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Financing Energy Performance Contracting: Introduction to Ireland Energy Efficiency Investments plc

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SDCL is the leading manager of energy efficiency project investment funds

SDCL has established specialist government backed funds in the UK, Ireland and Singapore. SDCL has established a unique track record of making investments in energy efficiency projects in public and private sector buildings and infrastructure assets.

UK



UK Energy Efficiency Investments Fund

**£50 million Committed by UK Green Investment Bank
GBP £100 million Target**

Manager

Launched September 2012

Investment Focus

Buildings and Industrial Facilities
Combined Heat & Power
Renewable Heat
Urban Infrastructure

Ireland



Ireland Energy Efficiency Investments plc

**Euro €70 million
Including €35 million
commitment from Irish
Government**

Investment Adviser

First Close March 2014

Investment Focus

Buildings and Industrial Facilities
Public Sector Buildings
Hotels and Data-centres
Street Lighting

Singapore



Singapore Energy Efficiency Investments Group Limited

**Up to SGD \$100 million
collaboration with Economic
Development Board**

Manager

First Close Q1 2014

Investment Focus

Manufacturing Sector
Heat Recovery
Lighting
Industrial Efficiency



Ireland Energy Efficiency Investments plc

✓ Government backed:	SDCL mandated to manage energy efficiency funds in the UK, Ireland and Singapore
✓ Proven management team:	SDCL has unique track record of investment in energy efficiency projects
✓ Compelling business case:	Investment returns derived from energy cost savings delivered for clients
✓ Green impact:	The largest and cheapest source of greenhouse gas emission reductions
✓ Massive untapped market:	Significant investment needed to reduce energy demand, waste and cost
✓ Strong pipeline:	Large addressable pipeline of attractive projects already identified
✓ World class supply chain:	SDCL has global relationships with the leading delivery and technology partners
✓ Excellent timing:	Addressing a funding gap in an emerging asset class set for high growth
✓ Investment ready:	First close of the fund achieved end March 2014 at Euro 35 million



Solving the energy efficiency problem

Energy efficiency projects offer investors attractive risk-adjusted investment returns and at the same time represent the most cost effective way of reducing greenhouse gas emissions and improving the security of the energy supply

Objectives	<ul style="list-style-type: none">• To achieve attractive returns for investors• To deliver value for money for end users
Approach	<ul style="list-style-type: none">• Work with users and energy services companies to identify, structure and invest in non-residential energy efficiency projects• Finance-led, performance and cost-reduction-focused – rather than driven by any single technology or service
Risk Management	<ul style="list-style-type: none">• Employ only commercially proven technologies (i.e. lighting, HVAC, smart metering, controls, systems upgrades)• Work with best-in-class energy services companies and suppliers, with performance guarantees• Focus on strong credit counterparties and projects that can be scaled and replicated• Avoid or limit exposure to regulatory risks involved with feed-in-tariff based renewable assets
Key Benefits	<ul style="list-style-type: none">• Savings cover costs of financing, installation, operation and maintenance• Reduced energy and maintenance costs and protection against future energy price rises• Enhancements to operating standards, asset upgrades (and reduction of breakdown pressures) and property values• Compliance with current and future regulations, carbon reduction and CSR commitments

Overview of investment policy and strategy

We have defined our investment strategy to focus on four distinct verticals that we see as key to developing the non-residential energy efficiency market in Ireland

