

Case Study

Project



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Integrated Energy Solutions

npower Awarded Carbon Trust Standard

38% carbon reduction target in sight

RWE npower Group Ltd have been awarded the prestigious Carbon Trust Standard in recognition of our carbon reduction achievements across the portfolio of npower sites. This was accomplished using the same range of products and services npower provides to deliver full energy solutions to its business customers.

Energy usage in our offices is a board level issue for npower. In 2012 we achieved a 16% reduction in electricity consumption, putting us on track to meet our 2014 target of a 38% reduction in carbon intensity of our offices compared to 2008 levels.

npower spends some £4.5million a year on energy across its portfolio of office buildings in the UK. Just like our business customers we have an Energy Manager whose job it is to manage that spend and hit our reduction targets.

Jonathan Hulbert; npower Energy Manager:

"The key areas assessed by the Carbon Trust Standard are measurement, management and performance. Like many of our customers, I have to manage a diverse portfolio of buildings of different ages and profiles – and this presents a variety of challenges. For me, the first step was to gather accurate, up-to-date consumption data that I could easily access and analyse."



npower



Solar PV at the Didcot Power Station

The Importance of Monitoring

The Measure, Monitor, Minimise framework helps Jonathan articulate and break down into chunks what he needs to tackle.

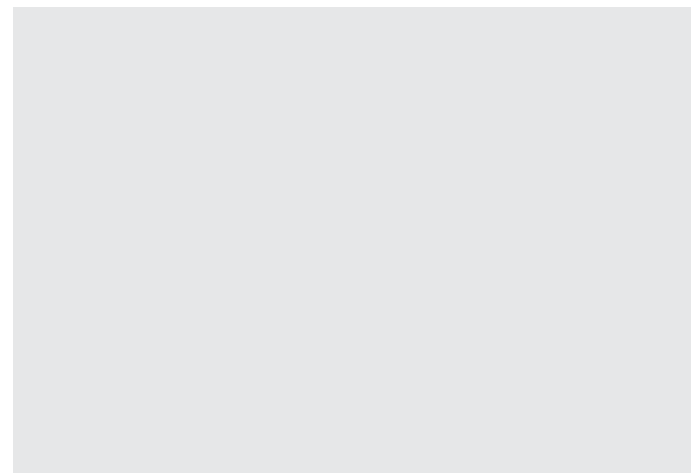
Measure - The first step for Jonathan was to invest in Automatic Metering (AMR) for all our non half hourly electricity and gas sites. It has been one of his best investments. Accurate data at his finger tips for all our sites even the smaller ones and an end to estimated billing. It's also invaluable when it comes to CRC reporting.

Monitoring - Jonathan now has over 98% of npowers energy use (both gas and electric) monitored through our encompass monitoring and targeting software. The tool enables him to identify potential energy waste and areas to reduce carbon emissions and is a platform for liaising with individual site facility managers and key stakeholders. To increase visibility for all npower staff individual site energy performance is now displayed in the receptions of a number of our key offices using the npower Energy Assist dashboard.



“In terms of increasing energy efficiency, encompass has helped me, for example view consumption profiles and amend the heating settings to more accurately reflect actual occupancy – leading, at one office site, to a 28% reduction in gas consumption in just one year.”

Jonathan Hulbert, Energy Manager



Minimise - Using the data and insight gathered from the measure and monitor stages of the process Jonathan could identify a range of ways to make savings.

- solar PV panels were installed on eight npower sites, which have so far helped the company save an estimated 160 tonnes of carbon
- installing Voltage Optimisation equipment at 11 sites has accounted for a massive 1000 tonnes of CO₂ a year



npower Optimisation Desk in Swindon



Smarter energy purchasing

Whilst the old adage; the cheapest energy is the energy you don't use remains true; smarter energy purchasing has also had a big impact on our overall carbon and cost reduction. As an Energy Manager with over 40GWh to procure Jonathan recognised the benefits of flexible purchasing contracts but with so much more to his role than just the procurement of energy he looked to npower to take the pain away and Direct Budget Management has done just that.

The award-winning tool is a middle-ground between fixed and flexible energy contracts enabling organisations to take greater control over their energy purchasing. Not having the time or the expertise to run a Flex contract himself Jonathan uses the market experts on npower's Optimisation Desk. Working to an agreed strategy they make purchases on his behalf. They do this within an appropriate risk profile and budget. The result has been a 10% saving on an equivalent fixed contract commodity price.

However the best savings come from understanding what the right combination of measures are for each building.

- Birch House in Oldbury, West Midlands -24% saving from replacing chiller units, voltage optimisation, solar PV and a new BEMS
- Birchfield House in Oldbury, West Midlands -22% saving from new HVAC, new lighting, Gas AMR, solar PV and a new BEMS
- Wear House in Peterlee, County Durham -22% saving from voltage optimisation, gas AMR and a new BEMS
- Limewood in Leeds -44% saving from a new data centre, new HVAC, new lighting and a new BEMS
- Acorn House in Worcester -19% saving from voltage optimisation, gas AMR and a new BEMS
- Oak House in Worcester -24% saving from voltage optimisation, gas AMR and a new BEMS

(savings compared to 2008 baseline)





Refurbishment for long term savings

When refurbishing and re-fitting our own buildings the npower team have committed to achieving the SKA Gold Standard on every job. This includes the refurbishment of the London office that achieved the highest SKA rating ever, and the recent refurbishment of the Didcot Sports and Social Club into an office building that was completed by the npower Business and Social Housing team. In this case desk space was created for 94 individuals in addition to meeting rooms and training rooms. As well as building works the job also included provision of heating and cooling systems and lighting and power. New building management systems and controls were installed along with fire detection and alarm systems. By committing to using the most energy efficient materials and systems in our refurbishment work we are ensuring that not only do we make short term reductions in energy consumption but that these are maintained for years to come.

It's important to note that every site is different and whilst the principles and process of 'measure, monitor, minimise' can work across all buildings the actual measures undertaken can vary significantly. Solar panels are great for some buildings but not others. Voltage Optimisation can deliver significant savings in older buildings but is generally not needed in the newer ones. Some sites had old inefficient Heating and Air Conditioning systems – such as at one of our contact centres in Stoke, where a new HVAC system helped reduce consumption by 14%.

Despite this success there is still more to be done and further savings to be made. Dave Horton; Sustainability and Investments Manager has extensive capital investment plans that include; lighting projects, full integration of all our Building Management Systems, HVAC systems and even a wind turbine installation.

Paul Massara, chief executive officer at npower said:

“This certification demonstrates that big energy efficiencies can be made when you have the right tools for the job. The carbon reductions we've made can be achieved by other businesses on their own sustainability journeys. Using tools that we've developed ourselves like encompass and Direct Budget Management, we've been able to identify numerous opportunities to save and manage energy consumption and costs, and these steps can be easily replicated by other companies.”

Darran Messem, Managing Director of Certification at The Carbon Trust added:

“Energy suppliers have a big role to play in promoting energy efficiency and helping customers to reduce their carbon footprints. By putting sustainability at the heart of its own buildings, npower is leading by example when it comes to using energy as efficiently as possible.

“It is also good to see that npower goes further by developing products that make it easier to measure energy and identify potential savings, as these can help other businesses to reduce their own carbon emissions.”

