FIRECE – Interreg CENTRAL EUROPE Project CE1131

WPT1 Increasing competence to manage Regional Energy Plans and elaboration of the FIRECE action plan

Guidelines on financial instruments to support the implementation of the Energy Plans

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1. Introduction and definitions

These guidelines provide instructions to use Financial Instruments in EU areas with a set of existing financial instruments, together with criteria for the selection and adaptation of existing FIs, to build new ones and with methods for private investors involvement in investments focused on reducing the carbon level in industrial energy use.

The document returns the results of the activity A. T1.1 and the deliverables D. T1.1.1 State of the art analysis and D. T1.1.2 Benchmarking Report to develop selection criteria and adaptation of the financial instruments at the local level.
The document will be declined at national level with action plan and used in A. T2.4.

Investing to reduce the carbon level in industrial energy uses means investing in measures to improve energy efficiency and promote energy supply from renewable sources: given the characteristics of these measures, it is necessary that the financial instruments are designed to integrate correctly into the life cycle of an energy efficiency project and that all the involved actors speak a common language and have a standardized and shared set of tools.

The basic definitions

Financial Instrument[1]: a tradable asset of any kind, either cash, evidence of an ownership interest in an entity or a contractual right to receive or deliver cash or another financial instrument. Financial instruments maybe represented by a real or virtual document (such as a check, draft, bond, share, bill of exchange, futures or options contract) representing a legally enforceable (binding) agreement between two or more parties regarding a right to payment of money. Commonly financial instruments are classified as equity based, representing ownership of the asset, or debt based, representing a loan made by an investor to the owner of the asset.
The mechanisms for industrial sector can be summarized as follow:

- savings and equity
- loans/mortgages
- leasing for energy efficiency products
- specialized energy efficiency funds offering equity or debt for projects
- financing through specialized energy service contracts such as Energy Performance Contracts.
- secondary financing through forfaiting funds, bonds, yields and securitization.

This general definition of FI, understood by financial institutions, has specific additional meaning ascribed by the European Commission when used in the context of European Structural and Investment Funds 2014-2020. Financial instruments, in the context of EU Cohesion Policy, specifically refer to those instruments which enable public sector resources to be used in a more efficient way by drawing upon commercial practices and actors and by stimulating the participation of private sector capital.

Innovative Financial Instrument[2,3] : IFIs can be defined as measures of financial support provided from the budget in order to address one or more specific policy objectives by way of loans, guarantees, equity or quasi-equity investments or participations, or other risk-bearing instruments, possibly combined with grants. The European Commission in the communication COM(2011) 662 final - A framework for the next generation of innovative financial instruments – defines IFIs as: “The innovative financial instruments dealt with in this Communication include instruments which provide equity/risk capital, or debt instruments (such as loans or guarantees to intermediaries that provide financing to a large number of final recipients who have difficulties in accessing finance, or risk sharing with financial institutions in order to increase the volume of finance and hence the impact resulting from the EU budget intervention)”.

[1] Energy Efficiency Financial Institutions Group (EEFIG)
[2] Centre for European Policy Studies
[3] PWC – ExAnte Financial Instrument Evaluation, 2015, Emilia-Romagna Region – VexA SP ER – www.pwc.com

It is important to remember that IFIs are only suitable for projects with potentially profitable financial returns. Greater discrimination is needed regarding projects that need grants and those that could be at least partially financed with loans. IFIs that combine grants – to reduce the overall cost and risk of projects – and loans help boost the credit rating of projects that otherwise would not have seen the light of day. Grant components attract financiers.
IFIs can be used for projects where the internal rate of return (IRR) is either close to positive, or positive but not high enough to attract financiers because of market failures, long maturities or other barriers that can be reduced by using IFIs.
The general benefits deriving from the adoption of the Financial Instruments, which are not traceable in other forms of support such as grants, can be grouped into the following categories:
• multiplier effect on the funds: ability of the Financial Instruments to associate different forms of public and private financial resources in support of public policy objectives and ability to guarantee a revolving flow of financial resources for strategic investments, favoring long-term sustainable investments and strengthening the growth potential of the Union;
• possibility of combining Financial Instruments with non-repayable resources: in cases where elements of an investment do not determine financial returns in line with the degree of risk of the project, it could be justified to combine the Financial Instruments with grants (within the limits permitted by the regulations in force in the field of State aid) in order to allow the economic viability of the projects;
• support for final beneficiaries: possibility to allocate part of the resources allocated to the Instruments Financial to provide non-repayable technical assistance to the final beneficiaries;
• possibility to contribute to the Financial Instrument with additional resources;
• reduction of moral hazards and responsibility of final beneficiaries in the use of public resources, being funds that must be repaid;
• interventions with aid intensity that are smaller than the fund lost and lead to a weakening of the distortionary effect on the markets.

2. Coordinated development of the energy efficiency project life cycle

The typical phases of technical development of the energy efficiency project are the following:

1. investment grade energy audit
2. design development:
    - basic design
    - detailed design
    - detailed installation design
3. implementation:
    - installation
    - commissioning
4. operation:
    - Measurement & Verification
    - Operations & Maintenance

in coordination with the financing operations development:

1. pre-financing:
    - origination
    - decision to proceed
    - underwriting
    - decision to invest
2. operations and servicing:
    - administration
    - draw down
    - servicing

The overall life cycle can be summarized in the following scheme:

Figure 1 - Coordinated development of the project life cycle

3. Industrial efficiency financing issues

It is current practice in the industry that energy efficiency investments with a payback period of longer than 2-3 years typically are not implemented based on the financial case alone. These projects do not proceed even though there is a promising investment opportunity and there are investors willing to invest in longer-term investments. If the projects are implemented, the improvements typically fulfill another purpose such as improved productivity or quality.
According to the results of the Trust-EE project[4], the financing related gaps include[5]:

- **credit risks** of the industrial owner/asset owner
- understanding, attracting, blending and managing the many different types of financing is difficult. **Lack of financial competence**/skills especially among SMEs
- choice and application of **financial metrics**: when to use what financial metrics for what purpose requires expertise and management time. Choice of metrics impacts project selection e.g., simple payback period versus time-based metrics like Internal Rate of Return (IRR). The financial competence required to use these metrics appropriately is high
- **line of credit limitations** for suppliers/project developers limit the number of projects, especially longer payback period projects, which smaller suppliers can offer without exceeding these lines of credit
- **aggregation and standardization** to increase scale of investment is critical from an investor and bank perspective. Standardized processes, standard contracts and documentation must be developed and applied (see par. 5 Non-financial instruments)
- **guarantee issues** especially affecting SMEs with innovative technologies and new solutions that lack a proven energy savings track record. This can drive up the cost of financing and be prohibitive
- **project identification**, timing, and preparation: investors and banks have funds, however, well-developed projects with a clear and well-documented business case are not forthcoming, especially in time to finance efficiency during otherwise planned renovations or production shutdown cycles.

Other critical gaps, which are not directly related to finance, but can affect industrial project development or financing, include:

- energy efficiency is a **low priority**, a small part of production costs and energy projects must compete again other projects for financing. Energy efficiency is not therefore viewed as strategic
- industry **motivations and drivers**: related to the low priority of energy, understanding the core business drivers, and different motivations of individuals and business units is a critical need

[4] TrustEE - Financing and realizing energy efficiency and renewable energy projects in industry https://www.trust-ee.eu/

[5] eceee pre-conference workshop: Mind the Gap - Financing industrial efficiency 11/06/18

- **capacity**: SMEs and even larger firms have limited time/resources to devote to project development and to build awareness about energy impacts in their organizations
- **skill gaps** across the supply chain: there are a limited number of qualified energy auditors and project developers with industrial process engineering expertise. Energy auditors often miss or ignore process efficiency opportunities and heating related opportunities. Marketing and finance skills are needed for energy auditors, project developers
- "**cream skimming**": the easy projects with short simple payback (e.g., lighting) are selected at the expense of more holistic projects that cover several systems or measures
- risk, risk perception and **risk management** as it pertains to changing or implementing measures on industrial processes. Issues around avoiding production stoppages or affecting production negatively
- **policy and regulation**: at the EU level gaps include the need to strengthen Article 8 of the EED to make sure that energy audits encompass process-heating systems. Regulatory/market mechanisms to ensure that recommendations from audits are implemented are also needed. Ensuring that efficiency first is built in to policy instruments, including access to public financing instruments for clear energy, is important. New instruments that bring additional actors to the market, such as white certificate schemes based on shared opportunities and incentives, are needed and have to be set on a stable regulatory framework. And, some Member States are actively trying to weaken efficiency policy, and this is a challenge.

The following table summarizes the drivers affecting the supply of finance for corporate energy efficiency investments[6]:

Company Segment	Large EN Intensive	Large Non-EN Intensive	Mid-Cap	SMEs	Average Rank
Regulatory Stability	1	1	1	2	1.25
Availability of Performance Data and Clear/ Transparent Monitoring and Measurement of Savings vs Baseline	2	2	2	4	2.5
Overall Supply of Long-term Finance	6	7	5	6	6
Industry/ Sector Risk	3	3	10	9	6.25
Awareness at Key Decision Maker Level & Leadership and Human Capacity	11	6	3	7	6.75
Development of Easy-to-Use Standards for All Steps in EE Investment Process	10	10	4	3	6.75
Technical Assistance/ Capacity Building for FIs	12	8	7	5	8
Knowledge of EE Technologies and Necessary Skills to Assess EE Investments	4	4	9	17	8.5
Technology Risk	5	5	17	11	9.5
Existence of Public Subsidies for EE Projects	20	18	6	1	11.25
Increased Investor Confidence and Changes in Risk Perception of EE Asset Class	7	12	13	13	11.25
Banking Regulations	13	11	14	10	12
General Economic Outlook	14	14	12	8	12
Improved Counterparty Risk	9	9	15	16	12.25
Finance Providers' approach is Project Cash Flow rather than Company Balance Sheet based	15	16	8	12	12.75
Key Decison Makers' Confidence in EE Resources	8	13	16	15	13
Increased Non-Bank Financing Options	18	19	11	14	15.5
Appropriate Resourcing for EE	17	17	18	18	17.5
Mainstreaming of EE Focus within Industrial Lending and Investment	16	15	19	20	17.5
Concentration Limits for Individual Lenders/ Availability of co-financing Options	21	20	22	22	21.25
Existence of Multiple Refinancing Options	19	21	23	23	21.5
Aggregation challenge and opportunity	24	24	20	19	21.75
Split Incentives	23	22	21	24	22.5
Reduced Hidden Costs of EE investments	22	23	25	25	23.75
Use of ESIF 2014-2020	25	25	24	21	23.75
Public-Private Funding to turn Research into Innovation	26	26	26	26	26

[6] EEFIG Final Report covering Buildings, Industry and SMEs - February 2015

4. Proposal for solutions

The financial related solutions include[7]:

- new financial models and instruments that **address credit risk** and credit lines of SMEs (through balance sheet financing, guarantees and other vehicles)
- creating **financial facilities** and vehicles that can bundle projects, access capital markets through securitization, and/or can help aggregate or manage different streams of financing
- efficiency first principle: ensuring that efficiency products and services are included in and eligible for **public clean energy funding.**

Solutions to other gaps include:

- **change the message**: efficiency is not an end, nor a leading motivator or driver for projects. The focus must be on the main business drivers and motivations. Solutions raised include:
    - changing the sales language, focus on main business drivers including terms such as "resource productivity"
    - partnerships: identify strategic partners that energy professionals can work with to access decision makers and processes (e.g., Lean consultants, etc.)
    - using existing business networks within sectors to identify leading drivers, sales arguments, training opportunities and champions
    - develop well-designed sales/pitching schemes for different sectors. Central information and evidence such as good case studies, evidence and examples can speak to drivers and build the business case.
- **timing**: be ready with solutions:
    - when is the industrial owner already planning a renovation/production stoppage? How can we anticipate these times? When there are natural work stoppages where training, project development, or financing assistance can lead to an investment?
    - Who are our ambassadors or "white knights" in the companies that can inform us of good timing, and are ready and willing to work on efficiency projects?
- **training, awareness building** and improving communication across groups including:
    - energy management workshops that include diverse groups and business units to build communications and understanding
    - energy managers with formal responsibilities to promote energy efficiency
    - encouraging certification of Energy Management Systems according to ISO 50001 scheme for long term approach to energy
    - communication tools – a Board level executive document following energy audits, that is provided with a summary and key results, instead of simply a lengthy technical audit
    - new training academies and initiatives devoted
- **look to successes** in the renewables industry and translatable lessons even if industrial processes are highly varied
    - RE projects worked with via IRR, reduced transaction costs, lowering risks with relatively high standardization
    - good projections for wind yields have improved dramatically
    - scale of investment is 200-300 M per park, so the scale is attractive
    - replicable processes
    - quality orientation
    - O&M contracts guaranteeing availability
- sharing **replicable projects** and applications
    - some equipment and system solutions are replicable. E.g., bakeries. Expose them and use these to build scale.
- **changes in policy** and regulation/business case development

[7] European Council for an Efficient Economy

- strengthen energy audits so that industrial processes are covered by competent auditors, and that recommendations are implemented
- white certificate schemes successful in bringing new and skilled actors into market (Italy)
- policy pressure and lobbying to expose Member states that would weaken industrial efficiency policy.

5. Characteristics of existing financial instruments[8]

From EEFIG Final Report, here are as guidance the identification of financial instruments and review of their sectoral applicability as well as certain key benefits and challenges which they face.

5.1 Dedicated Credit Lines

Dedicated credit lines (or soft loans) are a mechanism where public funding decreases the cost of energy efficiency building renovation loans and provides concessions on terms, such as repayment periods. The impact and relative success of dedicated credit lines can also be attributed to their retail distribution through networks of private banks.

