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REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Progress report on the implementation of the 2021-2027 Connecting Europe Facility for the years 2021-2024

I. Introduction

Article 22(4) of Regulation (EU) 2021/1153 establishing the Connecting Europe Facility (CEF) for the 2021-2027 period[1] requires the Commission to present progress reports that include information on the implementation of the CEF and clarify whether the different sectors are on track. The CEF Regulation was adopted in July 2021, six months after the start of the 2021-2027 Multiannual Financial Framework (MFF), and this first progress report will cover the years 2021-2024.

The Connecting Europe Facility was set up to build, develop, modernise and complete the trans-European networks in the transport, energy and digital sectors. Seamless cross-border connectivity is a necessary condition for the good functioning of the EU's single market. It fosters greater economic, social and territorial cohesion and contributes to the EU achieving the long-term decarbonisation commitments of the European Green Deal. The current programme is the successor of the CEF 2014-2020 programme (CEF1) under the previous MFF. The financial budget for implementing the CEF 2021-2027 programme (CEF2) is EUR 33.7 billion.

The CEF is a centrally-managed instrument. It is implemented with the help of the European Climate, Infrastructure and Environment Executive Agency (CINEA) for the transport and energy sectors, and with the help of the European Health and Digital Executive Agency (HaDEA) for the digital sector. It is based on competition between projects submitted by project promoters like infrastructure managers or private companies during the regular CEF calls for proposals. This competition ensures high quality in the preparation of the projects and pressure for their timely delivery. This governance model guarantees CEF funds serve the priorities laid down in the Regulation. The CEF is implemented through multiannual work programmes specifying the timetable for calls for proposals, their topics, indicative budget, and selection and award criteria.

Transport:

For the **transport** sector, the CEF supports infrastructure projects of common interest related to the completion and modernisation of the trans-European transport network (TEN-T) to help develop an efficient, interconnected and multimodal trans-European transport network and infrastructure for smart, interoperable, sustainable, inclusive, accessible, safe and secure mobility. The CEF also aims to adapt parts of the TEN-T for dual-use transport infrastructure in order to improve both civilian and military mobility. The budget allocated to the CEF Transport strand for 2021-2027 amounts to EUR 25.8 billion. A total of EUR 11.3 billion is earmarked for countries eligible to receive support from the Cohesion Fund and EUR 1.7 billion for dual-use military mobility projects.

The CEF Transport multiannual work programme, adopted in August 2021[2] and amended in July 2023[3], covers the annual calls for proposals from 2021 to 2024. Because of the high

[1] Regulation (EU) 2021/1153 of the European Parliament and of the Council of 7 July 2021 establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014 (Text with EEA relevance) OJ L 249, 14.7.2021, p. 38-81.

[2] Commission Implementing Decision C(2021) 5763 final of 5 August 2021 on the financing of the Connecting Europe Facility – Transport sector and the adoption of the work programme for 2021-2027.

oversubscription of these calls, the maturity of projects and the rising inflation after Russia's invasion of Ukraine, the amendment of the multiannual work programme allowed to frontload all the available budget under the current MFF to the CEF Transport calls 2023 and 2024.

Energy:

The CEF strand dedicated to the energy sector (**CEF Energy**) aims to develop projects of common interest and projects of mutual interest under the trans-European networks for Energy (TEN-E) policy[4] in order to further integrate the internal energy market, increase interoperability of networks across borders and sectors, facilitate decarbonisation of the economy, and to ensure security of supply. CEF Energy should also facilitate cross-border energy cooperation, including for renewable energy projects. CEF Energy has a budget of EUR 5.8 billion for 2021-2027.

The first multiannual work programme for CEF Energy was adopted in August 2021[5]. It was amended in October 2022[6] in the wake of Russia's war of aggression against Ukraine to provide technical assistance for additional studies necessary for accelerating the synchronisation of the electricity system of the Baltic States with the continental European network[7].

The revised Regulation on trans-European energy infrastructure (TEN-E)[8] entered into force in 2022. It lays down guidelines for the trans-European energy network policy and the selection procedure for projects of common interest (PCIs) within the EU and projects of mutual interest (PMIs) with non-EU countries[9]. These infrastructure PCIs and PMIs are one of the two categories of projects that are eligible for CEF Energy funding (the other category being cross-border projects in the field of renewable energy).

This revision aligned the TEN-E Regulation with the EU climate neutrality objective for 2050, restricting the eligibility of gas infrastructure projects to those needed to end the energy isolation of Cyprus and Malta. It also introduced new project categories: offshore electricity grids, hydrogen projects and electrolysers. In light of the revision, a new PCI and PMI list

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[3] Commission Implementing Decision (2023) 4886 final of 25 August 2023 amending Implementing Decision C(2021) 5763 final on the financing of the Connecting Europe Facility – Transport sector and the adoption of the work programme for 2021-2027.

[4] Defined in Regulation (EU) 2022/869 of the European Parliament and of the Council of 30 May 2022 on guidelines for trans-European energy infrastructure, OJ L 152, 3.6.2022, p. 45-102.

[5] Commission Implementing Decision (2021) 5791 final of 6 August 2021 on the financing of the energy sector under the Connecting Europe Facility and the adoption of the multiannual work programme for the period 2021-2027.

[6] Commission Implementing Decision (2022) 7393 final of 13 October 2022 amending Implementing Decision C(2021) 5791 final on the financing of the energy sector under the Connecting Europe Facility and the adoption of the multiannual work programme for the period 2021-2027.

[7] See: Funding for projects of common interest (europa.eu).

[8] Regulation (EU) 2022/869 of the European Parliament and of the Council of 30 May 2022 on guidelines for trans-European energy infrastructure, amending Regulations (EC) No 715/2009, (EU) 2019/942 and (EU) 2019/943 and Directives 2009/73/EC and (EU) 2019/944, and repealing Regulation (EU) No 347/2013, OJ L 152, 3.6.2022, p. 45-102.

[9] PMIs were introduced by the revision of the TEN-E Regulation in 2022 and first eligible to apply for CEF Energy in 2024.

was adopted in November 2023, identifying the selected projects in the new categories and making them eligible to apply for the CEF as of 2024[10].

A new multiannual work programme for 2024-2027 was adopted in February 2024[11].

Digital:

With a budget of around EUR 1.6 billion, the objectives of the **CEF Digital** sector are to contribute to the deployment of safe and secure very high-capacity digital networks and 5G systems, to increase the resilience and capacity of the digital backbone networks on EU territories by linking them to neighbouring territories and to foster the digitalisation of transport and energy networks. CEF Digital (2021-2027) has different objectives and a greater budget than its predecessor CEF Telecom (2014-2020). CEF Digital focuses on grants for the deployment of digital connectivity infrastructure of pan-European relevance, while CEF Telecom had allocated EUR 117 million to financial instruments supporting broadband infrastructure deployment, EUR 130 million to WiFi4EU, and the rest of the budget to digital services (around EUR 900 million).

The first CEF Digital multiannual work programme, covering the calls for 2021-2023, was adopted in December 2021[12] and amended in April 2023[13] to take account of changes in stakeholder preparedness and demand and the latest developments in policy priorities. The second CEF Digital multiannual work programme (2024-2027) was adopted in October 2024[14].

II. Calls for proposals from 2021 to 2024

Transport:

CEF Transport is mainly allocated through yearly calls for proposals. So far three yearly general and cohesion calls have been launched and concluded, with an available budget of EUR 19 billion. The envelope for military mobility (EUR 1.7 billion) was allocated in its entirety in three calls between 2021 and 2023. The last call for the general and cohesion

[10] Commission Delegated Regulation (EU) 2024/1041 of 28 November 2023 amending Regulation (EU) 2022/869 of the European Parliament and of the Council as regards the Union list of projects of common interest and projects of mutual interest, OJ L, 2024/1041, 8.4.2024.

[11] Annex to Commission Implementing Decision (2024) 482 final of 1 February 2024 amending the Commission Implementing Decision C(2022) 7393 on the financing of the energy sector under the Connecting Europe Facility and on the adoption of the multiannual work programme for the period 2021-2027.

