**Sustainable Infrastructure Window – Draft Policy Note**

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# Introduction

This policy notes describes policy objectives and rational for different financial products supported by SIW.

*[This policy note will need to be updated to align with further policy developments in the context of final decisions under the MFF and the implementation of the Green Deal.]*

# InvestEU for Sustainable Transport

All projects meeting the criteria set out in Annex II of the InvestEU Regulation point 2, and Investment Guidelines section 3.1.1.2 are eligible. However, for certain areas and geography where the market is well developed, implementing partners should prioritize the use of subordinated finance and optimize the level of senior debt.

Whenever possible, financing solutions such as loans and bonds credit enhancement and subordinated debt financing, as well as projects that attract capital market financing and broadly promote green bond market, should be explored.

In addition, the need of equity for the development of infrastructure in line with environmental and climate change targets remains high, especially for green field projects, assets with untested technologies / revenue models, or assets in certain geographical areas where investors’ concentration is low. To address this, investments in smaller / innovative equity funds should be considered, also notwithstanding the current concentration of the market towards large funds favouring large / established brown field projects. This point applies to the infrastructure window as a whole.

## TEN-T

“Connecting infrastructure” to support ‘projects of common interest’, as defined in Article 3 of the TEN-T Regulation for the development of the TEN-T networks.

Rationale, objectives and expected impact

Due to its strong correlation to GDP trends, transport was most affected by the financial crisis and has not fully recovered yet, leaving behind a significant back-log in terms of maintenance and investments. Sufficient investments in greener modes of transport are being impeded by the fact that the external costs of transport are not adequately priced.

The overall investment gap for sustainable infrastructure in transport can be estimated between EUR 50 to EUR 80 billion per year, to which we need to add the investment for greening transport vehicles, rolling stock and vessels, and for the overall digitalization of the transport sector and enhanced urban mobility services.

In general for the EU, around EUR 500 billion will be needed to complete the Trans-European transport network (TEN-T) core network during 2021-2030 and up to EUR 1.5 trillion, if the TEN-T comprehensive network and other transport investments are included. These include investments that can enable important reductions of greenhouse gas emissions and air pollutants, and/or provide alternatives for infrastructure with large impacts on natural capital. According to EIB estimates, the overall investment gap for sustainable infrastructure in transport has reached a figure of EUR 80 billion per year as mentioned above.

Support to the development of the TEN-T, including connection to its urban nodes, maritime and inland ports, multimodal terminals and their connection to the main networks includes projects across all modes. Support shall also target multimodal connections and last mile sections allowing shifting freight or passenger traffic to more sustainable transport modes (rail transport, public/collective transport, inland navigation or short sea shipping).

Deployment of infrastructure along the TEN-T core network is the priority over the comprehensive network.

## Cleaner, Safe and Smart Mobility

“Cleaner, Safe and Smart Mobility” includes inter alia: smart and sustainable urban mobility projects; multi-modal hubs; green shipping and inland waterways; deployment of alternative fuels; development of traffic management systems including digital transport infrastructure; and other smart mobility projects.

Rationale, objectives and expected impact

Moving towards a more sustainable transportation is one of the main European priorities. According to a recent study[[1]](#footnote-2) by the European Parliament, transport accounts for over 33% of the EU-28 final energy consumption and around 25% of the EU’s greenhouse gas emissions. Given the rising motorization rates, together with the growing mobility patterns estimated both at the EU level and globally, the impact on the environment may be huge if policy measures are not adopted to mitigate those actions.

The transport sector produces other negative externalities, including accidents, congestion, noise, pollution, land artificialisation and health issues, with the large economic and social costs that they entail, especially in urban areas. The need for combatting the negative externalities of the transport sector has been stressed both at the EU level and worldwide. Reducing transport externalities is crucial to tackling climate change, ecosystem damage and improving citizens’ quality of life.

As mentioned earlier, the overall investment gap for sustainable infrastructure in transport can be estimated between EUR 50 to EUR 80 billion per year, to which we need to add the investment for greening transport vehicles, rolling stock and vessels, and for the overall digitalization of the transport sector and enhance urban and suburban mobility services.

This shall also include the deployment of digital transport management systems like the “European Rail Traffic Management System” (ERTMS); the “Intelligent Transport System” (ITS); the “Vessel Traffic Monitoring and Information Systems”; the “River Information Services” (RIS) and the “SESAR system”, including on-board equipment, as well as digital transport infrastructure for interoperable data sharing across modes and sectors.

The product shall therefore aim at supporting transport infrastructure, purchase, renewal and retrofitting of transport mobile assets, and related equipment and innovative technologies in accordance with Union transport priorities and commitment under the Paris Agreement.

This shall in particular include greenfield projects (consisting of construction of new assets) or brownfield projects (consisting of extension, improvement or transformation, maintenance and upgrading, of existing assets). It should also entail whenever relevant safety upgrades, using appropriate safety management procedures, and environmental performance upgrades, notably in view of reducing congestion, accidents and pollution and energy consumption, biodiversity loss and ecosystem fragmentation while increasing accessibility, safety and inter-modality.

In inland and maritime transport the deployment of LNG remains a priority, as the currently only available transitional fuel for green shipping.

## Green vehicles and equipment

Rationale, objectives and expected impact

The new CO2 emission performance standards for light-duty vehicles set ambitious requirements for manufacturers to reduce the overall emissions of their fleets by 2025 and 2030. A strongly increased uptake of zero-emission vehicles will be needed to support meeting these requirements. While the recent years have seen strong growth in vehicle registrations, the overall market share of these vehicles is still very low in the EU. Moreover, while original equipment manufacturers are starting to roll out ambitious programs to introduce new vehicles models in the market, there are still shortcomings in the market offer to customers today.

This concerns also the leasing industry. While corporate leasing has been taking up the introduction of zero-emission vehicles in fleets, it is still difficult and expensive for customers to lease a zero-emission vehicle. Leasing companies face higher costs in the context of uncertainty about customer demand and hence are exposed to higher financial risk. A guarantee scheme would help addressing this market scheme and make it more attractive to lend to leasing companies in view of uptake of zero-emission vehicles.

This product will lead to an accelerated take-up of zero-emission vehicles, by offering customers a greater choice for obtaining a zero-emission vehicle in addition to the direct purchase. It will focus on business cases that are at pre-commercial level or early commercialisation stage, or have not yet reached commercial scale at a sustained pace.

# InvestEU for the Clean Energy Transition

## Decarbonized energy networks and generation

Projects of Common Interest in the energy sector

Connecting and upgrading energy networks across Europe is vital to ensuring the provision of secure, sustainable and affordable energy for all Europeans. Current estimations on projected capital expenditures in the domains of electricity transmission, gas transmission, and storage highlight an overall amount of EUR 220 billon in the decade 2021-2030 in the EU28 region.

Projects of Common Interest (PCIs) are key energy infrastructure projects that are essential for completing the European internal energy market and for reaching the EU's energy policy objectives of affordable, secure and sustainable energy. The EU has put in place a robust and stable framework for building better energy infrastructure projects bridging national and regional borders within the EU, as part of its Trans-European Network for Energy Strategy. In particular, the TEN-E Regulation provides Projects of Common Interest (PCIs) with a streamline framework to overcome permitting and regulatory barriers.

