



How to Develop and Successfully Present Business Cases

Energy Managers often identify opportunities for energy reduction, either through their own energy audits or audits carried out by third parties, such as the ones required for the Energy Savings Opportunity Scheme (ESOS). Opportunities identified could be anything from lighting replacement, controls upgrade, HVAC upgrade, the installation of renewables with a battery storage solution or even the upgrade of the site electrical connection to export generation onto the grid.

However, the work of the energy manager does not stop once an opportunity is identified. The second, and often more important step, is to create a business case that explains to the management team the reasons that the project is beneficial so they can make the necessary funds available.

A business case provides companies with the opportunity to assess certain criteria for each project. These include:

- Business opportunity or problem;
- Technical solution(s) possible;
- Benefits;
- Risks;
- Timescales;
- Impact on operations;
- Organisational capability to deliver the project outcomes;
- Costs, including investment appraisal;
- Measure of success criteria.

But what makes a successful business case?



This varies on a case-by-case basis and no two projects are the same, but certain rules of thumb hold true across the board. Below, you can find my top tips for developing and successfully presenting business cases.

Where to begin – identify & group opportunities

When identifying opportunities for energy reduction, it is best to use a targeted approach; focusing resources at one building at a time, or one technology at a time, depending on the type of estate you have at hand. Opportunities can be grouped based on the type of project, such as assessment of all lighting opportunities; or the building as a whole, i.e. all opportunities related to the building being assessed. A decision on the grouping should be based on what makes more sense for the specific projects and estate in question.

Another way of looking at it is focusing on the 'pain' areas for your buildings. For example, if you are managing several office blocks and one of them has a heating issue, look at upgrading the HVAC system. How old is your system? Has it been regularly maintained and cleaned? Is it correctly sized? Can the technology be improved? What about the controls? Moving on to other storeys or buildings within the estate, ask yourself the same questions.

Innovation – testing and trial verification

Testing and trialling of new technologies is a vitally important part of innovation. Innovative technologies are presented to us all the time, so you need to be able to assess their effectiveness in relation to your estate. The ways in which new technologies are trialled and verified could form a whole new article, but we can summarise the essential considerations for a new technology trial:

- What are you testing? What is the technology?
- Why are you testing it? What are you expecting to see or change?
- How are you testing it? What data are you going to monitor, and what method are you going to use to calculate benefits? Is the metering already in place and correctly calibrated? Have you allowed enough time to collect enough data to make your results statistically significant?

Once a trial is completed, savings and costs can then be extrapolated for a larger installation.

Calculate savings per initiative/group

Once an initiative has been identified, the consumption of the existing system should be estimated or calculated. Depending on what is available, you can use metered data, or you can estimate the consumption based on the rating of the unit and the number of hours it has been running in a year.

The International Performance Measurement and Verification Protocol (IPMVP) provides a method for measuring the savings depending on the type of project.

See Table 1 for an example calculation.

Existing scenario	Upgrade scenario	
30 fittings that have 3 x 28W lamps in each. Operating from 8am until 8pm every day apart from Sunday	30 LED fittings, 30W each. PIR control especially for meeting rooms that are not used, and Saturdays when staff is not regularly in. Estimated 20% reduction in operational hours	
Consumption before	Consumption after	Savings
30 fittings x 3 lamps x 28W = 2,520 W 12 hours x 6 days x 52 weeks = 3,744 hours → estimated consumption = 2,520 x 3,744/1000 = 9,434.88 kWh → 9,434.88 x £0.12 = £1,132	30 fittings x 30 W = 900 W 3,744 hours x 80% = 2,995.2 hours → estimated consumption = 900 x 2,995.2/1000 = 2,695.68 kWh → 2,695.68 x £0.12 = £323	(9,434-2,695)/9,434 = 71% reduction → 1,132 - 323 = £809 That's £809 saved every year off the electricity bill - if your cost is 12 pence per kWh

Table 1: Calculating consumption before and after an upgrade

“WHEN IDENTIFYING OPPORTUNITIES FOR ENERGY REDUCTION, IT IS BEST TO USE A TARGETED APPROACH; FOCUSING RESOURCES AT ONE BUILDING AT A TIME, OR ONE TECHNOLOGY AT A TIME, DEPENDING ON THE TYPE OF ESTATE YOU HAVE AT HAND.”

