity participate in the value chain of a 5G corridor providing connected and automated driving? What project size do you expect?

Service providers are essential, as are equipment vendors: however, equipment is increasingly available as "open" components to form the network, and collaboration even between competitors is possible. It is also important to ensure any such synergy project cannot be used to enhance or entrench an existing monopoly provider - whether of transport, energy, or digital infrastructure.

We would not expect to participate in the ongoing service, as our role is delivery rather than operations: the operational railway will have infrastructure management body/bodies, and it is expected they would be involved as a dark fibre provider or potentially as a wholesale service provider for transport network. The railway may also be an Early Deployment of the FRMCS standard, using LTE/5G for railway command and control: as this is a "greenfield", that will be a new deployment, and during the planning of that then additional possibilities could emerge.

The project covers three Member States and will have physical interconnection with a fourth.

5. To what extent do you think that more than one network providing uninterrupted 5G services along cross-border sections of corridors could be necessary and can be expected, given that such areas are often rural and generally poorly covered?

Ideally competing networks would be available but in the short term one option would be wholesale connectivity could be provided by a single operator, possibly "sliced" for other commercial operators; a single underlying infrastructure which could then be used to support multiple commercial operators during their rollout phases could be a way to accelerate the introduction of 5G services, especially in more sparsely populated areas. It should also be borne in mind that wholesale transport or dark fibre connectivity could be established by transport / energy corridors (such as Rail Baltica) and this could help with 5G deployment outside larger towns and cities.

6. Given that several national public authorities are imposing certain coverage obligations for major transport paths on telecommunication operators via the conditions of spectrum rights of use, how do you estimate the investment needs on the remaining parts/sections, which are not covered by such obligations? What are the most relevant frequency bands for those latter sections?

We do not believe this question is relevant to our organisation.

7. Which category of use cases or digital services enabled by 5G networks along transport paths do you expect to be most used in the 2021-2026 period?

The initial use cases in transport paths are likely to be passenger usage, freight location/condition tracking and the monitoring of infrastructure. Of those, passenger usage is likely to be the largest consumer of data services, although in time the monitoring of cargo will use increasing amounts (as the networks are deployed and as sensors/nodes become cheaper): the monitoring of fixed infrastructure will increase, but some technologies are better suited to "wired" connections, especially when fibre available alongside the transport corridor. During the development of new transport corridors, small-scale technology demonstrators can be used to attract additional custom for the transport mode (in our case, rail freight), if possible with a focus on areas outside the larger cities.

2. Connectivity for 5G smart communities in Europe

Description of the action:

Europe must seize the countless opportunities offered by the digital transformation everywhere. This requires investing in future-proof infrastructure, including 5G networks, as a prerequisite. An early 5G deployment in urban centres and along the major transport routes are important objectives. However, Member States also need to ensure that digital services become a means to close territorial divides and that all European citizens and business, including those living in rural and remote areas, have equal opportunities to participate in the Digital Single Market and to benefit from modern public services.

Indeed, communities all around Europe consider digital networks as enabling an array of new innovative services that will transform mobility, healthcare, the use of energy, and many other services and sectors, bringing them into the era of the internet of things. Ubiquitous connectivity of 100 Mbps upgradable to Gigabit is therefore increasingly recognised by citizens and businesses as a pre-condition to thrive in the digital future, wherever they live.

Given that the business case for investment in networks depends on economic factors such as population density and income levels, it is imperative to ensure Gigabit connectivity in the first place to all socio-economic engines of digital growth, regardless where they are located (this includes public services, such as schools and hospitals, as well as digitally intensive enterprises, etc.). The availability of such networks will stimulate the use and take-up of innovative online services.

In order to ensure that such services are available locally, CEF Digital will support network deployments to 5G smart communities in Europe by offering targeted co-funding for:

- Gigabit network deployments in areas where socio-economic drivers, such as educational and medical centres, public administration buildings, transport hubs or business parks are located, but where they would only be partly delivered by the market and where they are needed as prerequisite for the deployment of 5G to support innovative smart communities' applications;
- Wireless equipment (Wi-Fi and 5G small cells) in areas with a risk of lagging behind in terms of 5G coverage, to provide communities local free of charge very high quality internet access (e.g. via Wi-Fi networks) and to support the rollout of 5G-based innovative smart communities applications. Local connectivity indeed often relies on the installation of many small wireless access points/small cells.