From the financing perspective, PCIs are eligible for funding from the [Connecting Europe Facility](https://ec.europa.eu/inea/en/connecting-europe-facility) (CEF), where CEF grants are considered as the last resort to fill in the gaps in commercial viability of projects that are particularly relevant for Europe. From the debt side, the CEF Debt Instrument (CEF DI) aimed to offer competitive financial products for priority investments in transport, energy and telecommunications. However, in the energy sector CEF DI has been absorbed by the European Fund for Strategic Investments (EFSI), due to an overlap in eligibility between the two instruments.

EFSI has provided tangible results on PCIs financing, catalysing a total related investment of roughly EUR 5.1 billion since 2015. One of the objectives of the InvestEU general debt product is to continue the successful experience under EFSI, as leverage tool offering risk-sharing for debt financing for PCIs.

InvestEU should facilitate access of energy PCIs to long-term debt financing both on corporate and project finance basis. The instrument should in particular assist the energy PCIs where the instrument can facilitate access to debt capital from commercial lending institutions, institutional investors or senior lending from banks. The Instrument provides a credit enhancement mechanism targeting loans, guarantees and equity-type debt financing support to PCIs promoters, as well as potentially climate bonds.

Blending with CEF could be foreseen for particular PCIs, with identical scope and eligibility under both instruments.

**Outside the EU - PMI and PECIs**

In addition to PCIS, infrastructure projects linking the Union’s energy networks with third-country networks are a crucial element to develop and integrate key regional markets on the European continent, in particular with neighbouring countries and with countries with which the Union has established specific energy cooperation.

The geographical scope extends to the Contracting Parties of the Energy Community (Albania, Bosnia and Herzegovina, North Macedonia, Kosovo, Moldova, Montenegro, Serbia and Ukraine).

The TEN-E Regulation, as adopted in the Energy Community, sets a comprehensive framework for streamlining the permitting and regulatory procedures in Contracting Parties. It also requires the establishment of a list of priority infrastructure projects called projects of Energy Community interest (PECI). The Regulation gives also a possibility to apply its provisions to projects of mutual interest (PMl) i.e. projects that are recognised by two neighbouring states (a Contracting Party on one side, and a Member State on the other side) as important but do not have the legal status of a PECI.

PECI/PMI projects are eligible to apply for EU technical and financial assistance from the Instrument for Pre-Accession Assistance (IPA) and the Neighbourhood Investment Facility. In the specific case that a PECI has also the PCI status, it can be eligible for CEF application.  From the debt perspective, InvestEU would constitute a critical financial instrument for PECI and PMIs, facilitating its access to finance in cases where market imperfections, sub-optimal investment situations or particular investment needs constitute a barrier for obtaining financing on reasonable conditions.

Smart Grids and Digitization of the grid

The European energy system is in transition to a decarbonized, more sustainable economy. European targets for 2030 and the climate-neutral trajectory beyond imply a high share of renewable energy in the energy and electricity mixes. Achievement of the EU2030 renewable target would mean a 55% of electricity from renewables.

The key challenge is building energy networks that can accommodate a situation where more than half of electricity is generated from variable sources, catalysing investments in smart grids, networks digitalisation and modernisation, demand response management, control/balancing platforms, e-mobility, and energy storage.

Instruments under this general product will work as a financial toolkit, targeting specific market failures in each case such as first mover disadvantages or regulatory uncertainty.

Flexibility is key to connect renewables to the grid and avoid involuntary curtailments or unnecessary investments in back-up generation and networks. This means that the markets need to reward flexibility at all levels. Network operators should continue expanding the grid capacity if the congestions are structural, but rewarding flexibility can reduce the need for investments to the benefit of the grid users. Flexibility provision may include from batteries via so-called Vehicle to Grid services (V2G).

Beyond providing a stable legal framework for system operation, the Clean Energy Package puts a lot of emphasis on enabling smart solutions for grids, as well as an emphasis on innovative network management by TSOs and DSOs and digitalisation. A common European scheme for rating the smart readiness of buildings will be introduced. More investments in innovation and smart grids may reduce the pressure on the cost of electricity for households, also optimizing the level of investments in additional transmission and distribution grid capacity.

Given the highly innovative character of the segment of smart grids and associated technologies that facilitate the intelligent links between energy supply, storage and use, heating and transport, the market sees several emerging players, including aggregators and energy service companies. The general product should catalyse investment in solutions that have already been researched and tested smart grids are highly R&D-intensive in dire need of capital as well).

Investment platforms set up by project promoters, which may be public authorities, social sector players or private stakeholders, could be used to pool smaller projects by geographic location or sector. This helps to better share risk, make it easier to attract private investors and eventually unlock private financing for individual project.

Cross-border smart grids projects are covered under the previous section above.

Cross-Border Projects in the field of Renewable Energy

The EU-level target of at least 32% renewables for 2030 will require an acceleration of renewables deployment in the next ten years; a climate neutral economy a quadrupling of current deployment. The costs of this deployment can be lowered if Member States cooperate to make better use of the EU’s resource potential and network infrastructure.

Cross-border projects in the field of renewable energy are defined under the new Connecting European Facility Regulation. These projects need to be underpinned by a cooperation agreement between Member States (or a MS with a 3rd country) on the planning and deployment of renewables and demonstrate an EU added value (e.g. cost savings in the deployment of renewables and/or benefits for system integration, security of supply or innovation). Projects fulfilling these conditions can be eligible for support in the form of technical assistance and construction grants under the new window in CEF-Energy. Potentially all renewable generation technologies across electricity, heating & cooling and transport are eligible, including their integration, conversion and storage solutions.

The concept mirrors the framework of “Projects of Common Interest”, as it will establish (through a delegated act regularly updated by the Commission) a list of projects with the status of “cross border project in the field of renewables”. However, unlike PCI under the TEN-E Regulation, these projects do not have special rights or obligations when it comes to permitting and authorisation. They will however have the visibility that comes from an EU label, improving also the anticipatory grid planning of such complex projects as well as their access to finance. It is expected that projects based on mature RES technologies would only require funding at the margins in order to compensate for the complexities of investments involving several MS. Hence, combining a technical support grant from CEF with an InvestEU loan for the works is expected to be sufficient in such cases. The EU is currently developing the methodology for assessing the financial viability gap of such projects that will be presented jointly with the delegated act on the selection criteria in time for the launch of the new programme.

The objective of the general product to extend its scope to cross border projects in the field of energy, which in certain cases may be combined with projects of common interest (e.g.: renewables + interconnector project deployed in the Baltics sea).