Advantages	- Easy to roll out, however careful ex-ante analysis of supply and demand and legal/tax framework needed - Leverage effect of public funds is usually between 4 and 10 which is higher than traditional grants - Standardised supply offering at the same time flexibility according to individual preferences (repayment, interest rate fixation etc.) - The use of Cohesion funds for soft loans in housing is facilitated with the "renovation loan" (off-the shelf instrument) - Allows 1:1 refinance to commercial banks (Basel III compliant) - Positive impact on public budgets[148] - Allows raising the ambition of the investment in terms of energy savings (e. g. by combining the loan with a grant component) - Can be used for ambitious renovation / refurbishing project as well as for individual measures: large flexibility - Usually offers longer duration than commercial loans
Weaknesses	- Capacity/ willingness of owners to take more debt (i.e. very country dependent) - Risk aversion of banks (calling for guarantees from Governments) - Often complicated, time consuming and static application processes which act as a hurdle for projects - Loans often require the additional implementation of costly non-energy related measures which change project characteristics
Main obstacles to the instrument	- Transaction costs to implement (technically) and manage long-term programs within financing institutions - Increased regulations / provisions for (promotional) banks hinder commitments of credit lines (EBA-supervisory, State-Aid-rules….)

[8] Energy Efficiency Financial Institutions Group

What is needed to roll out the instrument at a larger scale	- Comprehensive framework, e. g. including energy audits and independent expert advice - Large network of on-lending banks and equal conditions for all - Long term horizon and stability - A set of criteria that can easily be understood, processed and checked (MRV), possibly using software instruments. - An effective information strategy directed towards the final beneficiaries. - Greater involvement with Energy Performance Contract providers in selected sub- sectors.

Table 2 - Dedicated credit lines instrument evaluation

5.2 Risk-sharing facilities

Risk-sharing facilities (Guarantee funds and First-loss Facilities) reduce the risks for banks and equity investors by covering part of the risk of payment default – either through a guarantee or first-loss absorption. They can be combined with dedicated credit lines and are a key instrument to grow the amount of bank lending to energy efficiency renovation

Advantages	- Reduces the risks for banks and enables them to lend greater amounts - Anecdotal evidence suggests that energy efficiency loans experience "market standard" or better credit performance therefore risk sharing facilities can be a transition phase until energy efficiency loans are mainstreamed - Provides extra leverage for private sector funds - Potential to boost energy efficiency services market in EU
Weaknesses	- Time to structure and negotiate - Moral hazard if substantially all risk is removed from bank lending - Know-how to implement at regional and local government levels
Main obstacles to the instrument	- Often extensive and complex handling of risk-sharing facilities at EU level ("red tape") especially for smaller financial intermediaries and first-time users
What is needed to roll-out the instrument at larger scale	- Template approach to execution of risk-sharing facilities using ESIF 2014-2020 - Consensus view as to at what stage and for what market segments this Financial Instrument is most useful and pressure by EU public financial institutions to develop faster in those identified segments and Member States - Greater degree of collaboration/ resource commitment on the design and implementation of these instruments by private and public sector Financial Institutions - Further consideration of the role public guarantees might play in support of the energy efficiency services markets

Table 3 - Risk-sharing facilities instrument evaluation

5.3 Subordinated Loan

This instrument sits between a grant and a direct credit line, with aspects of loss-absorption like a first-loss facility, in the form of a subordinated loan. Very simply, a subordinated loan would be of junior rank in the case of bankruptcy or liquidation and its interest repayments are made after all the holders of more senior debt are paid. EEFIG felt that it is a widely used instrument which may be very useful for those countries that need to move away from a grant dependent environment, where what would have been a grant becomes a long-dated, low interest subordinated loan

Advantages	- Leveraging private bank funds (i.e. for every euro of grant the bank is obliged to add its equivalent euro of private funding thereby multiplying the size of the fund with private funds) - Reducing the interest paid - Increasing the term of the financial package - Reducing default risks for the senior lenders
Weaknesses	- Time to structure and negotiate - Moral hazard if substantially all risk is removed from bank lending - Know-how to implement at regional and local government levels - New application of "old technology" requires adjustment period
Main obstacles to the instrument	- State Aid rules: The subordinated loan is different from a strictly "market rate loan". The value of aid in Euros can be calculated through the different interest rates charged between the market-based loan and the subordinated loan - Lack of "Best practice examples"
What is needed to roll-out the instrument at larger scale	- Trial instrument work-group containing key public and private operators in target Member State to design and implement the structure

Table 4 - Subordinated loan instrument evaluation

5.4 Covered Bonds

Covered bonds are corporate bonds backed by a pool of assets (e.g. energy efficiency loans) which remain on the balance sheet of the issuer but are used as a collateral to secure the cash flows of the bond. In case of default, the investor has a recourse both against the issuer and the collateral. Moreover, the asset pool is dynamic meaning that non-performing assets have to be replaced.
Covered bonds are a well-established instrument for banks to access cheap capital. They are regulated by national legislations in each EU Member State, which ensures that they get very high credit rating. They are also attractive to investors because they are classified as low-risk and the capital requirements under Solvency 2 and Basel III are lower.
The inclusion of energy efficiency in covered bonds could be through specific energy efficiency assets (EE loans) or through the mainstreaming of energy efficiency in standard covered bonds (increasing and reporting on the share of the bond which is dedicated to energy efficiency), which could attract more interest from investors looking for specific SRI criteria.

Advantages	- Provides cheap capital for banks - Lower capital requirements for investors than standard bonds - Covered bonds are a solid and well-established legal framework which allow access to capital at a lower cost
Weaknesses	- The average size of a covered bond is usually around EUR 0.5 to 1bn, but smaller bonds can also be issued, down to EUR 150m - On balance sheet for most covered bonds - Present collateral requirements need to recognise solidity of energy savings (e.g. the building needed not just the cash flows of energy savings)
Main obstacles to the instrument	- Lack of experience of investors in "energy efficiency loans" - Legal framework at national level need to be clarified regarding the inclusion of energy efficiency - Lack of clear definition of "green covered bond"

What is needed to roll-out the instrument at larger scale	- Scale portfolios of energy efficiency loans on banks' balance sheets which can be used as covered assets - Agreement among market players on what to include in energy efficiency covered bonds - Co-ordination with stakeholders at national level to define what types of energy efficiency assets can be included and how - At the European level, recognition of the relevance of energy efficiency for covered bonds

Table 5 - Covered bonds loan instrument evaluation

5.5 Energy Performance Contracting

An Energy Performance Contract is a contractual arrangement between a host beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings.

EEFIG draws a distinction between "financing Energy Performance Contracts" in which the Energy Performance Contract provider also provides finance and "operational Energy Performance Contracts" where the finance is provided by the project host. Operational Energy Performance Contracts secure the energy savings, which reduces the risk for the lenders to the host. Some financing Energy Performance Contracts have been provided off-balance sheet accounting for the host (thus not increasing its debt ratios), but this depends on the details of the contract and (for the public sector) on national accounting rules.

Figure 2 - Energy Performance Contract

Advantages	- Turnkey contract: The Energy Performance Contract represents a one stop shop for the customer, with only one counterpart for the entire duration of the contract - Guaranteed savings: Energy Performance Contract provider manages the performance risks - Professionalism and expertise of Energy Performance Contract providers - Energy Performance Contract provider can bring financing or facilitate access to finance through savings guarantee.
Weaknesses	- In many cases, focused on short payback times due to low requirements of the client host, although the private sector can deliver deep renovation through Energy Performance Contract (when requested) - Increases transaction costs - Requires more developed skills on the client side - Lack of standardised framework and templates.

Main obstacles to the instrument	- Accounting treatment needs to be clarified for public and private clients - Lack of confidence in ESCOs - Lack of understanding of the Energy Performance Contract concept, in particular in the housing sector - Lack of capacity and willingness of the client side to launch Energy Performance Contracts for deep renovation of buildings - Split incentives in the buildings rental sectors - Procurement regulations may not be adapted at national level - Energy Performance Contract is seen as a self-financing whereas for deep renovation it is only part of the financing – the rest can come from grants or additional investment from the owner based on "green value" - Deep renovation often happens with general refurbishment measures which increase the overall investment - Fear of externalisation of energy management - Lack of access to public support schemes for Energy Performance Contract providers (tax breaks, soft loans, reduced or no VAT…) compared to project host and in-house ESCOs.
What is needed to roll-out the instrument at larger scale	- Capacity building on Energy Performance Contract towards public authorities (in particular financial and procurement departments) and private clients - Market facilitation and aggregation programmes, notably through project development assistance - Possibility for construction SMEs to group themselves to be able to offer Energy Performance Contracts - Standardisation of contracts and procurement procedures - Proper implementation by Member States of article 19 of the Energy Efficiency Directive (2012/27/EU) on the removal of obstacles to Energy Performance Contract in public sector - Proper implementation by Member States of article 7 (b) of the Energy Efficiency Directive on the partnership with obligated parties in order to preserve the energy saving targets towards the customer - Addressing the supply of finance supporting the Energy Performance Contract sector through making dedicated credit lines, guarantees[161] and factoring funds more considerate of the Energy Performance Contract model, where appropriate.

Table 6 - Energy Performance Contract instrument evaluation

5.6 Leasing

Leasing is how the host obtains the use of machinery, vehicles or, in this case, highly energy efficient equipment, or other EE measures, on a rental basis. This avoids the host's need to invest its own capital in the equipment. Ownership rests in the hands of the lessor (financial institution or leasing company), while the business has the actual use of the equipment. Applied to energy efficiency, it can be used to overcome the issue of higher upfront costs for energy efficiency investments, as payments in a lease merge capital and operational expenditures.

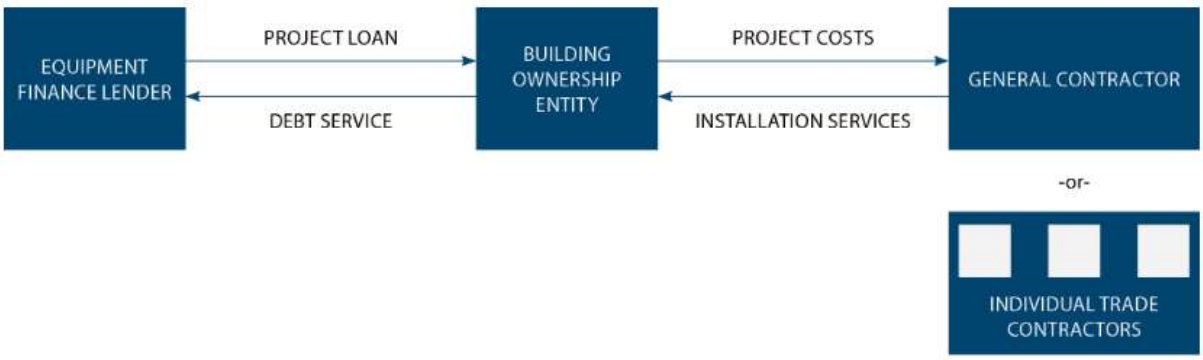


Figure 3 - Lease Finance

Advantages	- Integrates life cycle costs - Can obtain off-balance sheet accounting treatment (equipment can be included in income statement as a lease expense, not on balance sheet as a purchase) - Some tax advantages in some jurisdictions - Conserving working capital and avoiding down payments - Well understood instrument by equipment suppliers and hosts.
Weaknesses	- Restricted to removable assets (energy management systems, boilers, cogeneration, printers, IT, etc.), which reduces the level of energy savings that can be achieved - Host may pay a higher price over the long term (depending upon implicit finance costs etc.) - Leasing commits host to retaining a piece of equipment for a certain time period, which causes a degree of "lock-in".
Main obstacles to the instrument	- Problems with use for deep renovation or holistic corporate energy efficiency investment programmes - Lack of "Best practice examples" for Energy Efficiency - Accounting treatment is under review

Table 7 - Leasing instrument evaluation

5.7 On-Bill Repayment

On-Bill repayment is a mechanism used to improve the creditworthiness (or seniority) of energy efficiency investments by having them repaid within the utility, or tax, bill and recovered through the existing payment collection infrastructures of utilities, or public authorities. This levers the existing payment relationship between customer and utility, or tax authority, and directly provides a "credit history" giving an accurate view of likely defaults (as customer payment histories with both utilities and tax payments are long and exhibit low default rates compared to other consumer finance).

Advantages	- Energy savings connected to energy bills - Public sector actors and utilities are more trusted by decision makers - Reduces transaction costs - Can overcome the split incentive between user and owner as it is connected to property (or corporate asset) not user - Overcomes the "split incentive over time" (i.e. short detention/occupancy time for buildings) as repayment obligation can be passed attached to the asset on to the next owner/user - Overcomes the lack of finance capacity of homeowners and SMEs.
Weaknesses	- May initially require additional public support (in form of risk sharing facility) to provide finance at an acceptable cost - Can be perceived as complex by users and may require technical assistance in order to avoid focus on low-hanging fruits - Complex instrument to manage/ market - Might crowd out small ESCOs.
Main obstacles to the instrument	- May require changes in the legal framework, in order to comply with banking monopoly regulations - May require modification to utility/ tax collection processing systems and/or tax code/ energy laws.
What is needed to roll-out the instrument at larger scale	- Green Deal espoused by a "public financial institution" (based upon the KfW approach) and offered at attractive rates and marketed by utilities to their customers - Review and showcase of working case studies from USA.

