CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE

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Concerted Action Energy
Efficiency Directive

4

Funds and financing for energy efficiency

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Content

1 Introduction and context

The Concerted Action for the Energy Efficiency Directive (CA EED) was launched in spring 2013 in order to support the effective implementation of the Directive on Energy Efficiency (2012/27/EU) in all EU Member States (MS) as well as Norway.

This report summarises the work carried out between January 2013 and October 2016 by the CA EED on funds and financing for energy efficiency. It focuses on analysing financial measures used for energy efficiency (EE) and finding successful examples of funding and financial mechanisms within the CA EED.

Energy efficiency measures and projects are supported in different ways. The public sector, national and local governments and the European Union are continuously working on incentives to encourage investment in energy efficiency in different sectors. In principle, EE financing should rely more on market mechanisms, and public funds should only be used where market failure occurs: the preamble of the EED says that "Member States should encourage the use of financing facilities to further the objectives of this Directive". Involvement of bank financing in energy efficiency will gain even more attention in the future across all sectors.

An intensive desk research exercise was undertaken of European Union legislation, studies and project outputs alongside interviews and questionnaires to gather knowledge of overall circumstances of EE funding within the countries and highlight national examples of successful approaches. This can be shared among participants and foster the adaptation of well-established financial solutions to national circumstances.

2 Involving banks in energy efficiency financing

Bank financing is critical for developing energy efficiency projects at scale and Member States' ability to reach carbon reduction targets will in part be reliant on the deployment of private sector as well as public finance in the right packages and at the right scale.

Many banks have recognised the potential of energy efficiency financing and have developed specific packages for households and companies to support EE, renewable energy and broader green investments or to complement national EE programmes (to cover own contribution, match funding). Bank financing also supports energy services, where loans are taken by the end user or the energy service provider.

Examples already exist in many countries using finance from private as well as national banks. Not all countries have national banks but where they exist they tend to support commercial banks, e.g. with dedicated financial sources or guarantees.

Types of instruments/mechanisms

Many different economic instruments are in place, from fiscal instruments to financial mechanisms, used by governments to support energy efficiency improvements. Economic instruments can be categorised under four main headings:

- Fiscal instruments, e.g. tax relief, taxes, charges, levies
- Financial measures, e.g. loans, grants
- Trading schemes, e.g. emission trading schemes, White Certificate schemes
- Direct investments, e.g. public procurement rules, public infrastructure, research and development investments

Economic instruments can also be categorised by their origin, i.e. they can be either public or private. They can also be used in combination.

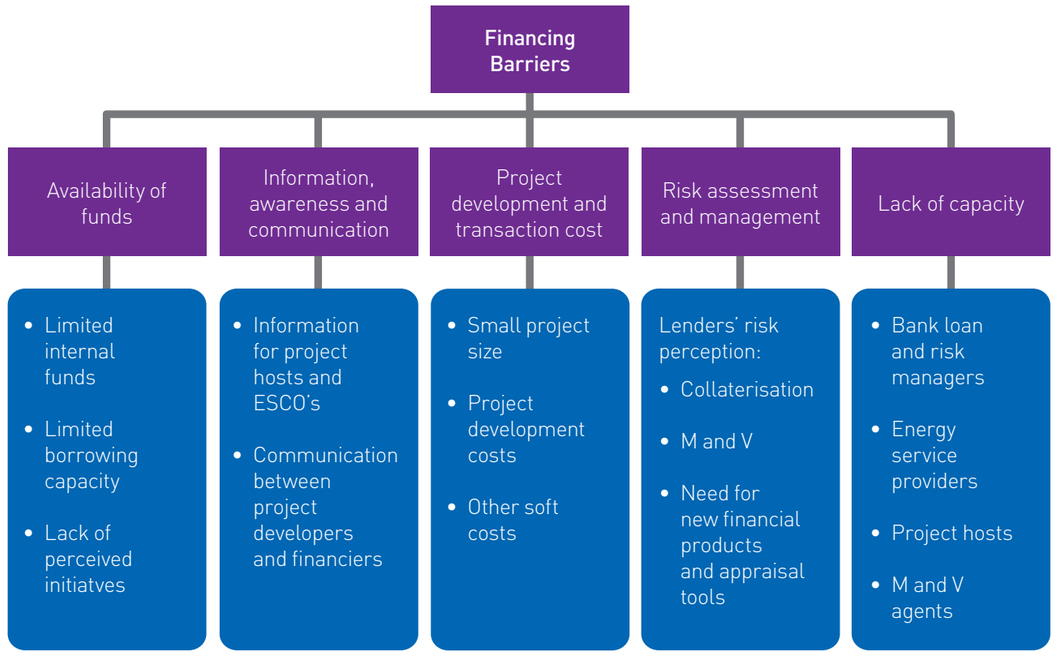
- Public financing mechanisms, e.g. tax relief, feed-in tariff, grants, guarantees, public loans, loans combined with grants
- Private financing mechanisms, e.g. loans, investment schemes, leasing

Barriers to EE finance

There are many barriers that prevent lenders providing finance and borrowers from receiving funds for energy efficiency investments. It must also be noted that different beneficiaries (e.g. households, SMEs, municipalities, etc.) have different needs and therefore financial products have to be adjusted to their requirements. Energy efficiency technologies can be mature or still in the development stage, which again requires different types or amounts of financing.

Top barriers for recipients:	Top barriers for financiers:
1. Lack of awareness or knowledge of EE & EE products/benefits.	1. Small size and geographically dispersed projects (many more risks), lack of project pipeline/ bundling/standardisation (problem of refinancing).
2. Lack of understanding of finance products/application processes.	2. Return on investment/less profitable than other investments.
3. Long payback periods (so it is not only about current activities but about activities 20 years from now).	3. Lender's perception of risk (lack of track record, no asset class).
4. Mistrust of financiers/EE suppliers, etc.	4. Lack of communication between financiers and beneficiaries / lack of supportive policy.

