



advancing with ESIF financial instruments



European Structural and Investment Funds (ESIF) and Energy Performance Contracting (EPC)

Stimulating investments in energy efficiency





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Abbreviations

Abbreviation	Full name
CAPEX	Capital expenditure
CDR	Commission Delegated Regulation
CPR	Common Provisions Regulation
EC	European Commission
EED	Energy Efficiency Directive
EFSI	European Fund for Strategic Investments
EPC	Energy Performance Contracting (also: Energy Performance Contract)
ESCO(s)	Energy service company/(-ies)
ESIF	European Structural and Investment Funds
EU	European Union
JRC	Joint Research Centre
NPV	Net present value
OPEX	Operational expenditure



1. Introduction to Energy Performance Contracting (EPC)

The Joint Research Centre (JRC) stated in its 2017 policy report ‘Energy Service Companies in the EU’¹, that:

*“improving energy efficiency is one of the most important pillars of a sustainable energy policy and a key component of climate change mitigation strategies. The private sector, including energy service companies (ESCOs) can play a critical role in improving energy efficiency at the market level. ESCOs have the necessary know-how to provide turnkey services and solutions achieving significant energy cost reductions while addressing various market related barriers on the ground. ESCOs can handle projects, manage or mobilise financial resources, undertake installation and maintenance work as well as collaborate with other market players. When providing Energy Performance Contracting (EPC), ESCOs share the unique characteristic to assume performance risks by linking their compensation to the performance of their implemented projects, thus incentivising themselves to deliver savings-oriented solutions. The value of ESCOs in unlocking the energy saving potential in the market is recognised by various EU directives and initiatives in the European context, such as the **Energy Efficiency Directive (2012/27/EU) (EED)**², which sets explicit requirements to promote the market of energy services through its Article 18.”*

The EED makes further a clear link between financing facilities, in particular cohesion, structural and rural development funds, to further the objectives of this directive and the “*use of innovative financing mechanisms (e.g. loan guarantees for private capital, loan guarantees to foster energy performance contracting, ...)*”.

The importance of EPC and its financing is underlined by Horizon 2020 that provides project development assistance for the development of EPC projects with innovative elements, such as combination with comprehensive renovation and the setup of innovative financing schemes for EPC.³

The **Eurostat guidance issued in 2017** tries to address one of the key fiscal/regulatory barriers by clarifying under what conditions an EPC can be considered off-balance sheet in government accounts (so called ‘*Maastricht neutral EPC*’)⁴. The two key provisions are that:

- **the majority of risk and rewards are transferred to the private sector** (i.e. the EPC provider); and
- **the EPC provider is taking responsibility for arranging the financing of the capital expenditure (CAPEX) invested into the building.**

This is expected to stimulate the development of the EPC market via new financing models.

1 JRC (2017) ‘Status review and recommendations for further market development with a focus on Energy Performance Contracting’: <https://publications.jrc.ec.europa.eu/repository/bitstream/JRC106624/kjna28716enn.pdf>.

2 References in recitals 50 and 52 of the EED.

3 https://ec.europa.eu/easme/sites/easme-site/files/ses2-pda-webinar_220317_final.pdf;
https://ec.europa.eu/easme/sites/easme-site/files/ses3_ee23-24_-_finance_webinar_-_22_march_2017.pdf.

