Flexitricity

Service Overview

Demand Response

Over a decade ago, Flexitricity turned electricity on its head. We are, and have always been, the pioneers and leaders in demand response.

When Flexitricity first started paying business energy users to help balance the electricity system, demand response was almost unheard of. Now, our customersare members of a portfolio that competes successfully against major power stations. It took expertise, care and innovation to build this capability. Every site is different,and the core business operations ofeach site always take priority. Flexitricity engineers have developed tailored solutions for virtually every industrial and commercial sector. Our 24-hour control room monitors everything from datacentres to greenhouses; fromsupermarkets to hospitals. Electricity never stops changing. We've always led the field in innovation. That's why we have the technology and thecommercial position to keep delivering best value as the industry transforms again. Demand response pays revenue to businesses, saves money for consumers, reduces emissions and helps keep the lights on. That's what we deliver.

> *Our experience, technology and track record make us Britain's leader in demand response*


Flexitricity

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Why Flexitricity?

Why Flexitricity?

Connect your business to Britain's leading demand response company. Generate new revenue from your existing energy assets.

Flexitricity is Britain's demand response pioneer - we've been generating new revenue for businesses since 2008. If it's happening in Britain, the chances are that we started it. Our success is based on care. We take the time to learn about every site you bring us. We automate, customise and defensively engineer. We keep you in control but take away the hassle. We help you manage all the pieces of the energy puzzle and optimise value through continuous analysis fed by up-to-the-second measurement of your site's capabilities and needs - from our 24/7 fully supervised control room.

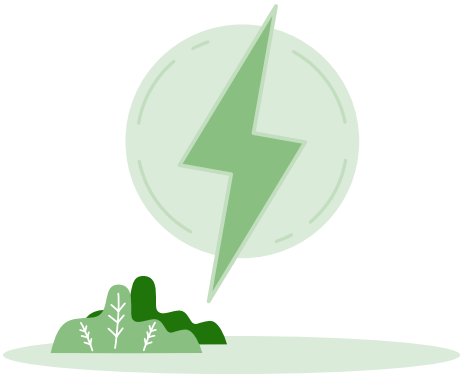
Revenue Sources

Balancing supply and demand

- Short term operating reserve (STOR)
- Frequency response
- Footroom / demand turn-up