	Buildings Retrofit	CHP	Renewable Heat	Urban Infrastructure
Allocation	Est. up to 50%	Est. up to 20%	Est. up to 20%	Est. up to 50%
Average Deal Size	€1-2m	€3-6m	€3-10m	€8-15m
Size	Building typically 50,000 sq ft. or more	500kW-3MW	Boiler Size 100kW – 10MW	N/A
Type of Asset	Public or private sector buildings and facilities (e.g. schools, hospitals, factories, hotels)	Hospitals, universities, data centres, districts (heating)	Fuel switch for off-gas grid clients and sustainable heat for public and private sector facilities	Outdoor lighting, smart meters, demand response, district energy
Payback period	2-5 years simple payback	4-7 years	6-8 years	Up to 10-15 years simple payback
Typical contract term	5-10 years	7-15 years	10-20 years	Up to 20-25 years
Interventions / Feedstock	<ul style="list-style-type: none"> • LED Lighting, HVAC, BMS, Chillers, Pumps, Variable Speed Drives 	<ul style="list-style-type: none"> • Heat, Electricity, Water 	<ul style="list-style-type: none"> • Wood chip, wood pellets 	<ul style="list-style-type: none"> • Lamps, columns, sensors, CMS, GSM chips, smart meters, CHP
Typical sectors	<ul style="list-style-type: none"> • Education, healthcare, industrial, data centres, hospitality and leisure, retail, logistics, technology parks, public buildings 	<ul style="list-style-type: none"> • Healthcare, education, local authorities, private sector clients. 	<ul style="list-style-type: none"> • Schools, hotels, agrifood, nursing homes 	<ul style="list-style-type: none"> • Local authorities, lighting authorities, private sector clients, infrastructure, utilities



Investment Approach



Our Approach

We work with end users and energy services companies to identify, structure and invest in non-residential energy efficiency projects.

1. Project Identification

- **We work with building owners, occupiers, end users of energy (Hosts) and energy services companies (ESCOs) to identify and evaluate energy efficiency project opportunities.**
- **ESCOs:** When we work with specialist energy service companies ("ESCOs") as well as utilities and specialist facilities managers and suppliers, we seek to help by supporting their process, removing barriers associated with cost or complexity of projects for end users and then preparing projects for financing.
- **Hosts:** When we work directly with Hosts, we are offering a turn-key solution, to procure the best energy savings interventions at the lowest cost and to deliver the highest performance.
- **Financial Institutions:** By taking a performance based or equity-led approach, we are able to work in partnership with a wide variety of industry partners, including banks and other financial institutions.

2. Financial Solutions

- **We can provide the investment needed to deliver the project. We aim to structure the optimal financial solution for the project, ensuring risks are identified and mitigated.**
- **Investment and Financing:** We can make equity or equity like investments in projects, or provide a combination of equity and debt finance to achieve the most cost effective solution for the project.
- **Tax & Accounting Treatment:** We consider the financial objectives of the counter-parties to the project and structure appropriate solutions.

3. Contracting and Delivery

- **We structure appropriate contractual arrangements to define the project and the construction, operation and maintenance, project management and risk allocation.**
- **Project Agreements:** Project and Energy Services Agreements define the project, obligations, risk management and returns.
- **Performance Contracts:** Contracts with delivery partners typically contain guarantees or assurances as to performance to ensure that projects are delivered on time and on budget and deliver to the highest standard.
- **Operation & Maintenance:** We focus on project management and performance throughout the project, including measurement and verification of savings achieved under international protocols.

Financial structures for energy efficiency projects

We can finance the total project cost and structure our returns based on the outcome of the project.

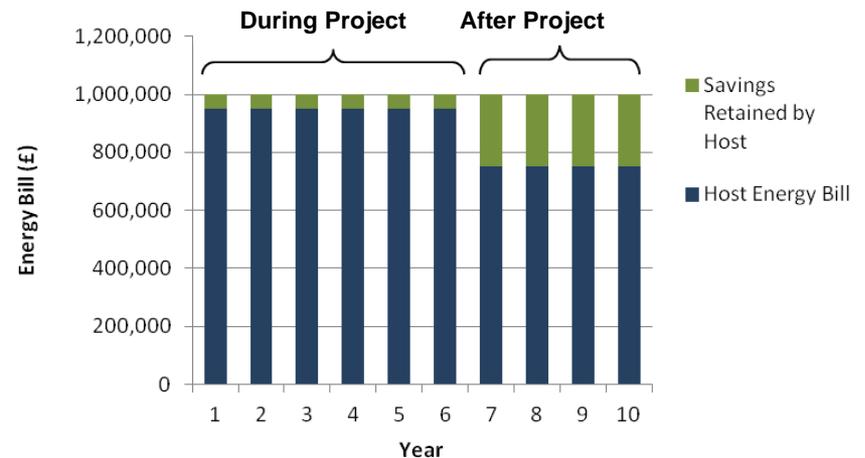
- **Financial Solutions** – We can finance up to 100% of the up-front capital cost of installing energy efficient systems and equipment.
- **Financial Structures** – We can make equity or equity-like investments to finance projects, customised to the needs of the project.
- **Shared Savings Model** – For retrofit projects, we can structure our returns based on a share of the savings achieved through the project term. At the end of the project term, the end user (the “Host”) benefits from 100% of the savings achieved.

