Financial instruments and energy efficiency uptake

4th EMA Meeting, Brussels

Ioannis Orfanos
Corporate Finance Advisor, BEIS, UK
Sounding Board Expert, EEFIG

22 November 2016

Overview

- Understanding Energy Efficiency (EE) Finance
  Value Chain, Barriers and Targeting
- UK Landscape
  Principal Policies and Examples
- Considerations on Financial instruments (FIs)
  Rational and Managing Authority
- Policy Considerations
  Effectiveness, Criteria and Approach

Understanding Energy Efficiency (EE) Finance

Mapping EE support value chain

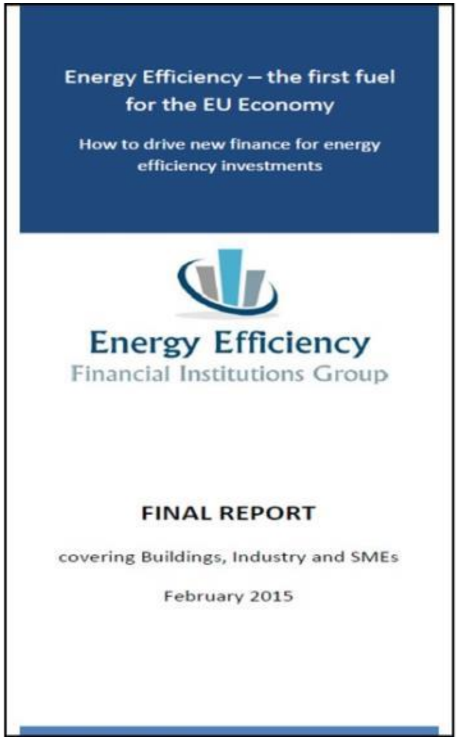
SAVINGS IDENTIFICATION		ENERGY & CARBON SAVINGS		
BUSINESS CASE DEVELOPMENT		OPERATIONS		ASSETS
TECHNICAL ASSISTANCE SUPPORT			CAPITAL INVESTMENT SUPPORT	
			MEASURES	
TIME	EXPERTISE	BEHAVIOURAL CHANGE*	MANAGEMENT SYSTEMS	EQUIPMENT/ TECHNOLOGY/RETROFIT
• Temporary dedicated resource(s) to focus on energy audits and business case development • Internal resource(s) to support and learn from the process	• Recruit temporary skilled resources • Hire trusted experts and commercial advisors • External training for selected internal resources	• Training of employees by internal resource • Creation of targeted guidelines • Optimisation of existing systems and processes	• IT (Hardware, Software) • ISO 14000 • BEMS • New monitoring resources	• Equipment (lighting, heat, voltage, boiler etc.) • Micro-generation (PV, CHP, heat pumps etc.) • Building fabric retrofit • Installation costs • Contractors overheads
			€	€

* **Note**: For energy efficiency measures where no capital investment was required, implementation rates were low (20%).

EEFIG* report

Phase I report conclusions on barriers

- Lack of knowledge and information
- Lack of performance data
- High upfront investments
- Fragmentation, transaction costs
- Complexity of financing
- Longer payback periods for certain measures
- The market is not clear
- Available financing products do not reflect EE fundamentals


Energy Efficiency – the first fuel for the EU Economy

How to drive new finance for energy efficiency investments

Energy Efficiency
Financial Institutions Group

FINAL REPORT

covering Buildings, Industry and SMEs

February 2015

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

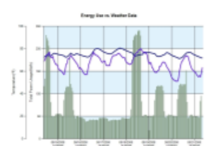
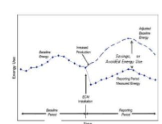
Complexity barrier of business case development

A proper business case needs to:

- Focus on financial structuring, optimum financing solution
- Focus on internal rate of return and to a lesser extent to payback periods
- Highlight the additional corporate benefits (risks mitigation, compliance, CSR, investment)
- Gain senior-management buy in