Calculate costs per initiative/group

Once you have calculated what your potential savings are, it is time to calculate the potential costs for the project. This could be simple, if the project is a one-for-one

lighting replacement, or it could be complicated if a complete redesign of an HVAC system is required.

It is advisable that you speak to your supply chain to understand how much the upgrade would cost. A trusted partner might be able to offer products that are more efficient than your anticipated costs, or a cheaper and easier way to complete the project.

Depending on internal processes, this is probably the stage where a procurement manager should be engaged to ensure you are attaining value for money.

Are there any government schemes that could reduce costs or add revenue?

The Enhanced Capital Allowance scheme is a government-backed scheme that incentivises businesses to invest in more efficient technology:

“If you’re a business that pays income or corporation tax, you’ll be able to claim 100% first year capital allowance on a product if it’s on the ETL (Energy Technology List) at the time of purchase.”

Feed-in-Tariffs are also a government-backed scheme that could be used to make projects profitable, or financially viable.

Flexibility projects

Demand Side Response is a term you might be familiar with - the power responsive website by National Grid has a wealth of information and case studies of their customers.

If you are able to use electricity flexibly in your estate, for example reducing the demand on a manufacturing plant when electricity is more expensive, then you might be able to monetise this. Flexible assets can earn anything between £5,000 and £120,000 per MWh/year by converting them to respond to specific signals. Response times vary between the different models, with the slower assets earning less.

Investment appraisal tools: Payback, Return on Investment, and Net Present Value

All of the above are numbers your finance team will either ask for, or need to calculate when evaluating your business case. Table 2 below summarises these investment appraisal tools.

Payback	Return on Investment (ROI)	Net Present Value (NPV) (https://www.investopedia.com/terms/n/npv.asp)
= Total cost/ Total savings = £2500/£809 per year = 3.1 years	= Total savings/ Total cost = £809/£2500 = 0.32 or 32%	Check with your finance team, organisations have different values for discount rates

Table 2: Investment appraisal tools

When calculating your total costs to deliver a project, remember to consider write-off costs of the existing assets, if those have not been fully depreciated. Additionally, consider any other internal overhead costs you might incur, such as the cost of an additional project manager, or the cost of leaving lighting on for longer whilst a project is underway.

Prioritise opportunities

The investment appraisal tools above provide a good method for prioritising investment opportunities. A lower payback period and a higher ROI indicate better investments; similarly you are looking for a positive Net Present Value.

Depending on the hurdle rate of your organisation, this is the part of the process where you need to shift and re-evaluate some of the projects. For example, do you really need to completely redesign the HVAC plant, or could you use more efficient fans and more intelligent controls?

At the other end of the spectrum, if the payback is looking like it is far beyond expectations, then this is the time to consider additional measures that were in your 'nice to have' list that did not have as good a payback. For example, you could add some extra light fittings for a dark area that is causing issues.

Preparation is key for the presentation

You have identified opportunities, calculated their potential savings, the potential costs, and even attempted to appraise the investment with a finance manager's hat on. When it is time to present these projects to a leadership team or board of directors, you need to be

thinking about convincing arguments for each one of them. Here are a few pointers on how to approach this:

- Prepare a well-rounded summary of the opportunity/issue;
- Show how this will be solved with clear measures to realise the benefits;
- Pre-empt the questions that may be posed;
- Keep it simple, do not attempt to lump all of the initiatives together;
- Present a section of the opportunity but make it clear there is more;
- Give yourself realistic timescales; think about mobilisation and manufacturing lead times;
- Make sure your numbers are accurate;
- Include benefits that might be difficult to quantify; extended warranty and reduced maintenance costs, employee wellbeing and/or productivity, customer satisfaction, sales uplift, increased visibility. These additional benefits might not be easy to quantify, but they can make or break your business case;
- Work with suppliers you can trust;
- Show how you validated your proposition with accurate testing, trials and verification;
- Close with a statement: "I am seeking approval to proceed with the proposed investment..."

Finally, one final tip for preparing any business case:

Under-promise and over-deliver

I have found this to be very important, especially if you are pitching to a new CFO or finance director. Be realistic with your numbers and delivery timelines, and if you are uncertain about any, go with a worst-case scenario. That way, when the first project is completed on time and over delivering on savings, the managing team will have more faith in your numbers and projects.

Author's profile:

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