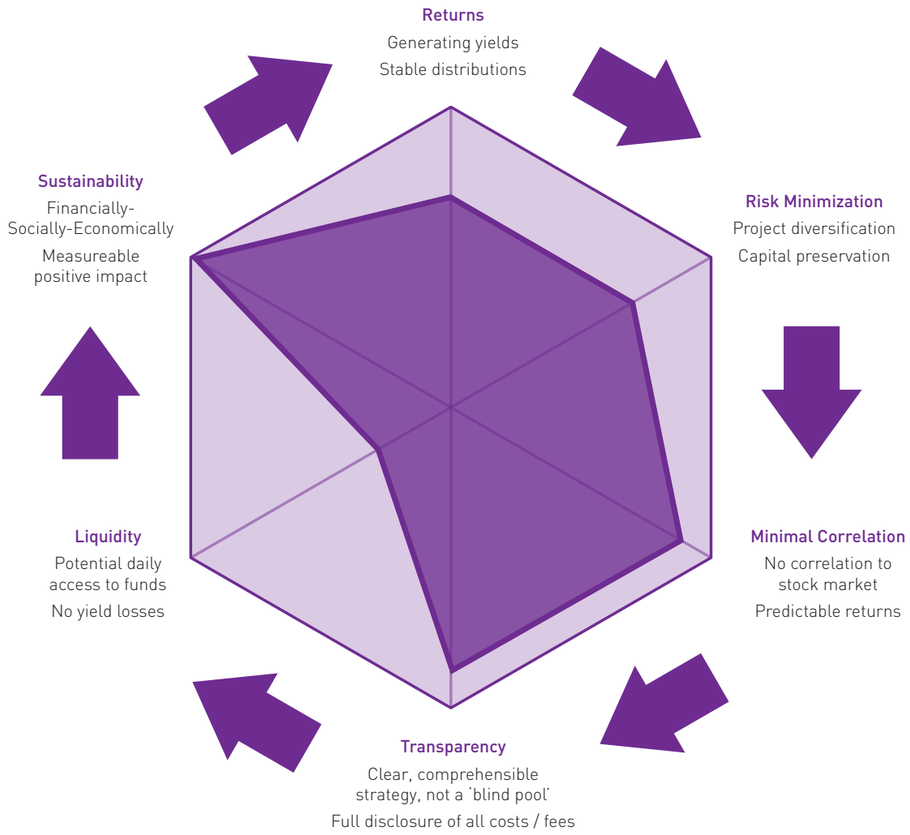
Figure 1: Classification of energy efficiency financing barriers



Source: Limaye, D.R. (2011). Taken from IEA (2011): Joint Public-Private Approaches for Energy Efficiency Finance

Energy efficiency financing is not considered a standard investment in the market because of its perceived risks. The diagram below shows what investors expect and what EE investments can offer for them.

Figure 2: Investors' expectations regarding EE investments



Source: P.Fankhauser, Susi Partners (2012): Energy efficiency for institutional investors. How to make energy efficiency investments attractive to institutional investors

Good practice examples

The Green Fund Scheme (GFS) in the Netherlands

The Green Fund Scheme (GFS) in the Netherlands provides cheaper loans for environmentally beneficial projects, secured returns for investors and helps build a green image for the banks proposing it. This is all provided at low public cost (banks do the work) with benefits for the environment and contributions to EU targets. It is based on a tax exemption on capital gains for savers choosing to invest in the GFS. It has a large multiplier effect, resulting from a successful co-operation between government and the financial sector: every 1 EUR of public funds spent generates a private investment of 40 EUR.

Key achievements

This is a long running scheme which started in 1995. Since then, over 7,400 projects have been supported. Over a quarter of a million investors are involved in environmentally sound investments and awareness in the banking sector and among end-users has been increased.

Further information:
www.agentschapnl.nl/groenbeleggen and
www.agentschapnl.nl/sites/default/files/bijlagen/SEN040%20DOW%20A4%20Greenfunds_tcm24-119449.pdf

'Energy Efficient Construction and Refurbishment' in Germany

'Energy Efficient Construction and Refurbishment' in Germany provides financing by way of soft loans and grants for energy efficient construction and refurbishment activities for the German residential sector.

KfW is Germany's state owned promotional bank and is mandated by law to carry out its promotional activities. KfW acts in close cooperation with the Federal Ministry of Building, Transport and Urban Development.

KfW offers promotional programmes for energy efficiency in the residential housing sector. Refinancing for the promotional loans is provided by KfW via the capital market. The interest rate of the promotional loans is further subsidised by funds provided by the Federal Ministry of Building, Transport and Urban Development.

Key principles of promotion:

In order to benefit from the advantages of promotional financing conditions, the efficiency standards achieved must be better than the requirements provided in the German Energy Savings Ordinance. The programme reduces the complex legal requirements to two values: first, the annual primary energy demand compared to the demand of a new building (the so called 'reference building') and second, the structural heat insulation (specific transmission heat loss) likewise compared to the reference building.

KfW-100 Effizienzhaus

The basis for measuring the level of energy efficiency is the 'KfW-Efficiency House Standard'. This has become a market-wide brand for energy efficiency in buildings.

Key achievements

- The promotional programmes are available for all private investors in the residential building sector in Germany, as well as housing companies, on equal terms.
- The promotional programmes reach a high number of households: in 2012 alone, 240,000 housing units were refurbished to more energy efficient levels and 116,000 new energy efficient housing units were built with support of the programmes (roughly half of all newly built housing units in Germany).
- One of the successes of the scheme is that it has a leverage effect of around 1 to 12, meaning that 1 EUR state contribution results in 12 EUR investment covered by private sources.

Further information:
www.kfw.de/inlandsfoerderung/Privatpersonen/Neubau/Finanzierungsangebote and
http://ca-eed.eu/private-area/themes/financing-ct4/financing-kfw-energy-efficient-construction-and-refurbishment-germany

3 Financing renovation of 3% of central government buildings

Article 5 of the EED states that "each Member State shall ensure that, as from 1 January 2014, 3 % of the total floor area of heated and/or cooled buildings owned and occupied by its central government is renovated each year" or that MS "opt for an alternative approach [...], to achieve, by 2020, an amount of energy savings [...] that is at least equivalent".

Most MS were unable to estimate their future needs in terms of budget, but for those who were, their analysis showed that a lot more of money is needed than is currently being spent.

Barriers affecting MS ability to finance EED targets for public buildings

- Government capacity to develop a financial plan, e.g. inventory of buildings and financial calculations
- Availability of financial sources to reach Article 5 targets
- Accounting and statistical problems, mainly related to energy performance contracting
- The limited availability of EU financial resources
- The lack of administrative human resources and the lack of financial resources to collect / update statistical data on the energy performance of buildings

The main financing opportunities for MS are:

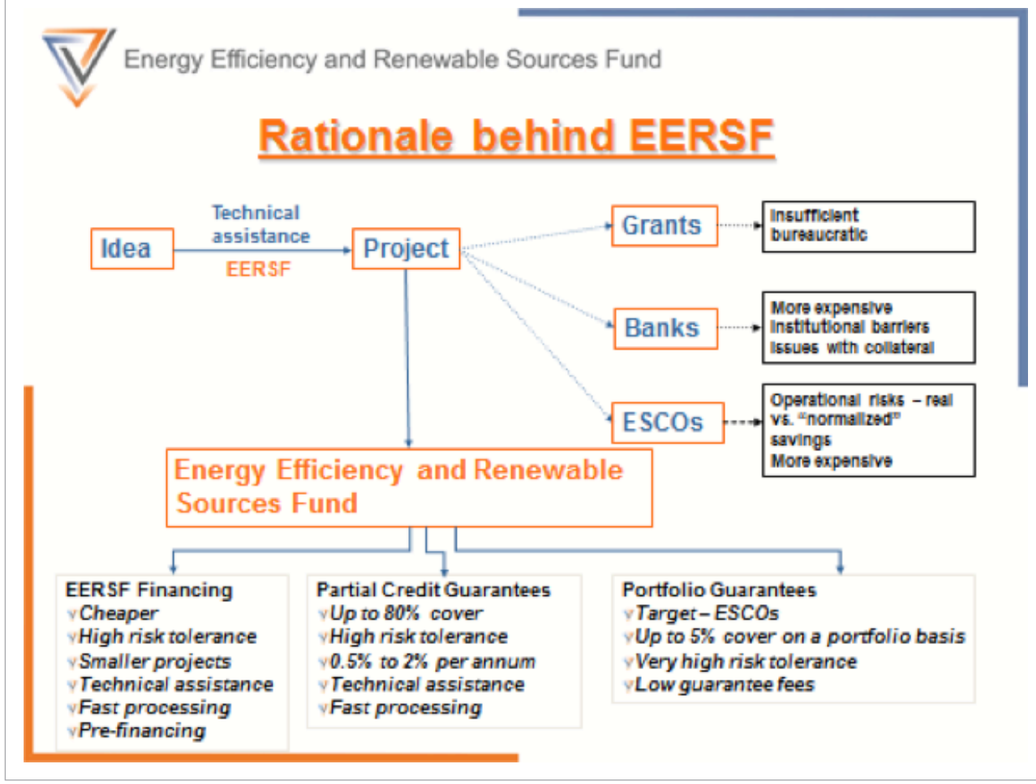
- EU Structural and Cohesion Funds, the use of which depends on the priorities of the respective MS
- Financing options at national, regional and local level, including both public and private financing
- Energy Efficiency Funds (EEF)
- JESSICA - Joint European Support for Sustainable Investment in City Areas
- ELENA - European Local Energy Assistance