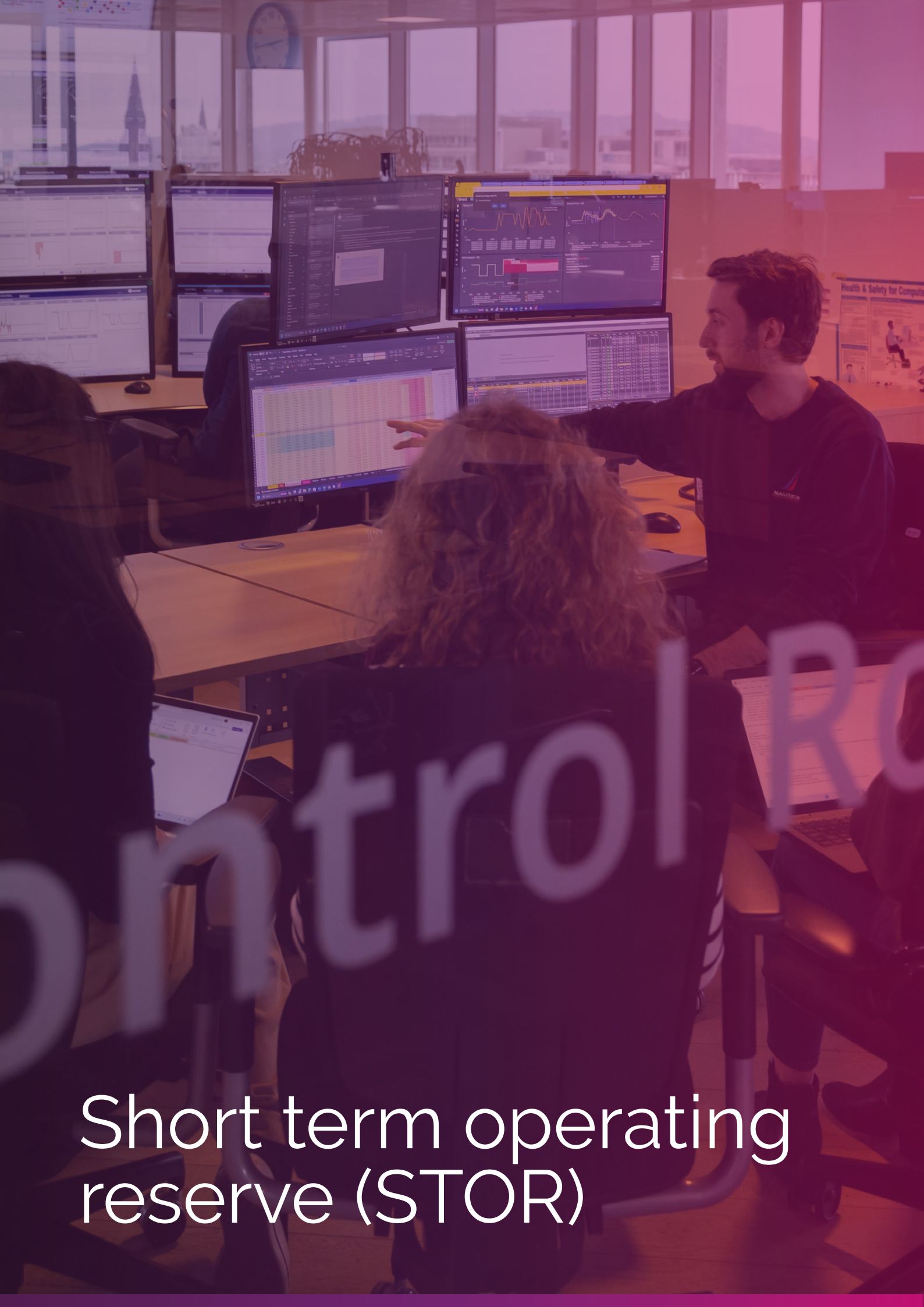
Managing peak demand

- Triad management
- Stress in distribution networks
- The Capacity Market



Energy supply and trading

- Flexitricity+ Energy Supply



Short term operating reserve (STOR)

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National Grid's most important source of reserve energy, STOR is the demand-response workhorse.

Short term operating reserve (STOR) is National Grid's most important source of reserve energy. Flexitricity is the most experienced STOR aggregator in Britain - we responded to our first STOR call in 2008.

STOR is delivered by reducing demand or increasing generation with around ten minutes' notice, and sustaining this for approximately one to two hours.

We pay sites for being ready to respond to a STOR event (availability), and we pay again for delivered energy (utilisation).

Flexitricity's STOR approach is the most capable in the market:

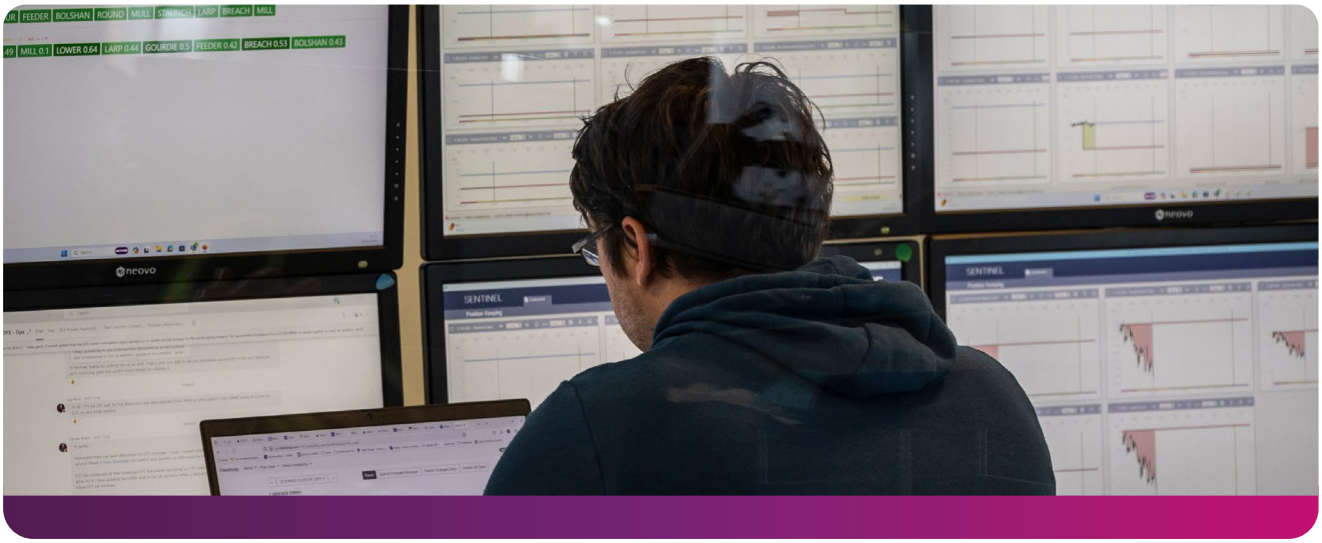
- Robust, secure and fully automated
- Control room staffed 24 hours/day, with continuous live site updates
- Defensive engineering
- Customers can use hard-wired optout controls at any time
- Unmatched market experience helps to secures the best price for each site
- Fully aggregated: no minimum or maximum size

STOR is suitable for a wide variety of assets, and Flexitricity has the portfolio needed to choose the best commercial approach for each:

50 hours/year: We limit running of standby generators to the biggest STOR events, normally just enough to provide a good-practice on-load testing regime.

500 hours/year: CHP generators normally run for all STOR events, although they opt out of STOR when they are already scheduled to run.

Variable: We can place flexible load into a more conservative or more aggressive role depending on the site.



Frequency Response

Frequency Response

Our frequency response portfolio stands in the front line of electricity system balancing.

Flexitricity's frequency response systems are compatible with all of National Grid's commercial frequency services, including:

FCDM – frequency control by demand management

FFR – firm frequency response

EFCC – enhanced frequency control capability

Frequency response sites respond to failures at large power stations. Most sites drop load in around a second, and resume normal operation in 30 minutes.

This happens around ten times each year – that's just five hours of annual service delivery. It's fast power, but only when the grid really needs it.

Frequency response services are subject to strict technical requirements. Our engineers know how to deliver the quality that National Grid needs.