Example of a Shared Savings Model

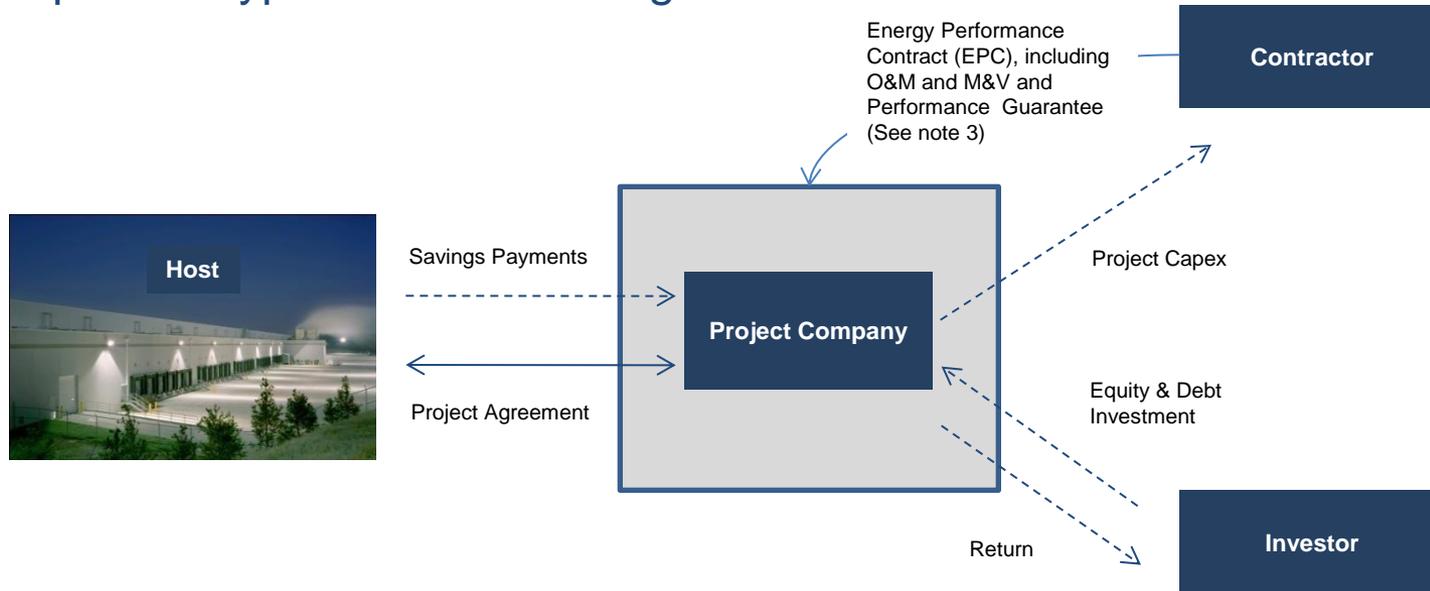


- A building with an annual energy bill of €1m reduces its electricity, water and gas bills by 25% by implementing a variety of energy efficiency interventions including lighting, insulation, plant upgrades, voltage optimisation and building management systems (BMS).
- During the first 6 years, the Host benefits from positive cash flow of €50,000 from savings achieved, net of operation, maintenance and finance costs. In year 7 and beyond, €250,000, all the savings are retained by the Host.