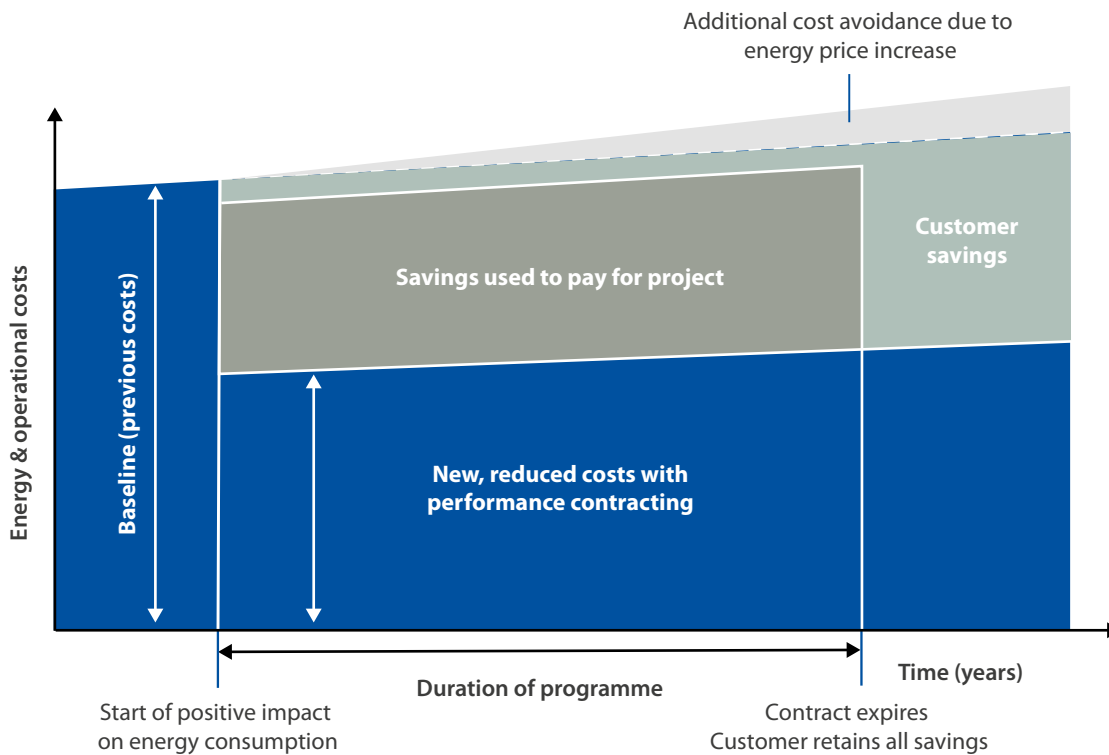
4 <https://ec.europa.eu/eurostat/documents/1015035/7959867/Eurostat-Guidance-Note-Recording-Energy-Perform-Contracts-Gov-Accounts.pdf/>



How does EPC work?

Energy performance contracts are contractual arrangements between EPC clients, usually the building owner, and an EPC provider, usually an energy service company ('ESCO'), where the EPC provider invests in energy efficiency measures and guarantees energy savings over the duration of the contract.

Figure 1: Business model of EPC



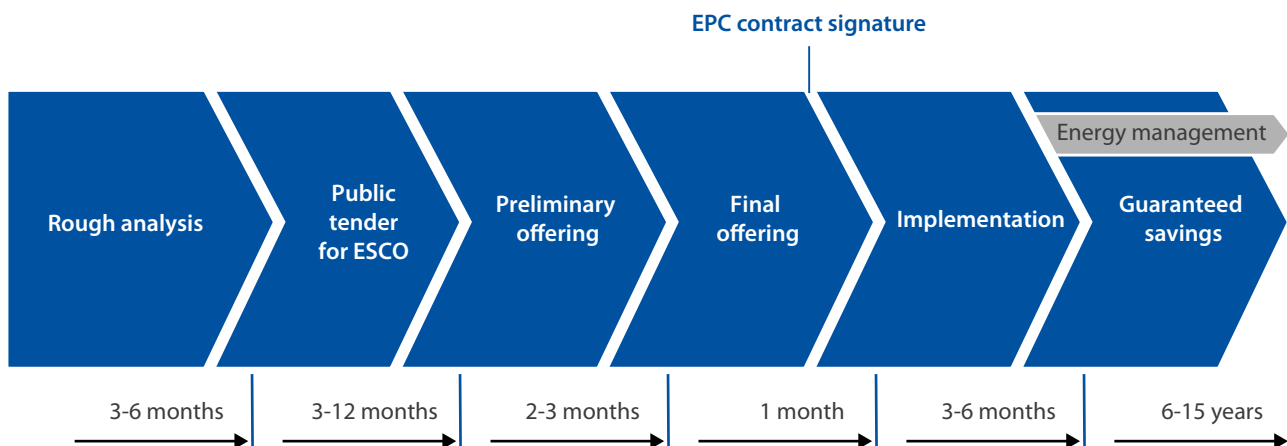
Source: <https://renovation-hub.eu/business-models/enhanced-energy-performance-contracting/>