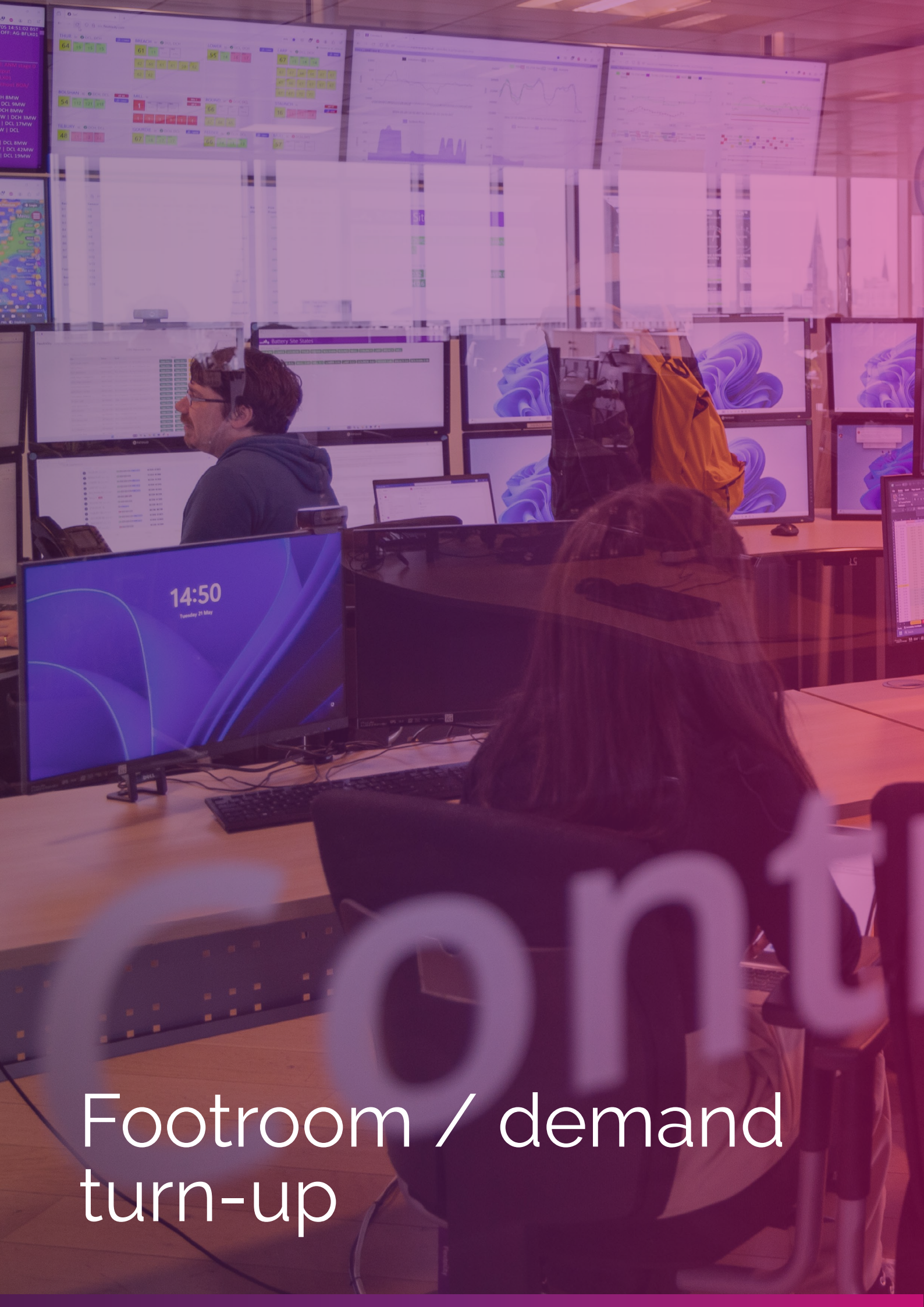
What you get

- New revenue from existing assets
- Predictable income throughout the year
- Freedom to opt in and out according to your needs
- Continuous remote monitoring and a direct line to our control room, 24 hours/day
- Also earn from triad management, the Capacity Market and other revenue sources

Payments for frequency response

As large frequency deviations are relatively rare, we charge National Grid for the availability of the frequency response capacity.

We pass live metering, aggregated across all frequency response sites, direct to National Grid. This validates the availability and generates the payments.



Footroom / demand turn-up

Footroom / demand turn-up

A Flexitricity first: income for curtailing generation or increasing consumption when wind generation is high.

We pay customers to use electricity when there's too much wind energy.

Flexitricity Footroom is Britain's first system for making use of excess wind power. We pay you to increase consumption or reduce generation at your site, so that National Grid doesn't have to pay wind farms to shut down.

Footroom, or demand turn-up, benefits organisations able to increase consumption or reduce generation when wind output is high.

- New revenue for business customers and small generator owners
- Flexible – customers can opt out when they wish to
- Compatible with other revenue sources

For generators

Small generators can be paid to reduce generation for the toughest half-hours in a high wind event.