Typical Impact on Energy Bills During and After Project



Example of a typical shared savings structure



Features:

1. The Host enters into Project Agreement with the Project Company under which the Project Company funds and implements the energy efficiency project in return for a share of the resulting energy savings.
2. The Project Company sub-contracts the implementation to the Contractor through the energy performance contract (EPC) and the Investor provides capital to fund the project capex and other costs.
3. The EPC may incorporate a performance guarantee, on-going O&M and M&V services; alternatively some or all of these may be provided directly to the Host. The other terms of the EPC are designed to be back-to-back with the Project Agreement, leaving the Project Company with only the obligation to fund the project and the Contractor with the obligation to deliver the project.
4. The Host has the right to terminate the Project Company at any time after implementation, for the present value of the future cash flow streams. In such a case the O&M services contract and Performance Guarantee would survive such termination.
5. SDCL has worked with its professional advisers to design its Project Agreements to maximise the likelihood that such projects may qualify for off balance sheet treatment (for the Host).



Case Studies

Case Study 1: Tesco LED Retrofit – investment summary

Investment Fund	Ireland Energy Efficiency Investments plc	Investment size	Euro 2 million
Sector	Retail Private Sector	Portfolio size	Multiple Sites
Description	LED lighting retrofit of across 7 Tesco sites in Ireland	Origination	SDCL EE CO (Ireland) Limited
Stage	Complete	Financial Close	May 2014

Project Overview		Key Counterparties	
Total Capex	Euro 2 million	Host	Tesco Ireland
Target Project IRR	Confidential		
Contract Term	Confidential		
Revenues	Quarterly lighting payments payable by host on the basis of LED Contractor achieving agreed lux level output for retail aisles and high-bay areas.	Technical Delivery	DCS Group, LED contractor and supply specialist
	Credit risk of ESCO / LED contractor mitigated through appropriate warranty and insurance coverage.	Legal Advisers	Philip Lee Solicitors
Inflation	n/a	Auditors	PWC
Performance Guarantee	Satisfactory warranties from lighting suppliers and installers., supplemented by specialist insurance product.	Measurement & Verification	Stipulated savings basis and host client energy software
Costs	O&M and M&V costs fixed.		
Gearing/Leverage	None: equity investment.	Technical Consultants	Davis Langdon, AECOM

Case Study 2: Powering Health and St Barts Hospital in London



Combined Heat and Power (CHP) is a cost effective, highly efficient, low carbon technology for generating power in the form of electricity, heat and cooling on site from a single fuel source such as gas

SDCL and chp solutions for the healthcare sector

SDCL enables the delivery of CHP systems for qualifying UK healthcare clients with no up-front investment requirement, reducing costs and CO2 emissions.

SDCL finances the design, installation, and servicing of bespoke systems and solutions. Under a 7-10 year energy services agreement, the Fund will invest in CHP systems to provide sustainable heat and power, and will share in the measured and verified energy cost savings achieved. At the end of the term of the agreement, all future savings and ownership of the systems will revert to the client.

PARTNERS FOR ENERGY EFFICIENCY

Clarke Energy, SDCL EE Co and the NHS Confederation are working together to provide solutions which offer fully funded energy efficient combined heat and power solutions for the NHS and the wider healthcare sector, with a strong connection to GE to provide commercial and technical support on the same.

St Bartholomew's hospital has already collaborated with SDCL to make high impact energy savings that have translated to significant financial savings. Now the NHS Confederation is progressing in developing a wider partnership with SDCL EE Co's UK Energy Efficiency Investments Fund (funded by the UK Green Investment Bank) and GE that will give qualifying NHS Confederation members access to an offer that could reduce their energy bills without needing to make an upfront investment.

ENERGY SAVING OPPORTUNITY

Electricity and gas costs are a large and fast growing operating expense for NHS. Energy efficiency is potentially the most cost effective and rational way of reducing carbon emissions and costs, improving productivity and security of energy supply.