[12] Annex to Commission Implementing Decision (2021) 9463 final of 16 December 2021 on the financing of the Connecting Europe Facility – Digital sector and the adoption of the multiannual work programme for 2021-2025. Multiannual work programme for 2021-2023 - Connecting Europe Facility - Digital | Shaping Europe's digital future.

[13] Annex to Commission Implementing Decision (2023) 2533 final of 19 April 2023 amending Implementing Decision C(2021) 9463 on the financing of the Connecting Europe Facility – Digital sector and the adoption of the multiannual work programme for 2021-2025. Multiannual work programme for 2021-2023 - Connecting Europe Facility - Digital | Shaping Europe's digital future.

[14] Annex to Commission Implementing Decision (2024) 6891 of 9 October 2024 on the financing of the Connecting Europe Facility – Digital sector and the adoption of the multiannual work programme for 2024-2027.

envelope (EUR 2.5 billion) closed in January 2025 and the evaluation is ongoing. It was the first call based on the revised TEN-T Regulation[15] that entered into force in 2024.

The response to the calls has shown strong interest from project promoters, with oversubscription rates going up to almost three times the available budget. The unprovoked Russian war of aggression against Ukraine also revealed the need to support the development of civilian-military transport infrastructure to tackle the consequences of the new geopolitical situation. The impact of the increased prices for energy and raw materials, and the lack of labour force led to further funding needs. In this context the Commission, in agreement with the CEF Committee, made use of the flexibility provided within the multiannual work programme for the 2021 and 2022 calls (awarding additional funds of up to 20% of the amount indicated in the initial work programme). Moreover, the CEF 2021-2027 multiannual work programme was amended in July 2023 to further frontload all the available budget under the current MFF to the CEF Transport calls for proposals for 2023 and 2024.

Part of the CEF Transport budget is allocated to the **Alternative Fuels Infrastructure Facility** (AFIF), which was set up as a blending instrument combining CEF grants with financial instruments provided by national promotional or commercial banks. With a budget of EUR 2.3 billion, the AFIF is dedicated to infrastructure for alternative fuels like electric charging points, shore-side electricity for ships at berth, hydrogen refuelling stations etc. The AFIF 2021 rolling call for proposals (with five cut-off dates) closed at the end of 2023.

The second AFIF rolling call with the remaining budget of EUR 1 billion was launched in February 2024, with three cut-off dates every six months until the beginning of 2026. The first cut-off date was September 2024. For this cut-off, EUR 421 million were awarded to 39 selected proposals.

Table 1: ***CEF Transport calls for proposals 2021-2023***

	Proposals		Budget			Oversubscription rate*
Envelope	**Eligible**	**Successful**	**Indicative**	**Requested**	**Allocated**	
General	909	299	8.5 billion	30.7 billion	9.5 billion	3.6
Cohesion	214	109	8.8 billion	19.6 billion	9 billion	2.2
AFIF	191	167	1.9 billion	2 billion	1.7 billion	1
Military mobility	186	95	1.7 billion	5 billion	1.7 billion	2.9
Grand total	1 454	631	20.3 billion	56.8 billion	21.5 billion	2.8

(*) Oversubscription rate: requested funding divided by the call's indicative budget.

Energy:

The **CEF Energy** budget is allocated through different calls: (i) the call for energy infrastructure projects (originally only for PCIs, but PMIs have been eligible since 2024), and (ii) the calls for cross-border cooperation in renewable energy (CB RES), which include a call for preparatory studies and a call for technical studies and works.

[15] Regulation (EU) 2024/1679 of the European Parliament and of the Council of 13 June 2024 on Union guidelines for the development of the trans-European transport network, amending Regulations (EU) 2021/1153 and (EU) No 913/2010 and repealing Regulation (EU) No 1315/2013, OJ L, 2024/1679, 28.6.2024.

The CEF PCI call has taken place yearly, with an indicative budget of EUR 785 million for 2021, EUR 800 million for 2022, EUR 750 million for 2023 and EUR 850 million for 2024. The CEF PCI calls have registered high subscription rates and resulted in grants worth 95% of the calls' indicative budgets awarded to suitable funding proposals.

Table 2: ***CEF Energy PCI calls 2021-2024***

	Proposals		Budget			Oversubscription rate*
Year	Eligible	Successful	Indicative	Requested	Allocated	
2021	11	5	785 million	1.3 billion	1 billion	1.66
2022	19	8	800 million	1.3 billion	601 million	1.68
2023	11	8	750 million	1.3 billion	566 million	1.67
2024	70	41	850 million	3.1 billion	1.25 billion	3.67
Grand total	111	21	3.2 billion	7 billion	3.5 billion	2.20

(*) Oversubscription rate: requested funding divided by the call's indicative budget.

The 2021 call allocated a higher amount than initially envisioned in the call's indicative budget. While the subsequent calls for proposals in 2022 and 2023 were oversubscribed, the Commission allocated slightly lower amounts than the initial call budgets. This is due to the strict selection of projects taking into account the maturity and hence the likelihood of their realisation, the relevance of proposals submitted with regard to the award criteria, and the justification of funding needs (existence of a financing gap that could not be closed without CEF funding).

The 2024 call, with an indicative budget of EUR 850 million, opened in April 2024 and closed in October 2024, resulting in the allocation of EUR 1 250 million to 41 of the 70 eligible proposals.

Cross-border renewable energy calls (CB RES)

Five **CB RES** calls have been organised since 2021: three calls for preparatory studies (2021, 2022, 2023) and two calls for technical studies and works (2022, 2023). For preparatory studies, the first call had a rather low subscription rate, related to the novelty of the programme window. The funding ratio significantly improved in the next two years, although it is still modest, reflecting the process of building up a pipeline of projects that fit the criteria.

Table 3: ***CEF Energy CB RES calls 2021-2023***

	Proposals		Budget			Oversubscription rate*
Year	Eligible	Successful	Indicative	Requested	Allocated	
2021	3	2	1 million	473 944	298 944	0.5
2022	5	3	31 million	44 million	22 million	1.42
2023	10	9	51 million	74 million	68 million	1.45
Grand total	18	14	83 million	118 million	91 million	1.43

(*) Oversubscription rate: requested funding divided by the call's indicative budget.

A third CB RES call for technical studies and works, with an indicative budget of EUR 80 million, opened in October 2024 and closed in January 2025. The CB RES calls for preparatory studies were discontinued in 2024.

Digital:

The first three calls (2021, 2022, 2023) covered the topics of backbone connectivity for Digital Global Gateways, 5G and Edge Cloud for Smart Communities, 5G coverage along transport corridors and backbone networks for pan-European cloud federations. Those calls revealed high demand for certain topics (submarine cables), and lower demand for others (such as 5G corridors, due to current lack of market readiness). This led to dynamic adaptation of the work programme and of resource allocation by focusing resources on resilient, high-capacity and sovereign connectivity within the EU and internationally. This was valuable input for the second CEF Digital work programme (2024-2027).

Table 4: ***CEF Digital calls 2021-2023***

	Proposals		Budget			Oversubscription rate*
Year	Eligible	Successful	Indicative	Requested	Allocated	
2021	51	38	258 million	555 million	151 million	2.15
2022	63	38	277 million	923 million	260 million	3.33
2023	70	52	241 million	578 million	273 million	2.39
Grand total	184	128	776 million	2.056 billion	684 million	2.64

(*) Oversubscription rate: requested funding divided by the call's indicative budget.

III. Main areas for investments

Transport:

Under Article 3(2)(a)(i) of the CEF Regulation, **CEF Transport** must contribute to the development of an efficient, interconnected and multimodal trans-European transport network and of infrastructure for smart, interoperable, sustainable, inclusive, accessible, safe and secure mobility.

