HOW EMR MAKES THE CASE FOR ENERGY EFFICIENCY MORE ATTRACTIVE.

Smart businesses are seeing EMR as an opportunity, not just an overhead.

WELCOME

Many businesses are currently focused on the cost that Electricity Market Reform (EMR) will add to their energy budget. And understandably so, given our forecasts say that it could add up to £10/MWh to bills by 2019.

But EMR isn't only designed as a way of raising more money for investment in big generation projects. It's also designed to encourage businesses in all sectors to reconsider how they consume electricity and how they can generate it themselves.

That's because the UK faces major challenges over the next few years to balance electricity supply and demand as old power stations close, while also meeting legally binding targets to reduce carbon emissions and increase renewable energy use.

EMR makes it more attractive for major businesses to get involved as active energy users and producers. It brings new rewards for businesses reducing their demand for electricity, both at times of peak capacity and over the long term. And those that are able to generate their own electricity should consider how and when they can export it to the grid to enhance the returns on their investments.

Whether it's getting paid for reducing demand or even supplying power when the grid most needs it, EMR brings with it a raft of financial incentives for businesses to invest in intelligent demand management.

In this paper, we'll show you how EMR makes it more attractive for your organisation to be part of this new energy future.

What you'll read draws on the expertise of Dan Bentham who leads our Energy Services Delivery Team. He is a regular blogger on the 2degrees Network and LetsTalkPower.com. The Energy Services team at EDF Energy is responsible for the delivery of Energy Performance Contracts (EnPC), the design and construction of on-site renewable generation assets and energy consultancy for UK industrial and commercial energy consumers.

Energy managers have traditionally found it challenging to make the case for energy efficiency projects. But Electricity Market Reform means there's greater financial incentive to make the investment.

EMR is more than a new overhead, it's also a new opportunity that changes everything. Here's why.

HOW YOU MANAGE YOUR ELECTRICITY IS AS IMPORTANT AS THE PRICE YOU PAY FOR IT

Traditionally, it has been difficult for energy managers to argue the case for energy efficiency projects, especially with stakeholders who are primarily focused on new revenue-related sources of profitability. Very often, energy projects aren't viewed as business-critical. Similarly carbon reduction often isn't a top priority against more tangible business pressures, despite all the good rhetoric.

We believe EMR helps change that, for two reasons:

Companies can only effectively mitigate the cost of EMR by reducing the amount of electricity they consume, especially at peak times.

EMR provides income opportunities for companies who are available to reduce demand or generate electricity when the grid needs it most.

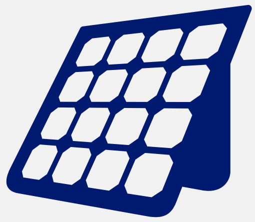
In short, EMR now makes how you manage your electricity just as important as the price you pay for it.

So what should your response include?

A 3 STEP **STRATEGY:** OPTIMISE, REDUCE, GENERATE

1. OPTIMISE
Reducing demand at specific times.

2. REDUCE
Reducing demand over longer periods of time.



3. GENERATE
Exporting electricity back into the grid.

By addressing all three areas, businesses will help insulate themselves from rising energy costs (including the cost of EMR) and take advantage of the incentives and opportunities that EMR provides too.

EMR **OPPORTUNITIES EXPLAINED**

Imagine an ever-flickering needle on a screen that needs to remain as close to a central point as possible. If you're not providing enough power to meet demand, it slides one way. If you're providing too much, it moves the other. Any significant change can have dramatic consequences. This is what National Grid manages on a half-hourly basis.

At present, this balancing act is mostly achieved by switching on or off fossil-fuelled power plants. However, fossil-fuelled generation is decreasing and new, low-carbon generation like wind and solar cannot just be turned on at will. So the balancing act is actually becoming more difficult.

The Capacity Market, introduced as part of EMR, aims to make sure this country has secured the right balance of capacity and demand a long time in advance, so we don't have to resort to emergency measures.

Part of the Capacity Market incentivises generators to provide more capacity. But it also incentivises users to use less electricity when supplies are tight.

So, what are the opportunities that the Capacity Market brings? And how can your business benefit?

1. OPTIMISE

DEMAND SIDE RESPONSE:
REDUCING DEMAND ON DEMAND

Demand Side Response (DSR) is when consumers adjust the amount of electricity they use at particular times in response to a signal, usually when demand is high.