Offshore Decarbonisation

Draft National Energy and Climate Plans submitted to the Commission in December 2018 already indicate a factor of more than four increase in offshore wind capacity by 2030. The incoming Commission has indicated that it wants more ambition, All the Commission’s Clean Planet scenarios show that reaching zero carbon by 2050 will require electricity production to double with a quarter generated offshore. This means going from 18.5GW in 2018 to 78GW in 2030 and 450GW in 2050. This is as much as is generated by fossil fuel today and twice that of nuclear. Not including the refurbishment of end-of-life turbines, it requires stepping up from 3GW a year now to 7GW in 2030 and 17GW in 2050. Reaching this point has been assisted by EFSI which has provided guarantees for nine projects for a total of about €1 billion. As many of the best sites close to shore have already been taken, despite significant cost reductions over the past years, investment, currently running at €10 billion per year, continues to be a challenge. This does not include the effort needed for grid connections. In view of this, special priority needs to be given to:

1. floating wind turbines; the only route for deployment for coasts with narrow continental shelves such as the Mediterranean and Atlantic coast of the Iberian peninsula. Currently the levelised cost of electricity is more expensive than from fixed turbines but will converge in the medium term[[2]](#footnote-3) once economies of scale kick in. The challenge is to build up to this point.
2. grid connections; especially meshed (connections between different farms as well as to shore) and hybrid (connections to two or more markets). The costs can be lower than connecting each wind farm to shore individually but will require enhanced cooperation between Member States and their transmission system operators.
3. port reconstruction; to shift from transport nodes to hubs for construction and maintenance of offshore renewable energy. Estimates suggest that €1 billion of port investment could result in 10-20% CAPEX reductions.

Storage and Hybrid renewables

The purpose of supporting this priority is to expand storage capacity in the EU electricity system in general and to foster flexible generation capacity. This is a high priority given the increasing share of renewable generation in the system.

The future investment needs for storage are substantial, a future fully decarbonised efficient energy system will not have large number of fossil fuel plants on standby for occasional use.

The financial characteristics of storage projects are very different from generation projects.

A storage project (based on batteries, pumped storage or other technologies) in the liberalised EU electricity market will typically rely on income based around capacity, scarcity and other ancilliary payments (for services such as frequency regulation, spinning reserves and voltage support), with the project drawing from the grid at times of low demand(prices) and supplying the grid at times of high demand(prices).

The financial sector is as yet not so familiar with how to price the risk associated with such projects. Indeed, there is no historical track record of several years of real returns from storage systems, therefore bankability for storage is a challenge.

**Hybrid projects** combining renewables plus storage. (e.g. Solar generation + battery storage, or solar generation + wind generation + pumped storage, etc) or a portfolio of different RES technologies plus storage managed under a Virtual Power Plant to provide flexible generation capacity.

The purpose of supporting hybrid projects would be to force the expansion of the storage capacity in the EU electricity system, by giving extra support to renewable projects which also contain storage elements.

Other technologies that provided similar characteristics to a combination of renewable and storage, such as concentrated solar power (CSP) which has storage like characteristics, would also be eligible.

The percentage of the value of the renewable part of a hybrid or virtual project must be capped at [50]%, since the primary purpose is to bring more storage onto the market.

Projects providing **seasonal storage,** (as opposed to short-term balancing), would also be eligible. This is especially useful where a high penetration of solar is present.

Renewables in the heating and cooling sector

Heating and cooling consumes half of the EU's energy and still is predominantly based on fossil fuels - decarbonising this segment will be essential to meeting the 2050 carbon neutrality goal.

Nearly 90% of the heating and nearly 100% of the cooling in the EU is produced and used in single buildings, the rest being delivered through district heating and cooling networks. Apart from households, industry and services are consumers of heat and cold. Heating and cooling and the electricity system can support each other in the effort to decarbonise. It is essential to recognise the links between them and exploit synergies. The key building blocks of the scenarios for heating and cooling are renewable technologies, energy efficiency, sector integration, the application of circular economy and bio-economy complemented with carbon capture and storage to tackle the remaining emissions in industry. The decarbonisation of heat generation is also an important issue for industry: waste heat from industrial processes, data centres etc. can be reused for heating purposes. The development of innovative low carbon industrial heat generation, including CCUS and other industrial processes is also an area where greater efforts are needed and where investment can be difficult to attract finance.

High up-front investment costs, no or weak ETS signals low fossil fuel costs and outdated energy taxation all contribute to a still higher than necessary risk profile for renewables technologies and other sustainable technologies such as waste heat reuse.

Communities and Local Actors

Decentralised renewable energy will gain significant relevance in the energy transition. As the costs of renewables and the digital solutions to use renewables continue to decline, it is becoming increasingly feasible for households, communities and small businesses to invest in their own energy resource. Furthermore, public acceptance issues will become increasingly acute when moving to the levels of deployment of renewable energy required to achieve the 2030 renewables target (RES electricity share needs to increase from circa [30%] today to 55%) and with the ambition to become a carbon neutral economy by 2050 (requiring a quadrupling of current renewables deployment). Indeed, sites that are easily exploited are becoming scarcer and developers will need to make use of sites which are closer to residential areas.

Renewable energy communities are entities through which citizens own or participate in the production, sale and storage of renewable energy. With more than 2500 initiatives EU-wide, renewable communities have been key in triggering the energy transition in Europe. The local anchorage and ownership of such initiatives have brought substantial benefits in terms of social acceptance for renewable energy projects, especially for wind energy, helping reduce the costs of deployment. Furthermore, as these communities are organised as not-for-profit associations, they may also engage in certain energy efficiency projects with longer payback period which would normally fail to be developed.

The clean energy package sets a framework to facilitate the development of renewables communities. Providing technical assistance and access to affordable financing (e.g. loans backed by guarantees, credit lines) will help enable the further expansion of renewables communities projects.

Renewable Corporate PPA support

This product would provide support to further develop the market for corporate Power Purchase Agreements (PPAs) that are linked to the construction of new renewable infrastructure projects.

Such PPAs involve corporates committing to buy certain quantities off electricity into the future. (They commit to ‘offtake’).

This offtake commitment enables renewable generation project developers to approach financiers with greater certainty about the future income of their projects. The lower perceived risk due to the PPA lowers the cost of capital of the project.

The market is currently limited to large companies with high electricity consumption, such as global digital companies, and industrial users such as aluminium producers, and some electricity suppliers. These existing PPAs have seen significant new renewable infrastructure built at no cost to the taxpayer.

Constraints, both regulatory and financial, limiting further leverage of offtake commitment to build renewable infrastructure should be tackled.

The limits from a financial perspective, may include inter alia the limiting of the offtake market to:

* the largest companies
* the most creditworthy companies or companies rated by credit agencies (typically the largest ones)
* Companies in certain industries (able to commit to buying over a long time horizon)

A suitable financial product would help bring more potential offtakers into the market, by supporting specifically the aggregation of smaller offtakers.

The smaller companies aggregated together would not have their creditworthiness individually analysed by a financier in any depth, and therefore the risk to the financier over the period of the offtake arrangement.

Support could share this credit risk between the financier, developer and the EU who would be providing a loan guarantee.

A careful design would ensure that the incentives of all parties were aligned to as great an extent as possible, so that it would be in the interests of the developer/aggregator not to sign up uncreditworthy offtakers and simply pass on the risk. The default event would be the not payment of offtake commitments.

It is worth noting the comparison of corporate PPAs with publicly guaranteed feed-in tariffs (FITs). PPAs entail significant credit risk for the financier, where public guarantees generally do not. Furthermore feed-in payments as a source of repayment are valued by the finance sector for their non-correlation with general macro-economic risk. This is not the case of PPAs where credit events might become significant in a prolonged downturn.

An alternative form of PPA-related support might target an effective extension of time period over which PPAs typically can offer support. PPAs give generally a shorter time horizon than FITs. The financing now on offer for big-ticket renewable generation projects can be over long time horizons, and these are less likely to be covered by PPAs than FITs.