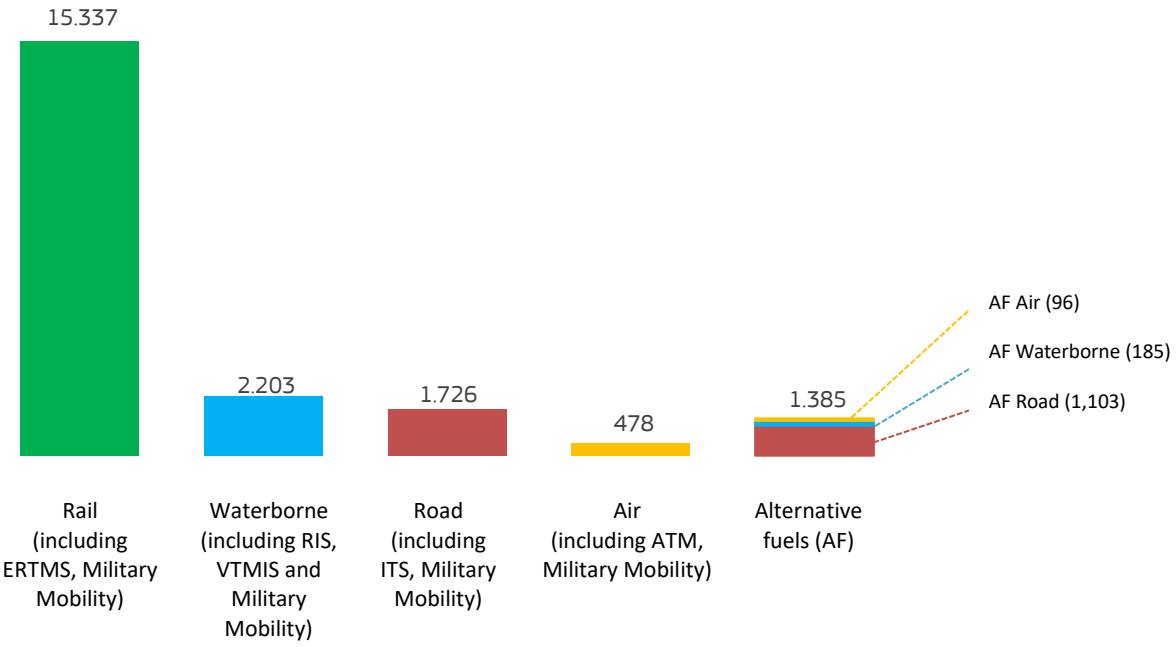
Article 4(1) of this Regulation states that the CEF must contribute 60% of its financial budget to **climate objectives**. CEF Transport has exceeded this target since 79% of its funding is dedicated to sustainable transport. It has invested in electrified railway infrastructure including associated signalling subsystems (ERTMS), in inland waterways and multimodal transport, and in the deployment of infrastructure for zero-emission vehicles. The CEF is also funding compensatory measures for infrastructure projects (reforestation, specific infrastructure allowing natural habitat continuity or corridors for the safe crossing of animals). Furthermore, the 2023 call for proposals introduced an element of 'climate proofing' that integrates climate change mitigation and adaptation measures in the development of infrastructure projects.

Investments per transport mode

The CEF programme has financed European transport infrastructure with more than EUR 21 billion between 2021 and 2024. The bulk of this investment is in **rail** projects, which received more than EUR 15 billion. Investments in this category range from the construction and upgrade of railway tracks to the deployment of the European railway traffic management system (ERTMS).

Additionally, CEF Transport supports improvements in **waterborne** transport, with more than EUR 2 billion allocated to maritime and inland ports, inland waterways, digitalisation (vessel traffic monitoring and information systems - VTMIS and river information services - RIS), and terminal upgrades. CEF Transport also funds **road** projects, such as constructing and upgrading TEN-T roads, and the development of safe and secure parking areas and intelligent transport systems (ITS). Under **air** transport, CEF finances air traffic management (single European sky air traffic management research - SESAR) and airport upgrades (under military mobility). Furthermore, CEF Transport supports infrastructure improvements across all modes to facilitate the mobility of military assets. Finally, EUR 1.38 billion is allocated to **alternative fuel infrastructure**, the largest share going to road vehicle charging, followed by vessels and stationary aircrafts.

Table 5: ***CEF Transport investments per mode (2021-2024, EUR million)***[16]



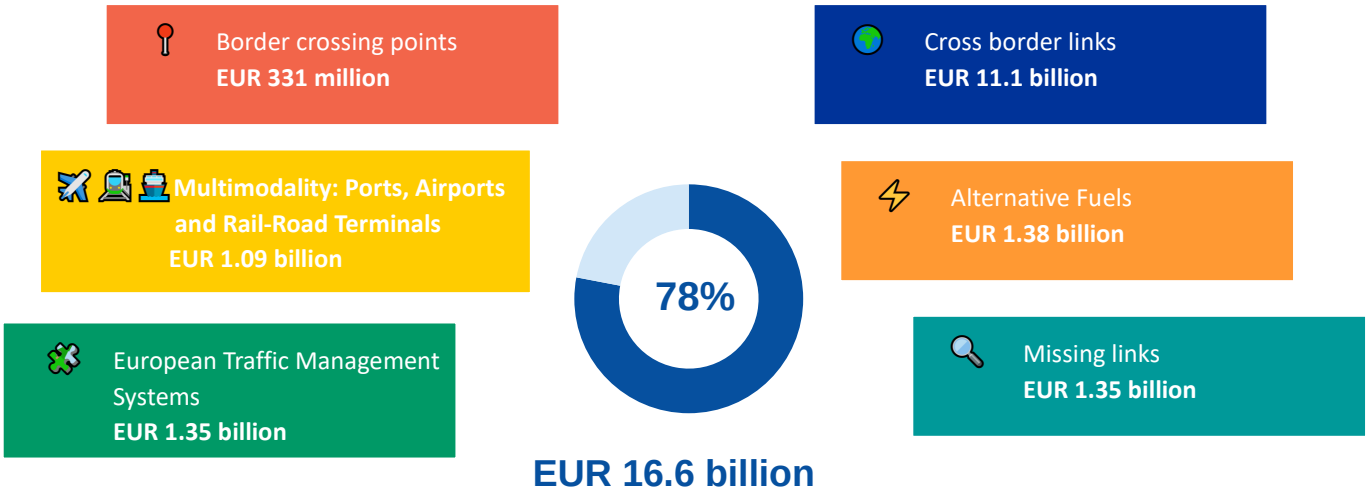
Most of the CEF funding (80%) is allocated to projects on the TEN-T Core network, 13% goes to the comprehensive network and 7% goes to projects that cannot be linked to a specific part of the TEN-T network but are still important for its completion (e.g. SESAR, ITS, ERTMS on-board components etc.).

Cross-border connectivity

CEF Transport supports cross-border connectivity for seamless travel in the EU, with 78% of CEF Transport funding going to projects addressing cross-border or missing links, ensuring multimodality, installing alternative fuel infrastructure and harmonising traffic management systems. This also included funding for five flagship cross-border projects (Lyon-Turin Tunnel, Brenner Base Tunnel, Fehmarn Belt Tunnel, Rail Baltica, Seine-Escaut/Scheldt) and their access routes.

[16] Excluding grant agreements under preparation.