Responses could include:

- shifting business operations, such as production cycles, to a different time of day
- powering down or switching off electricity to reduce demand
- or using on-site generation or stored energy instead of grid supply.

Participants in the Capacity Market Demand Side Response scheme are contracted to lower their demand for electricity within two hours when the grid most needs it. In return, they get paid a regular fee.

How could your business take advantage?

If you want to participate in the Capacity Market Demand Side Response scheme, you need to make a competitive bid in an auction. You do that on your own or work with an aggregator like EDF Energy to manage it for you. It's likely most businesses would be better suited to taking part in the one-year-ahead rather than four-year-ahead auctions. The next auction takes place in January 2016.

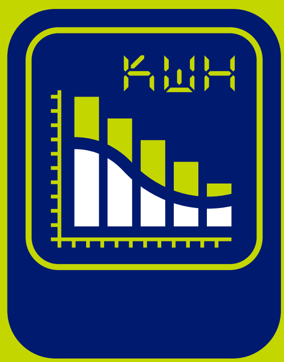
Three other kinds of demand response schemes exist outside of the new Capacity Market:

1. Frequency response schemes in which companies agree to have their supply interrupted for short periods to help restore balance to the grid.
2. Reserve schemes which operate much like the Capacity Market scheme to shore up grid at time of stress.
3. Peak avoidance schemes to encourage companies to use less energy at times of peak demand to reduce stress to the grid.

We can help you work out how these schemes can be a part of your company's energy strategy and also help you participate within them.

2. REDUCE

DEMAND REDUCTION: **PERMANENTLY REDUCING DEMAND AT PEAK TIMES**



The Department for Energy and Climate Change (DECC) estimates there's still £2.2bn worth of energy savings to be realised in UK businesses. The Electricity Demand Reduction (EDR) scheme should encourage more businesses to go for those savings by boosting the returns from energy efficiency programmes.

EDR works by providing financial subsidies to organisations that deliver permanent electricity savings at peak times (4-8pm during winter) by installing more efficient equipment or by increasing the efficiency of existing electrical systems. They might, for example, replace old bulbs with LEDs or improve motors and pumps. Although currently a pilot, it could soon become part of the Capacity Market and be funded by EMR.

In the first round of auctions at the end of 2014, participants bid kW savings from their efficiency projects. The winning bids were those that represented the lowest price for each kW offered. **Organisations up and down the country were awarded a total of £1.28m for their efficiency projects, which should help reduce demand by 1,855,548 kWh in winter 2015/16.** Network Rail, Leicestershire County Council, Tata Steel and David Lloyd Leisure Group won subsidies, among others.

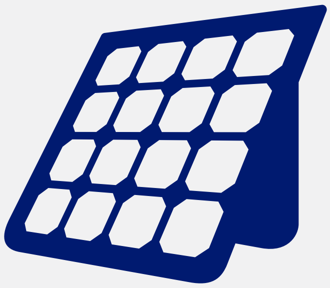
How could your business take advantage?

In summer 2015, the Government will publish details of the next auction. If your efficiency projects can promise savings from 4pm-8pm on business days in winter 2017-18, consider bidding in the auction.

Don't forget, the Enhanced Capital Allowance scheme provides tax incentives for investment in energy efficient equipment. It lets businesses that invest in certain energy-saving equipment write off the total cost of the equipment against their taxable profit as a 100% first-year capital allowance.

3. GENERATE

GENERATING ELECTRICITY **ON DEMAND**



The Capacity Market also contracts generators to generate electricity at times when supplies are tight.

To date, most of the emphasis in the Capacity Market has been on large generators competing for large contracts to produce large amounts of electricity. But it's not just for large generators, it's also for businesses who have the ability to export smaller amounts of electricity they generate on-site to the grid.

Contracts have already been awarded to large industrial businesses such as steel manufacturers for just 10-12MW of generation, proving that businesses should take the prospect of getting paid to participate in the Capacity Market seriously.

How could your business take advantage?

In December 2015, the Government will be running the next Capacity Market auction, which will procure capacity for winter 2019/20.