Key features of EPC arrangements, compared to traditional procurement through works contracts, are:

- Energy performance contracts offer solutions where energy efficiency improvement investments are financed directly from saved costs;
- Contractual payments from the EPC client to the EPC provider are usually based on predefined outcomes/results (e.g. % of guaranteed energy savings achieved) rather than actual costs;
- The EPC provider takes over the energy performance risks;
- Savings (energy and/or financial savings) are guaranteed by the EPC provider and determined by predefined and transparent monitoring and verification protocol;
- The EPC provider supports long-term use of energy management and actively supports its client in the implementation of an energy management system; and
- The EPC provider supports its client in finding the most suitable financing solution.

EPC arrangements may concern different kind of investments. The present note focuses on **comprehensive (or 'deep') energy efficiency refurbishment of buildings**. Such EPC arrangements are able to generate savings above 40% but have a much longer repayment period, above 8 years, compared to EPC arrangements only covering energy management systems, heating, cooling and lighting. Only such comprehensive energy efficiency measures allow for reaching the 2050 decarbonisation targets set by the European Union (EU).

Figure 2: Typical timeline of an EPC project



The EPC client, usually the building owner, organises a tender for EPC providers. The EPC client provides bidders with a rough analysis and historic data on energy consumption. EPC providers usually undertake their own more detailed measurements during the tender period, and their bid proposal will usually include the following elements:

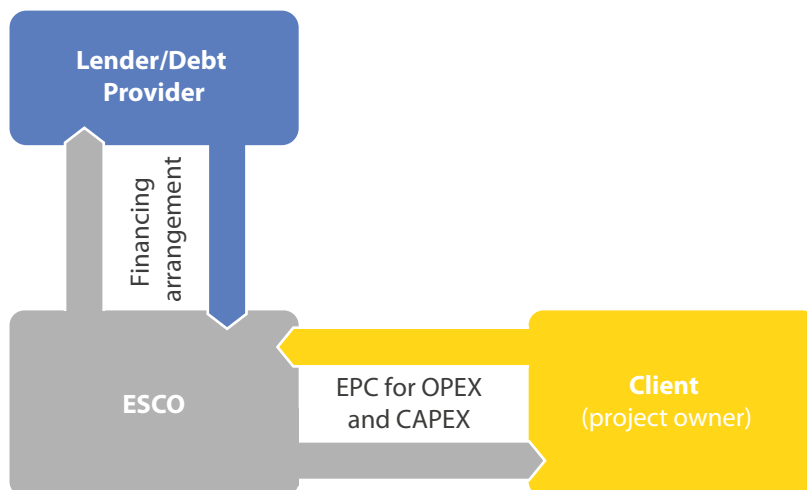
- The amount of savings to be guaranteed, compared to a baseline established on the basis of historic data;
- Technical design to achieve energy savings, such as change of the heating, ventilation, air conditioning and lighting systems, the installation of an energy management system, as well as a training programme for users of the building to reduce consumption. The measures may further include renewable energy integrated in the building or insulation improvements to the envelope of the building; and
- A monthly fee covering the CAPEX and a fee for the maintenance and operational expenditure (OPEX) and in some cases, a monthly fee related to financing cost, if not already included above.

The winning EPC provider signs an EPC with the EPC client and a financing arrangement with the lender for the capital expenditure (CAPEX) of the project.



After signature of the EPC, the EPC provider undertakes the necessary energy efficiency investments (implementation period), which lasts typically between 3 to 6 months. The EPC provider does not receive payment from the EPC client during the implementation period. Thus, the risk of cost overruns or delays during the implementation period are the risk of the EPC provider.