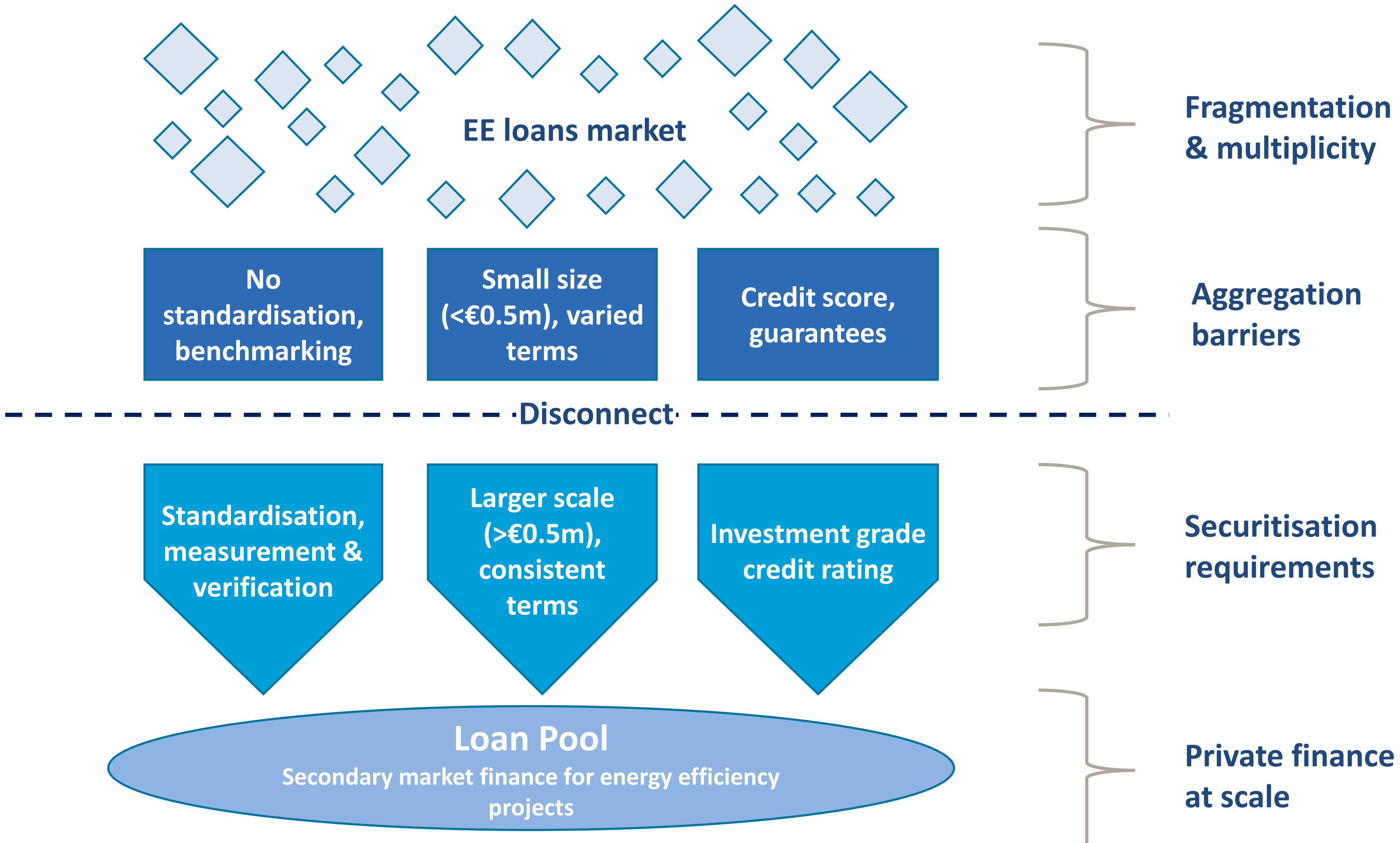
Hypothesis case → Variables identification → Retrofit measures → Price → Risk allocation → Energy consumption → Interviews → Financial model