7 TIPS TO MAKE A **BETTER** ENERGY EFFICIENCY BUSINESS CASE

1

THINK INCOME GENERATION, NOT JUST SAVINGS

Many of the new schemes could actually generate income for your business. For example we helped a retailer turn scheduled maintenance test burns of back-up generators in their basement from a cost to a revenue stream. Running the generators during peak times in an early demand response programme earned the retailer around £100,000 a year.

An energy centre we built to provide 100% renewable heat for a training facility in Somerset will earn £30,000 more than the site's annual energy bill.

These sorts of figures help get finance teams on your side. **So don't just promote your business case on savings, shout about the extra income too.**

2

SHIFT THE ROI MINDSET

Finance departments set average return on investment (ROI) periods of less than 2 years for most projects, far too short for many energy projects. **To make the case for investment in demand management, encourage your organisation to think about ROI in different terms relevant to how the company behaves.**

For example framing ROI in terms of how long you'll be in the building or how long the new equipment will be used helps people understand that the investment pays back well within the term the company will use the building or equipment. This makes it easier to get support for larger projects with longer ROI, but which deliver larger scale improvements for the business.

3

CREATE A COLLABORATIVE WORKING GROUP

Energy efficiency projects often cross many internal departments from Finance through Estates and Operations to Procurement. Each function will likely have their own incentives and objectives and may not be motivated by, or even have sight of, the long-term energy strategy. So create an environment that encourages collaboration. **Creating a cross-functional working group, your "Team Energy" if you will, helps align a vision, incentives and accountability.** Take a look at the "Turning EMR from an overhead into an opportunity" section to learn more.

4

ALIGN TARGETS THROUGHOUT THE ORGANISATION

Energy efficiency targets are often set from the bottom up, in a reactive way, not linked to long-term strategy. This can lead to inconsistent decisions or extra costs across an organisation, particularly if that organisation is spread across multiple sites. **So, define an energy efficiency strategy that's well communicated throughout the business at a central level.**

TARGET SETTING: MINI CASE STUDY

United Biscuits found devolving responsibility for energy efficiency to individual sites had a downside of creating silos and inconsistency.

They became more successful when they looked at things at a corporate level across sites. Why? Because target setting was no longer in the hands of individual ops teams who had day-to-day targets, but in central functions who had a longer-term view. It also gave them significant synergies and economies of scale to roll out a programme of energy projects that delivered over £400,000 savings within a year.

The best organisations look at their total estate rather than making decisions at site level. This avoids deploying new technologies like Combined Heat and Power (CHP) at the wrong sites – or worse still, at every site, even though (as frequently happens) one site never uses the new technology.

5

KNOW HOW YOU'LL PAY FOR IT

Your organisation will have a preferred way of procuring capital projects. **So be clear on all your financing options at the start – and choose the one that best fits your organisation.**

FINANCING ENERGY EFFICIENCY

Here's a quick guide to the three most common ways of financing energy efficiency projects:

1. **Capital project:** investing your organisation's own capital into the project (you own the risk, but reap all the benefits)

2. **Energy Performance Contract (EnPC):** a way of guaranteeing that the energy efficiency measures implemented will generate sufficient savings to pay for the project during the contract. And, all additional savings gained after the contract ends will accrue to you. It can be financed by your own capital investment, or by a third party and often allows you to bundle lots of small projects together. That allows you to meet payback requirements whilst delivering the largest number of projects possible.

3. **Energy Service Company (ESCo):** a way of financing generation or efficiency projects. The ESCo finances the cost of the project and operates a long term service model so your organisation benefits from the cost and carbon savings, whilst only paying for utility bills.

6

MEASURE THE BENEFITS THROUGHOUT THE PROJECT

In a recent survey by Achilles, a quarter of UK firms admitted they do not have a company-wide programme to record and monitor their own emissions and energy use*. If you're asking your organisation to make a large investment in new technology, **don't write the benefits into the business case and then promptly forget them.** This kind of approach has traditionally created a bad impression of the value of energy efficiency projects. **So make sure you prove the benefits of the project throughout its lifecycle.** You'll find future requests for project funding are viewed favourably as the returns from previous investments have been proven.

**Source: achilles.com*

MEASUREMENT METHODS

There are two recognised methods for measuring energy efficiency:

- **International Performance Measurement and Verification Protocol (IPMVP):** an internationally recognised standard for verifying results of energy efficiency and renewable energy projects in commercial and industrial facilities. This standard prevents disagreements over the performance of energy projects. It provides methods for calculating a relevant baseline to measure the project's performance whilst taking account of changes in the business.