Figure 3: Contractual relationship in an ESCO financed EPC



After completion of the implementation period, the EPC provider commissions the project and assumes the performance risk for the measures in the form of a long-term performance guarantee to ensure that the projected energy and operational cost savings materialise and are preserved over time. The EPC client pays the EPC provider the agreed fees on a monthly basis. The EPC provider monitors the EPC assets on a regular basis and measures continually the actual energy savings. On an annual basis, a third party verifies the measurements by the EPC provider. The actual savings are compared with the guaranteed savings and depending on the outcome, there may be an adjustment to the payments⁵:

- **Ideal scenario:** actual savings = guaranteed savings \Rightarrow no adjustment of payment;
- **Underperformance:** actual savings < guaranteed savings \Rightarrow the EPC provider needs to compensate the EPC client (in 'Maastricht neutral EPCs', the fee needs to be reduced proportionally to the degree of underperformance);
- **Overperformance:** actual savings > guaranteed savings \Rightarrow EPC provider is receiving a bonus (in 'Maastricht neutral EPCs', the EPC provider has to receive at least 2/3 of the overperformance).

5 The difference between actual and guaranteed savings may also be due to factors outside the EPC provider's control, such as climate, change in energy prices or utilisation of the building. In this case, the baseline to which savings are compared is adjusted. In case of dispute between EPC provider and EPC client, they may call an arbiter for settlement.



2. Identified market gaps

According to the JRC⁶, the EPC market in Europe is not sufficiently developed, mainly because of the following factors:

- Lack of information and awareness of the public authorities;
- Lack of trust and track record of the public authorities;
- Project development capacity of project promoters;
- Complex procurement process to select adequate EPC providers;
- Statistical treatment of EPC which implies additional public debt and deficit;
- Access to finance for EPC providers; and
- Competition with grant schemes, EU and national grants are often not compatible with EPC arrangements.

European Structural and Investment Funds (ESIF) can play an important role in addressing the market gaps for access to finance for EPC providers and competition with grants, for example by providing adapted financing to EPC providers and providing grants dedicated to energy efficiency measures compatible with the EPC approach.

2.1 The main financing gaps

The following financing gaps for EPC for comprehensive building refurbishment have been identified:

- Difficulties for the EPC provider to access to long-term financing (longer than 6 years), also because of their limited balance sheet resources;
- The EPC market is fragmented;
- Lack of standardisation increases transaction costs for EPC clients and for banks; and
- The banks are reluctant to finance EPC projects where they are exposed to EPC client credit risk and to the risk of underperformance of the EPC provider.

The new Eurostat rules on '*Maastricht neutral EPC*' require that the majority of risks are with the EPC providers and a minimum contract duration of 8 years. The potential of these rules can only be exploited beneficially, if adapted financing solutions are put in place. Currently, the banking sector is reluctant to engage in '*Maastricht neutral EPC*'.

2.2 Potential investment strategy to address the identified market gaps

Several Member States currently envisage setting up different models of ESIF financial instruments or investment platforms in order to foster the investment in energy efficiency in buildings by taking advantage of the new Eurostat rules on EPC.

6 Source 2017 JRC report



Such financial instruments / investment platforms are expected to:

- Provide easier access to long-term financing for EPC providers without increasing their debt burden;
- Reassure EPC clients by developing standardised contract templates and sharing best practices;
- Stimulate the market demand by addressing budgetary constraints;
- Reduce the cost of financing for EPC arrangements, especially in the public sector; and
- Provide a risk coverage for EPC client credit risk and EPC provider performance risk.

Such financial instrument / investment platform models would address some of the main barriers and market gaps identified.





3. Using ESIF financial instruments to support EPC projects

The expected upscaling of the EPC market will require new forms of **adapted financing** to be made available to EPC providers. Only a limited number of specialised financial instruments or investment platforms are available in this still rather niche sector. New financing models may be developed with public support, for example using national resources, **ESIF** and/or the European Fund for Strategic Investments (EFSI), in order to support the implementation of comprehensive energy efficiency refurbishment in buildings through EPC providers.