Good practice examples

Bulgarian Energy Efficiency and Renewable Sources Fund (EERSF)

Following the Energy Act of 2004, the EERSF was established in 2005 as a revolving mechanism for developing and financing commercially viable EE and renewable energy projects. The initial capitalisation was approximately BGN 22million ($15m), with donations from the World Bank (Global Environment Facility ($10m)), Bulgarian Government, Government of Austria, Eurobank EFG, "Lukoil" AD, Brunata Bulgaria, Enemona AD and others.

The main objectives of EERSF are to develop the Bulgarian energy efficiency market under the Energy from Renewable Sources Act (2011) and to fund projects that provide renewable energy for on-site consumption (off-grid projects).



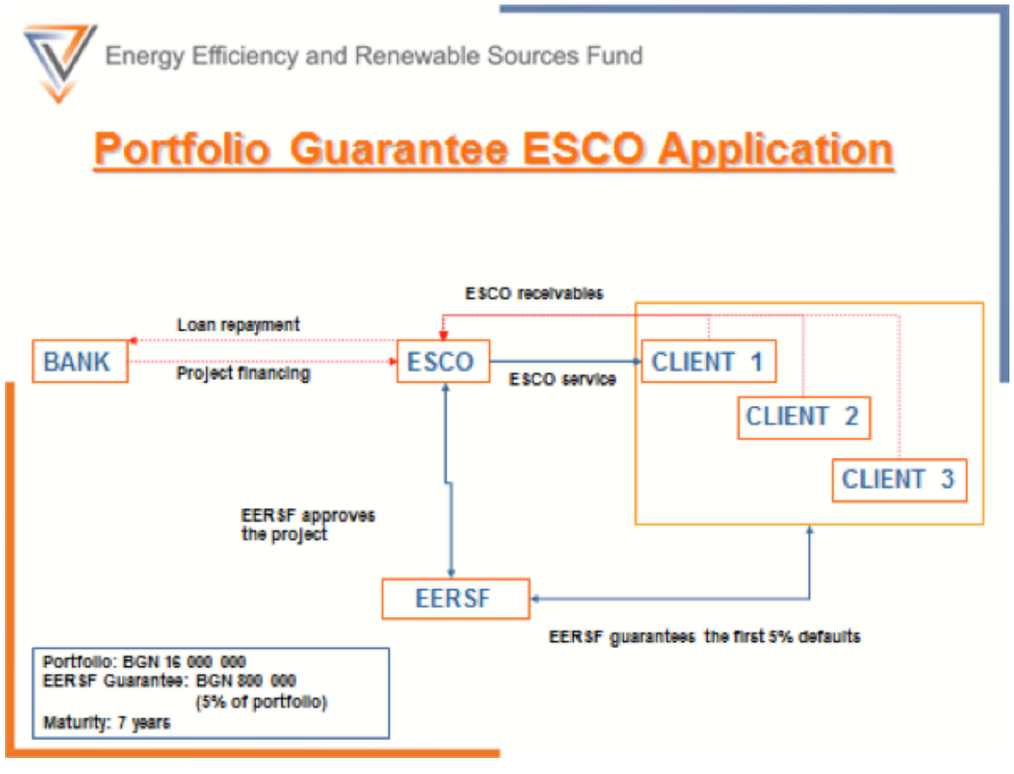
Special product – ESCO Portfolio Guarantees

- Guarantees the first 5% of defaults in the portfolio of projects
- ESCo companies to guarantee the receivables from their clients
- Instrument of average financial risk, which is statistically measurable
- Un-collateralised
- Small guarantee covers large number of projects (e.g. guarantee for BGN 500,000 can cover BGN 10million portfolio)
- Portfolio Guarantee contract with the Energetics and Energy Savings Fund SPV (EESF) from April 2008
- 29 ESCo projects funded

EERSF successes:

- Legal framework facilitating investments
- Market based energy prices
- Flexible approach to financing energy efficiency - National Supporting Schemes
- Higher project and client risks
- Customisation of financial products to the clients' needs
- Promotes the establishment of new ESCos
- Set up partnerships with commercial banks
- Provides technical assistance for project development.

Further information:
http://www.ca-eed.eu/private-area/themes/financing-ct4/energy-efficiency-and-renewable-sources-fund-partner-in-project-funding-bulgaria



Key messages

- The least energy efficient buildings should be targeted first.
- Energy performance as a whole avoids lock-in effects but also gives flexibility to reach clear targets in the most cost-effective way.
- Governments should seek greater involvement of banks.
- There is an important role for ESCos in renovating public sector buildings and in energy performance contracting.

Recommendations

- Collect and/or centralise data on the current renovation rate of governmental buildings and on the budget currently allocated to reach this rate.
- Diversify funding sources.

4 Best practice in leveraging market finance through public funds

Previous CA EED research in this area has identified that stringent EU purchasing rules can make it very complicated for public bodies to work with energy performance contracts / ESCos and that there are implications for financing models relating to accounting and statistical treatment of funding for the renovation of public sector buildings (e.g. on/off general government's balance sheet assets vs. services as a basis for contracting vs. resource budgets). Our work has also identified that, with on/off balance sheet accounting, MS are not sufficiently aware of some of the key issues, emphasising the need for more information on the subject.

Nature of the problem

- Since costs for the renovations may be recovered through ongoing independently audited and verified energy bill savings, EPC/ESCo models are of interest in a time of restricted public sector budgets.
- There are a variety of risk sharing and contractual models whereby ownership of assets and finance for the project may remain on or off the public sector balance sheet.
- Public expenditure will usually be governed by national accounting rules, procedures and regulations and these are in turn regulated by the European system of national and regional accounts, abbreviated as ESA95, which provides a system to ensure that individual MS accounts are comparable.
- The on/off balance sheet treatment of ESCo and other energy efficiency finance may therefore be restricted by a desire to limit the levels of recorded public sector spending and borrowing.