Table 8 - On-bill repayment instrument evaluation

5.8 Energy Efficiency Investment Funds

Energy efficiency investment funds are specific investment vehicles created to invest only in energy efficiency projects targeting both buildings and industry usually seeking a return based on savings achieved. Such funds target Socially Responsible Investment (SRI) investors and public financial institutions for their own fund-raising. The legal and financial arrangements and instruments at project level can vary from pure equity to debt provision. Some energy efficiency investment funds have partnered with governments as investor, promoter or guarantor. These funds often target the generation of ongoing operational cost savings and carbon emission reductions as well as improvements to productivity and asset values, in compliance with current and prospective regulations.

Advantages	- Dedicated vehicles for energy efficiency investing, which allows to better track the use of proceeds than in a general investment fund - Attractive to SRI investors.
Weaknesses	- High return and liquidity requirements may entail a focus on short and medium paybacks, not tapping higher energy savings potential.
Main obstacles to the instrument	- The lack of a clear project pipeline makes it difficult to show a clear business case to investors - Off-balance sheet accounting is a clear specification of public and industrial clients, but accounting frameworks make it increasingly difficult to ensure - Counterparty risk remains a key factor which may prevent a large number of investments in SMEs.
What is needed to roll-out the instrument at larger scale	- Support the development of a pipeline of projects - Guarantees or first loss facilities from public sources targeted to reduce the counterparty risk of SMEs.

Table 9 - Energy efficiency investment funds instrument evaluation

5.9 Green Bonds

Green bonds are a financial instrument in which the proceeds are exclusively applied to (new and existing) “green projects” defined here as projects and activities that promote climate or other environmental sustainability outcomes162. Given the long-term, stable characteristics of energy efficiency investments, debt financing is usual and the new market for green bonds is a natural place for investors to seek capital for investments in green buildings and energy efficiency in industry. Green bonds can finance investments in energy efficiency of buildings and industry in two ways: either directly through bonds issued by corporations, or indirectly through bonds issued by banks, which in turn can on-lend to all types of energy efficiency project hosts.

Advantages	- Large and deep pools of investor finance - Could be applied to most energy efficiency investments - High leverage effect - No need for public funding - Strong market signalling - Simplifies means to attract new investors - Diversification of investor base - Strong CSR message from issuer - Strong demand from investors ($10bn in 2013, $35bn in 2014).
Weaknesses	- Need to meet investors’ expectations in terms of size of issue and liquidity - Issuers need to provide a minimum level of assurance to investors: green quality of the buildings financed, external verification of the use of proceeds, management of proceeds and environmental impact measurement - Most critical challenge for growing green bonds market is environmental integrity: current green bonds use a wide range of measurement for environmental performance and provide limited information on what the proceeds will be used for - Investors are not able to exit if use of proceeds is not in line with

	their expectations or if the investments are not implemented.
Main obstacles to the instrument	- Ability of issuers to provide the relevant key performance indicators to both select eligible green building projects and provide quality assurance reporting - Minimum size of projects or projects portfolio (e.g. $50-100m) - Lack of a clear definition of and standards for green bonds in technical and governance terms - Lack of an acknowledged index for green bonds prevents some institutional investors from investing.
What is needed to roll-out the instrument at larger scale	- Some level of standardisation in the issuance process - Standardisation of the technical aspects in measuring the environmental performance delivered by use of proceeds - Stricter reporting and governance and third-party verification of use of proceeds. - Further development of Green bond indices.

Table 10 - Green bonds instrument evaluation

5.10 Energy Services Agreement

The Energy Service Agreement (ESA) is a "pay-for-performance" service contract between a third-party investor and an asset owner to deliver energy savings as a service. The ESA is in some ways an evolution of the traditional shared-savings model, provided through Energy Performance Contracts (Energy Performance Contracts), but it is structured more like a Power Purchase Agreement (PPA) and used more frequently by actors present in the mainstream energy markets. A third-party investor and an asset owner enter into an ESA contract (typically for 10 years) where the asset owner agrees to pay their historical utility bills to the third party. An upfront “access fee” or an ongoing utility bill discount may also be paid to the asset owner as incentive. The third party invests into money-saving, energy efficient opportunities and owns and operates the energy equipment to provide “energy services” to the asset/ building. In industry, ESAs need to take into account the risk of decreased activity and thus could have to adapt the contract duration, as well as guarantee a residual value for the assets.

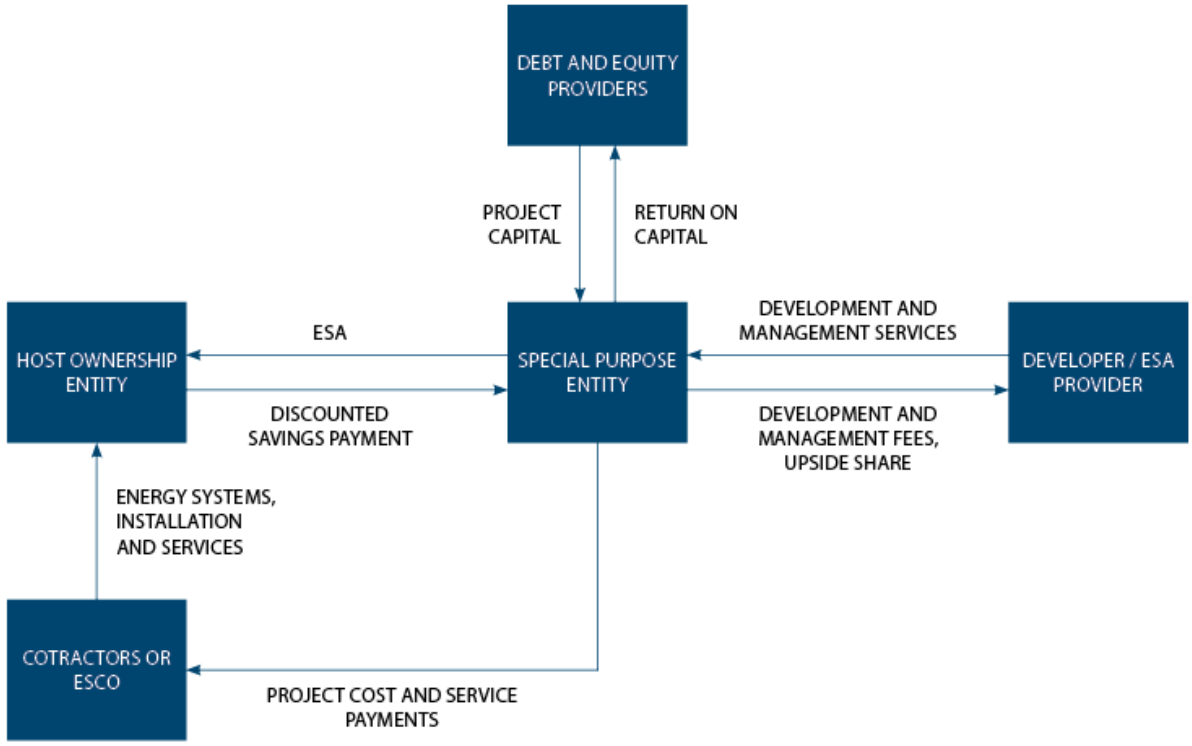


Figure 4 - Energy Service Agreement

Advantages	- Bilateral contract does not require new regulations - Overcomes some traditional EE barriers (e.g. split incentives) - No capex for owner, aligns incentives of project developer, building owner and investor.
Weaknesses	- Limited scale to date - Fragmented market - 10-year contract period can limit third party measures installed to low hanging fruits (high returns) - Limited willingness to commit to one energy supplier and the current price level (lock-in) as well as with contractual obligations on the side of the supplier - Increases transaction costs - Requires more developed skills on the client side - Lack of standardised framework and templates.
Main obstacles to the instrument	- Accounting treatment should to be clarified - Lack of confidence in Energy Utilities as conflicted “energy managers” - Lack of understanding of the ESA concept - Unlikelihood of the use of ESAs for deep renovation of buildings - Fear of externalisation of energy management.
What is needed to roll-out the instrument at larger scale	- Education of building owners and project developers - Need for more pilots to help develop the market - Clarity on lease accounting and investors’ rights in case of bankruptcy, tenant change or sale of host building.

Table 11 - Energy Service Agreement bonds instrument evaluation

5.11 Factoring Fund for Energy Performance Contracts

Factoring is a financial transaction in which an entity sells its accounts receivable (usually invoices) to a third party (called a factor) at a discount. In energy efficiency terms a factoring fund for Energy Performance Contracts would purchase funded Energy Performance Contracts from their originators (usually ESCOs) at a discount, freeing up the balance sheet of the originators to originate more Energy Performance Contracts. As the risk of underperformance of an Energy Performance Contract is more

likely to occur at the beginning of the contract, these “de-risked” contracts become a safer income stream which can be assigned (transferred) to a factoring fund.
An objective of this kind of fund would be to allow small Energy Performance Contract providers (once up the learning curve) to continue generating Energy Performance Contracts without breaching their own balance sheet covenants and limits with their banks. ‘Forfeiting’ arrangements are common practices in the most developed Energy Performance Contract markets (e.g. Germany) and leasing (in the form of sale-and-lease back) can also be an option if the contracts are adapted. Once active, such a fund could help establish standard legal and financial arrangements in the Energy Performance Contracts and then aggregate receivables into securities which can be sold in the form of bonds to institutional investors, once a critical size is reached (estimated at €150 million). A factoring fund may need public equity to speed its launch into the market, however, it could also involve private equity and debt, if the public sector takes the first-loss risk or requires a lower return on equity.

Advantages	- Secures refinancing for Energy Performance Contract providers, clearing their balance sheets and contributing to lower their capital costs - Could contribute to standardise energy efficiency assets - Dedicated vehicles to support the Energy Performance Contract procurement model, which should allow easier tracking of their performance than when spread across many small ESCOs - Potentially attractive to SRI investors.
Weaknesses	- New concept that will take time to mature - Unclear what “discounts” will make this work for Energy Performance Contract originators - Requires public money to kick-start.
Main obstacles to the instrument	- Very “early stage” with limited pilot examples - Public budgets and abilities and in-house capabilities of public sector to set-up new fund - Issues around the discount rate and “value for public money” - Need to be analysed and adapted country by country - May require changes in contracts and the legal framework, comply with financial regulations and to access the same fiscal benefits as individual project hosts - The lack of a clear project pipeline - Accounting and regulatory treatment for new vehicles and their clients.
What is needed to roll-out the instrument at larger scale	- Support the development of a pipeline of “factoring ready” Energy Performance Contracts - Public investment (or a public financial institution) willing to provide first-loss or initial junior investment to new fund.

Table 12 - Factoring fund for Energy Performance Contracts instrument evaluation

5.12 Market driven assessment of FIs

The assessment of the likely impact of financial instruments on corporate energy efficiency investments conducted by EEFIG was crystallized through a survey where participants were asked to rate each financial instrument on its applicability to support the energy efficiency investment flow in each market segment using the following scores:

Score 0 if instrument is "not applicable"
Score 1 if instrument is "marginally useful"
Score 2 if instrument is "useful"
Score 3 if instrument is "very useful"

Instrument	Large - energy intensive	Large - non-energy intensive	Mid-cap	SMEs

Energy Performance Contracting	3	3	3	2
Energy Efficiency Investment Funds	3	3	2	2
Dedicated Credit Lines	2	2	3	3
Risk-Sharing Facilities	2	2	2	2
Subordinated Loan	2	2	2	2
Leasing	2	2	2	2
Energy Services Agreement	2	2	2	2
Factoring Fund for Energy Performance Contracts	2	2	2	2
Green Bonds	3	2	2	1
On-Bill Repayment	1	1	1	2
Covered Bonds	1	1	1	0

Table 13 - Financial Instruments impact assessment

6. European framework for financial instruments concerning the industrial sector[9]

6.1 FIs provided by EIB and EIF

The European Investment Bank (EIB) and the European Investment Fund (EIF) provide financial instruments grouped in three main categories:

- Lending Financial Products
- Blending Financial Products
- Advising – European Investment Advisory Hub

LENDING FINANCIAL PRODUCTS

- ***Project loans*** **–** to finance projects with high investment cost, research and innovation programs, direct loans of between 7.5 and 25 M€ to mid-cap companies (< 3000 employees) and multi-component loans (financing projects for energy efficiency and renewable, infrastructure, transport and urban renovation through national or public sector institution).
- ***Intermediated loans*** **–** to support SMEs, large and mid-cap businesses, national administrations, public sector bodies and local authorities via intermediary entities.
- ***Venture capital*** **–** to support innovation and entrepreneurship of high-tech SMEs in their early stages of growth, managed by the EIF. In the EIF activities are included advising and managing guarantee/debt funds and equity funds-of-funds through national and regional governments and private strategic investors.
- ***Venture debt*** **–** to support small, high-risk and incredibly innovative projects, where the needed investment cost is between EUR 7.5 to EUR 50m.
- ***Microfinance*** – to support microfinance institutions and smaller businesses with low income self-employed through promoting sustainable financial services.
- ***Equity and fund investment*** **–** to support investments in Infrastructure and Environment (infrastructure equity and debt funds, environmental funds), Carbon Funds, Sustainable Urban Development (loans, guarantees and equity investments through the JESSICA initiative), Energy Efficiency and Renewables (innovative fund-of-funds GEEREF), Venture capital and private equity

BLENDING FINANCIAL PRODUCTS

- ***Structured finance*** **–** for projects that include trans-European transport and energy networks, infrastructure, energy and SMEs using mix of instrument with higher risk profile provided by the Structured Finance Facility
- ***Guarantees*** **–** financing large or small, private and public projects through variety of guarantee instruments

[9] Katerina Maneva Mitrovikj, Enviros Presentation at Pandorf Meeting (Burgerland) – 7th June 2018

- ***Private Finance for Energy Efficiency (PF4EE) –*** financing energy efficiency investments in projects that support implementation of National Energy Efficiency Action Plans or other EE programs of EU member states, provided by the joint agreement between the EIB and European Commission (EC)
- ***Project bonds –*** the Europe 2020 Project Bond Initiative by EIB and EC, is financing large-scale infrastructure projects in the sectors of energy (TEN-E), transport (TEN-T) and information and communication technology (ICT)
- ***Trust funds –*** partnering with donors provide funds directly or combined with financial instruments from the EIB or other financial institutions to improve people's lives in different regions around the world
- ***European Structural and Investment Funds (ESIF) Financial instruments –*** provide loans, guarantees, equity to support economically feasible projects that promote the EU policy objectives
- ***Flexible SME funding (JEREMIE) –*** support the SMEs financing using EU Structural Funds provided through loans, guarantees and equity
- ***Urban development technical assistance (JESSICA) –*** Joint European Support for Sustainable Investment in City Areas is initiative that supports the use of EU grant funding (Structural Funds) to make repayable investments (loans, guarantees, equity) in projects such as: urban infrastructure, energy, transport, EE improvements, water/wastewater, university/medical and other facilities, office space for SMEs/IT/R&D sectors, heritage of cultural sites etc.