An ESIF financial instrument targeting the market gaps identified in the ex-ante assessment in line with Art. 37 Common Provisions Regulation (CPR) may take the form of a loan or a guarantee instrument set-up under Article 38(1)(b) or 38(1)(c) CPR⁷. The implementation of such instruments can take one of the forms described below and must respect the applicable legal framework for ESIF financial instruments.

3.1 ESIF loan or guarantee products

ESIF loan products can potentially finance EPC providers at preferential conditions, such as lower interest rates and/or longer tenures, with the economic advantage being passed on to the EPC client who would benefit from a lower EPC fee. The standard tenure of the loan to support EPC for comprehensive building refurbishment will usually need to be between 8 and 15 years and include the provision of a grace period for the implementation.

As stated previously, the financial intermediaries, which lend to the EPC providers, are essentially exposed to two types of risk:

- The performance risk, when the EPC provider does not deliver guaranteed savings; and
- The credit risk that the EPC client does not pay the EPC fee over the longer term.

An **ESIF guarantee product** can also help to cover these types of risk and thus enable financial intermediaries to provide financing for EPC providers at more affordable rates or with a longer tenure, always with this benefit being passed on to the EPC client resulting in a lower EPC fee component.

ESIF financial instruments delivering loan or guarantee products therefore have the potential to make access to financing easier for EPC providers. The current EPC market (and smaller ESCOs in particular) is looking for longer-term and affordable **debt financing** for their EPC projects, which would allow them to borrow for new, additional projects, once other projects are completed. Such a solution can be provided through a so-called 'EPC with forfaiting'.

⁷ Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.



3.2 ESIF ‘forfeiting’ loan or guarantee to ‘forfeiter’

The financial and operational set-up of an ‘EPC with forfeiting’ financial instrument is described in detail below.

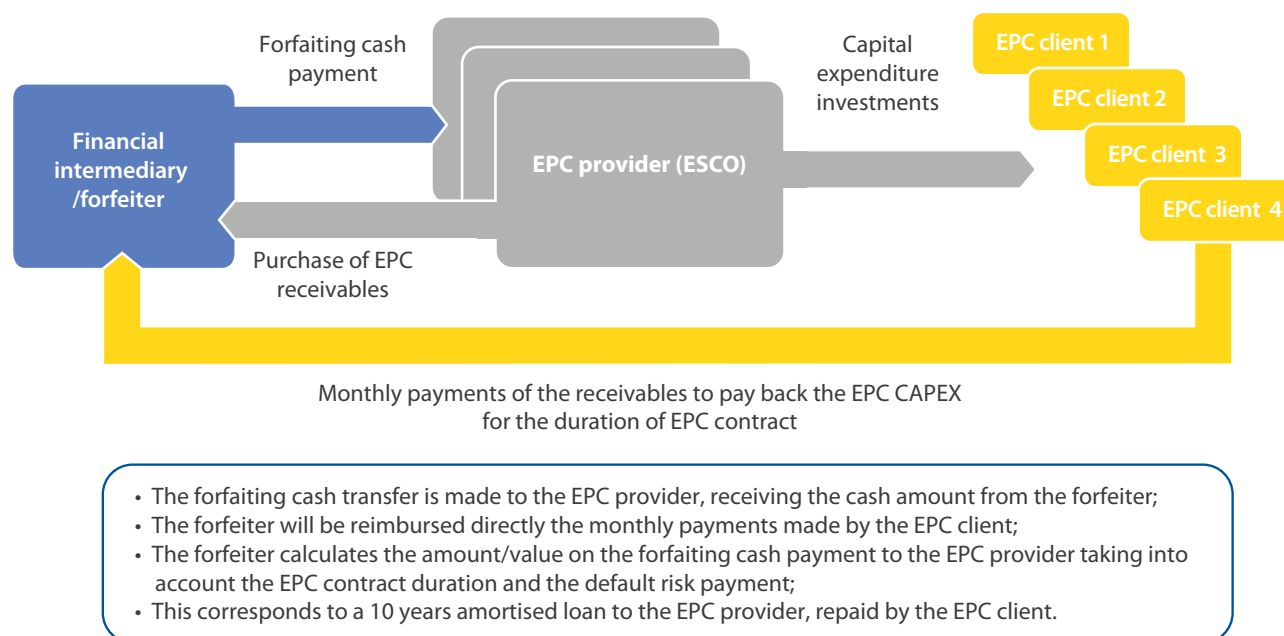
3.2.1 General description of an EPC with forfeiting