Challenges/barriers in MS

- Issues of public debt and the implementation of national and EU accounting rules
- Concern about the use of EU funds on ESCo projects, particularly structural funds
- Difficulties in preparing an accurate emissions baseline
- A feeling that transactional costs for smaller projects were high
- A lack of trust between the public sector and ESCo companies, meaning that risk sharing on projects was not always handled in the right way

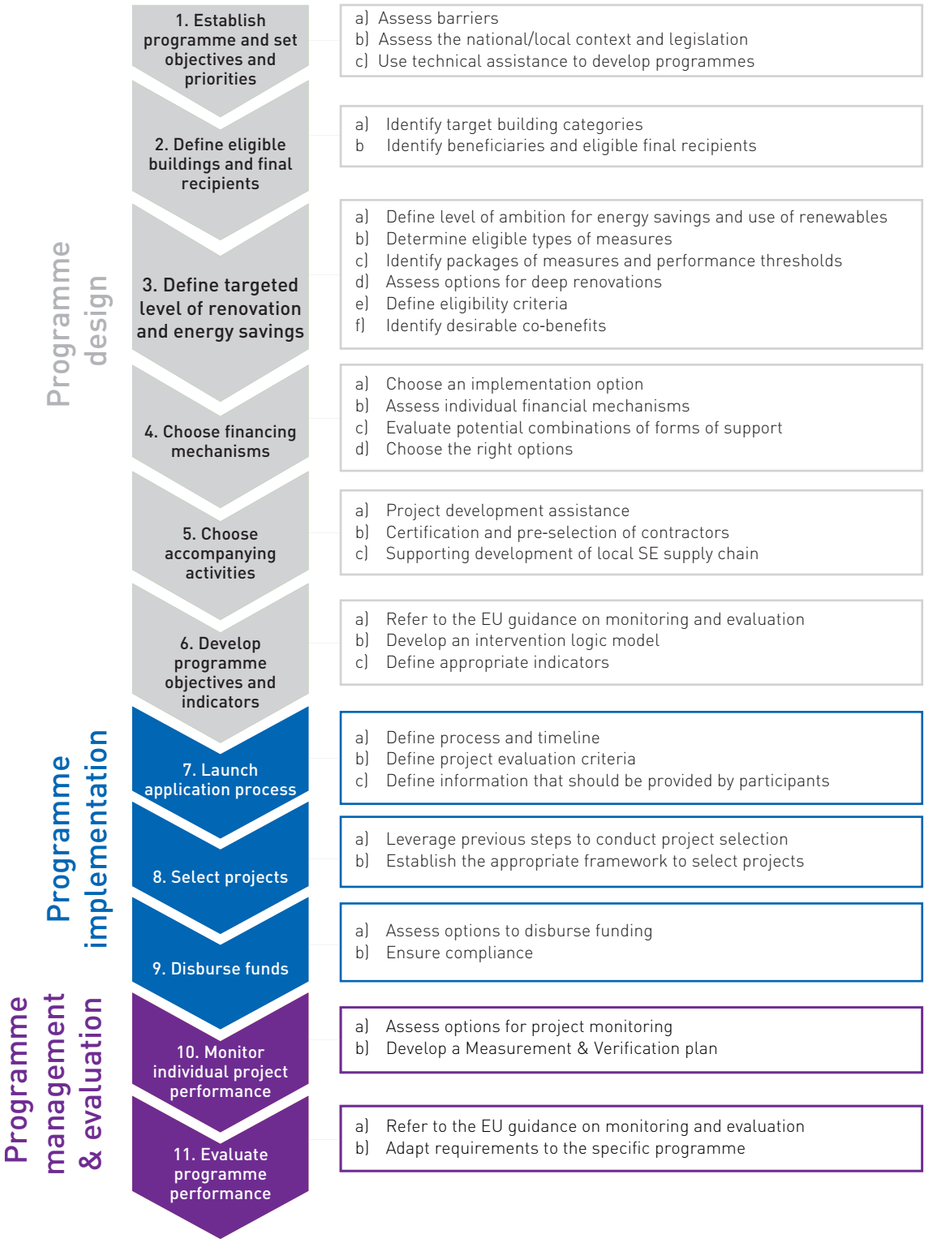
Guidance on financing the energy renovation of buildings with cohesion policy funding

In February 2014, the European Commission published guidance on financing the energy renovation of buildings with cohesion policy funding[1]. The guidance document aims to help Managing Authorities (MAs) in MS plan and deploy sustainable energy investments in buildings within Operational Programmes. It provides a list of good practice approaches and case studies and informs MAs about the European requirements on buildings and energy efficiency. It also explores the different financing mechanisms that MAs can use to support sustainable energy projects within an Operational Programme.

The diagram below provides an overview of the key steps that are described in this guide. These steps are based on the different stages of development and implementation of the Operational Programmes and the projects they finance, and are aimed at providing highÐlevel guidance to MAs and project promoters.

1 http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/financing_energy_renovation.pdf

Figure 3: Roadmap to implement a programme for financing the energy renovation of buildings using Cohesion Policy funding



The guidance report also provides a summary of the financing options available to MAs depending on the type of final recipient (further described in Step 4): preferential loans, renovation loan (offÐ theÐshelf instrument), a combination of grants and loans, guarantees, equity and energy performance contracting. Depending on the local context, the type of buildings, the final recipient targeted and the objectives of the programme, MAs should evaluate the appropriateness of using certain financial mechanisms against others.

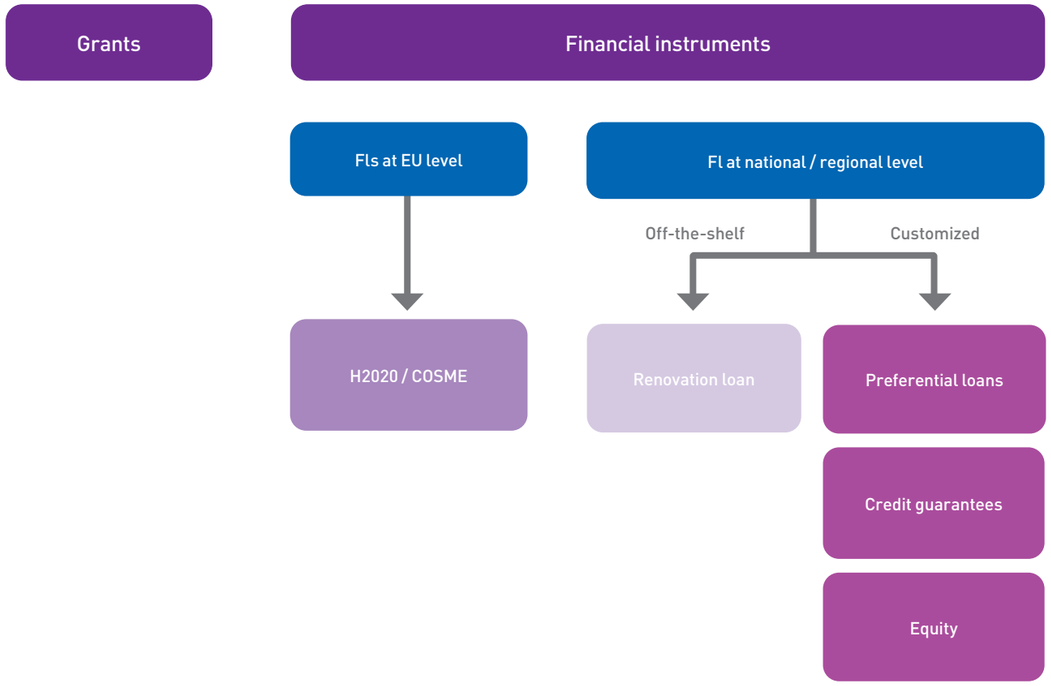
Energy efficiency retrofits, unlike other investments, do not produce direct income streams; rather they create avoided costs. Energy savings and associated cost savings are therefore often not considered a tangible revenue stream by financial institutions. This is mainly because of the uncertainty surrounding the scale of the actual savings that can be achieved. Inappropriate design, implementation and operation of the building and its equipment (including potential 'comfort taking' by occupants) can all influence the final savings realised in practice.