6.2 IFIs provided by EIB and EIF

InnovFin-EU Finance for Innovators are financial solutions available for:

- small or medium-sized enterprises (SME)
- large private companies
- mid-cap companies
- research organisations or institutes
  universities or public institutions

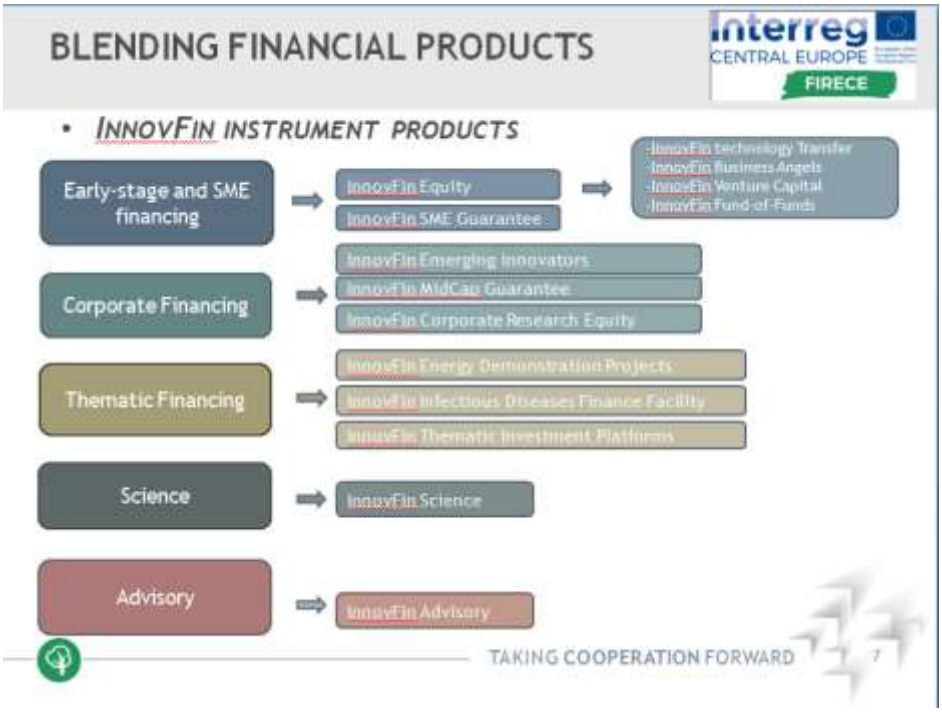


Figure 5 - Overview of the InnovFin instrument

EARLY STAGE AND SME FINANCING

InnovFin Equity provides risk capital financing to enterprises in their early-stage or start-up phases in development.

- ***InnovFin TT*** supports investments in technology projects through technology transfer funds to expedite innovations in ICT, bio-tech, clean-tech, nano-tech, med-tech.
- ***InnovFin BA*** supports investments into innovative early-stage enterprises and social enterprises at regional, national or cross-border level by business angel managed funds or co-investments funds.
- ***InnovFin VC*** supports investments in venture capital funds that contribute in funding to enterprises and social enterprises in their early-stage operating in Horizon 2020 innovative sectors.
- ***InnovFin FoF*** supports investments in funds of funds that focus to build a portfolio of investments into underlying funds with significant geographical spread and early-stage focus.

InnovFin SME Guarantee provides guarantees and counter-guarantees to improve access to loan finance, arranged through financial intermediaries. The guarantees on debt financing between 25000 € and 7.5 M€ are targeting innovative small and medium-sized enterprises and small mid-caps (<500 employees).

CORPORATE FINANCING

- ***InnovFin Emerging Innovators*** available by the EIB or through loans and equity-type financing by financial intermediary, improves the availability of risk finance for research and innovation fast-growing enterprises and other innovation-related entities.
- ***InnovFin MidCap Guarantee*** provides guarantees and counter-guarantees to improve access to finance, arranged through financial intermediaries. The guarantees on debt financing of up to EUR 50m are targeting innovative mid-caps (<3 000 employees) which are not applicable under the ***InnovFin SME Guarantee***.
- ***InnovFin Corporate Research Equity*** provides large equity-type investments in the form of contingent loans by the EIB or through financial intermediaries on financing of up to 75 M€. The investments are addressed to innovative large mid-caps and large research and innovation programs.

THEMATIC FINANCING

- ***InnovFin Demo Projects*** provides loans, loan guarantees and equity-type of financing between EUR 7.5 and EUR 75m by EIB to innovative demonstration to projects in the field of renewable energy technologies, carbon capture and storage/use, energy storage and smart energy systems.
- ***InnovFin Thematic Investment Platforms*** will provide debt or equity-type of financing, arranged by financial intermediaries and fund managers, to innovative projects in specific thematic sections.

SCIENCE

- ***InnovFin Science*** available by the EIB through debt or equity-type financing from EUR 25m, supports research and innovation investments by universities and public or private research institutions. *InnovFin Science* includes the financing of buildings and other infrastructures directly related to research and innovation activities.

ADVISORY

- ***InnovFin Advisory*** support helps clients in successful building their research and innovation projects in order to improve the projects access to finance. *InnovFin Advisory* is focused on financing large projects for which are required long-term investments by offering the following services:
    - business modelling
    - strategic planning
    - capital structure, debt and risk allocation
    - funding sources and their eligibility criteria
    - management of stakeholders
    - more and better usage of public FI

OTHER ADVISORY SERVICES

The advisory services are crucial part of the EIB's lending and blending product strategies providing the development and the implementation of the investment programs.]

- ***Support to public-private partnership (EPEC) –*** under the PPP the public authority provides payments to the private partner for the provision of the service or grants a right to generate revenues from the provision of the service.
- ***Sustainable energy: maximizing investment (ELENA) –*** provides grants under the Horizon 2020 program, for technical assistance in the implementation of energy efficiency, transport, and renewable energy projects and programs.

The choice of the financial products will depend on the market failures, suboptimal investment situations and investment needs to be addressed as well as the acceptable level of risk, reward and ownership; MAs can tailor financial products according to their needs and capabilities or structure the FI based on terms and conditions provided by the Commission for 'off-the-shelf' instruments, according to two of the models defined by the European Commission[10] :

1. Loan fund for SMEs based on a portfolio risk-sharing loan model (Risk Sharing Loan - RSL): this is set up with contributions from the ESIF program and additional resources of the F.Int to finance a portfolio of newly originated loans. The ESIF program contribution and the additional resources provided by the F.Int bear, at any time, the losses and benefits in proportion to their contributions (pro-rata).
2. Guarantee fund for SMEs (Capped Guarantee Portfolio): this provides credit risk protection in the form of a first loss portfolio capped guarantee which reduces the barriers that SMEs face in accessing finance. It leverages EU funds to support SME financing

6.3 FIs implementation using ESI Funds[11]

Financial instruments co-funded by the European Structural Investment Funds (ESIF) are a sustainable and efficient way to invest in growth and development in EU regions and cities. They can support a broad range of development objectives to the benefit of a wide range of final recipients (FRs) with the potential for EU funds to lever in additional public and private contributions and/or to be reused for further investments; when using ESI Funds, Managing Authorities (MAs) may implement FIs: the choice of FI and of financial products must be determined in the ex-ante assessment. The main financial products which may be offered by FIs are[12]: loans, guarantees, equity and quasi-equity.

LOAN

Agreement which obliges the lender to make available to the borrower an agreed sum of money for an agreed period of time and under which the borrower is obliged to repay that amount within the agreed time.

Under a FI, a loan can help where banks are unwilling to lend on terms acceptable to the borrower. They can offer lower interest rates, longer repayment periods or have lower collateral requirements.

[10] Common Provisions Regulation (EU) No 1303/2013 of the European Parliament and the Council of 17 December 2013 - Regulation (EU) No 964/2014 of the European Parliament and the Council of 11 September 2014

[11] FI Compass - ESIF Factsheet

[12] European Commission (2015). Guidance for Member States on Financial Instruments – Glossary

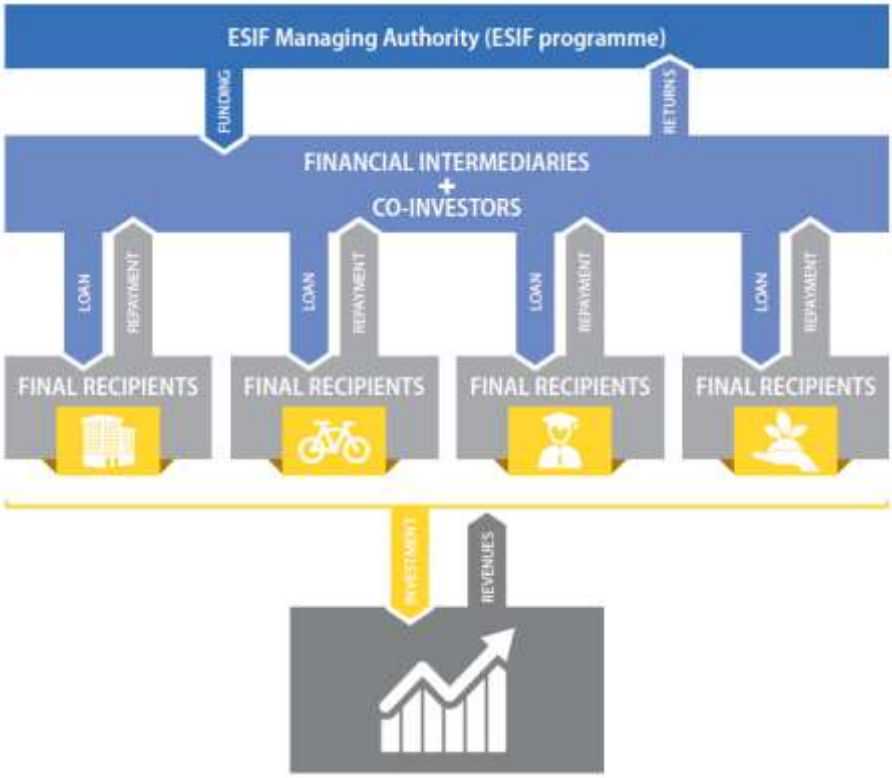


Figure 6 - Functional scheme of the Loan instrument

The involvement of ESI Funds results in loans that are offered at lower than market interest rates, with longer repayment periods, the possibility of grace periods, when loans do not need to be repaid in the first years or with reduced collateral requirements; these are called soft loans.

In general, for commercial loans, the interest charged on the loan is the market rate plus a risk premium that reflects the likelihood of a lender getting their money back. The risk premium includes credit risk which varies with the borrower's credit history and expected cash flow.

One way to decrease the risk premium is through collateral, where the borrower offers assets such as property, receivables, or investments as security which become the property of the lender if the borrower defaults (does not repay the loan).

Risk completely ceases only on the date the loan is fully repaid, the maturity date. Therefore, the later the maturity date, the higher the risk premium.

Individual repayments must cover the interest due, but the sooner the principal of the loan is repaid then the lower the total payments will be.

PROs	CONs
1. Not particularly difficult to administer (so there are limited management costs/fees). 2. A defined repayment schedule makes budgeting easier. 3. The lending mechanism is well understood, reducing the need for capacity building and the risk of misunderstandings. 4. Loans preserve the equity of the FRs as there is no claim on the ownership of the enterprise.	1. Funded products such as loans require more initial resources than unfunded products such as guarantees. 2. It is sometimes difficult to establish the probability of default, especially with a lack of history of FRs. 3. The advantage for the FRs is almost entirely financial. There are limited additional benefits as know-how is not transferred.

Table 14 - Features of the Loan instrument

GUARANTEES

Written commitment to assume responsibility for all or part of a third party's debt or obligation or for the successful performance by that third party of its obligations if an event occurs which

triggers such guarantee, such as a loan default. Guarantees normally cover financial operations such as loans.