Figure 1: ***CEF Transport support for cross-border connectivity***



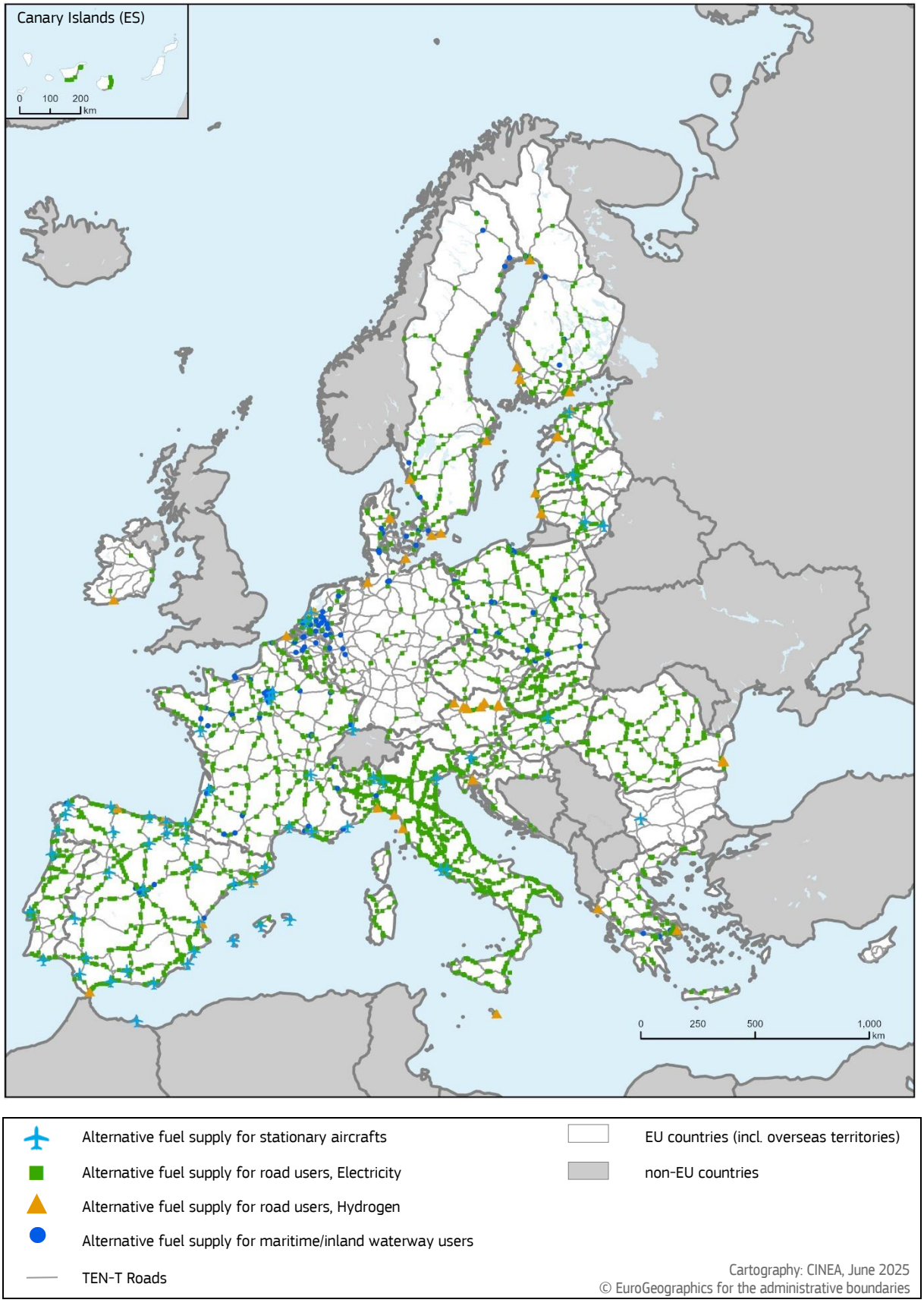
Most cross-border projects improve or establish rail connections, but the CEF also supports inland waterway connections and a few road sections. For example, a major bottleneck on the Danube in the Rhine/Meuse-Main-Danube corridor between Straubing and Vilshofen in southern Germany received CEF support for increasing the fairway depth and capacity.

Infrastructure for alternative fuels

CEF Transport supports the deployment of alternative fuel infrastructure with more than EUR 1.38 billion, mainly going to projects deploying charging stations on TEN-T roads and electric charging points. It also finances the installation of shore-side electricity for ships at berth, the electrification of airport ground operations, and hydrogen refuelling stations.

Since 2021, around 1 500 supply points for alternative fuels have been put into operation along the trans-European transport network, mainly for light-duty vehicles. We expect that the projects selected so far will install more than 25 000 supply points for light-duty vehicles and almost 2 000 supply points for heavy-duty vehicles. The portfolio of alternative fuel projects will also contribute to the decarbonisation of operations in 63 European airports and to the deployment of onshore power charging for vessels in 28 European ports.

Map 1: ***Alternative fuels recharging infrastructure supported by CEF Transport (2021-2024)***



Digitalisation of transport

CEF Transport supports the digitalisation of European transport with specific calls for proposals focusing on smart and interoperable mobility, under the general and cohesion envelope. Following these calls, 93 projects received more than EUR 1.4 billion of funding. Almost half of this amount went to ERTMS projects (46%), followed by SESAR (23%) and ITS (17%) projects. Projects involving the remaining systems (e.g. electronic freight transport information (eFTI), RIS, the European maritime single window environment (EMSWe), and VTMIS accounted for 13%.

Safer transport

CEF Transport supports road safety through the construction of safe and secure parking areas, the removal of level crossings, the improvement of road alignments for safety reasons and the deployment of ITS. A total of 58 projects on road safety receive EUR 3 billion.

Military mobility

One of the specific objectives of CEF Transport is to adapt parts of the TEN-T network for dual-use, improving both civilian and military mobility. This should allow for large-scale movements of military personnel and equipment across the EU at short notice in the event of crises. Under the three calls for military mobility (2021/2022/2023) a total of 95 projects were selected in 21 Member States. They are fairly balanced geographically across the EU with a good density of projects on the Eastern flank. 45% of this funding went to railway projects (e.g. to upgrade rail bridges, construct low-speed track sections for longer and heavier trains, increase the minimum height of tunnels), 34% to road projects (e.g. to upgrade road stretches and bridges), 7% to airport projects (e.g. to increase operational capabilities and accessibility), and the remaining funding went to projects in ports and terminals (e.g. to increase capacity and connectivity).

The CEF allows for financing of **synergetic elements** pertaining to another CEF sector (up to 20% of eligible costs). For CEF Transport synergetic elements, mostly concerning energy-related infrastructure, are financed in 34 projects receiving EUR 64 million in CEF funding. For example, 20 projects plan to install hydrogen refuelling stations and electrolysers, while 8 projects plan to install solar panels in airports, ports and rail-road terminals.

CEF Transport also works in complementarity with **Horizon Europe**, for example for greening airports. While CEF supports infrastructure for alternative fuels and access by public transport, Horizon Europe funds innovative energy efficient or new digital and automated solutions for airport operations[17].

Energy:

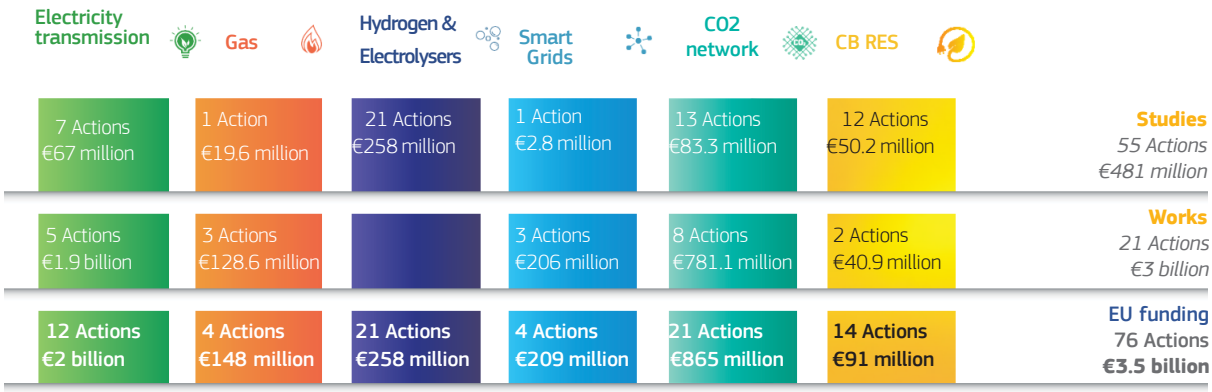
Since 2021, the PCI calls have received proposals from five different types of project categories (electricity, gas, CO_2 transport infrastructure, smart electricity grids, hydrogen and electrolysers).