The diagram below shows the main types of financial instruments available to Managing Authorities.

Useful models presented in the CA EED

- UK – Green Investment Bank: www.greeninvestmentbank.com
  Salix finance: www.salixfinance.co.uk
- Belgium – FEDESCO: www.fedesco.be
- Ireland – Energy Performance Contracting handbook: www.seai.ie/Your_Business/National_Energy_Services_Framework/EPC_Handbook/EPC-Handbook.pdf
- European Energy Service Initiative: www.european-energy-service-initiative.net

Figure 4: Financial mechanisms for sustainable energy financing



5 Selecting appropriate financial instruments to deploy 2014-2020 structural funds on energy efficiency and building renovation

The new European Cohesion Policy for 2014-2020 goes further than ever regarding the promotion of EE and renewable energy sources (RES) because a minimum share of each region's European Regional Development Fund (ERDF) envelope will have to be invested in measures supporting the shift to a low-carbon economy. This should ensure an investment of at least Ð38 billion for 2014-2020 from the ERDF to support the shift to a low-carbon economy.

In order to properly plan and deploy this funding, MS have prepared new Operational Programmes (OP) directing an increased proportion of European funds towards the low carbon priority area through dedicated financial instruments.

It is now necessary more than ever for MS representatives and MA to understand the various financial mechanisms available to deliver finance for their EE programmes and projects.

How to choose the appropriate financing mechanism

1. Choose an implementation option

- Move away from the 'grant dependency' culture
- Lever private sector financing
- Help overcome market failures around access to finance
- Achieve higher quality, bankable projects
- Achieve a broader range of sustainable energy measures
- Achieve longer term sustainable finance

2. Assess individual financing mechanisms including

- Grants
- Preferential loans
- Guarantees
- Equity
- Energy Performance Contact (EPC)

3. Evaluate combinations of support

MAs can tailor interventions to meet objectives and combine financing mechanisms. They need to consider:

- Maturity of local market, key players and their needs
- Nature of Financial Instruments (FI) and how they best address needs
- Project types (i.e. research and development (R&D) or implementation)

4. Choosing the right financing options / the optimal financing mechanism

MAs need to evaluate appropriateness of financing mechanisms. The best option will depend on local context, building types, final recipients targeted and programme objectives (e.g. a combination of energy savings, support for local supply chains and skills enhancement).

Further information:
European Commission's published guidance on financing the energy renovation of buildings with cohesion policy funding: https://ec.europa.eu/energy/sites/ener/files/documents/2014_guidance_energy_renovation_buildings.pdf

6 Facilitating access to private financing

Facilitating access to private financing is critical in overcoming identified market failures and to meet the investment needed for wide scale retrofit. Full engagement of the private sector is key to fulfilling climate-related objectives over the long term and the involvement of the private sector in economic undertakings will support the overall reduction in consumption of energy in the economy. To develop such conditions and create a fully sustainable energy efficiency market, it is crucial that sound frameworks of support are created to maximise the involvement of private sector financiers.

The fundamental issue in stimulating investment in the energy efficiency sector is to create a coherent and well communicated market among financial institutions. The conditions should assure (amongst others) not crowding out available sources of financing, using adequate levels of public finance intensity, and facilitating the interest of private financing to participate in the market by reducing the risk.

Using EU funds to stimulate more participation of private financing institutions can also be important to trigger a sustainable energy efficiency market. European Structural Investment (ESI) Funds might trigger interest in financial institutions to become co-financing partners. The deployment of ESI Funds often results in very good quality market assessments, which leads to the design of well-shaped effective instruments that overcome the private financial institutions' barrier of information asymmetry. This also results in them lowering their price of risk and makes their financing attractive for beneficiaries.

Potential barriers for energy efficiency investments

The main obstacles are related to the level of energy efficiency market development and legal clarity. Market immaturity is reflected mostly by the lack of clear national energy efficiency strategies and scarcity of support schemes. In addition, immature markets are not able to sustain more sophisticated financial tools (such as guarantees, green bonds, equity) and are characterised by the lack of uptake of Energy Performance Contracting. Legislative problems are also connected with the absence of well prepared, clear national energy efficiency strategies and problems of MS with full transposition of the EED regulations at a national level.

The ideal financial instrument is a system which encompasses[2]

- An investment strategy based on ex-ante assessment
- Institutional and contractual set-up among engaged parties
- Capacity building, educational activities and promotion
- A specific system of accounting, reporting, monitoring and evaluation
- A specially structured system of advisory and communication platform (optional)
- Additional financial resources from other international, European, national or regional financial institutions, both public and private
- Precisely chosen and designed financial tools (including: grants, loans, equity, guarantees and similar solutions)

2 Taken from: Energy Efficiency – the first fuel for the EU Economy - How to drive new finance for energy efficiency investments (EEFIG report) https://ec.europa.eu/energy/sites/ener/files/documents/2014_fig_how_drive_finance_for_economy_1.pdf

Key lessons:

- **Make use of professional help, share information:** Financial sources are available but sometimes it is difficult to make good use of them. Existing success stories on financing schemes and instruments to support EE investments must be made more publicly available and more bilateral consultations are needed between countries.
- **Combine:** When planning a policy or a programme, it is beneficial to combine funding sources with other instruments (e.g. regulations, tax schemes, enhancing private capital, etc.). Public finance is often needed to kick-start the EE market; however, the goal is to shift more towards market based financing solutions.
- **Facilitating access to private financing:** This is the key for increasing the number of projects and unlocking the full potential of energy efficiency investments, helping to achieve EU energy efficiency targets.