N.b. PPAs already mentioned in Governance and RED II regulations (incentives).

Renewable Cost Reduction Facility

This product aims to reduce cost of renewable infrastructure projects where cost of capital is high in certain Member States.

To appreciate the design of the product, it is useful to distinguish between RES-specific risks related to tariffs in a broad sense (including policy design risk, market design and regulatory risk, sudden change in policy risk, financing risk) and non-tariff related RES risks (including administrative risk, grid access risk, social acceptance risk, technical and management risk).

The product would address any regulatory uncertainty (i.e. tariff-related) in RES support.

It would only be open to participating MS on a voluntary basis, using MS’ own funding from the MS Window. It would not involve an EU support scheme replacing an MS support scheme against the will of the MS.

Effectively the scheme replaces risk of individual MS renewable support schemes with EU risk. Therefore an MS that honours in full its obligations under its support scheme, would not see the facility guarantee called.

With the rapid evolution of the financing situation in the renewable market, it is not certain that the key drivers of high cost of capital in certain MS are still tariff related, or will continue to be tariff-related over a long period.

The facility may not necessarily have a large impact on the market, and it may not necessarily be chosen as a tool by MS. However, since it is a MS Window only funded tool, there is no opportunity cost in terms of the EU budget under InvestEU to include it as a thematic product.

The Cost Reduction Facility proposal has been referred to in the Investment Guidelines.

“Merchant” Renewable infrastructure

The renewable energy generation sector is moving away from relying on revenues coming from government support schemes, and instead is building projects on market terms, (so-called ‘merchant’ projects).

The massive capital needs for renewables over the coming years, as well as the extra uncertainty involved in building for the market, (albeit potentially with offtake agreements) merits further support for general renewable power ‘merchant’ projects.

## Energy efficiency

Energy Service providers for Energy Efficiency

Reaching the EU energy and climate 2030 targets and the “at least 32.5%” energy efficiency target requires an annual investments of around €400 billion between 2021 and 2030. The biggest investment gap (74% of the total investment gap) relates to investment in energy efficiency in buildings, which represents €130 billion annually. Buildings are responsible for 40% of energy consumption and 36% of GHG emissions in EU and majority of building stock has low or very low energy performance class. The residential sector requires particular attention. Around 75% of the existing EU building stock was built at times when there were minimal or no energy-related building codes, and are not energy-efficient. A majority of those buildings (up to 90%) will be still in use until 2050, and the renovation rate is very low in Europe (just a little bit above 1%).

The public sector is a key energy consumer in Europe. Buildings owned and/or managed by the public sector make up more than 10% of the overall EU building stock. In general public buildings and associated installations represent a significant and largely untapped potential for energy savings: around 34 and 58.5 TWh in the EU with economic savings of a total of 2.7 – 5 Billion Euro. That would mean a need for total investment in that sector of 21.3 – 39.4 Billion Euro annually.

The energy efficiency of buildings is a key policy priority for the European Union, reinforced within the scope of the 2016 Clean Energy Package, with the overarching aim being the cost-effective transformation of existing buildings into nearly zero-energy buildings in order to achieve a highly energy-efficient and decarbonised building stock by 2050.

For the period 2014-2020, around €18 billion of ESIF are allocated for direct investments into energy efficiency. A large part of the energy projects financed by EFSI (18% of all funded projects under EFSI are in the energy sector, as of September 2019) target energy efficiency. Over the period 2013-2017, around 24% of EIB lending in energy was channelled to energy efficiency. While these are significant amounts, the magnitude of support from EU grants and EIB lending would not be sufficient to cover the identified investment gap.

Energy efficiency investments lead to energy savings and reduce the costs linked to energy consumption. The energy savings can be used to repay the financing of the necessary investments, and this concept is at the basis of energy performance contracts, usually offered by Energy Service Companies (ESCOs); The development of the ESCOs market has the potential to increase substantially the investments in energy efficiency and the renovation rate. However, the development of this market is extremely difficult and slow.

Energy efficiency projects compete for scarce capital with more traditional investments such as new power plants, large infrastructure or industrial expansion. Companies in general approach energy efficiency investments as a secondary issue with regards to investment decision. In parallel, banks have generally low awareness and trust in that area and there is often a lack of dedicated financing products tailored for energy efficiency. For many financial institutions, the concept of energy services is new and unclear.

ESCOs are confronted with additional obstacles, and their financial liquidity is likely to be challenged when long term and/or many projects are carried out and financed from ESCOs own resources. After a few projects running, they may have insufficient financial capacity to engage into new ones, in the absence of appropriate means for re-financing.

ESCOs usually finance energy efficiency projects (e.g. for buildings, public lighting) based on Energy Performance Contracts, under which they guarantee a minimum level of energy savings. This energy savings guarantee is a central element of Energy Performance Contracts. ESCOs take a very high risk when energy demand is influenced by the user and where the data of energy consumption may be miscalculated or incorrectly estimated. The Energy Performance Contracts are usually closed for long-term periods (to allow the investment costs to be recovered through energy savings), and this is another risk for ESCOs.

Therefore, EU should engage more widely with smarter financing facilities to support the development of the ESCOs markets. There is a significant potential for better use of public resources, and an increased use of financial instruments: e.g. loans backed by guarantees, credit enhancement, dedicated credit lines.

Certain investment funds e.g. equity funds, might also be interested to finance the ESCOs directly, and as such provide refinancing for their investments or provide initial financing for investments. The guarantee might cover part of the risks of investors.

SMEs for Energy Efficiency

Financing with high prices, short tenors and high collateral requirements remains a challenge for SMEs looking to make investments in energy efficiency, and in particular outside their production processes, while for many SMEs the buildings count for a significant part of their energy consumption.

Therefore, EU should engage more widely into smarter financing facilities for SMEs, to support them increase the energy efficiency of their buildings. There is a significant potential for better use of public resources, and an increased use of financial instruments: e.g. loans backed by guarantees, credit enhancement, dedicated credit lines.

Industrial energy efficiency

European industry is amongst the most energy efficient in the world. However, with much of the low hanging energy efficient fruit plucked, further measures are a challenge, being more expensive, innovative, and more structural, not incremental. Financing such investment is therefore high risk and support for industry should be made available to ease access to finance.   There is significant potential to support industrial process restructuring and innovation to reduce energy consumption further in a range of heavy and energy intensive industries.

Energy renovation for households

Improving the energy performance of buildings in the residential sector is a key policy priority for the European Commission, reinforced within the scope of the Clean Energy Package. The decarbonising the building stock by 2050, requested under the Energy Performance of Buildings Directive, is essential to the decarbonisation of our economy. This challenge should be addressed taking into account the trends of decentralisation and digitalization, which enable households and buildings to increasingly become an active player in the energy system (e.g: producing their own energy, consuming, selling and storing such energy). In addition, public intervention in this sector is further justified due to severe market failures, which include imperfect/asymmetric information (i.e. concerning potential savings, risks, market opportunities and potential), split incentives (i.e. between buildings owners and tenants), high complexity of preparing and organising the works (as compared to the often very small size of a project), lack of experience, and insufficient trust between financial institutions, service companies and final beneficiaries.