[17] Ensuring competitive and sustainable airports

In the 2021 call, electricity was the most significant project category, with three grants for works accounting for 92% of the EU funding allocated. In the 2022 call, electricity was again the most significant category accounting for 52% of EU funding allocated (64% when counted in combination with electricity smart grids). In the 2023 call, CO_2 transport infrastructure was the biggest category accounting for 80% of the EU funding allocated. In the 2024 call, electricity (including offshore grids, storage) was again the most significant category accounting for 57% of the EU funding allocated (59% when counted in combination with electricity smart grids).

Between 2021 and 2024, the PCI calls have supported 62 projects with EUR 3.5 billion in CEF Energy funding: 43 were studies, with funding amounting to nearly EUR 431 million and the remaining 19 were works, with funding amounting to more than EUR 3 billion. The CB RES calls have also supported 14 projects (12 studies and 2 works) with EUR 91.2 million in funding.

Figure 2***: CEF Energy portfolio per category (2021-2024)***



Electricity and smart electricity grids

The CEF supported 16 electricity projects, amounting to over EUR 2 billion. Notable projects that received grants for works include: the EuroAsia interconnector between Greece and Cyprus (EUR 658 million, 2021), additional infrastructure elements necessary for the synchronisation of the Baltic States with the continental electricity system (EUR 166 million, 2021), the ELMED interconnector between Sicily and Tunisia (EUR 308 million, 2022), and the Bornholm Energy Island (EUR 645 million, 2024).

The CEF also supported four electricity smart grids actions in four different PCIs, amounting to EUR 209 million. The largest grant for works was of EUR 100 million for the digitalisation of the energy distribution networks in Bavaria and Czechia.

Carbon dioxide network

The CEF supported 21 CO_2 transport infrastructure projects amounting to EUR 864 million. The largest grant for works was of EUR 161 million for phase I of the Dunkirk CO_2 Hub.

CEF funding of critical cross-border infrastructure for CO_2 networks and storage works very much in complementarity with Horizon Europe that supports research projects to explore the

feasibility of new technologies for industrial carbon management and to demonstrate the viability of technologies from technological and economic points of view[18].

Natural gas

The CEF supported four gas projects amounting to EUR 148 million. The largest grant for works was of EUR 78 million for gas storage in Bulgaria. Overall, while natural gas projects made up a significant share of the funding awarded under the CEF I programme (EUR 1 454 million), their share decreased under CEF II, mainly because they are no longer eligible for CEF Energy funding following the revision of the TEN-E Regulation.

Hydrogen

The CEF supported 21 hydrogen projects – all for studies – amounting to EUR 258 million. The largest grant amounting to EUR 33 million was for the Spanish Hydrogen Backbone project.

Cross-border renewables

CEF Energy financially supports five cross-border renewable energy projects, which involve eight different Member States, and four other projects that do not have the CB RES status with preparatory studies. By 2024, EUR 91 million in funding was granted to 14 projects, including 12 technical and preparatory studies and two works. The projects cover a variety of renewable energy technologies, such as offshore and onshore wind energy or solar photovoltaics, and energy applications, such as district heating or renewable hydrogen production.

For CEF Energy, **synergetic elements** mostly concern transport infrastructure, such as quays and ship loading installations. With the increasing maturity of energy infrastructure categories covered by the new TEN-E Regulation, notably smart electricity and hydrogen grids, further synergies with the transport and digital strands are expected. In the cross-border renewables sector, emerging projects focus on entire hydrogen value chains from generation to utilisation in sectors like industry and transport.

Digital:

By addressing projects of common interest and focusing on cross-border interconnections, CEF **Digital** acts as a catalyst for the EU-wide digital connectivity ecosystem. Following the first three calls, CEF Digital currently funds 117 projects covering the main topics set out below, for a total budget of over EUR 640 million.

Backbone connectivity for Digital Global Gateways

CEF Digital supports the deployment of new backbone networks or significant upgrade of existing networks, including submarine cables within and between Member States and between the EU and non-EU countries. Since 2021, the CEF Digital strand has been providing financial support to 51 Digital Global Gateways projects for a total of EUR 420 million.

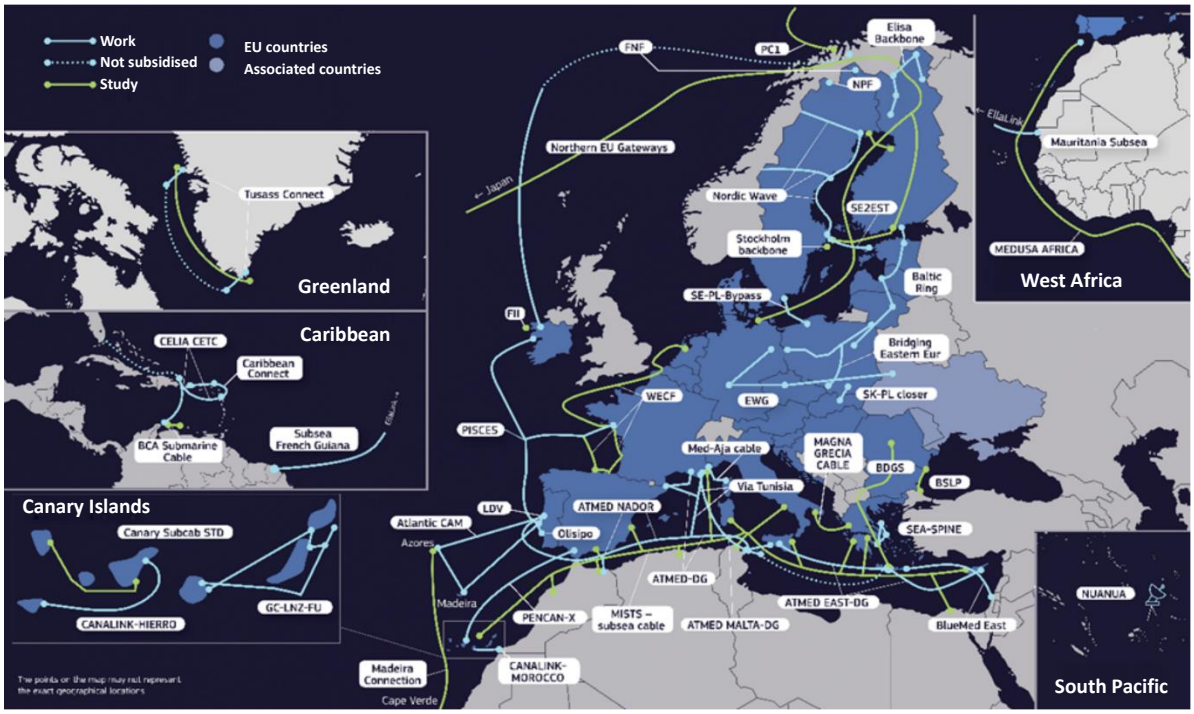
[18] Industrial Carbon Management: Interactive Stories. Industrial carbon management funded by the European Union

These projects significantly contribute to boosting global connections between **Europe and Africa** (e.g. the Medusa Africa or Canalink-Morocco projects), the **Middle East** (e.g. the BlueMed East project) and **Asia** (Arctic connectivity), and to consolidating the connections between Member States in the Mediterranean, the Atlantic, the Baltic Sea and Continental Europe (including Central and Eastern Europe). These projects also support connectivity in Europe's **outermost regions** and **overseas countries and territories**, like in the Pacific Ocean (e.g. the NUANUA project), the Caribbean (e.g. the BCA project), the Canary Islands (e.g. the PENCAN-X project) and the Azores-Madeira area (e.g. the Atlantic CAM project).

All beneficiaries of these CEF grants are **EU-controlled entities** and the cables that will be deployed are built with secure technology. Besides guaranteeing the secure transmission of terabytes of data per second, almost all the funded cables include **smart technologies**, which act as large geographical sensors to monitor nearby activities, acting as early warning systems to protect the infrastructure itself.

The second CEF Digital work programme for 2024-2027 provides an additional EUR 542 million to co-fund backbone connectivity projects. The EU's total investment in these critical infrastructures over the current financial framework will amount to almost EUR 1 billion.