The maximum co-financing rates for this action range from 30% to 75%: whereas the default rate for connecting households is capped at 30%, deployments to socio-economic drivers can be funded up to 75%. Moreover, specific actions, in continuation of the Wifi4EU programme, can be funded up to 100% when implemented via low value grants. Cross-sector synergy projects can benefit from an additional 10% compared to the maximum applicable funding rate (see below "Synergy actions" (Transport – Energy – Digital)).

The draft CEF2 Regulation recognises that actions supporting the deployment of and access to very high-capacity networks, including 5G systems, capable of providing Gigabit connectivity in areas where socioeconomic drivers are located, as well as the provision of very high-quality local wireless connectivity in local communities that is free of charge and without discriminatory conditions, are among the strategic digital projects of common European interest that can be supported by the programme.

8. Do you agree that the EU should prioritise financial support from the programme for efforts in Member States to improve the business case for investments in such strategic digital infrastructure deployments?

- Yes
- No

9. Are you interested in investing in this area or otherwise directly involved?

- Yes
- No

10. Which other socio-economic drivers – in addition to schools and hospitals – would you prioritise for receiving Gigabit connectivity and why (benefits of services, quality of life, job creation, gaps in your region / country, etc.)?

Key drivers of bandwidth usage identified in studies include industrial automation & utilities, as well as professional services: in the case of utilities, for example, monitoring systems and predictive maintenance could be used to schedule work in less densely-populated areas, leading to cost savings. For professional services, the ability to create more / better options for home working (including possibly job creation) in such areas is also a key opportunity. These could be assisted by using stations as drivers but also other railway elements: for example, if railway communications, monitoring or sensor networks require a powered, connected cabinet at a particular location, then potentially that same location could be used to house network equipment for wholesale access to backbone capacity. With this approach it may become cost effective to view business parks, or even larger industrial facilities as a "base" from which services could be provided, with the proximity to the transport corridor becoming a criteria as well as the services/role of a facility: clearly, the nature of such facilities will vary along any transport or energy corridor.

11. Under which circumstances would you consider that stand-alone deployments to socio-economic drivers (i.e. not involving also deployments for the respective surrounding areas) would be economically reasonable and should be supported from CEF Digital?

Given the nature of our Project, we have the potential to provide fibre connectivity to points along the railway corridor (including locations that may be reserved for future use), and so we would suggest support is made available to provide those points for interconnection even if there is no onward deployment in surrounding areas at this stage. In addition, "spare" fibre capacity should be supported: if large-scale construction throughout a corridor is to take place, it would be sensible to make optimum use of the opportunity to install excess capacity (even if the primary project does not require it, installing and configuring such capacity at the same time will almost certainly be cheaper than adding it later on with a second, separate construction activity).

12. What are in your view the most appropriate safeguards that should be put in place to avoid market distortion, while aiming at quick project selection and deployments of networks that would underpin smart IoT and/or 5G enabled services across EU territories?

We suggest that any supported "first" or "early" deployment is done as a virtualisation infrastructure service provider: commercial offerings can then be launched at different scales to suit the operator, with larger providers able to deploy their own infrastructure but the supported offerings in place to avoid any loss of services in areas that are for example sparsely populated. The VISIP would also create a framework for local businesses to offer services, perhaps in smaller towns or rural areas that are not considered attractive

by large service providers: where appropriate, particularly in underserved rural areas, this model could also allow public sector entities to offer services

In terms of the quick selection of services that could underpin IoT or 5G, we suggest that synergies with energy and transport corridor projects are used as a key selection criteria: if there is going to be large scale disruption and/or construction activities then Digital projects should be implemented during that same "window", and the timing of the transport/energy project can be used to guide rollout.