The EU should therefore engage more widely into smarter financing facilities to encourage sustainable investments in energy renovation for residential buildings, targeting energy efficiency measures, building integrated renewables, access to local district efficient heat networks, measures to improve the smartness of the buildings, infrastructure for charging electric vehicles etc.

For the residential sector there is significant potential for using innovative financing instruments: e.g. loans backed by guarantees, credit enhancement, dedicated credit lines, energy performance contracts, third party financing, on-bill financing, on-tax financing.

Technical assistance and information campaigns can also contribute significantly to accelerate the market uptake of these required investments.

Considering the very low renovation rates, and the perceived difficulties for renovation of residential buildings (e.g. reluctance of households to invest due to inconvenience of works, lack of knowledge and understanding of technical solutions, absence of a long-term investment perspective, behavioural biases like myopic preferences) it is important to allow different forms of financing to be combined, and completed with technical assistance and information campaigns.

Where there is clear market failure and if building regulations to not address the issue sufficiently, there may also be scope for providing finance assistance for the construction industry in delivery of the energy efficiency targets as well as for climate proofing aspects of the construction industry such as the bio-sourcing and development of markets of low carbon materials.

## 2.3 Credit Enhancement for Green Bonds

The energy efficiency of buildings is a key policy priority for the European Commission, reinforced within the scope of the 2016 Clean Energy Package. Attractive financing solutions can increase the investments needed to improve the energy performance of buildings and decarbonise the building stock. A well functioning refinancing market is key for the development of financing solutions at the needed scale.

Since there is a large investment gap, it will be crucial to mobilise public and private financing, including institutional investors (e.g. pension funds and insurance companies). Green bond platforms might attract such investors and allow participating Financial Intermediaries to transfer their green loans originated under their products to the investors with the subsequent obligation to reinvest the transfers into new loans eligible under InvestEU energy efficiency products. A full alignment with the InvestEU Programme principles incl. additionality should be ensured. Such green notes may benefit from the EU budgetary guarantee in order to make them more attractive for third-party investors.

Green bond markets have grown fast in size and market coverage since the first green bond was issued in 2007 by the European Investment Bank (EIB), and represented by June 2019 a total of approximately EUR 550bn outstanding. Green bonds have given mainstream capital markets a quick way to map how the sustainability and green trends visible in the public debate are reflected in the real economy’s investments and functions.

The Technical Expert Group on Sustainable Finance recommends in its report (June 2019) that the European Commission and EU Member States (MS) consider developing a full range of short-term and long-term financial incentives to support the development of the EU Green Bond Market aligned with the EU-Green Bond Standard. It is also in line with the Capital Market Union objectives to test innovative solutions to crowd in capital market financing.

Clearly tagging the financial instruments as energy efficiency (e.g. green mortgages tagging) might provide additional assurance to the third-party investors.

## Other low carbon network infrastructure

Rationale, objectives and expected impact

A further area where scale is minimal, markets are nascent, technologies are novel and technology, environmental, policy and construction risks are high is low carbon network infrastructure, in particular carbon capture and storage and carbon capture, use and storage, both for industrial applications and for power plants as well as for low carbon gas networks for hydrogen, syngases and green gases. Whilst there is the expectation that such fuels and infrastructure will be necessary for decarbonising the energy and industrial networks and processes, it is clear that there is little market awareness of these novel technologies or market appetite to explore them. Thus, extra financing or leveraging from InvestEU could increase the finance available for these high risk and necessary investments. In addition to access to InvestEU there is potential scope for blending with other EU funding instruments available to these technologies.

# InvestEU for Environment and Resources

## Clean Water

Rationale, objectives and expected impact

Section 3.1.1.3 *Environment and resources* of the Investment Guidelines identifies support for water, including drinking water supply and sanitation, flood protection, networks efficiency, leakages reduction, infrastructure for the collection and treatment of waste water, coastal infrastructure and other water-related green infrastructure. The support shall comprise of investment projects and accompanying services supporting the implementation of EU environmental policies concerning land-based and marine water resources and related ecosystem services (e.g. Water and Marine Strategy Framework Directives, Drinking Water Directive, Urban Wastewater Treatment Directive, Floods Directive etc.). Particular importance shall be given to (i) ensuring access to water supply and sanitation for all EU citizens by completing and maintaining infrastructure for drinking water and wastewater treatment that complies with energy efficiency and leakage prevention criteria, and (ii) ensuring compliance with the Water Framework Directive (2000/60/EC) and the Floods Directive (2007/60/EC) including measures foreseen in the River Basin Management Plans and Flood Risk Management Plans, notably investments ensuring good ecological status of rivers, renovating or upgrading of existing hydropower to increase efficiency and reduce ecological impacts, and reducing diffuse pollution from agriculture, aquaculture, and industrial sources, water efficiency solutions, water reuse in any sector and in nature-based solutions to reduce flood risks.

The water supply and sanitation investments needs[[3]](#footnote-4) amount to roughly or 68.4 bn € /year over the next 10 years. For comparison, the cohesion policy in the 2014-2020 programming period supported the water sector with around 15 bn € in total.

Concerning water supply[[4]](#footnote-5), based on the Eurostat data around 23 million people, or 4.5 % of the total EU population are not connected to a public water supply with connection rates at the Member State level varying from 57 % (Romania) to 100 % (Belgium, the Netherlands). Further on, 23 % of treated water is lost in public water supplies (as of 2015), with large differences between Member States. This corresponded to a total amount of 6.5 billion m3 of water.

Concerning wastewater, according to the data reported by the MS from 2014[[5]](#footnote-6), a total load of 600 million p.e. is generated at EU level. From the total load generated, 11 million p.e. are not properly collected (1.8 % of total EU load). This load is not properly treated either. In addition, from the collected load 41 million p.e. do not meet the performance requirements of secondary treatment (7.2 % of the total EU load that requires this treatment) and 45 million p.e. do not meet the performance requirements of more stringent treatment (11.9 % of the total EU load that requires this treatment).

In the next 2021-2027 programming period Member States will have to draft the national investment plans as part of the water enabling conditions in order to identify and prioritise relevant investments. Given the significant needs in the sector, it is important to complement the cohesion policy funds i.e. by the means of the EU guarantees and loans, to ensure access to water supply and sanitation in line with the applicable environmental legislation (Drinking Water Directive, Urban Wastewater Treatment Directive).

Ensuring compliance with the Water Framework Directive and the Floods Directive including measures foreseen in the River Basin Management Plans and Flood Risk Management Plans requires significant investments across the Member States, which is only covered to a limited extend by the investment needs mentioned above in relation water supply and sanitation. All water bodies in the European Union should be in good status by 2027. This requires additional investments in wastewater treatment and other investments, such as river restoration and clean-up of contaminated sites, green infrastructure, measures to restore river continuity (dam removal, fish passes etc), measures to reduce diffuse pollution, water efficiency solutions, water reuse in any sector and in nature-based solutions as to reduce flood risks.