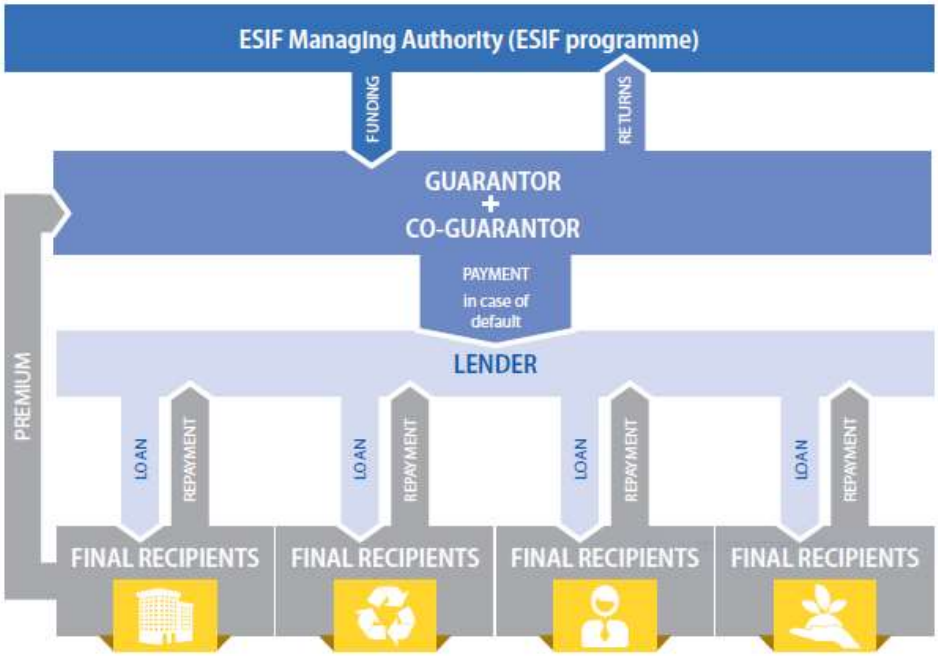


Figure 7 - Functional scheme of the Guarantees instrument

Key elements in defining a guarantee instrument are:

- Portfolio volume: the aggregate amount of the underlying transaction, such as loans to be disbursed by the lender which are covered by the guarantee.
- Guarantee Rate: the maximum portion of the value of each loan covered by the guarantee.
- Guarantee Cap Rate: the maximum portion of the total portfolio covered by the guarantee. In other words, the guarantee will cover losses at the guarantee rate up to the maximum determined by the guarantee cap rate applied to the total portfolio.
- Capped amount: the maximum liability under the capped guarantee. It is calculated as the product of the i) total portfolio volume, ii) the guarantee rate and (iii) the guarantee cap rate. In other words, the capped guarantee will cover losses at the guarantee rate up to the maximum determined by the guarantee cap rate applied to the total portfolio volume. This amount plus expected management costs and fees related to the instrument will be set aside from the OP resources.

Other important elements for the definition of a guarantee are:

- Eligibility criteria: conditions which regulate the access to the guarantee regarding three layers: FR, F.Int and the relevant underlying transactions.

A breach of any of the eligibility criteria will result in an exclusion of the underlying transaction from the portfolio.

- Timing: termination of the guarantee.
- Payment claim: conditions under which payment demands are valid (e.g. losses incurred by a lender in respect to defaulted loans).
- Loss recoveries: The F.Int should take recovery action in relation to each defaulted loan.
- Responsibilities for managing the repayments due and collateral of defaulting borrowers: what happens to funds recovered after a complete or partial default has been accepted.

PROs	CONs
1. Guarantees can preserve the equity of FRs as there is normally no claim on the ownership of the enterprise. 2. Potential benefits for FRs could include inter alia, lower or no guarantee fees, lower or no collateral requirements as	1. The guarantee represents a risk reserve for the lender and does not provide liquidity. It can however, in some cases, provide capital relief to the lender. 2. Estimating the appropriate cap, or maximum limit, can be challenging.

well as lower risk premiums. 3. Since program contributions cover only certain parts of loans (appropriate multiplier ratio), there is a high leverage effect. 4. The investment risk for third party lenders is reduced (because they only bear part of the risk of default). 5. Unfunded products such as guarantees require less initial support than funded products such as loans.	3. There is no transfer of business expertise to FRs.

Table 15 - Features of the Guarantees instrument

EQUITY

Provision of capital to a firm, invested directly or indirectly in return for total or partial ownership of that firm and where the equity investor may assume some management control of the firm and may share the firm's profits. The financial return depends on the growth and profitability of the business. It is earned through dividends and on the sale of the shares to another investor ('exit') or through an initial public offering (IPO).

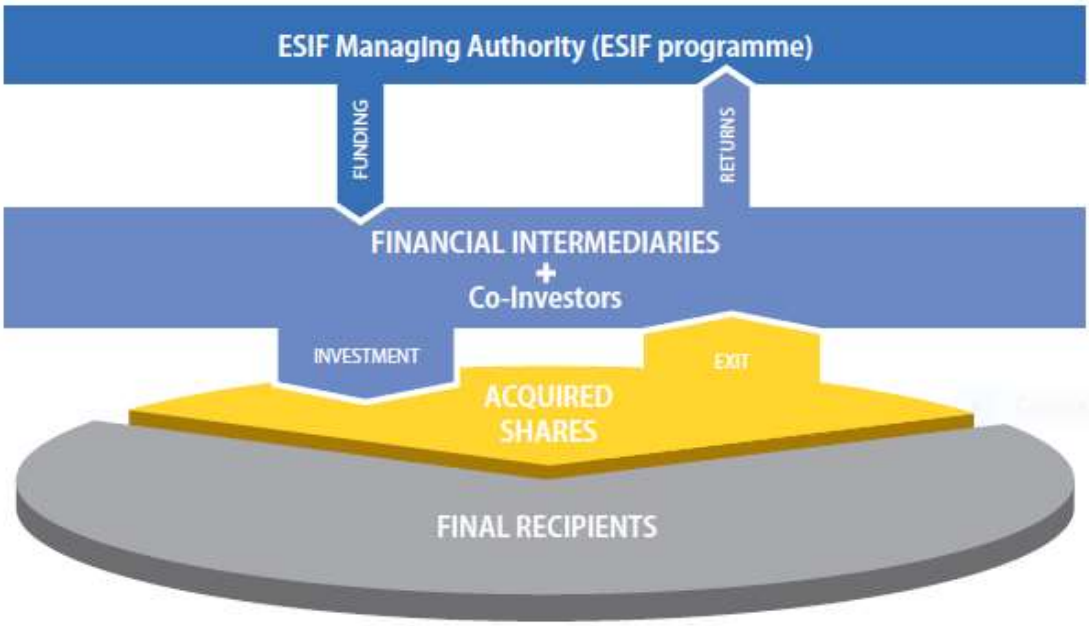


Figure 8 - Functional scheme of the Equity instrument

In equity investments the exit means the liquidation of holdings including a trade sale, sale by public offering (including IPO3), write- off, repayment of preference shares or loans, sale to another venture capitalist or sale to a financial institution.

There is full insolvency risk for the invested capital in the target companies. Thus, a high risk is borne by the FI. However, this can be mitigated by portfolio investing and by having private sector co-investors.

PROs	CONs
1. There are higher potential returns compared to pure debt instruments. 2. There is an active role in project management and access to share- holder information for the investor. 3. Stimulates investment by local private equity industry also in risk kier areas not previously serviced. 4. The need for equity investment might	1. There is insolvency risk for all the invested capital. 2. Time-consuming and cost-intensive investment. 3. These investments are more difficult to administer than normal loans (high set- up and operational costs), more time- consuming and cost- intensive. 4. Short- term financing is not possible,

prompt changes in regulatory framework to encourage a private equity market. 5. The company can benefit from investor's management expertise. 6. Public investors can influence the configuration and mission of a company.	since returns are feasible only in the long term. 5. Establishing the process for the investment can be challenging. 6. Compared to debt instruments, equity can be less attractive to FRs due to the obligation to yield control.

Table 16 - Features of the Equity instrument

QUASI-EQUITY

A type of financing that ranks between equity and debt, having a higher risk than senior debt and a lower risk than common equity. Quasi-equity investments can be structured as debt, typically unsecured and subordinated and in some cases convertible into equity, or as preferred equity. The risk-return profile typically falls between debt and equity in a company's capital structure.

In general, quasi-equity investments are more difficult to administer than classic debt instruments (loans and guarantees).

PROs	CONs
1. For co-investors, there are higher returns compared to pure debt instruments. 2. Addresses specific risk capacity constraints in a particular market segment. 3. Stimulates investment by local private equity industry, also in riskier areas not previously serviced. 4. Might prompt changes in the regulatory framework to encourage a private equity market.	1. These investments are more difficult to administer than normal loans (high set-up and operational costs), more time-consuming and cost more. 2. Short-term financing is not possible, since returns are feasible only in the long term. 3. Any ancillary services such as management expertise would be an expense for the company. 4. There are typically a low number of investors and FRs, while the investment amounts are high. 5. Compared to debt instruments, they may be less attractive to FRs as they may involve loss of control when bonds are converted into equity.

Table 17 - Features of the Quasi-equity instrument

7. Implementation scheme of financial instruments[13]

Drawing on the results of the Jessica European program, we summarize an example of roadmap for (I)FIs setting-up and implementing using EU funds. They are three strategic and interlinked components of the Financial Instruments lifecycle: these strategic components should be considered in parallel when designing Financial Instruments, to ensure that Financial Instrument investments are aligned with Operational Program objectives. The three components are:

1. **Strategic Policy** - Managing Authorities at the ex-ante assessment stage design the policy framework and set the high- level Investment Strategy including but not to limit to products, targeted final recipients, expected non-financial results and contribution to Operational Program objectives within which Fund Managers identify suitable strategically-aligned projects for investment.

[13]Joint European Support for Sustainable Investments in City Areas Program - Assignment 29: Strategic UDF Investing and Project Structuring

2. **Investment Strategy** - Fund Managers and "Fund of Funds" Managers elaborate the business plan of the fund, and the mix of financial products offered to enable delivery of strategic policy objectives, financial return on investment, and alignment with private and public co-investment requirements.
3. **Project & Portfolio Structuring** - Project Promoters structure their projects, and fund managers their project portfolio, to align with the fund's investment strategy, and correspondingly the strategic policy framework set by the Managing Authority.

The components of the Roadmap are linked to the four phases of Financial Instruments: Design, Set-Up, Implementation, and Winding Up:

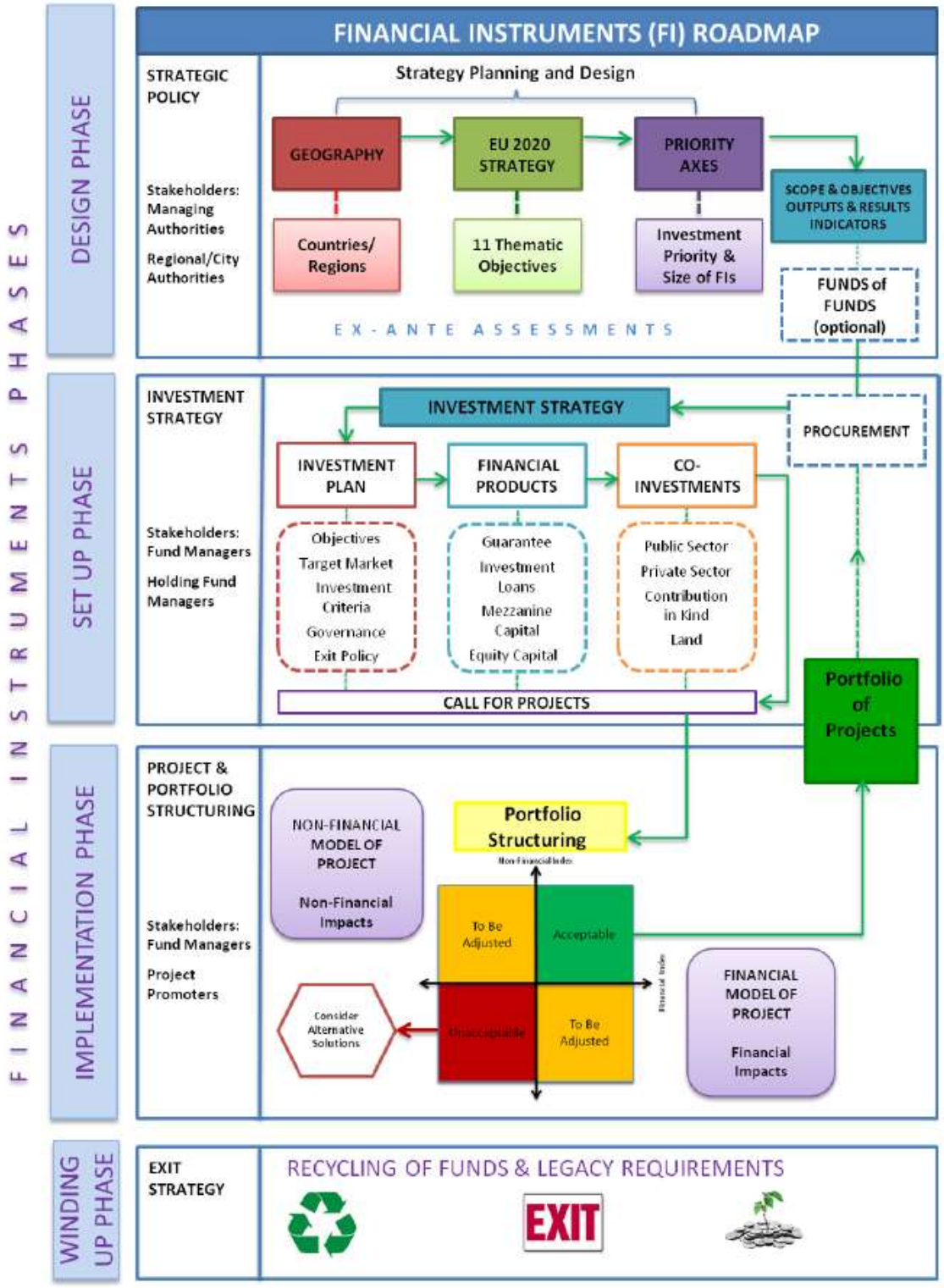


Figure 9 - FI implementation scheme

7.1 Preliminary steps

Identifying a role for Financial Instruments within the Operational Program

An Operational Program sets out national and region's priorities for delivering the funds. The Operational Program sets out the socio-economic circumstances, investment priorities, indicators, targets, partnership, and management arrangements. Managing Authorities should set out if and how they intend to use Financial Instruments within their respective Operational Programs. This should be done as part of the program level Ex-Ante Evaluation.