Energy Efficiency Financial Institution Group (EEFIG's) Key Market and Policy Recommendations[3]

Market actions:

- Improvement of building certification methodologies and Energy Performance Certificate standards and the implementation of minimum performance standards upon building upgrade, sale or rental to help build a vibrant and comparable pan-European market for energy efficiency investments in buildings
- Improvement of information flows by developing an open-source energy and cost database for buildings, and effective systems for sharing information and technical experience within industry sectors
- Facilitate innovation such as on-bill repayment and on-tax finance mechanisms by creating pilots to help expand energy efficiency investments in commercial and residential buildings
- Develop a project rating system to provide a transparent assessment of the technical and financial risks of energy renovation projects and their contracting structure

Economic actions:

- Streamlining, blending and optimising the use of European Structural and Investment Funds, Horizon 2020 and EU ETS revenues for energy efficiency investments through ensuring their better linkage to National Building Renovation Strategies together with National Energy Efficiency Funds and energy market reforms
- Increase the use of targeted fiscal instruments to motivate both building owners and companies to prioritise energy efficiency during their natural replacement cycle
- Review of public and private accounting treatment of Energy Performance Contracts
- Further expert examination of the discount rates used in energy modelling, policy-making and investment decision-making to adequately balance the benefits and risks of energy efficiency

Financial actions:

- Development of a common set of procedures and standards for energy efficiency and building renovation underwriting for both debt and equity investments
- Adjustment to financial regulatory frameworks to better support capital market innovation, ensuring that risk assessment and related capital requirements for long-term energy efficiency investments correctly reflect their risks and develop market potential for green bonds, citizen financing, factoring funds for Energy Performance Contracts and other more innovative sources of financing for energy efficiency
- Address barriers to expanding the green mortgage market, including examining how to include energy costs and energy efficiency potential in mortgage affordability calculations
- Ensure that new regulatory frameworks for financial institutions (Solvency II and Basel III) do not prejudice energy efficiency investments
- Ensure that public technical assistance and project development assistance facilities are compatible and can be easily combined with market-based and concessional funding by qualified and experienced financial institutions
- Ensure that public refinancing facilities, like those operated by the European Central Bank, confirm eligibility for financial instruments relating to energy efficiency

3 Taken from: Energy Efficiency – the first fuel for the EU Economy - How to drive new finance for energy efficiency investments (EEFIG report) https://ec.europa.eu/energy/sites/ener/files/documents/2014_fig_how_drive_finance_for_economy_1.pdf

Institutional actions:

- Increase the capacity to facilitate ongoing project development assistance to all relevant actors and technical assistance to relevant public sector bodies and entities for development and aggregation of energy efficiency investments in SMEs and households
- Review of the public authority procurement rules to better value lower operational costs as a part of their tender assessment processes
- Increase institutional capacity to implement National Buildings Renovation Roadmaps that enable long-term planning and supply chain scale-up to deliver and finance ambitious buildings renovation programmes
- Increase focus on regulatory frameworks which support strong corporate energy efficiency investment choices at key points in their investment cycle (connecting with energy audits)
- Review to ensure that current State Aid rules do not unnecessarily burden accelerated energy efficiency investment and the up-scaling of public-private financial instruments

7 Unlocking private finance for energy efficiency: perspectives from Member States and private financial institutions

The existing opportunities for financing energy efficiency have been realised by many Private Financial Institutions (PFIs), and products to support energy efficiency investments have been developed over time.

Many MS are now aware of specific financial products that are available from PFIs to support the delivery and financing of energy efficiency projects. These financial products support a range of projects from the refurbishment of commercial and public buildings to financing district heating and cooling systems, as well as energy efficiency transport and mobility schemes.

The requirement to better understand the financing of energy efficiency projects is driven by EED Art. 20, which calls for 'Member States to facilitate the establishment of financing facilities, or use of existing ones, for energy efficiency improvement measures to maximise the benefits of multiple streams of financing.'

Good practice examples

Investor Confidence Project

A US Environmental Defence Fund project, the Investor Confidence Project (ICP), defines a clear road-map for financing energy efficiency, starting from identifying a retrofit opportunity through to successful project financing.[4] With a portfolio of energy performance protocols and standards in place, ICP reduces transaction costs by assembling existing standards and practices into a consistent and transparent process. This promotes efficient markets by increasing confidence in energy efficiency, with the aim of establishing energy efficiency as a profitable global asset class.

ICP provides information about open source tools and resources to help all energy efficiency market participants to improve renovation project performance and investment attractiveness. It aims to:

- Help governments reduce programme processing time and attract investment
- Help developers deliver more bankable projects
- Help investors and owners manage risk so they can invest in energy efficiency

Different levels and types of risk exist for the following participants:

- Financial markets
- Building owners
- Insurance industry
- Utility / Capacity markets

Financing of energy efficiency by a commercial bank: BOS Bank (Poland)

BOS S.A., the Polish Bank of Environmental Protection, is a commercial bank established for an unlimited period of time as a joint stock company. The bank´s mission is strongly related to supporting activities that contribute to the development of products and services in environmental protection, the development of an ecology-related goods and services market, and further encouragement of environment-friendly attitudes and environmental protection initiatives. The bank performs its mission by providing specialised banking services and financial products tailor-made for specific types of projects and beneficiaries.

The majority of financial products offered in the area of energy efficiency and RES include some measures to make an offer more attractive for the investors and to increase the bankability of the project proposals, such as preferential loans and incentives regarding investment expenditures.

4 http://europe.eeperformance.org/

Barriers

Several barriers still exist that prevent more opportunities for financing energy efficiency from being realised. While there is recognised potential in financing low-emission projects by PFIs, many of the banks are still reluctant to prepare a financing portfolio dedicated to EE projects. There are a number of market challenges and hurdles behind this: most of those obstacles are related to the level of market maturity, which varies from sector to sector (buildings, industry, SMEs). The main identified challenges are:

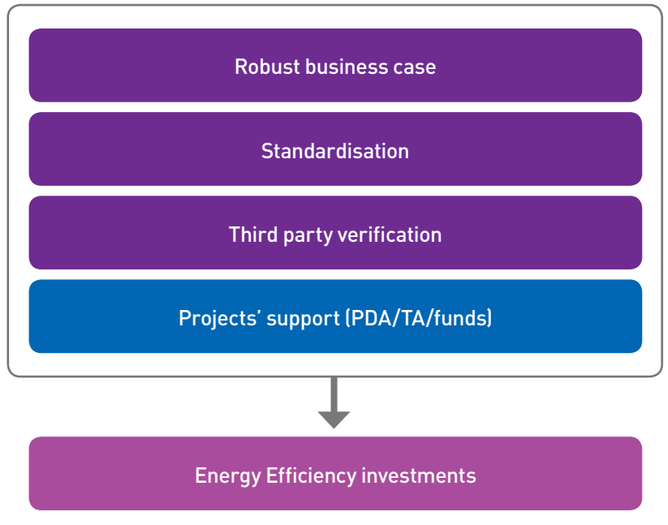
- PFIs prefer short or medium-term financing (not corresponding to the EE projects' payback periods)
- Insufficient creditworthiness of specific investors' groups
- Insufficient collateral level of specific investors' groups
- Lack of interest and capacity within the PFI's in environmental effects assessment and evaluation
- Relatively small value of some EE projects
- Investors and banks are mostly focused on 'low-hanging' fruit investments
- Risk aversion (at the development and operational phases)
- Barriers resulting from the banking regulations

Recommendations

The following recommendations might be helpful in overcoming identified barriers unlocking the potential in using private financing for energy efficiency projects on a very large scale:

- Standardisation of energy efficiency projects and practices
- Robust business case
- Third party verification
- Increased investor confidence and change in risk perception
- Reduced transaction costs / simplicity
- Measurement, Reporting & Verification (MRV) and Quality Assurance

Figure 5: Recommendations to support project development



8 Financing energy efficiency: dealing with State Aid rules

The term 'State Aid' refers to a form of assistance from public funded resources which are used to selectively support organisations or businesses. This can range from government departments and local authorities to institutions. State Aid rules are designed to prevent the use of this financial support in ways that may distort competition and free trade in the EU.