13. What would be the optimal size of network deployment projects (e.g. in terms of areas, households, number of socio-economic drivers or others) to underpin smart community projects and what will be the most important challenges to ensure availability of digital services on these networks? What project size do you expect?

From the perspective of a transport corridor, this is difficult to assess, however backbone connectivity and virtualisation infrastructure could be put in place, and services allowed to develop according to local conditions. Provided sufficient capacity is available in the backbone link (and this could be promoted by providing financing for the incremental cost of "spare" fibre and duct capacity for the future) then a wide range of project scales (and scopes!) can be supported across the same infrastructure.

14. What business model do you anticipate will be the most prevalent for the deployment of 5G networks supporting the digital transformation of local communities and what barriers / obstacles do you expect for such 5G deployments?

The major obstacles are likely to be a combination: transformative projects are often not financially self-sustaining until a certain critical mass achieved, and as some of the territory we pass through is sparsely populated then this might not be the case for some time, which leads to two different potential obstacles. Firstly, commercial organisations may not view the market as attractive in such areas, and secondly they may wish to use differential charging to cover the additional costs of such deployments (something that could be addressed in our response to question 12): clearly, for some services, such approaches lead to a distortion which governments may not wish to see.

15. What would be the best way, in your view, to ensure synergies and complementarity with other sources of public funding, whether from Member States and/or EU programmes?

We suggest that best way to ensure synergies is to consider the flagship cross-border transport and energy projects, and determine what can be done in alignment with their objectives or to further improve the cost-benefit ratio for such projects - perhaps with a shared implementation phase (thus reducing costs or achieving economies of scale); similarly, on a smaller scale where transport or power links to communities are subject to large-scale maintenance then synergies can be drawn. Synergies and complementarity with other sources of funding could be made easier with joint calls, with specific synergy elements in calls, and perhaps in certain cases with allowing existing coordinating entities to study potential for synergy areas within a current programme. There are also other options, for example allowing external (including commercial) entities to co-finance *specific sections* (such as "last mile" to industrial facilities) of projects: an appropriate mechanism would need to be devised to protect the interests of such investors as well as existing beneficiaries in determining long-term priorities for projects which may cross for example Ministry portfolios. It is also important to note that any such synergy project should not be used to enhance, entrench or protect an existing monopoly provider of services to businesses or consumers - whether of transport, energy, or digital infrastructure - and of course projects should be encouraged (and in some cases it should be made easier) to make use of outputs from Horizon Europe, the various EU joint undertakings and any

appropriate projects/bodies within or across Member States to help generate greater benefits from any action.

3. Backbone networks of strategic importance (Terabit connectivity to HPC/ EU cloud federation / Submarine cables)

3.1 Terabit connectivity for High Performance Computing (HPC)

Description of the action:

The exponential growth of data, combined with increased networking and computing resources and new algorithmic paradigms, such as Artificial Intelligence, is today one of the major drivers of innovations and productivity gains in the global digital economy. Europe's scientific capabilities, industrial competitiveness and sovereignty depend critically on continuous access to world-leading HPC and data technologies and infrastructures to keep pace with the growing demands and complexity of the problems to be solved.

We need a secure digital infrastructure of world-class computing, data and connectivity capacities consistent with the economic importance of Europe, underpinning our Digital Single Market, and making it trustworthy, attracting investments and stimulating economic competitiveness. This infrastructure is essential for processing in Europe the data produced by EU research and industry, with top of the world HPC capabilities that ensure that strategic know-how for innovation and competitiveness stay in the Union.

The EuroHPC Joint Undertaking (EuroHPC JU) has been established to address this situation. The EuroHPC JU gathers the Union and 28 European countries (with the support of two private associations on HPC (ETP4HPC) and Big Data (BDVA)) in a strategic instrument to foster leadership in HPC and in the global digital economy. The EuroHPC JU mission is to develop, deploy, extend and maintain in the Union an integrated world-class supercomputing and data infrastructure and to develop and support a highly competitive and innovative High-Performance Computing ecosystem, for the next generation exascale supercomputing era and beyond. This world-leading infrastructure will be deployed across many Member States, and the most advanced and high-speed connectivity capabilities will be critical to fully maximise its huge computing potential.