EFFICIENCY, DURABILITY, RELIABILITY



Clarke Energy

- Clarke Energy delivers turn-key design, engineering and servicing in the UK
- Clarke Energy has installed 770 engines in the UK (890 MWe)
- The installation at Guy's and St. Thomas' reduced CO₂ emissions by 11,300 tonnes per year and will also save the trust more than £1.5 million p.a.

GE's Jenbacher gas engines technology

- Drawing on over 55 years of experience in gas engine technology
- High electrical efficiencies - up to 48.7% electrical and up to 90% overall with the patented "Leanox" air/fuel ratio control
- Power range up to 10 MWe
- Installed ~12,500 Jenbacher engines in more than 80 countries

SUMMARY of Key Benefits

- Services agreement with no upfront investment requirement
- High efficiency, low carbon heat and power at lower cost
- Innovative solutions under performance based contract
- Design and operational risks transferred to the Fund

Case Study 3: FOUR SEASONS HOTEL DUBLIN – investment summary

Investment Fund	SDCL / L&R	Investment size	Confidential
Sector	Private Sector	Portfolio size	Four Seasons Group to use as exemplar
Description	Energy efficiency retrofit for five star hotel facilities owned and operated by client	Origination	SDCL
Stage	Investment Grade Audit	Target Close	Q2 2014

Business & Strategy		Key Counterparties	
Total Capex	Confidential	Host	Five Star privately owned hotel
Target Project IRR	Confidential	Technical Delivery	Aramark
Contract Term	10 years (including construction period)	Legal Advisors	A&L Goodbody
Revenues	Quarterly payments by Host based on a share of measured and verified energy cost savings achieved compared to business as usual (Baseline) under an Energy Services Agreement (ESA) throughout the term. Value of savings based on energy costs established at the time the Baseline is set and subject to inflation.	Auditors	Deloitte
Inflation	Based on utility base rate agreed by Host	M&V Contractor	Aramark
Performance Guarantee	All revenues guaranteed through terms by Aramark	Technical Consultants	Davis Langdon, AECOM (Dublin)
Costs	O&M and M&V costs fixed under an Energy Performance Contract (EPC) with Aramark.		
Gearing/Leverage	None assumed at this stage		



Appendix: investment process and risk mitigation



Summary of investment process

Phase 1

Segmentation and Origination

- Evaluate industries and segment the market opportunity
- Focus on Hosts with strong credit characteristics, preferably energy intensive enterprises and municipalities
- Source investment opportunities through proprietary networks, local ESCOs, international ESCOs, government referrals and direct host relationships
- Provide Opportunity Summary to Investment Committee to approve more in-depth analysis

Phase 2

Evaluation and Due Diligence

- Conduct initial appraisal to include (i) credit worthiness of the host, (ii) Project savings and capital costs, (iii) structure between host, ESCO and the Project Company, (iv) estimated cash flow returns to the group and sensitivities, and (v) timetable for investment and implementation, develop budget for third party abort costs (if applicable), prepare 'Preliminary Investment Paper'
- Preliminary Investment Paper presented to Investment Committee for approval

Phase 3

Final Due Diligence

- Confirm investment rationale, appoint any third party advisors, conduct detailed due diligence, confirm financial appraisal, costs, investment returns and sensitivities, complete corporate, financial, legal, insurance, accounting, tax structuring and due diligence, perform environmental and social impact assessment, perform credit analysis and investment grade audit, prepare 'Investment Memorandum'

Phase 4

Investment Execution

- Due diligence resolved
- Establish project company
- Arrange project debt and other financial structures required to make the investment
- Finalise any outstanding investment terms
- Contractual documentation with the host and other counterparties ready to sign, prepare 'Investment Approval Paper'
- Formal signoff by Investment Committee