Benefits

- Energy, Carbon
- Economic
- Financial
- Corporate
- CSR, Branding

Aggregation barriers in EE financing



Source: Ceres

Targeting EE support finance

Size of project	**Micro & Small** (<50 to 100 staff) average to good credit rating	**Medium size** (>100 to 250 staff) average to good credit rating	**Medium to Large** (>250 staff) Average to good credit rating	**Large** (>250 staff) Good credit rating
< €25k	Own resources / Bank loan	Own resources / Bank credit line	Own resources	Own resources
€25 – 100k	Own resources / Bank loan	Own resources / Bank loan	Own resources/ Bank credit line	Own resources/ Bank credit line
€100 – 250k	Bank loan	Bank loan / EPC Solutions	Own resources / Bank loan	Own resources / Bank loan
€250k – 1million	n/a	Bank loan / EPC Solutions	Bank loan / EPC Solutions	Own resources / Bank loan
€1-3million	n/a	Bank loan / EPC Solutions	Bank loan / EPC Solutions	Project loan / EPC Solutions
>€3 million	n/a	n/a	EPC Solutions	EIB / Project loan / EPC Solutions

Easy to access finance

Limitations in accessing finance

Difficult to access finance

Placing focus

Financially viable projects of small and medium sized businesses having limitations or difficulty accessing finance from markets

UK Landscape

Principal EE policy landscape

General comments

- Number of policies that target energy efficiency take-up.
- Primarily target large energy intensive organisations, large businesses, public sector organisations and domestic customers.

Examples

- **Climate Change Levy (CCL):** A tax on energy delivered to non-domestic users to provide an incentive to increase energy efficiency and to reduce carbon emissions
- **Climate Change Agreements (CCAs):** Voluntary agreements that allow eligible energy-intensive sectors to receive up to 90% reduction in the Climate Change Levy if they sign up to stretching energy efficiency targets agreed with Government.
- **Enhanced Capital Allowance (ECA):** The scheme allows businesses to benefit from tax breaks when investing in eligible energy-saving technologies
- **Energy Demand Reduction (EDR):** A pilot programme rewards kW of electricity capacity savings that are achieved by installing energy demand reduction measures.
- **Energy Savings Opportunity Scheme (ESOS):** A mandatory energy assessment scheme that requires non-SMEs to carry out energy audits, at least every 4 years, to identify cost effective ways to improve their energy efficiency.
- **Energy Company Obligation (ECO):** Imposes obligations on larger gas and electricity suppliers to promote energy efficiency measures in domestic households.
- **Central Heating Fund:** Grants to local authorities to be spent on the installation of first time central heating in households in fuel poverty who were not on mains gas.

Energy Demand Reduction (EDR)

Details on EDR (Pilot) programme

- Funding is provided in the form of £/kW of winter electricity capacity savings through a competitive auction.
- The programme rewards electricity savings achieved by installing energy demand reduction measures.
- It contributes to the reduction of CO_2 emissions, reduction of electricity bills as well as security of supply.
- National sources of funds are used in the form of grants

Who is the beneficiary of the support programme?

- The pilot scheme is open to everyone to participate including large enterprises, SMEs and public authorities .
- Small projects participate through aggregators.
- In auction I, funding of £1.28M was offered to 18 organisations with 22 individual projects. A variety of organisations participated, both public and private sector.

State aid approval?

- Obtained approval under the EEAG Energy Efficiency guidelines, though EDR also covers generation adequacy requirements.

Climate Change Agreements (CCAs)

Details on CCAs:

- Voluntary agreements that allow eligible energy-intensive sectors to receive up to 90% reduction in the environmental tax, the Climate Change Levy (CCL).
- The aid is in the form of a tax relief, the participants to the scheme pay reduced rates of CCL.
- The participants sign up stretching energy efficiency targets with Government. To retain their entitlement, they need to meet their targets or by paying a buyout fee if they fall short of meeting their targets.

CCA CLIMATE CHANGE AGREEMENTS

Who is the beneficiary of the support programme?

- Large private enterprises and SMEs in energy intensive sectors
- Eligibility to hold a Climate Change Agreement depends, in part, on whether the participant/beneficiary carries on an eligible process as defined by law.

State aid approval?