Forfeiting is a sale of receivables without recourse against the seller regarding the receivables sold. This means that a financial institution acting as a forfeiter (financial intermediary) is buying the rights to the future revenues that a seller (EPC provider) will receive from the EPC client. The EPC forfeiting relates only to the part of the EPC fee covering the capital expenditure (CAPEX), i.e. expenditure corresponding to the investments incurred by the EPC provider during the implementation period for the energy efficiency refurbishment of the building. The selling price is the net present value (NPV) of the sum of the future CAPEX related receivables less the interest rate cost and the cost of EPC client credit risk.

EPC forfeiting is usually **a necessary part of the long-term financing scheme** and will be already under negotiation between the EPC provider and the financial intermediary/forfeiter at the time the EPC provider enters into a contract with the EPC client. EPC forfeiting can reduce the financing cost of the projects significantly.

Consultations with banks show that smaller/medium EPC providers and long-term EPC projects face difficulties in accessing EPC forfeiting and/or find that financing becomes very expensive if there are no irrevocable payment obligations from the EPC client to the forfeiter. Because, in this case, the forfeiter is exposed to both risks, i.e. the EPC client’s credit risk and the performance risk of EPC provider⁸.

Figure 4: Forfeiting scheme in an EPC



8 It is estimated that interest rates for EPC forfeiting without ‘irrevocable payment obligations’ may be over 5% per annum higher than where EPC clients finance the expenditure themselves. Policy paper from RENOWATT a project by the Province of Liège, Belgium: http://cityinvest.eu/sites/default/files/library-documents/WORKING%20DOCUMENT_Eurostat%20Note.pdf.



Experience shows that this performance risk can be overestimated by forfeiters/banks, as in practice EPC providers are usually able to achieve the guaranteed savings over the contract duration, and any underperformance usually occurs only in the beginning of the guarantee period. There seems to be a clear case of a perceived market failure as commercial banks have difficulties to assess the real performance risk attached to such EPC agreements, and thereby charging too high interest rates compared with the actual risks.

3.2.2 Description of an ESIF ‘forfeiting’ loan or an ESIF guarantee to ‘forfeiter’

ESIF resources can be mobilised through financial instruments to support ‘EPC forfeiting contracts’ to enable the EPC provider to realise comprehensive energy efficiency measures for the benefit of EPC clients. Financial instrument support for forfeiting can address market failures, providing EPC providers with access to long term financing at competitive pricing, notwithstanding its constrained balance sheet resources.

An EPC forfeiting agreement may be considered as a loan to be repaid by the EPC client. In terms of an ESIF financial instrument, the forfeiter is the financial intermediary and the EPC client is the final recipient.

The operation is a ‘forfeiting’ transaction from the perspective of the EPC provider, but can be assimilated to a loan from the perspective of the final recipient/EPC client of the ESIF financial instrument for which the EPC provider is considered the supplier of the works.

The ESIF contribution will be utilised either to provide funding to the financial intermediary to be able to provide longer-term forfeiting loans (i.e. ESIF forfeiting loans) or to cover the financial intermediary acting as a forfeiter against its exposure to the EPC client credit risk and EPC provider performance risk (i.e. ESIF guarantee for forfeiter).



Such an ESIF financial instrument should comply with several conditions as described in the following paragraphs:

The **investment decision**, meaning the forfeiting agreement between the forfeiter/financial intermediary and the EPC provider, needs to be signed directly after the EPC provider is awarded the EPC contract. The initial financing provided by the EPC provider or third party should be considered as bridge financing for the implementation period. The sale of the CAPEX related share of the receivables takes place right after completion of the project. The forfeiting transaction should not be considered **refinancing** because this arrangement is a necessary part of the project implementation and concluded **before** the physical completion of the project. The financial advantage of this arrangement in the form of cheaper long-term financing must be also already reflected into the EPC provider's price offer and the lower EPC fee paid by the EPC client.