Phase 5

Management and Realisation

- Manage ESCO implementation of the project and project commissioning
- Manage the project during operations, monitor adherence to project budgets and ensure rigorous cost and quality control, prepare regular management reports and accounts for Investment committee and investors, monitor invested capital and returns paid over the life of the investment through regular payments by the hosts, manage debt service payments to the lenders and equity dividend and capital payments from the Project companies to the fund
- Monitor the portfolio of investments to assess potential for a project or portfolio level divestment strategy

SUMMARY OF KEY RISKS AND MITIGANTS

Risk	Description	Mitigation
Host Credit Risk	The risk associated with the host's ability (or willingness) to make the savings payments.	This risk is managed through SDCL's credit risk assessment, due diligence and using credit insurance instruments; suspend or terminate energy services if payments are not made.
Performance Risk	The risk that the energy efficiency solution delivered does not result in the expected savings.	<p>SDCL typically seeks performance guarantees from ESCOs. This is a guarantee that the installed energy efficiency solution provided by the ESCO will produce a set level of savings (or a negotiated percentage of that level).</p> <p>For smaller ESCOs an assessment is undertaken to establish whether or not the fund wishes to accept the performance risk or rely on manufacturers' warranties, what value (if any) to ascribe to any performance guarantee (given an important constituent of a performance guarantee is the credit risk of the ESCO) or whether to look for external insurance products.</p>
ESCO/Deliver Partner Credit Risk	The credit risk associated with the delivery partner	This risk is managed through SDCL's credit risk assessment, due diligence and project management process. SDCL seeks diversification of sub-contractors and the right to step in and replace non-performing sub-contractors.
Construction Risk	The risk that there is a construction delay impacting payback period.	<p>SDCL contracts with specialist service providers with a track record of delivering projects on time and on budget.</p> <p>SDCL seeks to actively manage all contracts associated with the projects.</p>
Technology Risk	The risk that the technology used in the energy efficiency project fails.	SDCL does not anticipate taking new technology risk. We only look to implement commercially proven technologies.
Energy Price / Demand Risk	The risk that the energy price (or demand) drops significantly adversely, affecting the financial performance of the project.	<p>SDCL typically structures contracts based on stipulated savings where the energy cost is fixed as a floor price in the contract, set against an agreed baseline for energy consumption.</p> <p>SDCL can elect to accept the energy price risk / agree an indexation schedule.</p>
Operating and Maintenance Risk	The risk that the energy efficiency equipment is not maintained resulting in equipment failure and financial loss.	<p>A pre-requisite of an ESCO providing a performance guarantee will typically be an operation and maintenance contract at least matching the life of the performance guarantee</p> <p>As such – the operation and maintenance schedule is contractually set and the consequences of operational failure is covered by the performance guarantee.</p>

Identifying and mitigating Technology risk

SDCL's focus is on investing in energy efficiency projects employing commercially proven technologies and services

Type of intervention	Description	Simple pay-back period
Space heating	This includes improved control systems, zoning of heating, heating systems insulation as well as boiler replacement	c.3-4 years
Lighting	This covers bulb replacement, luminaire replacement and improved controls	c.3-4 years
Ventilation	Replacement of ventilation equipment including improved controls	c.3-4 years
Motors and drives	Any electric motors, for example in ventilation and air conditioning units or swimming pool pumps. This will include measures such as variable speed drives and replacement of efficient motors	c.3 years
Air conditioning and cooling	Adjustment of existing air conditioning systems; a combination of maintenance and potentially adjustment technologies such as variable speed drives	c.0-1 year
Building fabric	This includes draft proofing, wall and roof insulation, windows replacement	c.3-4 years
Building instrumentation and control	Adjustments and improvement to existing building control systems and installation of new systems	c.2-3 years
Building services distribution systems	Heating distribution system improvements, voltage optimisation	c.2-3 years
Renewable energy / renewable heat	On-site renewable energy or heat generation	c.10+ years
Refrigeration	Improvements to refrigeration equipment, such as condenser/ compressor replacement	c.1-2 years

Source: Carbon Trust



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