- Obtained approval under the General Block Exemption Regulation.

Green Deal Finance Corporation (GDFC)

Details on GDFC

- The government implemented the Green Deal in 2013, a scheme intended to increase the energy efficiency of the UK's housing stock. An industry group of energy companies and organisations (Green Deal providers*) established GDFC.
- The finance company was a not-for-profit company that provided finance to Green Deal consumers. It aimed to do this by enabling consumers to access loans to fund improvements to their homes.
- National sources of funds were used in the form of subordinated loans. A senior loan was made on a senior debt basis, secured against the loan book and a stakeholder loan was provided on "quasi-equity" terms pari passu with private investors to support the finance company set-up costs.

The Green Deal Finance Company

Who is the beneficiary of the support programme?

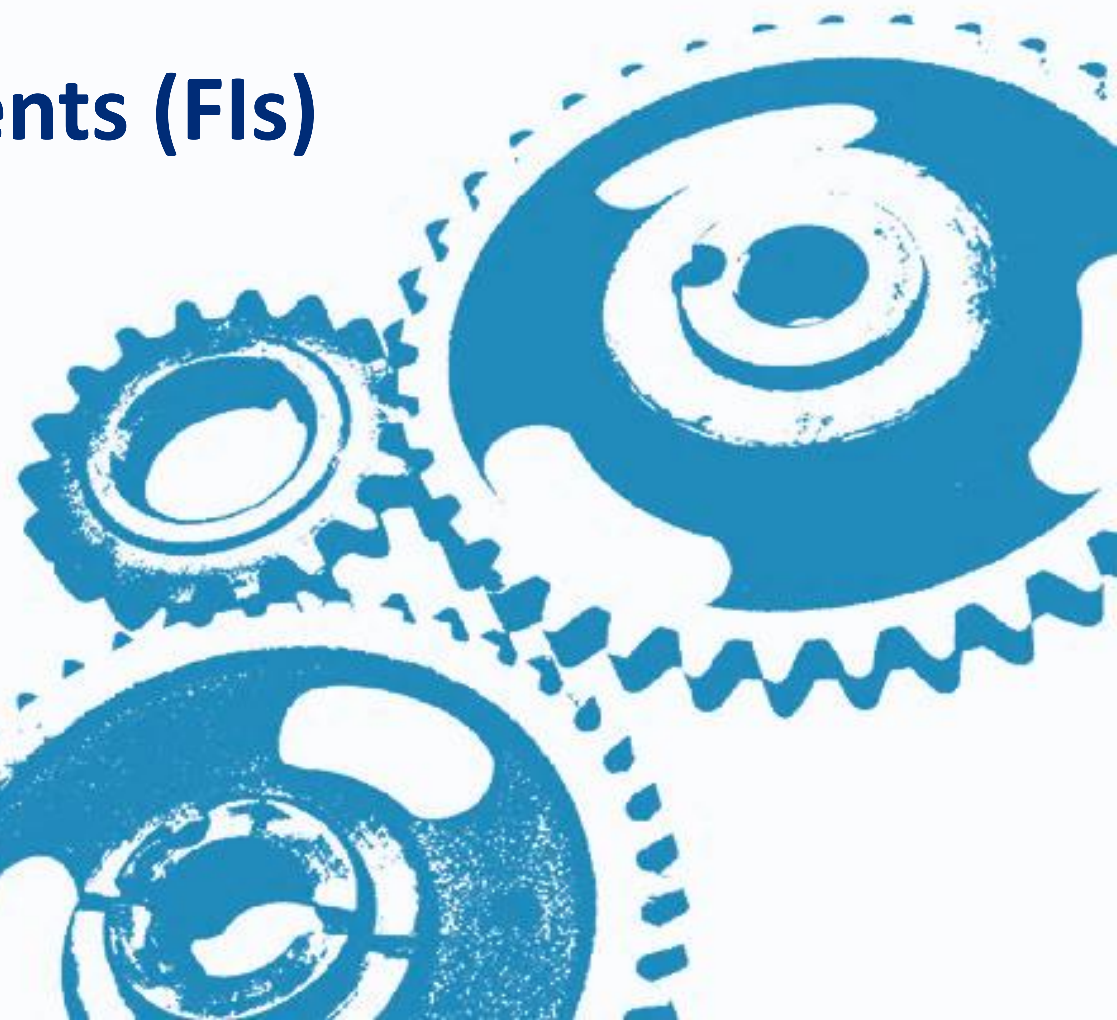
- Households. The scheme was targeting domestic energy efficiency.
- Consumers would repay the loans through their energy bills, with repayments offset by lower bills resulting from lower energy usage (Pay-As-You-Save basis).