Ex-Ante Evaluation for Operational Programs

The Ex-Ante Evaluation aims to ensure:

- That resources are allocated optimally
- That the Operational Programs demonstrate a contribution to the Europe 2020 strategy
- the adequacy of human resources and administrative capacity for management of the program;
- the suitability of the procedures for monitoring the program and for collecting the
- data necessary to carry out evaluations etc.

The Ex-Ante Evaluation assists in maximizing the quality of plans and program implementation. In line with European Commission guidance, the Ex-Ante Evaluation consists of eight themes, which follow the structure of the Operational Program:

- Socio-economic analysis
- Program Strategy and Priorities
- Contribution to Europe 2020 Strategy
- Financial Instruments
- Consistency of financial allocations
- Indicators, Monitoring and Evaluation
- Strategic Environmental Assessment
- Equality Impact Assessment.

7.2 Design phase

If Managing Authorities decide to use Financial Instruments within their Operational Program, then they also need to conduct the mandatory Ex-Ante Assessment for Financial Instruments to help design the Instruments.

In the Europe 2020 Strategy, Common Provision Regulation, Title IV (Articles 37 to 46) lays down provisions for ESIF. Article 37 stipulates that support from Operational Program resources to a Financial Instrument shall be based “on an Ex-Ante Assessment which has established evidence of market failures or sub- optimal investment situations, and the estimated level and scope of public investment needs, including types of financial instruments to be supported.”

The Financial Instrument Ex-Ante Assessment needs to be completed before the Managing Authority decides to make Operational Program contributions to a Financial Instrument. It needs to be submitted to the Monitoring Committee for information purposes and be in accordance with the rules set out by the Commission in the CPR. The summary findings and conclusions of the Ex-Ante Assessment should be published within three months from their date of finalization.

Ex-Ante Assessments for Financial Instruments

The Ex-Ante Assessments for Financial Instruments are designed to enable Managing Authorities to understand the prospective demand for Financial Instruments, key relevant market players, the ability to attract private sector co-investments and to help ensure that their introduction will not crowd out existing funds. The key components of the Ex-Ante Assessment are illustrated in the figure below:

Figure 10 - Key Components of the Ex-Ante Assessment

Key Components of the Financial Instrument Ex-Ante Assessment

- **Assessment of market failure**: successful design and implementation of Financial Instruments hinges on a correct assessment of market gaps and needs. A mismatch between the demand and supply for financing – known as the financing gap – can constitute a rationale for public intervention in the market, where that intervention can help to address EU 2020 policy objectives. Demonstrating the existence of market failure is critical to ensure that Financial Instruments are in line with State Aid regulations within the European Union.
- **Investment strategy**: this should consider the financial products to be offered, Final Recipients to be targeted, and any envisaged combination with grant support as appropriate. Implementation arrangements should be considered in accordance with the requirements of Article 38 of the CPR.
- **Level of co-finance/co-investment**: an estimation of additional public and private resources to be potentially raised by the Financial Instrument should be undertaken. There should also be an assessment of what might be needed to attract co-investment from private investors.
- **Expected results and impacts**: how the use of Financial Instrument is expected to contribute to the achievement of the specific Operational Program objectives, priorities or measures within a Program should be set out, along with indicators i.e. unemployment, GDP, carbon reduction, etc. to monitor such contribution to support economic growth and prosperity.
- **Value Added**: an assessment of the value-added Financial Instruments would make should be undertaken. This should consider any overlap with other forms of public intervention addressing the same market, possible state aid issues, whether the introduction of Financial Instruments is proportionate to the market need, and measures that may be undertaken to reduce any market distortion.
- **Application of lessons learnt**: there must be an assessment of lessons learned from similar Instruments or Ex-Ante, Interim, and Ex- Post Assessments or review exercises in the past to help maximize the success of Financial Instruments in the future.

Setting the Strategic Policy Framework

The Financial Instrument Ex-Ante Assessment is integral to defining the strategic policy framework for the introduction of Financial Instruments. The Ex Ante Assessment process should allow Managing Authorities to define:

- The geographical area the Financial Instrument(s) will cover;
- The scope and objectives of the Financial Instrument(s) and its contribution to meeting the Operational Program objectives;
- The size of the Financial Instrument(s);
- The target outputs and indicators to measure progress and results which should be clearly defined in order to seek suitable propositions; and
- The implementation structure for the Financial Instrument(s).

Geography

The geographical area or boundaries in which the Financial Instruments can make investments must be clearly defined, and could be at the following levels:

1. National
2. Regional
3. Local
4. Transnational and Cross Border.

Geographical areas of coverage can also be defined according to by size of town/cities by population i.e. small, medium, and large; they could cover the entire geographical boundary of the Managing Authority; or cover a sub-regional level where multiple Managing Authorities pull together resources in order to reach the critical mass of resources required to make a Financial Instrument viable.

The Investment Strategy will need to conform to any geographical restrictions set down in the contributing Operational Program.

Scope

The scope of the Financial Instruments is important to determine and provides the link to the Operational Program priorities. Informed by the Ex Ante Assessment, Managing Authorities need to determine which Thematic Objectives the Financial Instrument (s) will support. This is core to the Investment Strategy of the Financial Instrument.

Size of the Financial Instruments

The size of the Financial Instrument is a key consideration. The amount committed from Operational Programs for Financial Instruments should correspond to the market gaps identified in the Ex-Ante Assessment. The amount will also vary depending on the product type, region, and policy.

Implementation Structure

As part of the design of Financial Instruments, Managing Authorities need to decide on the desired implementation structure. This should be informed by the Ex-Ante Assessment, and should consider issues such as: knowledge, skills and expertise of the Managing Authority, local and national organizations in setting up and managing Financial Instruments; market capacity for setting up and managing Financial Instruments; the importance or otherwise of local vs. regional, national, or cross border networks and connections to build a robust project pipeline; and the number and diversity of Financial Instruments proposed. This is not an exhaustive list and Managing Authorities may wish to seek advice on the pros and cons of different options. Implementation options include establishing Financial Instruments directly, using 'off the shelf' templates, using EU wide Instruments, and a "Fund of Funds" approach.

A “Fund of Funds” is a fund with the objective to contribute support from programs to several bodies implementing Financial Instruments. The purpose of the “Fund of Funds” is an umbrella fund set up to invest in more than one Financial Instruments via financial intermediaries to allow for flexibility and balancing risk and rewards of the funds, in addition to the set-up, management and supervision of the Financial Instruments. This can assist in reaching the desired size of fund to attract co-investment and achieve efficiencies of size and scope, allow for flexibility, and provide greater opportunities for portfolio diversification to achieve the desired financial and non-financial returns and manage risks.

Different structures will be more or less appropriate in different areas but are crucial to determine prior to the set-up of Financial Instruments. Soft market testing is recommended to help Managing Authorities decide on appropriate structures.

Pros and Cons of “Fund of Funds” Structure

A summary of pros and cons of the “Fund of Funds” structure is provided below:

Pros:

- Robust financial structure to ensure independent and professional management of funds, overseeing key tasks including: treasury management, risk management, monitoring and reporting
- Allows for greater flexibility and diversification of investments
- Provides technical, managerial, and financial expertise
- If there are multiple funds, “Fund of Funds” allows for economies of scale.

Cons:

- Establishing a “Fund of Funds” can be complex and potentially time-consuming in order to reach an agreement. However, if the structure and governance is well designed, then this itself could accelerate investments into projects at a later stage
- Potentially requires an additional layer of reporting and monitoring
- Where there is considerable in-house, financial and fund management expertise within public sector organisations, then the added value of having a “Fund of Funds” could be minimal.

Moving from Design to Set-up

The Ex-Ante Assessment should enable Managing Authorities to be able to articulate any market failures and how Financial Instruments could address these within their Operational Programs. The Ex-Ante Assessment informs the strategic policy framework for the introduction of Financial Instruments, by identifying the investment priorities for the Instruments, their size, and thematic and geographical focus. This links to and informs the design of the Financial Instrument(s) and the Investment Strategy.

Setting out a clear policy framework linked to how Financial Instruments can be invested ensures that prospective propositions for investment can be checked against both:

- Eligibility: Assurance that prospective investments contribute to impacts whether these are social, economic, or environmental, and that they comply with EU regulations.
- Suitability: Prospective propositions are in line with the policy aims and objectives of the Financial Instruments i.e. thematic focus, geography, types of Final Recipients, and non-financial impacts resulting from the investments. The indicators should be clearly defined from the onset and be aligned with the Operational Program objectives.

The policy framework is one half of the Investment Strategy, the other half needs to set out the

technical aspects such as financial products, delivery, governance, and operational arrangements (procedures and processes).

7.3 Set-up phase

Setting up Financial Instruments involves finalizing the technical detail of the Investment Strategy and selecting suitable financial intermediaries to implement and manage the Financial Instruments, usually referred to as Fund Managers.

This Set Up section of the Guide provides information on: financial products to finalize the Investment Strategy; the selection process for Fund Managers; business plans; co-investments; and governance arrangements.

Finalizing the Investment Strategy

The Investment Strategy should incorporate the policy framework in the Strategic Policy Pathway informed by the Ex-Ante Assessment in the design phase, and include the financial products offered overleaf. The delivery mechanisms for the Investment Strategy are set out in the Business Plan. These are developed by the Fund Manager as part of their selection process.

Co-investments are key to delivering on the Investment Strategy and are the responsibility of the Fund Manager.

As soon as the parameters of the Investment Strategy have been defined, it is advisable for the Managing Authority to start a marketing campaign to publicize the forthcoming Financial Instruments to help identify suitable projects for investments. This will assist Fund Managers in identifying indicative pipelines of projects.

Financial Products

Financial products refer to loans, equity or quasi-equity, guarantees, and other risk-sharing instruments. The products selected to be offered should be informed by the Ex-Ante Assessment which should provide an indication of the types of products required to address sub-optimal performance/market failures. The financial products will depend on the sectors targeted as well as regional economic context.

Establishing Financial Instruments

Article 38.4 of the CPR outlines the following in relation to establishing Financial Instruments:

a) Managing Authorities can invest in the capital of existing or newly created financial institutions, which will implement Financial Instruments
b) Managing Authorities can entrust implementation tasks to:
    - The European Investment Bank Group
    - National or international public financial institution where Member States are shareholders
    - Any other public or private body following a tender process
c) Managing Authorities can undertake implementation tasks directly where Financial Instruments consist solely of loans and guarantees.

Procurement Options for Fund Managers of Financial Instruments

Managing Authorities have several procurement options with respect to selecting Fund Managers(s) to select Fund Manager(s), whether to make direct investments in projects, or to manage a 'Fund of Funds' to invest in individual Financial Instruments. These include:

- Entrusting the European Investment Bank (EIB) Group as the "Fund of Funds" Manager;
- Appointing an international financial institutions (IFI) in which a Member State is a shareholder, or financial institutions established in a Member State aiming at the achievement of public interest under the control of a public authority, selected in accordance with

applicable Union and national rules;

Managing Authorities have also the option of procuring a financial institution via a competitive procurement process. If this is the case, Managing Authorities will need to conduct a public procurement exercise. Applications from Fund Managers are invited through a published 'Call for Proposals'. Managing Authorities score the applications from Fund Managers against a set of criteria to decide who is their preferred bidder. Subsequently, the Managing Authorities and Fund Manager(s) negotiate and finalize a Funding Agreement between each other.

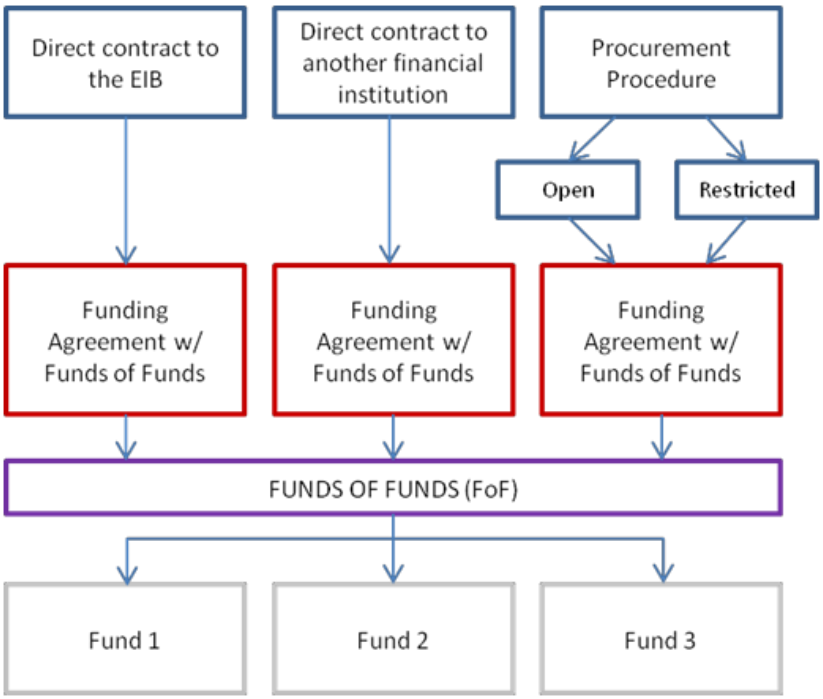


Figure 11 - Procurement options

Using a "Fund of Fund" model is optional. Where a Managing Authority wishes not to use this model, then the Funding Agreement is directly with the individual Financial Instrument.