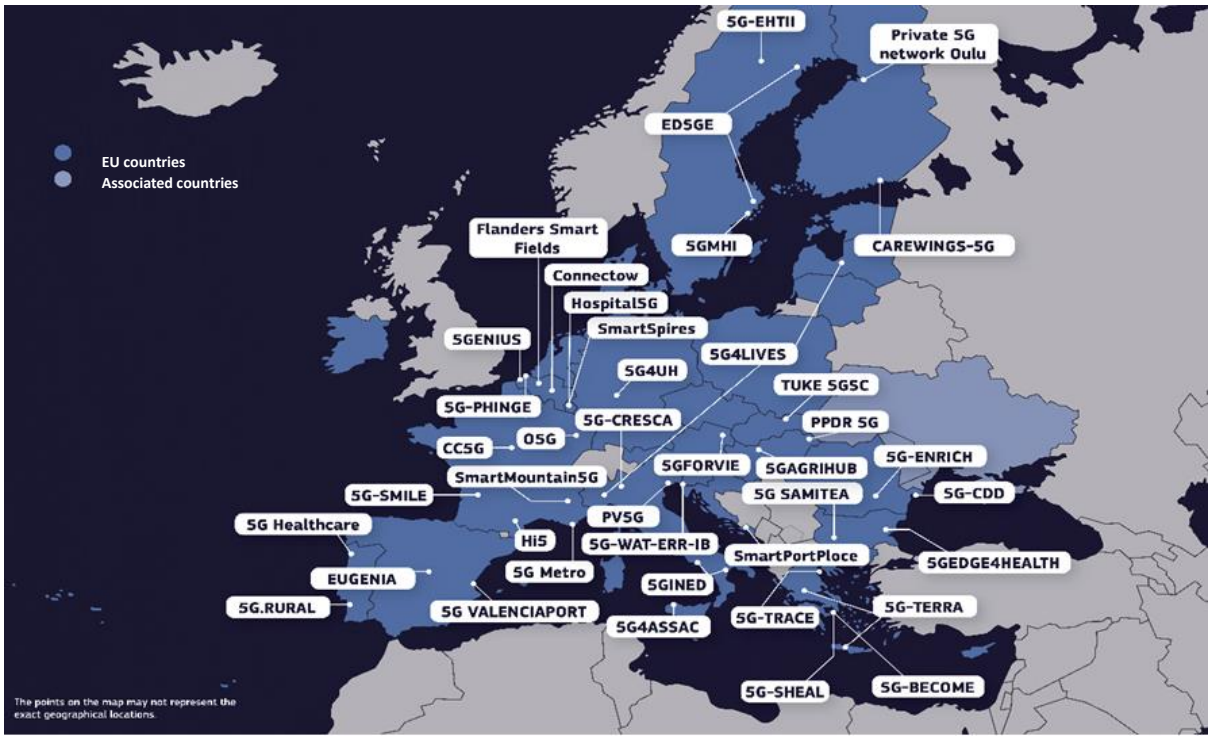
Map *2*: ***CEF Digital Global Gateway projects***



5G systems in areas where socio-economic drivers are located

Since 2021, CEF Digital has been providing financial support of a total of EUR 128 million to 41 projects for the rapid deployment and take up of **5G for Smart Communities.** The funded projects integrate 5G infrastructure with **edge cloud computing**, focusing on **standalone 5G**, enabling innovative use cases such as remote surgery, virtual reality for learning, drone-based monitoring and more.

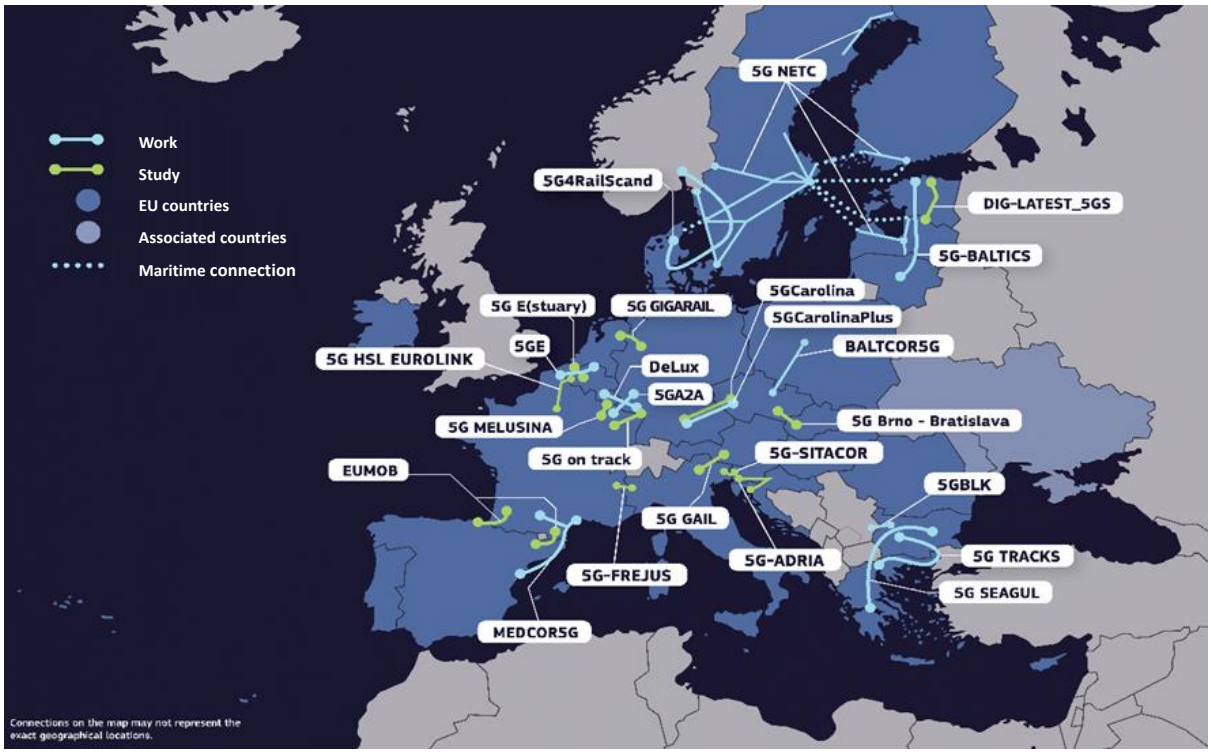
Map 3: ***Projects 5G for Smart Communities***



5G coverage along major transport corridors

Since 2021, CEF Digital has been providing financial support to 25 projects (works and studies) for uninterrupted 5G coverage along cross-border transport corridors for a total of EUR 93 million. Twelve of those projects deploy standalone 5G infrastructure along cross-border corridors of the TEN-T, such as highways, railways, or maritime paths, thus ensuring seamless interoperability of national 5G systems. 5G corridor infrastructure will enable a broad range of connected and automated mobility services for vehicles, drivers, passengers, and other relevant players.

Map 4: ***Projects for 5G coverage along major transport routes***



5G corridor projects along the main TEN-T corridors are a good example for **synergies** between the different CEF strands. The CEF Digital strand also supports the deployment of cross-border digital infrastructure (i) to accelerate the digitalisation of the energy and transport sectors by enhancing interoperability and standardisation (operational digital platforms - ODPs) and (ii) to trigger a public-private partnership 'virtuous' circle of investment. The 2022 ODP call funded a coordination and support project that is preparing the ground for a works project in the second CEF Digital multiannual work programme for 2024-2027.