The EPC fee consists usually of two elements:

- A payment covering the **CAPEX** of the EPC provider; and
- A payment covering the cost for operation and maintenance of the EPC assets (OPEX) during the lifetime of the project.

In case of the 'EPC forfeiting contract', the interest cost relating to the forfeiting also comes into play. The explicit disclosure of the interest component of the EPC fee ensures full transparency of the financing costs of the forfeiting arrangement. This helps ensuring for State aid purposes that the interest rate applied by the forfeiter to the EPC provider is the same that is invoiced to the EPC client. So, for the 'EPC forfeiting contract', the EPC fees elements are paid as following:

- A CAPEX related fee paid by the EPC client directly to the forfeiter (financial intermediary);
- An OPEX related fee; and
- A fee for the interest cost relating to the forfeiting arrangement;

the last two paid by the EPC client to the EPC provider. As ESIF can only finance investments, only the capital expenditure element of the EPC fee should be forfeited and consequently be included as ESIF eligible expenditure.

The **economic advantage** of the financing received from the ESIF financial instrument needs to be passed on – through the EPC provider – to the EPC client as the purpose of the ESIF instrument is to increase the value for money of energy efficiency investments realised through EPC. The forfeiting agreement therefore should include provisions that ensure the pass-through of the economic advantage through the EPC provider and result in an improved energy savings to cost ratio for EPC clients. In the Czech Republic, for example, there is full transparency on the financing cost of the forfeiting arrangement, which is disclosed to the EPC client. In order to comply with State aid rules, the forfeiting agreement with ESIF support shall include e.g. provisions that the interest rate applied by the forfeiter to the EPC provider is the same that is invoiced by the EPC provider to the EPC client.

As indicated above, the **eligible expenditure** for the EPC ESIF forfeiting loan is limited to the investment cost incurred by the EPC provider for the benefit of the EPC client (CAPEX). The same CAPEX investment costs are the underlying basis (i.e. of disbursed new loans) for the calculation of the ESIF programme contribution for ESIF guarantees to the forfeiter. More specifically:

- In case of a 'forfeiting' loan financial instrument, from an Article 42(1)(a) CPR perspective, the eligible expenditure will be the amount of the programme contribution of the loan to be paid back by the final recipients (the EPC clients) to the body implementing the financial instrument. This loan corresponds to the CAPEX costs incurred by the EPC provider for the energy efficiency refurbishment of the building;



- In case of guarantees to the forfeiter, from an Article 42(1)(b) CPR perspective, the eligible expenditure will be the programme resources committed for guarantee contracts covering the financial intermediaries acting as forfeiter to which the final recipients have to pay back the CAPEX costs. The resources committed are determined on the basis of a multiplier ratio that should be established in line with Article 8 CDR 480/2014⁹.

In both cases, the energy efficiency refurbishment works are performed by the EPC provider based on the legal agreements that were signed with the EPC clients.

3.2.3 Further aspects that should be considered for all types of ESIF financial instruments supporting EPC

In order to reduce the risk for ESIF financial instruments and to reduce transaction costs, the following aspects should be considered when setting up an ESIF supported EPC scheme. Only EPC projects using standardised contracts should be financed in order to reduce operational risk and facilitate bundling of small EPC projects. EPC providers should be certified and follow best practice in the sector (in order to mitigate the energy performance risk)¹⁰. Beyond this, the financial intermediary would need to assess the EPC project in line with their normal processes and procedures and make the investment decision with an appropriate level of 'skin in the game' (i.e. invest own-funds at own risk) or risk sharing.

⁹ Commission Delegated Regulation (EU) No 480/2014 of 3 March 2014 supplementing Regulation (EU) No 1303/2013 of the European Parliament and of the Council laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund.

¹⁰ This approach follows the recommendation in the Energy Efficiency Directive, Art. 18 (1,d) which advises Member States to provide model contracts and information on best practise for EPC in the public sector.