CEF Digital support will complement European high performance computing resources with adequate terabit-capacity connections where these would not be provided on time, or at all, by the market. Eligible actions include the deployment of new or significant upgrade of existing backbone networks, within and between Member States.

The maximum co-funding rate is 30% for actions within a Member State and 50% for cross-border actions. An additional 10% can be added to the EU funding rates in the case of cross-sector synergy projects (see below “Synergy actions” (Transport – Energy – Digital)).

The draft CEF2 Regulation recognises that actions supporting deployment of new or significant upgrade of existing backbone networks, including submarine cables, within and between Member States and between the Union and third countries, are among the strategic digital projects of common European interest that can be supported by the programme.

16. Do you agree that the EU should prioritise financial support from the programme for efforts in Member States to improve the business case for investments in such strategic digital infrastructure deployments?

- Yes
- No

17. Are you interested in investments in this area or otherwise directly involved?

- Yes
- No

18. Which investments in high-speed data networks are required beyond the current state-of-the art to reap the benefits of the future European HPC infrastructure and ecosystem?

When other large-scale projects are developing physical infrastructure which crosses several Member States, investment should be made in future capacity (for example by installing additional optical fibre capacity, possibly with CEF Digital covering the incremental costs): efforts linked to other projects could also be developed - for example, facilitating use of HPC infrastructure by transport/energy infrastructure managers, or connections to other socio-economic drivers. The use of open systems designs and interfaces, rather than vendor-specific mechanisms, should be encouraged, as this could help create opportunities for local ecosystems to develop along cross-border corridors.

19. What is the need and level of EU support (to address market failure) and what form should this support take (grant, loan, anchor customer, etc...)?

If the infrastructure is an addition to an existing project, the support required is likely to be lower; acting as an anchor tenant may be sufficient to justify Member State or private funding for remaining costs. This could be in the form of connecting existing HPC facilities or possibly connecting universities/research establishments - the organisation concerned could then share some of the effort in a joint project.

20. What would be the main characteristics of the investment project in which you would be interested in co-investing, in terms of project size and cost, capacity, network segments, location (cross-border, or national access backbone), timing, connection of commercial data centres to HPC, etc.?

We are implementing a cross-border transport corridor, and so any investment would have to be in the form of synergies with that: we could however incorporate a cross-border fibre backbone through Estonia, Latvia, Lithuania and into Poland as an activity (subject to approval), as the coordinating body is already in place (it would may be advisable to add mechanisms to ensure any funding suitably "ring-fenced").

21. What would be the business model/rationale that would make your organization interested in applying for co-investing in such a project (collateral benefits, opportunities for new services, etc.)?

We are the project Coordinator for a transport project which we believe has clear synergies with digital infrastructure, rather than an investor.

3.2 Energy efficient inter-connections of an EU cloud infrastructure federation

Description of the action:

The imperative to sustainably and strategically manage ever-growing energy-hungry data flows across the EU in the policy context of the Free Flow of Non-Personal Data EU Regulation and the impacts of the ‘US Cloud Act’ on the European economy and society call for targeted European strategic investments. The growing demand for highly specialised and tailor-made cloud products and services from European industrial sectors to enhance their competitiveness in the digital age and the critical role of cloud infrastructures to enable a swift roll-out of novel technologies such as AI, blockchain and IoT, reinforce this investment imperative.

European investments are thus of utmost importance to foster the deployment of a competitive, energy efficient and secure European supply of interconnected cloud infrastructures (the ‘Federation’). It will support companies to operate at scale across the whole European single market, enable responsible free flow of data and, ultimately, contribute to building the ‘next generation’ European competitive advantage in digital infrastructures in the global economy.

Finally, companies and public entities are not yet fully taking advantage of the socio-economic potential that cloud computing offers as an enabler. Cloud uptake is at an average of 26% among European companies, with large discrepancies among Member States, companies and sectors of the economy, with the public sector using in average 4 times less cloud computing than the private sector. EU strategic investments should thus also stimulate cloud uptake among the public sector to deliver better services of general public interest across the EU. This can be achieved by investing in interconnecting existing cloud infrastructures of public administrations across the EU territory.