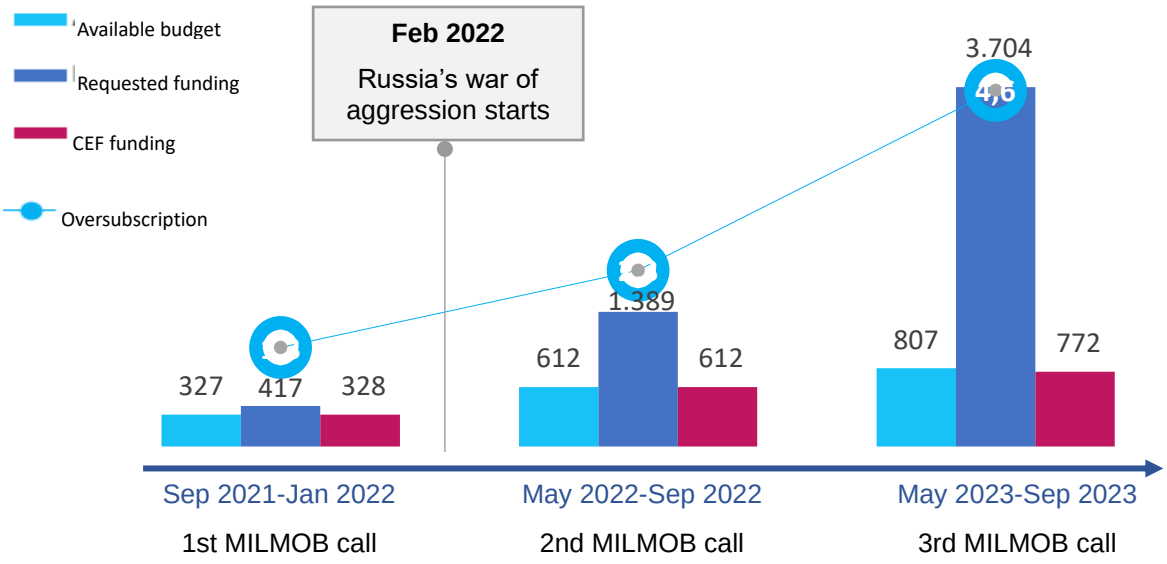
IV. The CEF reaction to recent crisis

During the last years, the CEF instrument has proven its flexibility to react to unforeseen challenges and crisis. With Russia's unprovoked war of aggression, Ukraine and Moldova requested formal association with the CEF programme (agreements signed on 9 May and 6 June 2023). This allows beneficiaries from those countries to participate independently in CEF calls and to be observers in the CEF Committee meetings. The EU has suspended their national financial contributions for EU programmes for as long as the financial challenges caused by the war remain for both countries.

Transport:

After Russia's invasion of Ukraine started in February 2022, the allocation of the **military mobility** envelope has been fast-tracked as much as possible. The Commission accelerated the evaluation of the first military mobility call for proposals in 2021 (which was open for applications until January 2022), then immediately launched the second military mobility call in May 2022 (four months earlier than planned). The remaining budget was frontloaded, with the last call for proposals launched in May 2023. Consequently, the EUR 1.7 billion military mobility envelope was absorbed in only two and a half years. Over the course of the three calls for proposals, the oversubscription rate rose continuously from 1.2 for the 2021 call to 4.7 in the last 2023 call, which also indicates rising investment needs for dual-use infrastructure.

Figure 3*: **Trend in demand for CEF military mobility funding (EUR million)***



CEF Transport also proved its agile nature by accommodating critical needs that emerged at the EU external borders with Ukraine and Moldova. CEF Transport funding is supporting the **'Solidarity Lanes'** initiative and contributing to establishing alternative routes for transporting goods to and from both Ukraine and Moldova after the blockade of Ukrainian ports. In total (following the 2022 and 2023 calls for proposals), CEF Transport has provided around EUR 1.5 billion of funding to projects improving the solidarity lanes and ensuring that Ukraine and Moldova are better connected with their neighbouring EU Member States (Poland, Slovakia, Hungary, Romania). These projects should enhance capacity and access to key road and rail TEN-T border crossing points by extending and upgrading infrastructure, improving parking areas, transhipment facilities and equipment. Support to Ukraine also includes projects for the development of the European standard (UIC) gauge in Ukraine to improve its rail connections with neighbouring Member States. The first results can already be seen on the ground.

The COVID-19 pandemic and Russia's war of aggression against Ukraine have led to high inflation, increased costs of construction materials, a depleted workforce and disrupted supply chains. This meant that CEF projects needed a rapid injection of funds to carry out planned actions. The multiannual work programme was therefore amended making it possible to frontload all the budget available under the current MFF to the 2023 and 2024 CEF Transport calls.

Energy:

The COVID-19 pandemic and the Russian invasion of Ukraine have also impacted the implementation of CEF-funded energy projects, due to the sharp increase in energy prices, significant cost increases, and supply shortages in components for infrastructure projects. This has resulted in delays for some projects, notably related to the need to implement alternative technical solutions and provide additional funding.

In May 2022, in reaction to the Russian invasion, the Commission adopted its **REPowerEU** plan[19], leading to the adoption of several pieces of legislation intended to reduce dependency on Russian fossil fuels, diversify gas supply sources, reduce energy consumption, and accelerate the roll-out of renewable energy sources.

While the current CEF Regulation and the revised TEN-E Regulation came into force before the REPowerEU plan, they are aligned with its objectives. Since 2013, projects funded by CEF Energy have contributed to integrating the EU energy market by strengthening cross-border connections and increasing the security of supply. In 2021, 2022 and 2023, grants were allocated for works in the area of gas storage that will address concerns about the security of gas supply in southeast Europe, which is the region most directly impacted by Russian supply cuts.

The revised TEN-E Regulation excludes fossil fuel infrastructure categories from eligibility for PCI status and includes new infrastructure categories that are key for decarbonisation, notably hydrogen projects and offshore electricity grids. The cross-border projects in the field of renewable energy contribute to the cost-effective deployment of additional renewable energy capacities which help reduce EU's fossil fuel dependence.

[19] Communication of the Commission (2022) 230 final of 18.5.2022 on the REPowerEU Plan.

Digital:

As set out in the scope of the projects of common interest in the digital sector, the CEF can help extend and strengthen digital connectivity between the EU and its neighbours. The **East West Gate project** (funded under the second call for proposals) will enable the provision of digital services to Ukraine and directly increase communication possibilities and capacity both with Ukraine and between EU countries.

In the context of the Russian war of aggression to Ukraine and the conflicts and instability in the Middle East, it has become imperative to increase the resilience and the redundancy of the **digital infrastructure connecting Europe to Asia**. The CEF has already funded three cable deployment projects in the Arctic region, namely Far North Fiber, Polar Connect and TUSASS CONNECT. These projects are part of the Artic connectivity vision, which will eventually lead to an alternative route between Europe and Asia.

Several projects funded under the CEF Digital strand enhance digital connectivity across Europe and with neighbouring regions, including North Africa and Eastern European countries (Ukraine and Moldova), reflecting a broader geopolitical strategy to strengthen Europe's digital resilience, foster economic integration and promote regional stability. By extending high-capacity networks and aligning digital standards, the programme acts as a countermeasure to external influences, establishing control over critical digital infrastructures.

CEF Digital also plays an important role in creating digital connectivity alternatives, reinforcing the resilience of communication networks and exploring routes able to bypass traditional overused chokepoints like the Suez Canal.

Last but not least, the strict eligibility requirements in CEF Digital, concerning the project promoters and the equipment deployed, contributes to the security and reliability of the critical digital communications infrastructure funded.

V. Budgetary state of play and assessment of progress

The midterm review of the current MFF concluded in 2024 did not result in any changes to the CEF budget of all three sectors. However, the different sectoral programmes still saw some changes to their budgets compared to the reference amounts in the legal base, as described below.

To make the CEF funds allocated and projects supported more visible and transparent, CINEA launched a public dashboard in January 2023[20]. This dashboard covers all the projects and programmes that CINEA manages, including those it manages for CEF Transport and CEF Energy. This tool allows everyone to find up-to-date information about the projects, their funding and beneficiaries, and graphs to visualise the data. CINEA has also published two interactive publications showcasing the programme's achievements since 2014, one for

[20] CINEA Project Portfolio - Welcome | Sheet - Qlik Sense (europa.eu).

CEF Transport[21] and one for CEF Energy[22], as well as a dedicated publication on the Baltic Synchronisation[23].

For information on CEF Digital's budget allocation and projects, see the HaDEA website[24].

More information on the budgetary implementation of the CEF can also be found on the Commission's performance portal[25]. This information is based on the programme performance statements submitted every year by each programme.