## Transition to Circular Economy

Rationale, objectives and expected impact

Section 3.1.1.3 Environment and resources of the Investment Guidelines identifies support for waste management infrastructure. This support shall comprise infrastructure necessary to support the transition towards a more circular economy in Member States notably shifting upwards in the implementation of the EU waste hierarchy. Without prejudice to the exclusion criteria, investment projects should cover the implementation of waste management plans and waste prevention programmes (based on the revised Waste Framework Directive), the establishment and support of reuse and repair networks, the setting up of functional waste separation and collection schemes, and recycling facilities.

According to the *Study on investment needs in the waste sector and on the financing of municipal waste management in Member States*, the capital investment cost requirements to reach the EU recycling targets for municipal and packaging waste until 2035 are estimated at € 28,1 bn out of which €17 bn is needed until 2027.[[6]](#footnote-7)

In line with the revised Waste Framework Directive, by July 2020, Member States will have to evaluate and revise as appropriate their Waste Management Plans and Waste Prevention Programmes. In the new Plans or other strategic documents covering the entire territory of the Member States, they shall ensure that an assessment of the investments and other financial means, including for local authorities, required to meet the closing of existing waste installations and building additional one is carried out.

In line with the measures identified in the updated Waste Management Plans and Waste Prevention Programmes, support should be channelled in the upper stages of the waste hierarchy, in order to close loops and prevent valuable materials from leaving EU value chains. This includes systems of separate collection, reuse centres, repair networks, sorting plants, composting plants and anaerobic digesters, other measures to prepare for reuse and recycling, awareness campaigns, as well as accompanying measures with a focus on the economic instruments listed in Annex IVa to Directive 2008/98/EC on waste.

Without prejudice to the exclusion criteria (Annex V of the Invest EU regulation), further support can be given for measures to modernise or upgrade existing recycling and waste treatment infrastructure, to adapt it to the new recycling targets. Some examples include innovative and advanced solutions for separate collection, sorting and recycling; anaerobic digestion plants for bio-waste, composting plants; upgrade of existing MBT plants (operating on the basis of mixed waste) to composting and anaerobic digestion plants (operating on the basis of separately collected waste).

The investments needs will also be defined under the Cohesion Policy through the enabling condition on waste management. All the above will set the framework for investments and drive waste policies in the Member States.

In September 2018 the Commission published the latest review[[7]](#footnote-8) of how well EU waste rules are applied in Europe, presenting challenges and ways forward. For municipal waste, 14 Member States have been identified as at risk of missing the 2020 target of 50% preparation for re-use / recycling. For each of these countries the Commission presented early warning reports including possible actions to improve their waste management and ensure compliance with EU waste legislation, taking into account best practice from other countries, but also local circumstances.

## Natural Ecosystems

Rationale, objectives and expected impact

Section 3.1.1.3 *Environment and resources* of the Investment Guidelines identifies investments in the field of enhancement and restoration of ecosystems and their services. The focus is on those projects that promote the conservation, restoration, management and enhancement of natural capital for biodiversity and adaptation benefits, including by means of green and blue infrastructure projects. It shall include ecosystem-based solutions to challenges, such as those related to air and climate systems, sea, land, soil, forestry, agriculture, water and waste, and transport and energy. Cross-border projects shall be in particular encouraged, as well as projects that promote sustainable cultural heritage.

An important part of investments is in Nature Based Solutions in support to climate change adaptation and mitigation, including carbon capture and sequestration through ecosystem restoration, natural hazard disaster risk reduction, infrastructure projects aiming at climate change adaptation and increasing the resilience to current and future climate. This shall include, among others, the protection of low-lying areas, coastal areas and other measures related to sea-level rise, flood prevention, improved and sustainable use of water supply and drought prevention, and adaptation of infrastructure to extreme temperature.

It is estimated that in the EU, an annual EUR 11 to 20 billion is needed. LIFE provides limited funding to projects protecting nature and biodiversity, while there is little biodiversity funding at national level.

Under InvestEU, nature is part of the list of environmental infrastructure which is eligible for financing under the Sustainable Infrastructure Window.

There is a need for specific pockets of money under the general investment programme on natural capital and circular economy that would allow differentiating across various risk levels, with a dedicated “pocket” for nature-related projects. A thematic product under the innovation window to support earlier stage projects could be complementary.

An additional focus area on ecosystem-based adaptation projects which address biodiversity protection / restoration / green infrastructure at the same time would be a real asset: driven by the biodiversity crisis, ecosystem restoration is a big upcoming policy agenda, and such restoration cannot be done without paying full attention to adaptation needs.

There is a need to extend financing to industry and SMEs deploying nature-based solutions on a small scale. A significant improvement can achieved by mobilisating small rather than large actors, acting locally, without excessive administrative burden. This need so far has not been fully catered for.

# InvestEU for Digital Connectivity

## Gigabit Networks and 5G infrastructures

Rationale, objectives and expected impact

Gigabit Networks and 5G infrastructure ‘projects of common interest’, as defined in Article 8 of the draft CEF2 Regulation aim to deploy safe and secure very high capacity digital networks and 5G systems, including for the digitalization of transport and energy networks, and digital backbone networks to the increased resilience and capacity of on EU territories, as well as inter-linking strategic digital service infrastructures such as High-Performance Computing (HPC) centres and sovereign Cloud providers.

High capacity connectivity infrastructures are an underlying condition for the success of key digital projects, ranging from 5G-based applications to the overall digitisation of the European industry, agriculture, mobility, healthcare, public administration, etc. Connectivity also helps closing territorial divides, giving better chances to citizens and SMEs in every region to have access to education and contribute to growth.

Investments in backbone networks including submarine cables connecting European territories to third countries on other continents or within Union territory connecting European islands, outermost regions or overseas countries and territories are needed in order to provide redundancy and increase the capacity and resilience of Union’s digital networks and ensure fair access to EU’s key digital capabilities.

Dedicated interventions are also necessary to support the continuation of CEF-funded cross-border 5G infrastructure corridors within Member States, in order to underpin the uninterrupted service provision throughout the Digital Single Market and to support generally the European digital economy and industry.

## Digital Connectivity

Rationale, objectives and expected impact

In 2016 the Commission has set three ambitious targets for a European Gigabit Society by 2025. These include that Member States should aim to ensure:

1. Gigabit connectivity for all main socio-economic drivers such as schools, transport hubs and main providers of public services;
2. High performance 5G connectivity in all urban areas and main transport corridors; and
3. As a minimum, that all European households, rural or urban, to have access to Internet connectivity offering download speed of at least 100 Mbps, upgradable to Gigabit speeds.

Member States are updating their National Broadband plans increasingly in line with these strategic objectives. However, in absence of further support, the objectives of the Gigabit Society will not be attained in areas where market operators cannot justify a business case for the necessary investments.

In 2017, based on the results of the study conducted by Analysis Mason for the European Commission entitled “Costing the new potential connectivity needs” (SMART 2015/0068), the combined investment needed to meet the Gigabit Society objectives has been estimated at € 500 billion. This would require an additional € 155 billion over and above a simple continuation of the trend of network investment and modernisation efforts of the connectivity providers. Furthermore, it was estimated that, under the current conditions, 50 to 70 million households in various areas (both sub-urban and rural) and across the entire EU territory will not have access to very high capacity networks. The estimation took into account current programmes and an improved regulatory environment. More recently (2019), a study prepared by Noon Venture for the European Investment Bank (EIB) estimated a 2018 total investment gap to achieve Digital Agenda for Europe and the Gigabit Society targets by 2025 of € 383.8 bn for premises and companies. After incumbent and/or alternative operators roll out in the period 2018–2025, the model estimates that the remaining gap to achieve DAE and EGS targets in 2025 amounts to € 254 bn.