Public Procurement Options

Under EU law, there are different options that Managing Authorities can follow when selecting Fund Managers through a competitive public procurement process:

- **Open Procedure** – This provides that all those interested in the matter advertised in the Official Journal of the European Union (OJEU) may respond to the advertisement by tendering for the contract.
- **Restricted Procedure** – This process selects an initial list of applicants through a review of pre-qualification questionnaire ("PQQ") responses. The opportunity will need to be initially advertised on OJEU and only the selected entities from the PQQ stage are invited to submit a tender for the contract. The benefit of this approach is that it avoids the need to deal with a large number of tenders.
- **Competitive Dialogue Procedure** – Following the issue of an OJEU Contract Notice and a selection process based on PQQ responses, a dialogue with selected potential bidders commences. The purpose of the dialogue is to develop one or more suitable solutions for required services, and to select a final set of bidders who are invited to tender.
- **Negotiated Procedure** – Here the purchaser of the services may select one or more potential bidders with whom they will then negotiate with respect of the contract. An advertisement in the OJEU is usually required but, in certain circumstances described in the regulations, the contract does not have to be advertised in the OJEU.

Business Plan

As part of the tendering process, potential Fund Managers should propose an outline Business Plan, which should be finalized as part of the Funding Agreement.

The Business Plan is essential because it defines the scope and objectives, investment strategy, size, and outputs measured by indicators of the Financial Instrument. The Business Plan should include the following:

- **Investment Policy**: outlines the investment objectives, summarizes the portfolio of potential projects including the methodology of selecting projects for investments. It should clearly articulate elements such as the performance objectives, eligibility of final recipients, risk profile, time horizon, financial and regulatory constraints.
- **Investment Period**: outlines the proposed life span of the Financial Instruments, which informs the timescales for investment.
- **National Co-finance**: outlines contribution in cash or in-kind.
- **Public and Private Co-Investment**: outlines expected levels of co- investments at the level of the "Fund of Funds", at the level of the Financial Instrument or at the level of Final Recipients.
- **Legal and Ownership Structure**: describes the legal and ownership structure including the rationale for the structure.
- **Management Costs and Management Fees**: outlines the proposed level of fees payable, including a proposed fee structure and calculations.
- **Monitoring and Reporting**: procedures for monitoring and reporting are required to ensure regulatory compliance with EU regulations.
- **Audit procedures**: Fund Manager(s) will receive regular control reports from the appointed auditors designated in the agreements when setting up the Financial Instrument(s).
- **Winding-Up Provisions and Re-utilization of Resources**: discusses plans for first and follow-on investments, as well as exit strategies.

Co-Investments

One of the key characteristics of Financial Instruments is the ability to attract private sector co-investments, either at the project or fund levels, alongside other public investment. The Fund Managers will need to consider the different conditions required in order to attract private investors (level of interest rate, liquidity risks, public and private initiative conditions, level of public aid). The Fund Manager should determine the 'financial effectiveness' of an investment, and in doing so, identify the risk areas and the intervention, if possible, which is most suitable for private investors.

Regardless of the financial products on offer, using Financial Instruments should adhere to the principle of risk sharing with private/public co-investors.

Governance Structure

The role of governance is a key factor in the structure and on-going management of the Financial Instruments and before the Funding Agreement is finalized, the governance rules and processes need be clear:

- set the parameters for the Financial Instruments operation
- provide clarity around the decision-making process (e.g. investment decisions)
- establish governance principles (investment policies, and any approvals processes)
- outline any additional management and control procedures (e.g. management of risk strategies, and the process for escalating issues that arise in the delivery of Financial Instruments operations by the Fund Manager to the Managing Authority and "Fund of Funds" Manager)

- Identify clear roles and responsibilities on approval of investments; supervision and performance review; and decision- making with the appropriate checks and balances in place.

7.4 Implementation phase

The Implementation Phase seeks to identify and make investments into a suitable portfolio of projects. Investments should contribute to Operational Program objectives, as well as achieving adequate financial returns. Projects and funds will need to be monitored and audited regularly in line with the financial regulations' requirements of the European Commission.

Identifying Projects for Investment

Fund Managers should actively build a pipeline of projects as soon as all investment agreements have been finalized. This process is perhaps the most time intensive, and stakeholders should seek to identify possible project promoters at an early stage, even if projects are at the conceptual phase.

Projects that have high economic-social impacts are frequently not adequately structured to fulfill the requirements for investments via Financial Instruments. These projects often take a long time to become 'investment ready'. Whilst Fund Managers can provide technical support to assist project promoters in financially structuring projects to make them suitable for investment, the earlier they are identified and informed of the requirements of Financial Instruments, the more likely they are to be ready when a Fund Manager initiates a 'Call for Projects'.

The aim of the 'Call for Projects' is to construct a portfolio of suitable projects for investments that meets EU regulations and are in line with Investment Strategy.

A 'Call for Projects' will involve marketing the Financial Instruments to help stakeholders understand what eligible activities the UDF can invest in, and how that investment can be made (by Loan, Equity or Guarantee). The aim is to engage potential Project Promoters to determine if the Financial Instruments can invest in their projects.

Interested promoters then submit an Expression of Interest. The Fund Managers will collate the project information to produce an initial portfolio of projects potentially eligible for investment. These will then be reviewed to identify projects which may be eligible according to the relevant regulations and Investment Strategy.

Investment Decisions

Once a list of eligible potential projects for investment has been identified, to help determine which projects should be invested in, Fund Managers will assess:

- **Risk**: the level of risk present within any given investment opportunity
- **Returns**: the potential financial return that opportunity offers
- **Impacts**: the economic, social, and environmental outcomes resulting from the investment.

Financial Modelling

Financial modeling is the task of building an abstract representation (a model) of a real world financial situation, and assess the performance of a financial asset or portfolio of business, projects, or other investments.

The Financial Models enable Fund Managers to understand the financial viability of potential investments as well as the risk/reward profile. Models help to understand the cash flow (revenues and costs), internal rate of return (the rate of return used in capital budgeting to measure and compare the profitability of investments), and the net present value (NPV) of an investment. NPV compares the value of a Euro today to the value of that same Euro in the future, taking inflation and returns into account. If the NPV of a prospective project were positive, it would normally be acceptable for investment. However, if NPV is negative, the project will likely be rejected because cash flows will also

be negative.

Project Business Plans

Project business plans set out the purpose and nature of the project, the financing requirements, and how they will be delivered. These inform the development of a financial model and should include:

- **Project detail** – This provides context for the Fund Manager to assess the projects for strategic fit with the Operational Program and Investment Strategy.
- **Source and type of financing** – This allows the Fund Manager to understand the scale of the investment sought from the Financial Instrument, contributions from other funders, the timing of those investments, and type of financial product most suitable to project needs – e.g. Loan, Equity, Guarantee
- **Revenue and Costs** – This allows the Fund Manager to understand the sources of revenue to repay investment and undertake an initial assessment of the risks associated with those sources. This information will also help the Fund Managers understand timing of repayment of the investment to ensure the projects can be supported through Financial Instruments resources
- **Repayment plan** – This should illustrate the position of the investment in financing the project and outline how that investment will be repaid alongside the other investors. The analysis should also help the Fund Manager understand the Project IRR and general profitability to compare with any objectives set in the Investment Strategy
- **Delivery structure** – This allows the Fund Manager to understand how the project will be delivered, the organizations involved in its delivery, and the governance and oversight mechanisms. This will enable an initial assessment of the credibility of the project delivery team and establish if any risks around their reputation or competency need to be addressed in any Investment Agreements.

Impact Analysis of Projects

Investments from Financial Instruments must deliver positive non - financial (economic, social, and/or environmental) impacts alongside financial returns, in line with the Investment Strategy. As discussed earlier in the Design Phase, a common set of output indicators will be critical to measure non-financial impacts. These results indicators will be compulsory for all Programs and all Priorities, in which the impacts will be evaluated against the broader objectives and targets of the Europe strategy.

The proposition's business plans should set out what impacts they will achieve, how, and the mechanism by which this will be monitored and quantified. Project should propose clear outputs as a result of the investment, e.g. jobs created, number of homes to be retrofitted with energy efficient insulation, square meters of brownfield land remediated etc., which are in line with the Investment Strategy set out by the Fund Managers.

These outputs should be designed to enable broader outcomes as a result of the project, which will help to achieve the broader strategic objectives of the Operational Programs, and in turn the overall Europe objectives, e.g. economic growth, action to address climate change, alleviate poverty, etc.

Project promoters which have previously received ESIF grant funding will be familiar with the need to quantify and monitor impact outputs. Others, who are more used to commercial financing, but whose projects nevertheless achieve broader objectives, may require assistance in this area.

Project and Portfolio Structuring

Financial Instruments are designed to achieve both financial return on investment, and broader impacts to society, the economy, and/or the environment. Assessing both the financial and non-financial aspects of projects in tandem, can assist Fund Managers in achieving both of these objectives through viable investments, provided that the non-financial objectives are clearly articulated in the Investment Strategy.

Furthermore, if project investments are considered as part of a portfolio investment approach, rather than individually, this provides an opportunity to optimize the achievement of both financial and non-financial objectives across a portfolio. This may enable some projects with low financial returns but high non-financial returns to be funded, which may not otherwise be, as they could be combined with other projects which achieve higher financial returns as part of the portfolio. Fund Managers are recommended to proactively structure their projects and portfolios to achieve the optimum balance of financial and non-financial outcomes from the onset of designing the Financial Instruments.

Monitoring and Reporting

During the Implementation Phase, regular monitoring and reporting is required. These will also be a mid-term review to review the performance of the Financial Instrument. Depending on the results of the evaluation, the Financial Instruments may need to be adjusted to reflect changes in the market; additional funds may be contributed to meet unexpected market demand; or funds may be reduced if analysis suggested that the funds would not be able to invest the entire sum. At the end of the implementation period, all capital, including interest, should have been invested as otherwise; it will need to be repaid.

Managing Authorities will report on all instruments under their responsibility or management, including Financial Instruments set-up at national, regional, transnational or cross-border level.

7.5 Winding up phase

The Winding-up phase of Financial Instruments includes the reutilization of resources returned fund from investments. It could also include remaining funds left over after all guarantees have been honored. Winding up and exit policy should be included in the funding agreement of each Financial Instruments.

During the closure of Financial Instruments, the settlement of accounts should be completed, and shareholders are paid out their share of the initial investment and returns on investments, if applicable.

Ex-post evaluation analyses the impact of Financial Instruments and identifies points of improvement. The results of ex-post evaluation will determine the further use of the remaining funds after the closure of the Financial Instruments. The returns from investments after the closure of the fund may be used by the Operational Program for the same Financial Instruments, for another Financial Instruments or in other forms of support.

8. Non-Financial Instruments

The concept of innovation concerning financial instruments is developed within the EU as a synergy with other tools created to support the correct implementation of projects and make investments attractive to the market, creating leverage to attract private capital, stimulate technical and information support and shared risk management.
These tools, technicians and human capital, aim to improve profitability and bankability by providing: competence, awareness, information, risk management, performance guarantee, technology, organization.
Among these we consider effective for the success of financial instruments, in particular:

Investor Confidence Project

One of the key issues in energy efficiency projects is that until recently there has not been a standard way of developing and documenting them, even where there are national or international standards every project developer uses different methodologies. This contrasts with energy supply investments such as oil and gas or wind power, both of which have standardized approaches. This lack of

standardization has several important negative effects for financial institutions looking to deploy capital into energy efficiency. These are:

- increased performance risk
- increased due diligence cost
- challenges in aggregating projects for subsequent refinancing
- challenges in building teams around ad hoc processes.