State aid approval?

- GDFC was an innovative scheme at the time and required an aid approval from the Commission.
- Obtained approval under the General Block Exemption Regulation.

*Note: Green Deal providers are responsible for arranging home audits and the financing for any subsequent measures.

Considerations on Financial Instruments (FIs)

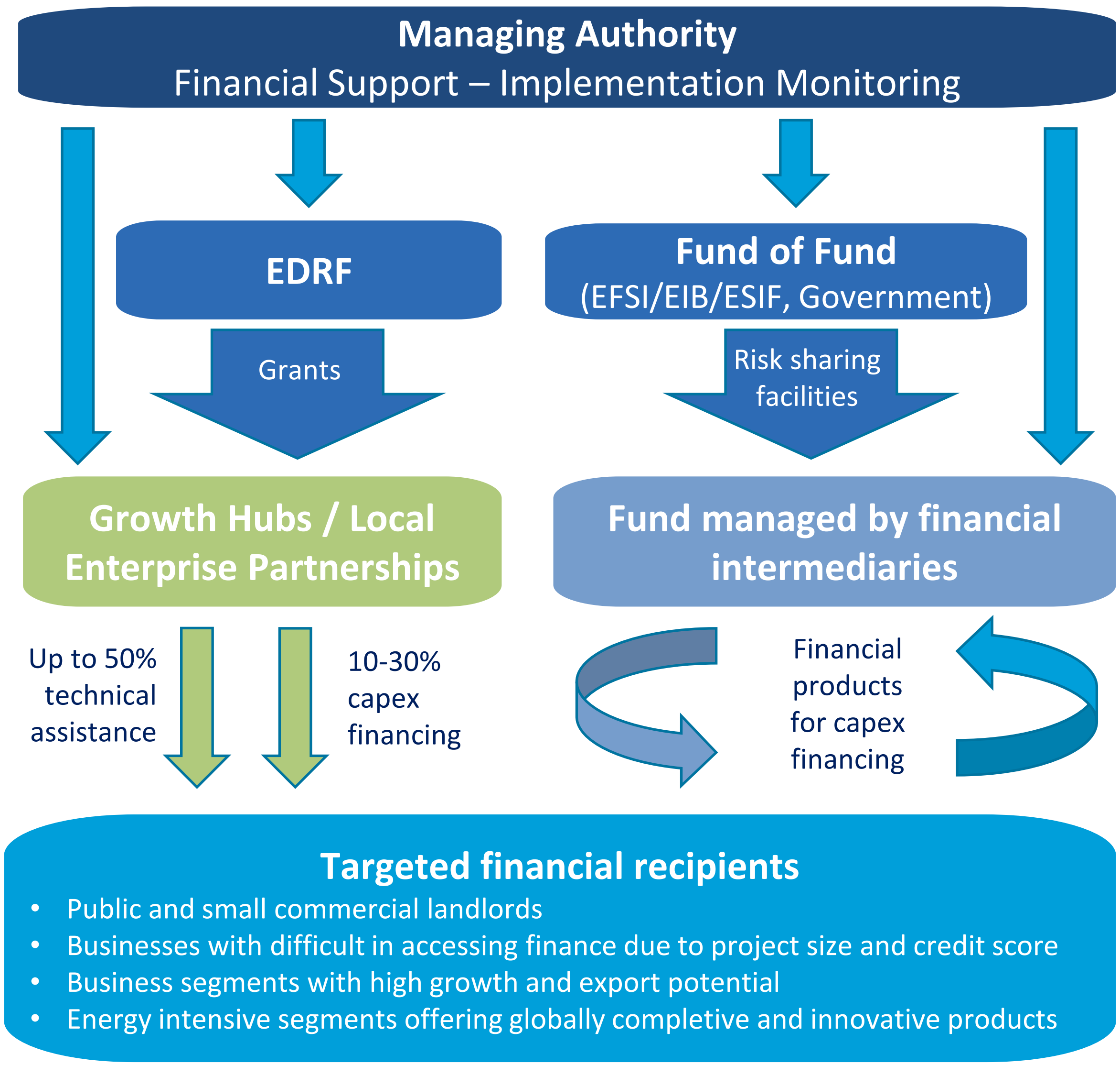


Why financial instruments

Rational

- **The scale of investment:** To meet the EU's 2020 energy efficiency target, annual investment is estimated at around €100 billion.
- **Additionality:** There is a need to boost private energy efficiency investments through a targeted use of public funds to develop robust investment solutions and support activities for project developers.
- **Leverage effect:** Financial instruments, compared to grants, mobilise more private investment and public resources to complement the initial public funding and can be reinvested over several cycles.
- **Transformation:** Financial Instruments (FIs) transform EU resources into financial products such as loans, guarantees, equity and other risk-bearing mechanisms (e.g. interest rate subsidies) to support economically viable projects.
- **Efficient use:** FIs aim to put funds to good and efficient use, ensuring that grants are complemented by other financial products so that funding can be used again in a revolving fashion. FIs can be combined with technical support.
- **Performance evaluation:** Conditional for establishing financial instruments is the ex-ante evaluation based on consistent performance indicators and pre-defined terms and conditions designed for a swift roll-out.

A managing authority to support and monitor



Off-the shelf instruments:

- Financial instruments complying with the EC terms and conditions
- Help to accelerate implementation
- Build on previous experience

Advantages

- State aid compatibility
- Governance structures
- Market based approach
- Full pass on to final recipient
- Minimum leverage ensured

Support examples

- Technical assistance grant to hire resources to develop the appropriate business case
- Public buildings renovation zero interest revolving loan.

Policy Considerations

Assessment criteria in government led support

Simplicity for business

- Difficulty/cost of taking the required action
- Site versus organisation level
- Predictability – guaranteeing a payback in x years

Government administration

- Impact on Government
- Which ministry/department is involved and who is the administrator?
- The level of assurance needed (self certification / verification / audits)

Deliverability

- Availability of funds? State Aid? Impact on the Treasury's budget
- Legal complexities
- IT systems required