The action therefore foresees support for pan-European, energy efficient, cross-border interconnections of European cloud infrastructures of strategic importance through backbone networks and middlewares to provide the necessary scale to foster the competitiveness of European companies; optimise energy consumption deriving from data flows and enable a swifter cloud uptake among the public sector.

The maximum co-funding rate is 50% for cross-border actions. An additional 10% can be added to the EU funding rates in the case of cross-sector synergy projects (see below “Synergy actions” (Transport – Energy – Digital)).

The draft CEF2 Regulation recognises that actions supporting deployment of new or significant upgrade of existing backbone networks including submarine cables, within and between Member States and between the Union and third countries, are among the strategic digital projects of common European interest that can be supported by the programme.

22. Do you agree that the EU should prioritise financial support from the programme for efforts in Member States to improve the business case for investments in such strategic digital infrastructure deployments?

- Yes
- No

23. Are you interested in investing in this area or otherwise directly involved?

- Yes
- No

24. The scope of the action only targets the interconnection of cloud infrastructures that are cross-border across the EU territory to achieve economies of scale and energy efficiency of data flows. Is there any other rationale to support this action in a cross-border setting?

Beyond economies of scale and energy efficiency, we believe that such interconnections can help with resilience and stability of access to services in underserved areas.

25. Which are the three most accurate key performance indicators to measure energy efficiency of cloud data flows in the context of this initiative?

We do not believe our organisation is the most suitable type to answer this question.

26. Who should be the main beneficiaries of the grant? What project size would do you expect? Could you provide a cost breakdown over the 7 years?

We do not believe our organisation is the most suitable type to answer in this specific case, but a single vehicle for cross-border projects offers clear scope for efficiencies and cost reduction, enabling improved delivery of such projects.

27. Which aspects and/or indicators would you consider most suitable for assessing the activity's performance against completed tasks?

We do not believe our organisation is the most suitable type to answer this question.

3.3 Submarine cables of strategic importance

Description of the action:

Adequate and future oriented digital connectivity throughout the territory of the EU is one of the prerequisites for a fully functional Digital Single Market and for Europe-wide economic and social cohesion and strategic autonomy.

Submarine cables are the essential element in ensuring high capacity and high performance (resilience, security, redundancy, latency) connectivity throughout the territory of the European Union, including island states, outermost regions, overseas countries and territories, or international connectivity of strategic importance between the EU and specific international hubs.

CEF will support “the deployment of new or significant upgrade of existing backbone networks, including submarine cables, within and between Member States and between the Union and third countries”.

The objective of the action is to fill in the missing links contributing to increased capacity, resilience and redundancy of the EU digital communications infrastructure.

The maximum co-funding rate is 50% for cross-border actions. An additional 10% can be added to the EU funding rates in the case of cross-sector synergy projects (see below “Synergy actions” (Transport – Energy – Digital)). Specific co-financing rates of up to 70% may apply for actions located in outermost regions.

The draft CEF2 Regulation recognises that actions supporting deployment of new or significant upgrade of existing backbone networks including submarine cables, within and between Member States and between the Union and third countries, are among the strategic digital projects of common European interest that can be supported by the programme.

28. Do you agree that the EU should prioritise financial support from the programme for efforts in Member States to improve the business case for investments in such strategic digital infrastructure deployments?

- Yes
- No

29. Are you interested in investing in this area or otherwise directly involved?

- Yes
- No

4. Synergy actions (Transport – Energy – Digital)

4.1 Operational Digital Platforms

Description of the action:

Support operational digital platforms directly associated to transport or energy infrastructures. Operational digital platforms are physical and virtual ICT resources that support the flow, storage, processing and analysis of transport or energy infrastructure data, e.g. an EU platform connecting cross-border data centres and the smart grids, a renewable energy availability platform, a cybersecurity platform for CAM, etc. These platforms operate on top of the communication infrastructure. They include hardware (sensors, actuators, servers, storage subsystems, and networking devices like switches, routers and firewalls) and software (e.g. data bases, analytics, simulation tools).

