

Energy Performance Contracting

What is Energy Performance Contracting

Historically a piecemeal approach to energy efficiency has been taken in public and private sector buildings, and often equipment is simply replaced reactively when it reaches the end of its useful life. Under an Energy Performance Contract (EnPC), an Energy Services Company (ESCO) will conduct a comprehensive energy audit of the site(s) to identify those Energy conservation Measures (ECMs) which can be cost-effectively installed and meet the requirements of the client. EnPCs “de-risk” projects by then providing a guarantee on those savings, backed by the ESCO who will install the measures. Any shortfall on the predicted savings will be rebated by the ESCO

The product of the detailed site audit(s) is an Investment Grade Proposal (IGP) which forms the basis of the contract between the client and the ESCO and outlines the technologies/solutions, the process, impacts, timeframe and costs. The requirements of the savings project should be outlined by the client depending on their specific requirements and capital availability. It is worth noting that this will constrain/drive the types of measures that the ESCO can consider. A portfolio of measures and sites can be included to “blend” the savings from short and long payback measures to maximise the total savings achievable. ESCO’s will generally be technology-agnostic, and instead focus on measures that can deliver true savings in operation (for that specific building). However, cost-effective measures typically include a variety of heating, ventilation, lighting, cooling, renewables and controls retrofits

To verify the savings are achieved, performance is measured before and after installation (often not an easy task) for the agreed contract period. An accurate Measurement and Verification (M&V) process is essential to confirm the achieved savings, since it is impossible to directly measure an energy saving. The International Performance Measurement and Verification Protocol (IPMVP) provides guidance, training and accreditation for implementing M&V

Dr. Zachary Gill, YEPG and Willmott Dixon Energy Services (Feb 2015)

Key Issues

- EnPCs allow risk-free energy savings to be installed in operational private and public buildings
- There are a variety of funding models available (including capital expenditure, shared savings, fully funded installation etc.)
- It is generally more cost effective to develop concepts across a portfolio of similar buildings
- The M&V process should be administered by a Certified Measurement and Verification Professional (CMVP)
- Change in building utilisation or operation post-ECM needs to be reported accurately. These responsibilities should be clearly identified in the IGP (contract)
- Good historic operational data is essential (to determine ECMs and define the M&V process)
- The ESCO and specialist partners will require facilitated site access to develop the IGP
- Buildings with high consumption, long utilisation hours, and low DEC ratings (for instance) are most likely to yield cost-effective savings from ECMs. Flagship buildings have often received energy upgrades already and, whilst headline grabbing, may not be cost-effective to install ECMs

LINKS

- RE:FIT Framework, EnPC Framework available for Public Sector Bodies (<http://refit.org.uk/>)
- The Efficiency Valuation Organisation, IPMVP and M&V (<http://www.evo-world.org/index.php?lang=en>)
- DECC Guide to Energy Performance Contracting Best Practices (Focus on Public Sector Bodies) (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/395076/guide_to_energy_performance_contracting_best_practices.pdf)

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