



# Smart approach to energy brings rewards

Renewables friendly



New revenue



Reduced carbon



STOR



Flexible generation



Smart grid



Full parallel



Standby generation



## Reliability is key to sustainable revenue for a major international venue in London's Docklands

**ExCeL London is one of the major European venues for exhibitions, conferences, association meetings and events. The 1,000,000ft<sup>2</sup> venue relies on Flexitricity to bring in revenue from its power plant, and to help secure the site's critical power supplies.**

ExCeL London, the international exhibition and convention centre, is the host venue for major events including award-winning exhibitions and conferences, international sporting events, award ceremonies, banquets and product launches.

Situated in a stunning waterfront location, ExCeL London is located within a 100-acre campus in the heart of London's Royal Docks. A major energy user, ExCeL London's investment in energy efficiency has given it class-leading environmental performance. ExCeL London will be host to seven Olympic and six Paralympic events in 2012.

The power supply to ExCeL London is controlled by the site's own dedicated energy centre, and is supported by two large standby generators and a combined heat and power (CHP) generator.

### Working with Flexitricity

Flexitricity Ltd created and now operates the first, largest and most advanced 'smart grid' system in the UK. Flexitricity brings revenue to UK businesses, reduces national CO<sub>2</sub> emissions, and helps to secure energy supplies. The relationship is win-win. Most businesses are sitting on untapped sources of revenue in their generators and electrical loads, and Flexitricity enables them to access this income.



## Key Facts

Up to 6MW of electricity generation can be turned on automatically for short periods

Standby diesel generators provide reserve services to National Grid when idle

Reduces national carbon dioxide emissions

Six-figure revenues earned every year using existing assets

No disruption to core business processes

Increases reliability of emergency power supplies

*“This year we were honoured to receive a Diamond Award – one of the top awards – in the Mayor of London’s Green 500 scheme, which involves companies from all over the capital with a common aim of reducing carbon use. There is no doubt our relationship with Flexitricity has contributed to that success.”*

## New revenues from existing assets

ExCeL London’s two on-site standby diesel generators, which are capable of up to 6MW of electrical output, can power the entire site in a power cut. They are also used occasionally to reduce peak demand during major events.

Flexitricity’s smart grid infrastructure has the ability to turn on the generators at short notice. This helps National Grid to stabilise the national electricity network during demand peaks, or when large power stations fail.

This revenue source – worth a six-figure annual sum to ExCeL London – is enabled by Flexitricity, entirely from assets which the company uses day-to-day.

## Secure power

A power failure during a major event would not be acceptable to ExCeL London’s customers. Standby generators are complex assets, and their reliability is vital to ExCeL London’s operations.

Flexitricity and ExCeL London worked together to overcome limitations on the site’s connection to the local distribution network, allowing the generation plant to run at full power in parallel with the grid. This provides an ideal on-load test and exercise regime, and gives the site’s operators early warning of any faults which would affect supply security.

## Reducing CO<sub>2</sub> emissions

Flexitricity’s smart grid provides Short Term Operating Reserve (STOR) electricity – the most important category of fast-acting generation or demand-reduction capacity – which is

held ready for National Grid, to keep the electricity system stable during times of system stress.

Every megawatt of capacity connected to Flexitricity’s smart grid is a megawatt that does not have to be held in reserve elsewhere. This reduces the need to keep coal and oil stations on hot standby or running inefficiently at part load – reducing emissions by between 300 to 750 tonnes of CO<sub>2</sub> per megawatt per annum.

## Getting on with core business

ExCeL London provides reserve electricity to National Grid only within the constraints of normal business operations. Flexitricity understands that core business processes must always be protected, so the system operates only within pre-agreed limits, which are measured and checked in real time.

“When we first started with Flexitricity, we used to watch the generators running every time. Now we just let the generators run, because Flexitricity manages the whole process for us while we get on with our regular duties,” comments ExCeL London energy manager Chris Barnes.

“We take our carbon footprint very seriously at ExCeL London. Our default mode used to be lights on, now it is lights off. If an area is being used, it is well lit, if not, everything except the emergency lighting is switched off. We also decided to operate build and breakdown with reduced lighting and – except in the organisers’ offices – no heat or air conditioning.

“We obviously need to generate our own power. However, our arrangement with Flexitricity means we are also deriving revenue from the plant, which helps towards our costs.”

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Unlocking smart grid revenue

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