Transport:

EUR 250 million of the CEF **Transport** budget has been used to finance the European Chips Act. CEF Transport budget is also supporting additional administrative expenditure resulting from the 'Fit for 55' package, in particular the FuelEU Maritime and ReFuelEU Aviation initiatives and more recently resulting from the revised Regulation on the European Maritime Safety Agency and from the Single European Sky 2+ Regulation.

As described before, the CEF Transport budget was frontloaded in 2021-2024. So far more than EUR 21 billion has been allocated, following the signature of projects selected under the 2021/2022/2023 calls (EUR 10.5 billion from the general envelope, EUR 9.3 billion from the cohesion envelope) and under the military mobility calls (all EUR 1.7 billion from the military mobility envelope). That amount also includes EUR 1.3 billion allocated to infrastructure projects for alternative fuels under the first rolling call for AFIF.

The remaining CEF budget will be allocated under the 2024 call for proposals and the second AFIF rolling call, with a budget of EUR 2.5 billion and EUR 1 billion respectively. The 2024 call was closed at the end of January 2025 and is currently under evaluation, while the second AFIF rolling call was launched in February 2024 and will run until the beginning of 2026.

The first grant agreements of this MFF were signed in 2022 after the first CEF Transport call launched in 2021. Since projects for studies run for two to three years and projects for construction works run for four to five years, most CEF Transport projects are still in their early stages. More than 600 projects are currently ongoing. Only a few small projects (23) are already finalised (e.g. alternative fuels infrastructure, safe and secure parking areas). So far, projects are progressing as expected and in line with their respective grant agreements. Possible delays might only appear in the coming years.

CEF Transport has successfully implemented the 'use it or lose it' principle. If the implementation of a project is delayed, its scope is adapted and its grant reduced accordingly. The budget is then made available in another ('reflow') call for proposals.

Energy:

[21] Greener Transport Infrastructure for Europe 2014-2024: Building future-proof infrastructure thanks to the Connecting Europe Facility Transport.
[22] Interconnected sustainable energy infrastructure for Europe 2014-2024: Building a future-proof European Energy network with the Connecting Europe Facility Energy.
[23] CEF Energy: instrumental funding to achieve the Baltic synchronisation with the Continental European Network.
[24] About Connecting Europe Facility - Digital - European Health and Digital Executive Agency.
[25] Connecting Europe Facility - Performance - European Commission.

CEF **Energy**'s commitment appropriations for 2021-2023 initially totalled EUR 2 397 million, including EUR 5.9 million in revenues assigned from the previous CEF 2014-2020 recovery orders in 2021[26].

Grants awarded on the basis of the calls for proposals for PCIs and CB RES projects in 2021-2024 totalled EUR 3 542 million, with the 2024 CB RES calls still pending.

EUR 430 million was transferred from the CEF Energy commitment appropriations for the year 2023 to CEF Transport. This shows that CEF budget is being used between the three sectors in the most efficient way. In 2023, the CEF Energy strand still had a limited portfolio of projects that had been awarded funding and some of which had faced implementation delays. At the same time, CEF Transport was frontloading its budget and could use the transferred budget under the 2023 CEF Transport calls.

The transferred budget will be returned to CEF Energy as of 2025 and is expected to be committed in the following years, as major investment needs are expected in the new energy infrastructure categories (notably offshore grids and hydrogen). The results of the 2024 CEF call for PCIs and PMIs confirmed this: the grants awarded total EUR 1 250 million, and offshore grids and hydrogen projects comprise 24 of the 41 proposals selected (amounting to EUR 947 million or 76% of the funding allocated).

Digital:

EUR 150 million of the reference amount in the legal base for CEF Digital was transferred to the Chips Act and EUR 110 million of the reference amount was transferred to the Infrastructure for Resilience, Interconnectivity and Security by Satellite (IRIS²) initiative (for 2024-2027).

The start of the CEF Digital implementation was somewhat delayed, because of certain delays in adoption, the novelty of the programme, and the innovative character of certain topics (e.g. 5G for connected and automated mobility). Accordingly, Call 1 projects started in January 2023, Call 2 projects started in the beginning of 2024, Call 3 projects started by the beginning of 2025, and Call 4 projects are expected to start by early 2026.

The three calls under the 2021-2023 work programme followed the 'one per year' planning schedule, with very good overall budgetary commitments in line with financial allocations, particularly for submarine cable projects submitted under the Digital Global Gateways call.

While the first project results will be available only starting from 2025, the current portfolio of projects can be considered as being on track. After the initial three calls, CEF Digital is currently funding 117 projects covering its main topics, with a total budget exceeding EUR 640 million.

VI. Conclusions and outlook for remaining MFF period

[26] As per the first multiannual work programme in 2021, C(2021) 5791 final of 6 August 2021: Commission Implementing Decision on the financing of the Connecting Europe Facility and the adoption of the multiannual work programme for the period 2021-2027.

The entire budget for the CEF **Transport** strand will be committed in 2025 and no further calls are planned under the current MFF, unless there are some limited reflows of funds not used by the projects.

The projects selected in the CEF Transport calls all have a high EU added value and should contribute to the completion of the TEN-T network. At the same time, investment needs for the TEN-T network remain high. According to the position paper of the TEN-T Coordinators from April 2024[27], the total investment needed to complete the core and extended core TEN-T network is EUR 845 billion over the next 15 years. This number takes account of all the new requirements added during the revision of the TEN-T Regulation. For projects with the highest EU added value alone, the remaining amount to be invested is estimated at around EUR 210 billion.

The current geopolitical context requires us to invest as fast as possible in military mobility projects that increase the capacity for large-scale movements of troops and heavy material at short notice. Such projects should be implemented in a coordinated manner between Member States to allow for seamless cross-border mobility.

For the **CEF Energy** strand, the Commission will continue organising calls for proposals for PCIs and PMIs and for cross-border renewable projects until 2027, and the entire budget is expected to be committed by the end of the programme. The high EU added value of CEF Energy projects comes from their contributions to the integration of the internal energy markets, to the security of energy supply, and to the decarbonisation of the energy system.

According to a study of investment needs published in January 2025[28], the investment needs for cross-border electricity projects and offshore connections alone will total EUR 130 billion over 2024-2040. Cross-border cooperation projects in the field of renewable energy (**CB RES** projects) are key to leveraging asymmetries of generation and demand potential, and are already essential for Member States where all possibilities for a domestically focused deployment have been exhausted. EU support is instrumental in facilitating such projects, which entail intensive capital expenditures and a greater level of complexity and risks, for instance due to the difficulty of finding cost-benefit sharing agreements between Member States.

The second **CEF Digital** work programme (2024-2027) builds on the results and lessons learned with the implementation of the first work programme (2021-2023) and on the evolving policy priorities in the area of digital connectivity infrastructure. CEF Digital will continue supporting the backbone connectivity and 5G topics mentioned above, with some adaptations for the 5G related calls, which are now integrated into '5G large-scale pilots' (starting with Call 4, opened on 22 October 2024).

The planned distribution of the EUR 865 million budget available for 2024-2027 prioritises increasing the capacity, resilience and security of EU cross-border connectivity, with EUR 542 million in funding for global gateways or submarine cables. Another priority is

[27] Connecting Europe. A transport funding and financing that is adapted to the challenges ahead. TEN-T Coordinators' Position Paper.

[28] European Commission: Directorate-General for Energy, Finesso, A., Kralli, A., Bene, C., Goodall, F. et al., *Investment needs of European energy infrastructure to enable a decarbonised economy – Final report*, Publications Office of the European Union, 2025.

continuing the deployment of state-of-the-art connectivity for advanced and innovative applications, with EUR 205 million for 5G pilots. EUR 90 million has been earmarked for the deployment of cross-border quantum communication links between Member States.

Work on the **interim evaluation of the 2021-2027 CEF** is ongoing, to analyse the CEF programme in more depth. A support study has been tendered and in November 2024 the Commission published the 'Monitoring and Evaluation Framework' (SWD(2024) 276)[29].

[29] Commission Staff Working Document. Monitoring and Evaluation Framework for the Connecting Europe Facility 2021-2027.