The provision of European Structural and Investment Funds (ESIF) in support of energy efficiency projects is invariably subject to State Aid requirements. The failure to properly address EU State Aid rules may result in a requirement to repay the monetary value of any assistance provided, resulting in both financial and political ramifications for the funder as well as for the recipient of such funding.

Therefore the need for MS to fully understand the requirements of State Aid is critical in ensuring the successful financing and delivery of energy efficiency projects. There are, however, exceptions to State Aid requirements that have been established to simplify procedures for aid granting authorities at a national, regional and local level. 'De minimis' is the most commonly used exemption that permits up to Ð200,000 to be provided to a fund recipient, subject to certain conditions. Provisions for exceptions are also included in the General Block Exemptions Regulation.

Good practice example

State aid rules for energy efficiency measures and district heating

Information on State Aid provisions in the context of policies and measures to promote energy efficiency was given at the plenary meeting in March 2016 in the following key areas:

- Guidelines on State Aid for environmental protection and energy, emphasising allowable aid intensity and the principles concerning the methodology for the calculation of eligible costs
- General Block Exemption Regulation (GBER) indicating the allowable aid intensity and rules related to the methodology for the calculation of eligible costs under the provisions of Article 38, underlining that Article 39 lays down the detailed rules for supporting energy efficiency in buildings
- Thresholds for individual notification of projects.

Good practice examples

Energy efficiency & State Aid: Polish experience

A presentation describing the experience of the Polish National Fund in dealing with State Aid and financing energy efficiency programmes was given at the plenary meeting held in March 2016 and included information about:

- Polish Sustainable Energy Financing Facility Programme - an example of application of the de minimis regulation
- Green Investment Scheme programmes – an example of support which does not constitute State Aid
- 'Efficient use of energy for large enterprises' programme, aimed at the financial preparation of energy audits and supported under the de minimis regulation
- Measures on the efficient distribution of energy and the refurbishment of public buildings within the Infrastructure and Environment Operational Programme 2007-2013
- Works related to the preparation of national regulations allowing the financing of investments to improve energy efficiency buildings under the Infrastructure and Environment Operational Programme 2014 – 2020

EE Policy and Financing: connecting the dots in State Aid

Practical examples of different energy efficiency support schemes presented in plenary meeting in March 2016 were accompanied by a discussion of the main problems and challenges related to State Aid in the UK. Programmes that were discussed during the presentation were:

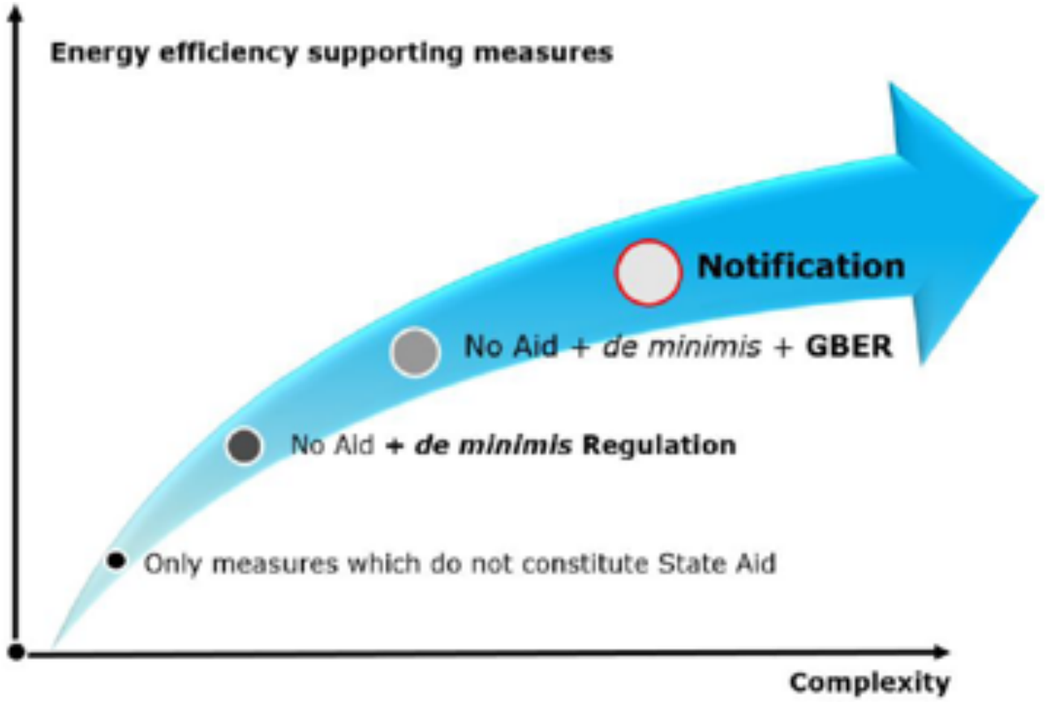
- Pilot Programme for Energy Demand Reduction (EDR), based on competitive auctions for projects aimed at reducing energy consumption through demand side reduction measures. Funding was provided in the form of subsidy for each kWh saved during the winter season. The pilot scheme was open for every type of beneficiary (SMEs, large enterprises, public authorities). State Aid was provided through the notification based on EEAG guidelines.
- Climate Change Agreements (CCAs) rely on voluntary commitments from large, energy-intensive enterprises to reduce energy consumption in exchange for environmental tax reduction paid by each company (Climate Change Levy – CCL). The support is in the form of tax relief for participants that fulfil approved targets. Where targets are not met, a buyout fee must be paid. State Aid is provided in accordance with the provisions of the GBER.
- The Green Deal Finance Company (GDFC) is a scheme designed to increase energy efficiency in the UK's housing stock. The concept is based on creating a non-profit company (by energy companies) which facilitates and provides the necessary finance to households. National funds were used in the form of subordinated loans. The GDFC was an innovative scheme at the time and required an individual approval from the EC. Eventually, State Aid was approved and provided under the GBRE provisions.

Barriers and Recommendations

The following recommendations can help MS deal with the complexity and administrative burden of State Aid rules:

- MS lack experience of State Aid provisions and there is a need for strengthening cooperation in the dissemination of information.
- The useful information on State Aid available on the e-State Aid Wiki platform, hosted by the Commission, should be promoted to MS.
- Successful outcomes of State Aid projects gathered from Commission monitoring reports should be included on a platform to promote best practice and cross-working between MS.
- When designing energy efficiency support programmes, areas of intervention and real market needs should be identified, with a focus on measures and mechanisms which avoid the need for notification.