The maximum co-funding rate is 50% for cross-border actions. An additional 10% can be added to the EU funding rates in the case of cross-sector synergy.

The draft CEF2 Regulation recognises that actions implementing digital connectivity infrastructure requirements related to cross-border projects in the areas of transport or energy and/or supporting

operational digital platforms directly associated to transport or energy infrastructures, are among the strategic digital projects of common European interest that can be supported by the programme.

34. Do you agree that the EU should prioritise financial support from the programme for efforts in Member States to improve the business case for investments in such strategic digital infrastructure deployments?

- Yes
- No

35. Are you interested in investing in operational digital platforms contributing to the digitalisation of energy or transport or otherwise directly involved?

- Yes
- No

36. How do you think operational digital platforms will be best achieved?

Where possible, as synergy actions to the implementation of transport or energy projects, starting during the detailed design phase of those projects and providing continuity through to operational phase. To support the implementation of operational digital platforms, the underlying infrastructure projects should be permitted to deploy relevant systems required (over and above "basic" functionality of the transport/energy project) with co-financing available for the additional equipment and effort. It should be recognised that in some cases an energy or transport ministry may not be the most appropriate choice as a sole beneficiary of such actions, especially where an operational digital platform can spur innovation and business creation that crosses "traditional" boundaries. To maximise the opportunities created by such developments, hardware and software standards should be open, allowing all sizes of organisations to become involved and not only large vendors and typical suppliers; to minimise risks when co-developing such platforms with the energy or transport infrastructure, there should be a co-ordinated approach (preferably but not necessarily a single Coordinator, depending on whether that Coordinator has sufficient flexibility to seek the best outcomes for the long term).

37. Which is the business model/rationale that would make your organization applying for a operational digital platforms project?

We are the project Coordinator for a transport project which we believe has clear synergies with operational digital platforms, and would seek partners for such projects (subject to specific objectives of a project or platform). In general, we believe it would be simpler if eligibility for CEF Transport, CEF Energy and CEF Digital are linked - an organisation eligible for one should be able to seek synergies, and this should be a "default" position: operational digital platforms can have significant value-added benefits for transport or energy projects, and a Coordinator may well be in the best position to establish an operational digital platform for a cross-border project and seek such benefits.

38. Who would be the beneficiaries of the grant (consortium members)? What project size do you expect?

If undertaken as part of a larger infrastructure project, the beneficiary should be the Coordinator (if one exists), or a special-purpose vehicle for the synergy elements: this could/should include commercial partners and preferably regional/local businesses from the Member States involved in the larger project. If organised as a consortium, project delivery organisations should be able to join as equal parties, or to seek a coordinating role. It should also be a protected budget such that the wider project cannot access funds intended for synergy elements, and if part of the intention of the operational platform is to promote innovation

and the development of new/growing businesses then the Member State involvement should be from that ministry, rather than focussed solely on energy or transport sectors respectively. It is also important to ensure any such synergy project cannot be used to enhance or entrench an existing monopoly provider - whether of transport, energy, or digital infrastructure.

It is difficult to estimate the size of such projects without more clarity on specific objectives of forthcoming transport / energy calls as there is significant scope for overlap: however, some elements of the "main" project (transport / energy) can almost certainly be managed in such a way as to enhance opportunities for operational platforms. For example, in rail transport, a digital operational platform for coordinating freight transport can help create opportunities for a "virtual" transport operator or Mobility as a Service actor for freight services."

39. What would be the expected impact of such deployment? Would you foresee other collateral benefits of this action, beyond the network infrastructure deployment, like opportunities for offering new services or new business models, etc...?