- **ISO50001:** a framework of requirements for organisations to:
  - develop energy efficiency policy
  - fix targets and objectives to meet the policy
  - use data to better understand and make decisions about energy use
  - measure the results
  - review how well the policy works and continually improve energy management.

7

CHOOSE THE RIGHT ENERGY SERVICES PARTNER FOR YOUR ORGANISATION

For energy services contracts to work brilliantly well, there needs to be a great deal of co-operation, communication and trust between client and contractor. So look for a partner who shares your values and is able and willing to commit to an enduring relationship. Good indicators are:

- Will they be open about times when things didn't go to plan, as well as describing successes?
- Will they share "lessons learnt" for those projects?
- How secure is their business?
- What are their corporate values?
- What are their strategies for carbon reduction?
- Do they have case studies that relate to your challenges?
- Are they willing to help you overcome some of your contracting challenges?

TURNING EMR FROM AN **OVERHEAD INTO AN OPPORTUNITY**

HOW EDF ENERGY CAN HELP

Those energy change programmes that have lasting impact – the type of programmes that go beyond tinkering around the edges – are still rare because the required commercial models and business cases are not well understood.

If that's to change, then businesses need the insight, tools and viable commercial models to be able to lead change and respond to this challenge.

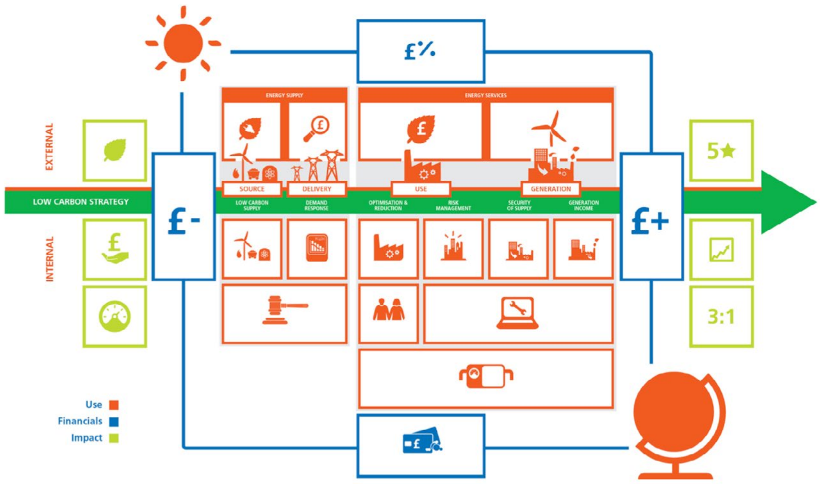
That's why **we've created the Energy Canvas, to help companies envisage and define a "total" solution to their energy needs in the context of their business strategy.**

It's a one-page view of your company's energy strategy that's easy for your colleagues to understand and support. Even better, it helps you move swiftly to implement the actions that can make a material difference to your company's long term energy costs. And really, implementation is what it's all about.

BOOK AN ENERGY CANVAS WORK OUT

Email:
energyexperts@edfenergy.com

or call your account manager.



The Energy Canvas, worked through in collaboration with key stakeholders in your organisation, like Finance, Operations, Estates and Purchasing can enable you to:

- Align your energy strategy with your business strategy and bring together all your stakeholders in the energy equation.
- Understand the changing energy context in which you operate and the implications of energy pressures and trends for your organisation.
- Explore the impact and opportunity of the latest energy policies like EMR on your energy strategy.
- Map the energy risks and opportunities facing you.
- Identify commercially-relevant responses to the changing context and establish programmes for active energy management.
- Design a roadmap to make your energy efficiency programme a success.
- Create a game plan to engage employees and identify how to influence key stakeholder groups inside and outside the organisation.
- Feel inspired to act, to make change happen.

BE SMART.
USE EMR TO YOUR ADVANTAGE.

Book an energy canvas work out

To design a roadmap to make your energy efficiency programme a success, contact our experts today:

energyexperts@edfenergy.com

Call your account manager.

For more information on EMR:

edfenergy.com/emr