As of July 2018, a total of EUR 2.78 billion of EFSI financing has been approved, guaranteeing € 3.24 billion of financing provided by the European Investment Bank to the digital infrastructure sector. The expected investment mobilized is € 11.99 billion. The success of EFSI in the field of digital infrastructure, in the form of loans and guarantees, shall be continued in the next Multiannual Framework (MFF).

Many deployments in rural, poor, peripheral or otherwise sparsely populated or isolated areas will only take place if large scale grant support is available. However, specific financial instruments can be developed with the aim of maximising the geographical reach of private investments to cover also less densely populated areas, or areas with slower prospects of return, such as middle income suburban and rural areas. This task can be performed by thematic financial instruments and blending facilities, including InvestEU funding.

## Gigabit Infrastructure Fund

Rationale, objectives and expected impact

A layered fund instrument, similar to the Connecting Europe Broadband Fund (‘CEBF’), where equity capital would be provided under the form of a ‘first-loss piece’ (‘FLP’), potentially combined with a budgetary guarantee to be provided as a separate tranche can be an efficient instrument to support bankable (or almost bankable) digital infrastructure projects in semi-dense (grey) areas and, to a limited extent, rural (white) areas or strategic infrastructure projects. Such funds could be developed in cooperation with national (ESIF, NPBIs) public and/or private capital (institutional investors such as insurance companies and pension funds). The objective would be to create leverage on Union resources, in order to increase the number of citizens and businesses that can benefit from support.

# InvestEU for Space & Defence

## Development & Exploration of space infrastructure

Rationale, objectives and expected impact

In recent years, access to space has become fundamental for the EU's ambition in space, particularly for the implementation of the EU flagships Galileo and Copernicus, but also for research projects funded by the Union Research Framework Programmes. Access to space is a key enabler and an indispensable element in the overall space value chain without which, there would be no space policy. Over the next 10-15 years the EU will have launched more than 30 satellites for its Galileo and Copernicus space infrastructures. In this context, ensuring independent, reliable and cost-effective access to space is a political imperative for the EU and it has been enshrined in the Space Strategy for Europe[[8]](#footnote-9). Space capacities are strategically important for civil, commercial, security and defence-related policy objectives. Europe needs to ensure its freedom of action and autonomy and not be dependent on conditions imposed by non-European players.

Given the importance of space for the European economy and society, a dedicated **EU Space Programme** has been proposed for the next MFF. Besides, space is one of the intervention area in the **Horizon Europe** cluster on Digital, Industry and Space as well as one of the funding areas in three **InvestEU** policy windows, including the Sustainable infrastructure window. Synergies between the three programmes should be sought for a cost-efficient deployment and operation of European space infrastructure involving private operators and thus stimulating new investment with a view to foster development of new services and creation of new infrastructures that will ensure competitiveness in the longer term.

A recent study on access to finance conditions for the European space sector carried out by the EIB advisory hub[[9]](#footnote-10) confirms that there is a clear gap in the access to finance landscape. The European public funding landscape is relatively strong both at national and at European level also due to the strategic nature of space and its close ties with defence. As a result, space has traditionally widely relied on public investment. At the same time, although there are growing investments from private sources that signal the increasing attractiveness of the commercial aspects of space, some market segments and business models remain significantly riskier than others due to the high upfront investments, immature markets and high technological and regulatory uncertainty.

In recent years, the global space sector has witnessed a profound change with the advent of new actors, including non-space actors being progressively involved in space ventures. This phenomenon, called New Space, is led by the US and a clear example of this is Elon Musk and the SpaceX company. However, more needs to be done especially for the **upstream sector** of space that covers the development and exploitation of space infrastructure, including R&D, production of satellites, launchers as well as the deployment and operations of such infrastructure. European companies in the upstream sector struggle with access to finance as they face long development cycles, are capital intensive and operate in a limited market with many business risks. As a result, many European space entrepreneurs are looking for private capital outside of the EU.

Therefore, there is a need to design dedicated products involving debt and guarantees for space infrastructure including access to space. This could be coupled with an equity product taking stock of the recent InnovFin Space Equity Pilot (ISEP).

[DG GROW to confirm if Defence is covered as for the General Debt Fiche]

# Cross-window initiatives

## Energy Demonstration Projects and Future Mobility

The InvestEU EDP-FM will aim at accelerating:

* The low-carbon energy and transport innovation, including demonstration of technologies and solutions with potential for material avoidance of GHG emissions in energy intensive industries, renewable energy production and use, energy storage and CCS;
* The deployment of future mobility solutions;
* The path towards [digitalisation of energy and transport CNECT tbc]

Targeting high EU added-value areas of policy focus where the final recipients bear a higher risk (e.g. early demonstration, technology risks, insufficient track records, lack of collateral or untested business cases) than operations otherwise supported by other InvestEU products.

The InvestEU EDP-FM will focus on early demonstration of the commercial viability and deployment of innovative transport and energy technologies and business cases. It should include projects that are at pre-commercial level or early commercialisation stage, or have not yet reached at commercial scale at a sustained pace, including digitalisation aspects.

In relation to demonstration, innovation may relate to a specific technology or processes, products or services. Such projects will aim to have the potential to be replicated and not be conceived for the sole purpose of demonstration, while delivering significant avoidance of GHG emissions. Regarding transport projects, the TEN-T regulation Article 33 further elaborates on the aspects of innovation and new technologies eligible for support.

**Market failure or sub-optimal investment situation the product addresses:**

The product aims to fill a critical gap in access to risk finance for projects attempting to cross the 'valley-of-death' from 'technology demonstration' to the 'demonstration of commercial viability of the technologies' (at the appropriate scale of commercial applications).

Access to finance is hampered at these stages, as financial investors still need reassurance and visibility on the commercial viability of the technologies in question, and demand risks during deployment. Such technologies are indeed still unproven for the period of time and/or were only implement in a limited number of projects (considering for example different geographical or geological conditions). Many innovative low-carbon products (e.g. fuels or chemicals) for instance do not yet have established markets that would remunerate the increased costs of the innovations involved in their manufacturing.

Support should therefore be given to companies facing higher risks for first-of-a-kind demonstration projects and deployment of innovative technologies and new business cases in the areas of energy and future mobility.

**Market assessment:**

References to market studies underpinning the InnovFin EDP and the CEF Debt Instrument – Future Mobility products:

* “Innovative Financial Instruments for First-of-a-kind commercial-scale demonstration projects in the field of Energy”[[10]](#footnote-11)
* “Financing innovation in clean and sustainable mobility”[[11]](#footnote-12)
* “Market study on CEF Transport blending facility”[[12]](#footnote-13)

The InnovFin EDP instrument was underpinned by a market study in 2016 concluding that the supply of equity and debt is at much lower levels for first-of-a-kind projects compared to financing of proven low carbon technologies. The study highlighted that market participants have very different appetites for risk. It leads to complex financial structures being required to enable such projects to achieve financial close, and to a high demand public sector funding mechanisms to fill the ‘valley of death’ financing gap.