Figure 6: Preferred approach and implementation options of setting up energy efficiency support measures



9 New and existing 'off the shelf' financial instruments

The European Commission (EC) is encouraging MS to double their ESIF investments through the use of financial instruments, such as loans, equity and guarantees. Consequently the ESIF framework for 2014-2020 provides more flexibility, clarity and possibilities to use financial instruments to help achieve the ambitious goals set up in the Investment Plan for Europe. The ESIF framework also brought new standardised, "off-the-shelf" financial instruments (OTS FIs) for which the terms and conditions are pre-defined, and designed for a swift roll-out. One of the biggest advantages of developing OTS FIs in the context of EU Funds is compliance with the ESIF Regulation and State Aid rules.

Initially the scope for the use of OTS FIs was focused on providing support for SMEs, energy and resource efficiency, as well as research, development and innovation. In July 2016 the European Commission launched two new off-the-shelf financial instruments, including a co-investment facility to provide funding to start-ups and SMEs, and Urban Development Funds which support sustainable urban projects in public transport, energy efficiency or the regeneration of urban areas

Details and specific regulation concerning OTS FI are envisaged in the Commission Implementing Regulation (EU) 2016/1157 of 11 July 2016, amending Implementing Regulation (EU) No 964/2014 as regards standard terms and conditions for financial instruments for a co-investment facility and for an urban development fund.

Three presentations were given during the CT4.8 workshop sessions which included information about financial instruments, supporting structures and case studies.

Why financial instruments to support energy efficiency (EE) uptake

Ioannis Orfanos, Corporate Finance Advisor to the Department for Business Energy and Industrial Strategy-UK, provided background information on financial instruments. The following key issues were included in the presentation:

- Findings from the recent Energy Efficiency Financial Institutions Group (EEFIG) Final Report[5]
- Aggregation of barriers and importance of targeting of financially viable projects of small and medium sized businesses having limitations or difficulty accessing finance from markets
- Overview of the types of financial instruments available, their benefits and advantages and ways to implement them

Overview of financial instruments and the work of fi-compass

Frank Lee, Advisory Services Department European Investment Bank, provided information on the following areas:

- The benefits of using FIs which included
  - A more efficient use of (scarce) public sector resources, especially for revenue generating or cost saving projects
  - Good leverage potential, also through recycling of funds
  - Brings financial discipline into the project identification/selection process
  - Can be combined with technical support and/or capital grants to overcome market barriers
- Support provided by FI Compass www.fi-compass.eu including
  - Step by step process guidance and manual
  - Learning opportunities
  - Awareness raising and networking
  - Access to a single knowledge platform
- A case study from Lithuania using Joint European Support for Sustainable Investment in City Areas (JESSICA) initiative to refurbish 24,000 multi-apartment blocks. The scheme involved both capital grants with technical assistance and soft loans via a single delivery structure – inspiring the "Renovation Loan off the shelf" instrument. See Figure 7.

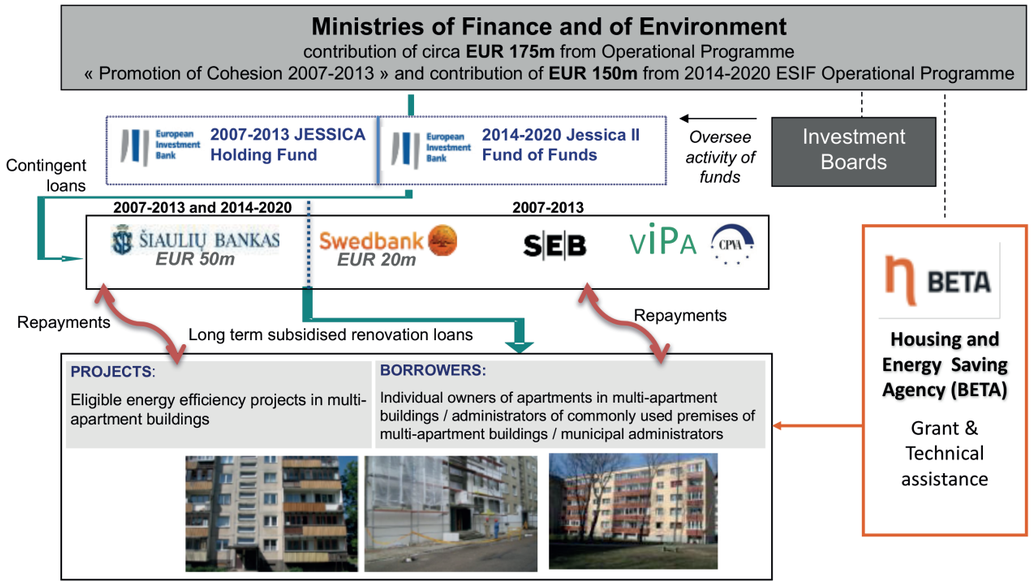
London Energy Efficiency Fund

Kenroy Quellennec-Reid, Senior Programme Manager from the Greater London Authority (UK), presented a case study on supporting environmental infrastructure projects in London.
Through JESSICA the Greater London Authority made Ð210m contributions from their Structural Fund Programmes, along with funding from other public and private sources, to create the London Green Fund. The London Green Fund invests these monies, in the form of equity, loans and/or guarantees - not grants - in urban development projects. The London Green Fund provides funding for three Urban Development Funds that invest directly in waste, energy efficiency, decentralised energy and social housing projects. They are 'revolving' investment funds, where monies invested in one project are repaid and then reinvested in other projects. As of 31st December 2015, the Fund had committed all the funds allocated and invested in 18 projects valued over £500 million. The Greater London Authority is now planning on extending the London Green Fund for 2017-2020 to continue investing in energy efficiency projects.

5 https://ec.europa.eu/energy/en/news/new-report-boosting-finance-energy-efficiency-investments-buildings-industry-and-smes

Figure 7: Structure of the Lithuanian refurbishment project

Lithuanian case study



10 Concluding remarks

If energy efficiency improvements are to happen, financing is needed from a wide range of sources. Both private sector and public sector grant funding sources are required to support projects and it will depend on the exact nature of the project as to the appropriate amounts of public/private sector fuding that is provided. The European Union and national funds, as well as private capital, are available to start an investment; however, there is still a mismatch between demand and supply.

The private sector can play an important role in the delivery of energy efficiency projects. However there is also the opportunity for governments to create the right policy landscapes to respond to market failures. Local governments, in particular have the ability to aggregate a number of projects to make them more attractive to private financing and they also have the knowledge of local markets. There is also a need for long term, stable policy frameworks to provide confidence to the market in investing in energy efficiency projects. There is an increasing recognition that there is a need to de-risk projects through project aggregation, provisions of guarantees, quantified audits and third party verification. Some of this work is currently being carried out by the Investor Confidence Project Europe (http://europe.eeperformance.org) that unlocks access to financing for the building renovation market by standardising how energy efficiency projects are developed, documented and measured.

Although many barriers still need to be overcome for MS to access private finance and to facilitate lenders and borrowers in investing in energy efficiency, solutions are being found. Lack of knowledge and awareness of energy efficiency products and benefits has often been cited as a major barrier by both lenders and borrowers. However as more and more projects are coming forward and best practice is being shared, this barrier is being overcome. Published guidance from the European Commission on financing energy efficiency is also supporting MS finance their projects through the deployment of structural funds as well as leveraging private finance.

For further information please visit **www.ca-eed.eu** or email **caeed@ca-eed.eu**

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