This issue, along with that of varying quality standards between project developers, is being addressed by the Investor Confidence Project (**ICP**) which was developed by the Environmental Defense Fund in the US, and then brought to Europe with support from the European Commission's Horizon 2020 program. ICP is now administered by Green Business Certification Inc. (GBCI), a not-for-profit that owns or operates several sustainability related indicators including: LEED, GRESB, WELL and EDGE).
The ICP has developed a system of project certification – Investor Ready Energy Efficiency™ (**IREE**) which requires projects to be developed by an accredited project developer using the ICP Protocols and to be independently assessed by a Quality Assurance professional. IREE cannot guarantee the result of a project but it certifies that the project developer has a certain level of competency and that a certified project has been developed and documented to an internationally recognized best practice standard.
In Europe, IREE is available in all EU countries (plus Switzerland) and recognizes national standards that can be used to achieve IREE certification, thus allowing for local national regulations and standards. IREE is available for buildings, industrial projects, street lighting and district energy.
For more information see: http://europe.eeperformance.org/

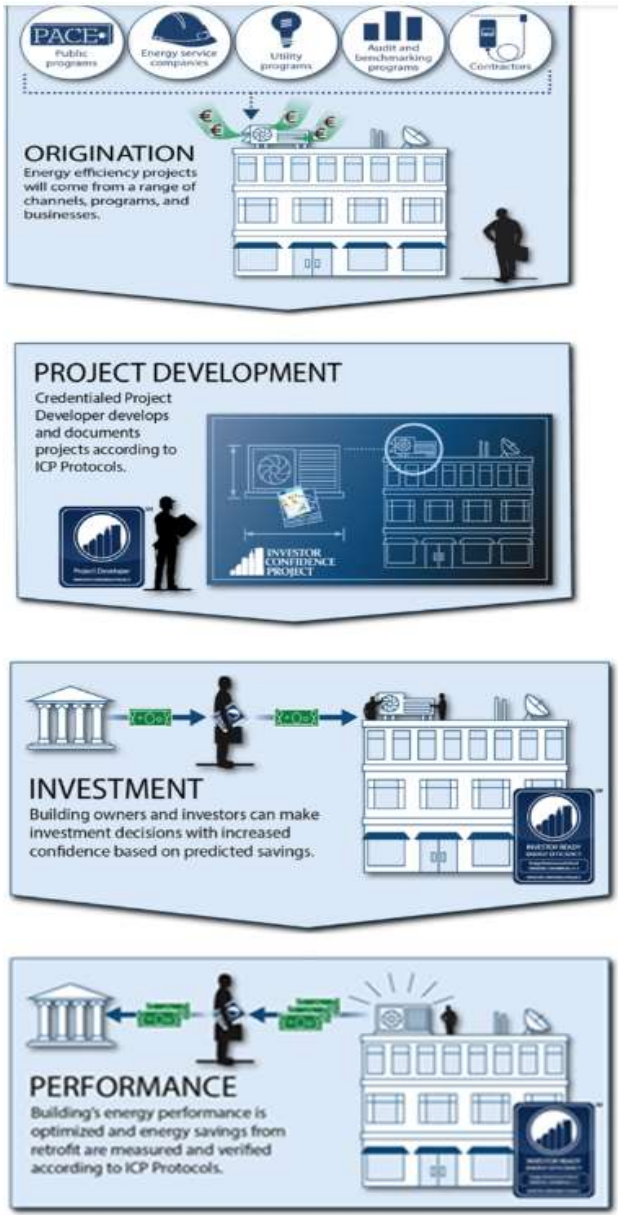


Figure 12 - The ICP- IREE process

International Measurement and Verification Protocol

The International Performance Measurement and Verification Protocol (**IPMVP**) is a collection of the best practices available today to verify the results of energy efficiency projects, water efficiency and renewable sources in any field, from civil buildings to industrial sites.
The IPMVP is a tool for assessing the real energy and economic benefits of interventions and is therefore very useful when efficiency improvement measures are proposed, and time savings are implemented, such as in energy diagnoses, incentive systems based on the results obtained and in energy management systems. Moreover, being shared by the parties, it proves to be a fundamental instrument in guaranteed performance contracts (Energy Performance Contract - EPC) with the ESCOs, minimizing transaction costs related to insufficient knowledge of technical, managerial, behavioral aspects, etc.
The IPMVP were formalized in the 1990s under now managed and maintained by the Efficiency Valuation Organization (**EVO**). The Investor Confidence Project draws on IPMVP and other sources to establish M&V practices recommended for lenders and seeks to tie those practices to the entire project development, design, construction, commissioning, and monitoring process.
IPMVP sets out different methodologies including: Stipulated savings, Partial or full measurement in isolation, Whole building measurement and Simulation. For an investor or lender to an efficiency project (or indeed for the asset owner) understanding how savings are measured and which party bears the risk is essential to gauging the risk associated with the investment or loan.
https://evo-world.org/en/products-services-mainmenu-en/protocols/ipmvp

EPC facilitators

The Energy Performance Contracting (EPC) facilitator is a figure introduced with the GuarantEE project (https://guarantee-project.eu/), which aims to develop the application of the Energy Performance Contracts and collect the best practices in this regard.
The EPC Facilitator provides the necessary know-how and experience to support the management with the successful implementation of an EPC project. The EPC Facilitator acts as a mediator between client and ESCO to build up a sustainable relationship and to create trust between the future contract partners.
Tasks of the EPC Facilitator usually include:

- initial assessment of project suitability for EPC
- initial assessment of potential energy savings and investment required
- initial technical analyses
- support client during procurement process
- provide advice throughout the project.

9. Criteria to assess public funding actions[14]

9.1 Definition of indicators

The definition of a set of indicators that translate the regional energy objectives into expected results represents a fundamental element to allow the assessment the public funding action.
Thanks to the Regional Operational Program it is possible to identify two types of indicators: result indicator and output indicator, as shown in the table below. These should act as a guide for assessing the effectiveness and the development of funds.

Type of indicator	Indicator	Unit
Result	Reduction on Industry Energy consumption	GWh

[14] PWC – ExAnte Financial Instrument Evaluation, 2015, Emilia-Romagna Region – VexA SP ER

Output	Number of Companies receiving financial support	Nr of Companies
Output	GHG emission reduction	Tons of equivalent CO2
Output	Energy Savings	GWh
Output	Additional Renewable energy power	MW
Output	Reduction of particular matter emission (PM10)	Kg PM10
Output	Reduction of NOx emissions	Kg NOx

Table 18 - Output and Results indicator for Low carbon Economy

Each indicator needs a starting level (Baseline) and a final target (Target).
Along with these indicators (indicated within Regional Operational Program) other financial indicators could be used for assessing the efficiency of funds. In the following table some additional indicators are described. The performances can be measured using standard financial indicators, such as the rate of repayment and non-performing loans:

Indicator	Description
Refund Rate	Share of refund made on the total payable
Delivery Rate	Percentage of investment delivered on the total available fund
Default Rate	Percentage of failures
Leverage Effect	

Table 19 - Financial indicators

It should be emphasized that the definition of indicators is the basic element of a system that will allow the monitoring of the performance, allowing consequently to carry out appropriate corrective actions or a review of the investment strategy.
The following step is the creation of an information system for the decision-making support; for this purpose, it will therefore be necessary to set up an effective system for the collection, organization and analysis of data in order to facilitate the setting of subsequent evaluations:
- evaluation during the planning period, to be carried out, as established by the plan evaluation, in order to assess how the support from the ESI funds contributed to the achievement of the objectives of each priority;
- ex-post evaluation.

9.2 *Determination of the potential leverage of financial instrument*

Equity

If we assume a contribution of public funds to an equity instrument of 5 million euros, it is possible to request the manager of co-investing an additional 5 million euros, thus creating a fund of 10 million euros. The fund can invest in companies acquiring minority interests, therefore at most 49.9%. This means that with 10 million euros it is possible to create companies that have about 20 million equity. Whereas banks can finance companies with one leverage 20:80 (20% equity and 80% debt), the total value of the debt that can be activated could be 100 million EUR. Therefore, with € 5 million of public resources, investments of € 100 million could be activated, with a lever of 20x.

Debt

If we assume a contribution from public funds to a debt instrument of 5 million euros, it is possible to request the manager of co-investing further 5/10 million euros, thus creating a fund of 10/15 million euros. The fund can finance 100% of the companies' needs with a lever of 20:80 (20% equity and 80% of debt). This means that the total value of the investments that can be activated could be 12.5 / 18.75 million euro. So with 5 million euro of public resources could be activated investments amounting to 12.5 / 18.75 million euro, with a leverage of 2.5 / 3,75x.

Guarantee

If we assume a contribution of public funds to a guarantee instrument of 5 million euros, the fund will be able to guarantee loans for an amount equal to 50-80%. This means that the total value of the loans

that can be activated it could be between 6.25 and 10 million euros. If we consider that banks leverage 20:80 (20% equity and 80% of debt), the total investment that can be activated could be between 7.8 and 12.5 million euro. Then, with 5 million euro of public resources, without requiring additional resources to managers, investments could be activated equal to 7.8 / 12.5 million euros, with a lever of 1.6 / 2.5x.

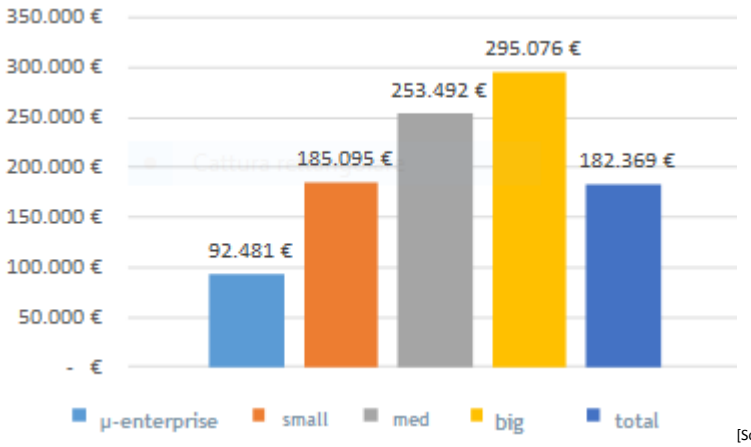
9.3 *Calculation of indicators*

An example of assessment from the experience of the Energy Fund of the Emilia-Romagna Region, assuming a public allocation of 10 M€, with an additional leverage of 1.25x, which brings the total financial envelope of the fund to 12.5 M€:

- **number of enterprises receiving financial support** other than grants: with a public funding of 10 million euro, 80% of the eligible costs are expected to be financed, which means that the total investment achievable by this fund amounts to 12.5 M€. Considering that the average funding granted to projects under the previous Energy Fund was € 100.000, the number of companies receiving financial support other than grants is conceivable in 125.

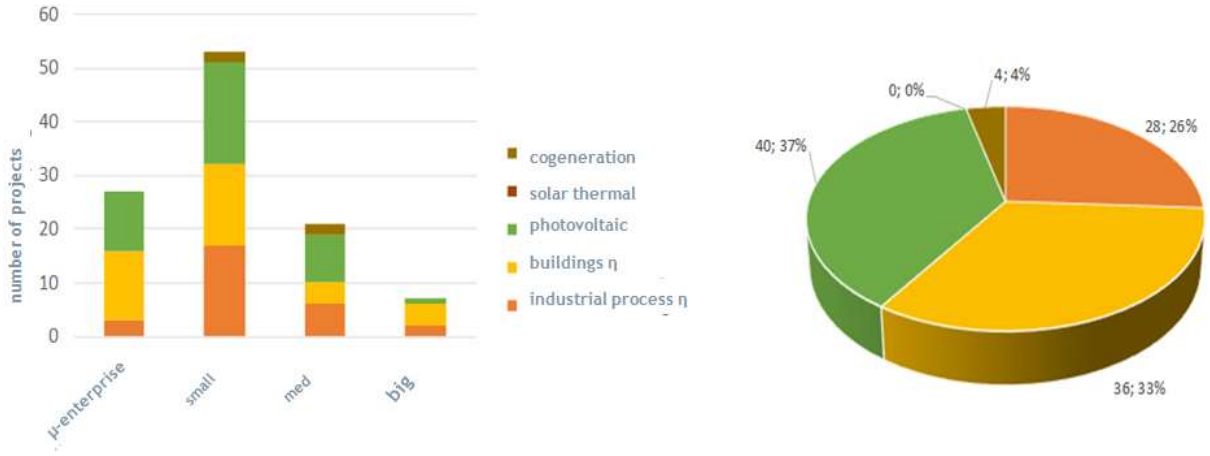
  Assessment from calls 2018 of the Emilia-Romagna Energy Fund:

  - 108 presented projects
  - 18,7 M€ total amount
  - 13,8 M€ public share
  - projects' average amount and type of measure



[Source: AESS]

Figure 13 - Average amount of measure cost in the calls 2018 of ERR Energy Fund



[Source: AESS]

Figure 14 - Type of measure in the calls 2018 of ERR Energy Fund

- **reduction of greenhouse gas emissions:**

  Assessment from calls 2013 of the Emilia-Romagna Energy Fund:

- 107 presented projects
- 53,0 M€ total amount
- 11,7 M€ public share
- 58.594 t_{CO2}/y of emission reduction
- 905 €/ t_{CO2} average cost of the reduced emission

- **reduction on industry energy consumption**:

  Assessment from calls 2013 of the Emilia-Romagna Energy Fund:

  - 20.852 toe/y of total energy savings
  - 2542 €/ toe average cost of the saved toe

10. Lessons learned and recommendations

From the analysis of the experiences learned, several elements emerged that a Region should consider for the design of the Financial Instruments. In particular:
- the choice to use a **revolving fund** is rewarding in terms of sustainability. In general, in fact, the refunds allow to refinance funds;
- the **combination of loans and training** is winning. Provide training on different aspects on the business development improves entrepreneurial skills, increasing the chances of creating jobs and reducing the risk failures;
- it would be desirable to offer the beneficiaries a **counseling and tutoring service** and accompaniment for the first year of activity, in order to guarantee a more effective use of financial resources;
- it is reasonable that, at the stage of submission of the application by the beneficiaries, the subject deputed to the coaching and tutoring service is different from the manager of the fund;
- in order to reach the widest number of beneficiaries, it is important to highlight the **activities communication**, both in terms of results and opportunities offered by the Funds;
- it is necessary to pay attention, in the definition of a Financial Instrument, to the possible difficulties of **coordinate the various grants** for the same object (e.g. other financial opportunities at regional, national and Community level);
- it is necessary to assure **stability and certainty over the time** to the financial instrument;

to policy makers	to market participants
policy framework should positively support strong corporate energy efficiency investment choices at key points in their investment cycle, using a "carrot and stick" approach	raise energy efficiency opportunities at board-level and implement appropriate strategic resource investments to capture their multiple benefits within the natural company investment cycle
public resources and facilitation should be engaged to establish dynamic and effective systems for sharing information and technical experience	financial institutions should more widely adopt existing "best practice" models to stimulate their clients' energy efficiency investments
ensure EU and national policies and resources are working effectively together to drive R&D and optimal energy efficiency outcomes	encourage and support collaborative processes and consider R&D whose objective is to reduce the cost of and improve the up-take of energy efficiency investments
support the clarification of the regulatory, fiscal and accounting treatment and standardization of Energy Performance Contracts	standards should be developed for the legal terms in and process to negotiate energy performance contracts
energy efficiency opportunity identification and investible project pipelines should be supported with Project Development Assistance facilities for SMEs	

Table 20 - Summary of recommendations[15]

[15] Energy Efficiency Financial Institutions Group