In order to incentivise energy efficiency measures realised through EPC (as an alternative to works contracts), it is important to reduce the financing cost of EPC to a level comparable to that which would have been borne by the building owner if the latter had borrowed directly the loan to perform the works. To achieve this, where duly justified, e.g. in case the ESIF guarantee for forfeiter does not sufficiently lower the financing cost of the EPC project, an ESIF guarantee for forfeiter may also be combined with **interest rate subsidies** supported by ESIF in a single operation. The interest rate subsidy would aim at improving the conditions of access to private capital for final recipients/EPC clients by covering the funding cost of private investors, such as the financial intermediary or other co-investors in a debt fund. Such lower interest rates would give an incentive to the EPC client and encourage the use of EPC as a more financially efficient means of carrying out energy efficiency investments. This should be a short term measure to be phased out, once the market is more mature and the risks of undertaking EPC are better understood by commercial lenders and other financing providers.



4. Numerical example of an EPC project with forfeiting

A municipality (the EPC client) wishes to renovate a number of school buildings procured through a single EPC contract. The buildings are 20-30 years old and have obsolete lighting and heating facilities. The following work is undertaken during the implementation period: installation of efficient lighting inside and outside the buildings, reconstruction of boiler houses, installation of combined heat and power units, installation of heating control equipment and an energy management system. The EPC provider is required to guarantee a minimum energy saving of 35% (relative to the historic base line).

The project has the following characteristics:

Illustrative project example	
CAPEX (without long-term financing cost)	EUR 2 000 000
Duration of contract	10 years
Energy cost before intervention (baseline) per annum	EUR 700 000
Guaranteed savings	35%
Guaranteed savings (monetary) per annum	EUR 245 000
EPC fee per annum	EUR 240 000
of which CAPEX related	EUR 200 000
of which OPEX related	EUR 24 000
of which interest related (1.5% per annum)	EUR 16 000

The EPC provider undertakes the initial investment of EUR 2 million, consisting of costs for equipment, works and bridge financing. After completion of the implementation period, the EPC provider commissions the works and sells the future receivables of the annual CAPEX related EPC fee (10 x EUR 200 000) component to a forfeiter/bank for its NPV at a discount rate of 1.5%¹¹. The discount rate includes the funding and the risk-related cost. The EPC provider therefore receives EUR 1.84 million from the forfeiter, which it uses to repay the short-term debt taken to finance the CAPEX works.

In the event that the minimum savings are achieved, the EPC client will make EUR 245 000 worth of energy cost savings and pay annually EUR 200 000 of CAPEX related fees to the forfeiter and a further EUR 40 000 for OPEX related fees and interest costs to the EPC provider. This leaves the EPC client with net cost savings of EUR 5 000 per year.

In case that the EPC provider achieves only 90% of the guaranteed savings (EUR 220 000) the EPC client needs to pay only 90% of the sum of the fees (EUR 216 000). The client will pay the full amount of CAPEX related fees to the forfeiter and will pay to the EPC provider only EUR 16 000.

¹¹ Calculation of the NPV in the example above:

$$NPV = \sum_{t=0}^{10} \frac{200\,000}{(1+0.015)^t} = \text{EUR } 1.84\text{m.}$$



In the case of significant underachievement of only 75% of the guaranteed savings (EUR 183 750), the EPC client needs to pay only 75% of the sum of the fees (EUR 180 000). The shortfall of EUR 20 000 of the CAPEX related fee would be covered by the ESIF contribution to the financial instrument. Nevertheless, the forfeiter has the right to recover the performance shortfall from the EPC provider. Eventually recovered amounts will flow back to the financial instrument.

In all these cases, the eligible expenditure under Art. 42(1)(a) CPR for a loan instrument would be EUR 2 million.

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contact@fi-compass.eu
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European Commission
Directorate-General
Regional and Urban Policy
Unit B.3 "Financial Instruments and IFIs' Relations"
B-1049 Brussels

European Investment Bank
Advisory Services
fi-compass
98-100, boulevard Konrad Adenauer
L-2950 Luxembourg