There are several areas where benefits beyond the infrastructure deployment are likely, such as the ability to coordinate future cross-border developments, provide more accurate simulations for potential projects based on "ground truth" data (as well as surveys or models), and to provide training sets for machine learning (eg for the management of disruptions, or the planning of renewals). In addition, an operational digital platform "on top of" a transport corridor, particularly for freight, could enable easier access to single window processing systems and data, and potentially access to unified "systems of record" (whether databases or blockchain) that could then be used by tax/customs authorities across Member States. Another example would be to enable an operational digital platform to access wagon/locomotive registration, ownership, history and cargo data to enable updates during an incident, or to record any incident which may affect either the future use or the maintenance required: again, this could be a cross-border effort, with safety-related information shared but commercially-sensitive areas protected. New services could be developed using such data, and existing companies may be able to expand existing offerings; vehicle manufacturers and operators could have the same data about incidents, with greater flexibility in choosing maintenance services /companies according to the current location (reducing any requirement for a "return to base" for maintenance, thus increasing flexibility for operators and customers).

4.2 Cross-sector programmes

Description of the action:

The future needs for decarbonisation and digitalisation of the European Union economy will imply a growing convergence of the transport, energy and digital sectors. Synergies between the three sectors should thus be harnessed to the full extent, maximising the effectiveness and efficiency of EU support. The ongoing CEF programme has shown that several potential synergies among the three sectors exist but that a systematic framing and inclusion in the financing work programmes has not been done. Synergies have been exploited by projects by default, but they have not been programmed by design. In order to capture those synergies and provide them with adequate funding for the necessary intervention, the newly proposed CEF has a dedicated 'synergy pillar'.

CEF Digital is particularly apt to be part of synergies activities due to its pervasive and underpinning nature. Examples of synergy areas include connected and autonomous mobility, clean mobility based on alternative fuels, energy storage and smart grids, cross-border cooperation in the area of renewable

energy, green ICT, including data centres. This will support, among other priorities, all connectivity aspects serving the projects of common interest identified in this pillar as well as the cybersecurity-specific aspects related to the security of critical infrastructures.

Actions contributing simultaneously to the achievement of one or more objectives of at least two sectors shall be eligible to receive Union financial assistance under this Regulation. An additional 10% can be added to the EU funding rates in the case of such cross-sector synergy projects.

Furthermore, within each of the transport, energy or digital sectors, actions may include synergetic elements relating with any of the other two sectors, provided that the cost of these synergetic elements does not exceed 20% of the total eligible costs of the action, and allow to significantly improve the socio-economic, climate or environmental benefits of the action.

40. Do you agree that the EU should prioritise financial support from the programme for efforts in Member States to improve the business case for investments in such strategic digital infrastructure deployments?

- Yes
- No

41. Are you interested in investing in synergy projects or otherwise directly involved?

- Yes
- No

42. What kind of synergy projects, in conjunction with the other parts of the CEF on Energy and Transport, are you interested in and what would be the best way support them (via joint calls, coordinated calls, others)?

Joint or coordinated calls would be interesting, as would a specific call for existing cross-border Energy or Transport projects which have clear synergies with an infrastructure corridor. It would be of particular interest to see calls which allow for current projects to be extended into digital infrastructure and operational platforms, leveraging existing co-ordination and work-to-date and avoiding duplication or overheads: it possible that such eligibility criteria changes for a project or grant agreement may also require changes in project structure to ensure suitable oversight in place for the altered/extended overall goals.

43. What should be the fundamental aspects and/or indicators for assessing a synergies project performance against completed tasks?

The synergy element itself should be monitored: as well as the usual metrics one would apply to for example a backbone network deployment, the effective savings compared with two independent activities should be considered an important metric.

44. Who should be the beneficiaries of the grant (consortium members)? What project size do you expect?

Where there is already a Coordinator for the existing project, then either that entity or an SPV setup including that entity should be a beneficiary: the selection of other beneficiaries should depend on the focus of those organisations (for example, a transport-only organisation would quite possibly be less appropriate than one which includes digital infrastructure, innovation or business promotion). It is also important to

ensure any such synergy project cannot be used to enhance or entrench an existing monopoly provider - whether of transport, energy, or digital infrastructure.

Contact

EC-CEF2digital@ec.europa.eu