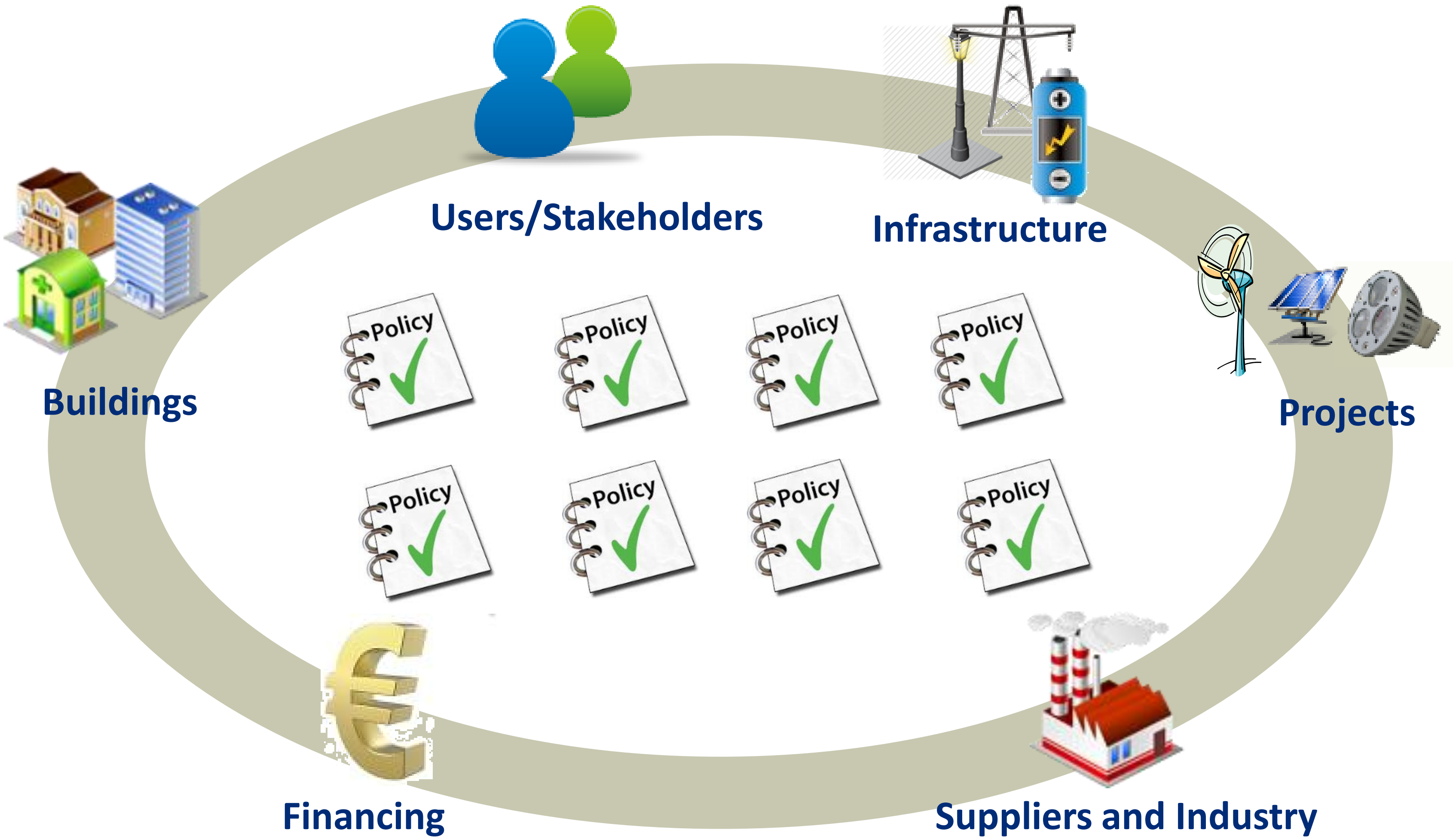
Likely additionality?

- It will help overcome other barriers to energy efficiency deployment
- Link to an established process
- Not targeting particular payback periods or technologies

Which / how many covered?

- No winners and losers but those are in need and matter
- Those with the biggest energy saving potential
- Those with limited access to available market financial products

Effectiveness of EE policy support

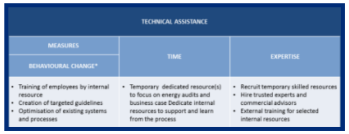


A multi-step gradual approach

1st Step — **Accelerating Demand**

1. Trusted information
2. Audits, opportunity
3. Business case development
4. Senior management buy-in

Technical Assistance



TECHNICAL ASSISTANCE		
MEASURES BEHAVIOURAL CHANGE*	TIME	EXPERTISE
• Training of employees by internal resource • Creation of targeted guidelines • Optimisation of existing systems and processes	• Temporary dedicated resource(s) to focus on energy audits and business case Dedicate internal resources to support and learn from the process	• Recruit temporary skilled resources • Hire trusted experts and commercial advisors • External training for selected internal resources

2nd Step — **Aggregating the Pipeline**

1. Standardisation
2. Segmentation
3. Risk management (M&V)
4. Procurement & contracting

3rd Step — **Projects Implementation**

1. Market based delivery
2. Financial instruments
3. Bank financing
4. Securitisation

Energy Efficiency - Productivity Enhancement

Thank you.

4th EMA Meeting, Brussels

Ioannis Orfanos
Corporate Finance Advisor, BEIS, UK
Sounding Board Expert, EEFIG

22 November 2016