The study identified two needed EU financial instruments: equity provision and loans, blended in some cases with grants and equity. These were subject to an ex-ante assessment in line with the criteria laid down in the EU Financial Regulation. Although the equity fund option scored slightly higher, both the equity fund and loan provision were deemed to be of strategic importance and should be developed in parallel, as complementary interventions.

The Innovation Fund Market testing Study also underpins the need for complementary financing on top of grants.

The study implemented by InnovFin Advisory on innovative transport technologies highlighted that easier access to finance could benefit the sector in the emerging areas of: urban green mobility solutions and services; low carbon highly energy efficient road vehicles; and automated and connected road transports. These areas represent the scope of this work and have a high potential to contribute to the Commission's objectives.

As a result of the analysis and market consultation carried out as part of this study, a set of nine recommendations was developed to address the financing gap and further barriers to innovation and access to finance in European Innovative Transport. These recommendations notably included: the development of tailored flexible grants (i.e. blending) for fast growing service companies; the push to the build-up of charging infrastructure through blending grants with flexible debt; and the support to dedicated innovative transport or multi-corporate funds to address the growth-phase financing gap.

The market study on blending further assessed potential for blending in the areas of decarbonisation of transport and deployment of alternative fuels and digital and telematics applications.

**Expected impact** (e.g. Financial / Policy KPIs)

Projects or investments should enhance the EU competiveness (e.g. accelerate repayment of the loans in case the company is acquired and/or provisions protecting property rights).

## Social infrastructure

[to be completed, subject to agreement with SISW]

# Other

## Tourism

Rationale, objectives and expected impact

Tourism is a heterogeneous sector encompassing a wide array of labour-intensive industries, activities and services. It is the third largest socio-economic activity in the EU; it makes an important contribution to the EU’s employment and GDP (above 10% on average in direct, indirect and induced). The sector comprises almost 2 million enterprises within the EU, 95% of which being SMEs. The increasing global competition, digitalisation and emergence of new business models (including platforms), the pressure on resource efficiency and environmental impact reduction, pattern changes in response to climate change, demographical changes and unbalanced tourism flows, constitute major challenges for the tourism sector in the EU.

InvestEU financing to the sector will be critical to help Europe maintain its attractiveness as a tourism destination at global level including improving quality of hotels, accommodation and attractions; supporting digitalisation of tourism businesses and destinations; developing new attractive products in a sustainable manner for local communities and the environment; developing local supply chain; contributing to and constituting an important component of a wider urban and post-industrial regeneration project (list not exhaustive).

## Aquaculture

Rationale, objectives and expected impact

## [to be completed]

The Low-carbon infrastructure for decarbonisation investments in the energy intensive industries, energy and transport.

The objective is to provide financing support to projects in the energy-transport-industry especially as regards the investments into low-carbon assets and infrastructure enabling the industrial decarbonisation. This may include support for CO2 or hydrogen pipelines, energy or CO2 storage facilities, or any other assets and infrastructure enabling the avoidance of process and product emissions and flow of low-carbon energy and products related to energy intensive industries.

## Union objectives on climate and environment

A financing or investment operation that contributes to meeting the Union objectives on climate and environment in accordance with consistent with article 7(5) InvestEU Reg, falls in the policy priority areas of the SIW general debt.

## Renewable corporate PPA support

Providing support to further develop the market for corporate power purchase agreements (PPAs) that are linked to new renewable infrastructure projects is a policy priority.

Corporate PPAs are contracts signed between a power generator and a corporation allowing corporations to procure green electricity at a fixed price for several years. (The corporates commit to ‘offtake’).

The corporate PPA market is still underdeveloped in Europe ( circa 2GW in 2017) but has a high potential to grow in a context of phasing out of public support together with the EU’s decarbonisation agenda which will require high levels of deployment of RES capacity (RES electricity share to increase from 30% today to more than 55% by 2030).

Offtake commitments enable renewable generation project developers to approach financiers with greater certainty about the future income of their projects. The lower perceived risk due to the PPA lowers the cost of capital of the project.

Currently the market is limited to large companies with high electricity consumption, such as global digital companies, and industrial users such as aluminium producers. These existing PPAs have enabled significant new renewable infrastructure to be built at no cost to the taxpayer.

Constraints, both regulatory and financial, limiting further leverage of offtake commitments to build renewable infrastructure should be tackled.

The limits from a financial perspective, may include inter alia the limiting of the offtake market to:

• The largest companies

• The most creditworthy companies or companies rated by credit agencies (typically the largest ones)

• Companies in certain industries (able to commit to buying over a long time horizon)

• Companies able to pledge collateral]

A financial product supporting corporate PPA would provide further security and bankability to the Corporate PPA segment enabling the developer to develop the renewable project at lower cost.

A proposed financial product should help bring more potential off-takers into the market, particularly since it can effectively support the aggregation of smaller off-takers.

It is worth noting the comparison of corporate PPAs with publicly guaranteed feed-in tariffs (FITs), depending on the off-taker PPAs can entail significant credit risk to the financier, where public guarantees generally do not. Furthermore, feed-in payments as a source of repayment are valued by the finance sector for their non-correlation with general macro-economic risk. This is not the case of PPAs where credit events might become significant in a prolonged downturn.

1. [http://www.europarl.europa.eu/RegData/etudes/STUD/2019/629199/IPOL\_STU(2019)629199\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2019/629199/IPOL_STU%282019%29629199_EN.pdf) [↑](#footnote-ref-2)
2. Projet de plan national intégré énergie-climat de la France, Janvier 2019 [↑](#footnote-ref-3)
3. Based on the yet ongoing OECD Study on water infrastructure investment needs focusing on correct implementation of the existing Urban Waste Water Treatment Directive without legislative changes tackling for example micro-pollutants. [↑](#footnote-ref-4)
4. [Impact Assessment for the recast of the Drinking Water Directive](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017SC0449&from=EN), SWD(2017) 449 final. [↑](#footnote-ref-5)
5. [The Ninth Report on the Implementation Status and Programmes for Implementation of the Urban Waste Water Treatment Directive,](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017DC0749&from=EN) COM(2017) 749 final. [↑](#footnote-ref-6)
6. *Link to be addeded when available*, Eunomia (2019) . [↑](#footnote-ref-7)
7. [Report on the implementation of EU waste legislation, including the early warning report for Member States at risk of missing the 2020 preparation for re-use/recycling target on municipal waste](http://ec.europa.eu/environment/waste/pdf/waste_legislation_implementation_report.pdf), COM(2018) 656 final. [↑](#footnote-ref-8)
8. COM(2016) 705 final [↑](#footnote-ref-9)
9. <https://www.eib.org/en/infocentre/publications/all/the-future-of-the-european-space-sector-report.htm> [↑](#footnote-ref-10)
10. <http://ec.europa.eu/research/energy/pdf/innovative_financial_instruments_for_FOAK_in_the_field_of_Energy.pdf> [↑](#footnote-ref-11)
11. <https://www.eib.org/attachments/pj/access_to_finance_study_on_innovative_road_transport_en.pdf> [↑](#footnote-ref-12)
12. https://eiah.eib.org/publications/attachments/cef-blending-facility-market-study-en.pdf [↑](#footnote-ref-13)