- Combined heat and power (CHP)
- Anaerobic digestion, including sewage and landfill gas
- Small hydro generators with reservoirs

The more a generator is used in normal business activities, the more it can earn in Footroom.

For business energy users

Flexible loads can earn by consuming more when wind output is high. The best sites have storage or inertia in their systems, including:

- Water pumping stations
- Cold storage
- Space cooling
- Some manufacturing loads

We only work with loads that can make practical use of the extra consumption. The more flexibility a load has, the more revenue it can generate.

Managing Peak Demand

Triad Management

Targeted peak management is a Flexitricity speciality. We predict triad peaks, and actively manage consumption and generation to save money for businesses.

Triad management is one of the most lucrative demand-response revenue sources. Flexitricity's triad management record is unbeatable.

The triad system is the way National Grid charges businesses for the cost of the transmission network. By reducing load and increasing generation when national demand is at its highest, customers can save or earn money.

Triad management is a difficult process. Too much triad management wastes fuel and disrupts business. Too little puts the revenue at risk.

Flexitricity's hybrid, to-the-wire triad management process has allowed our customers to benefit even from the difficult triads that many large companies have missed. This gives us a 100% record since we began operations in 2008.

- Triad analysis updated from week ahead to real time
- Fully automated triad monitoring and despatch
- Seamlessly integrated with STOR, frequency response and other demand response revenue sources
- Careful targeting of peaks to minimise fuel use
- Site-specific start times and fuel costs taken into account
- Compatible with flexible load and generation

Managing Peak Demand

The Capacity Market

We're ideally placed to secure Capacity Market revenue for business consumers and generators.

The Capacity Market (CM) is part of the government's Electricity Market Reform package. Flexitricity was the first demand response company to enter this market.

The CM is intended to secure electricity supplies by paying extra for reliable sources of capacity. The full cost of this is recovered from Britain's electricity consumers – including businesses. Flexitricity can turn this cost into revenue. Flexitricity has the longest sequence of Capacity Market contracts in the industry - from 2016 to 2036. Our demand response solutions are qualified to work alongside the Capacity Market. We hold headroom, and are allocating it to business consumers and generators on a first-come, first-served basis.

Two options for participation

T-4 Auction

The main T-4 auctions run annually and buy capacity to be delivered in four years' time.

Flexitricity has successfully secured T-4 contracts in all auctions to date, and will repeat this process annually to provide contracted sites with a rolling four years of Capacity Market income.

T-1 Auction

The T-1 auctions are annual top-up auctions that, should there be a requirement, provide a mechanism for The Department of Business, Energy and Industrial Strategy to procure additional capacity for the forthcoming delivery year. Flexitricity will use these auctions for sites which aren't ready to take up a T-4 commitment but wish to participate in the Capacity Market. Most businesses will want to move into T-4 as soon as possible to take advantage of predictable prices.

Managing Peak Demand

Managing stress in distribution networks

Electricity network operators, such as UK Power Networks, must adapt and innovate. Flexitricity turns distribution innovations into revenue for businesses.

The distribution network operators (DNOs) face the toughest challenge in the electricity industry. That's why Flexitricity has always been there to support the DNOs.

Tight distribution networks can mean revenue for electricity users. Flexitricity was the most successful demand response aggregator in several multimillion Low Carbon Networks Fund projects:

Low Carbon London
UK Power Networks

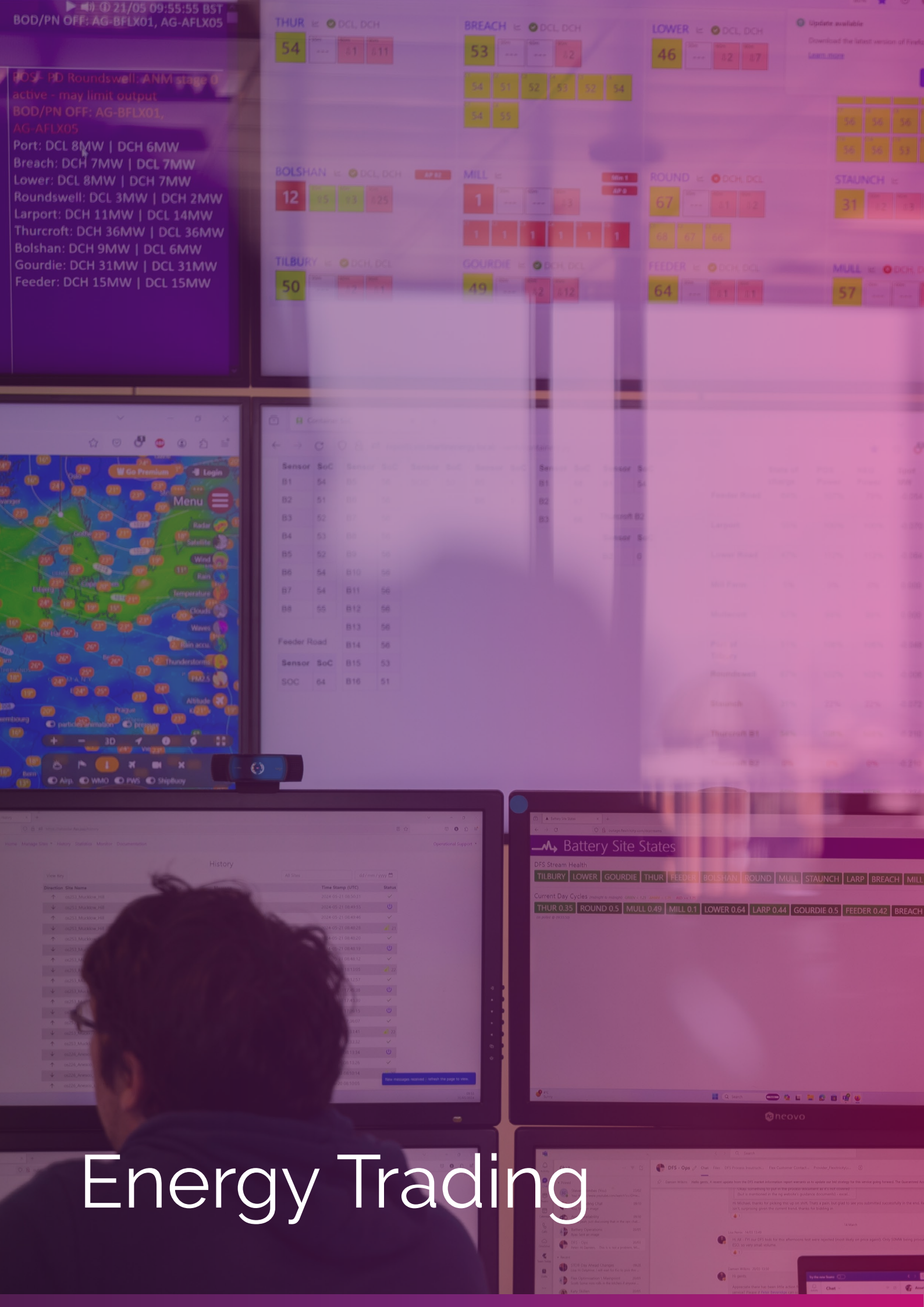
Customer-Led Network Revolution
Northern Powergrid

FALCON
Western Power Distribution

Capacity to Customers
Electricity North West

These projects proved the role of demand response in distribution networks. The DNOs have since committed to saving money for their customers by using demand response to avoid or defer infrastructure spend.

For DNOs, location matters more than anything else. To find out if your sites can earn money by helping the DNOs, please contact us.



Energy Trading

Flexitricity+ Energy Supply

Unique energy supply contract with access to the Balancing Mechanism.

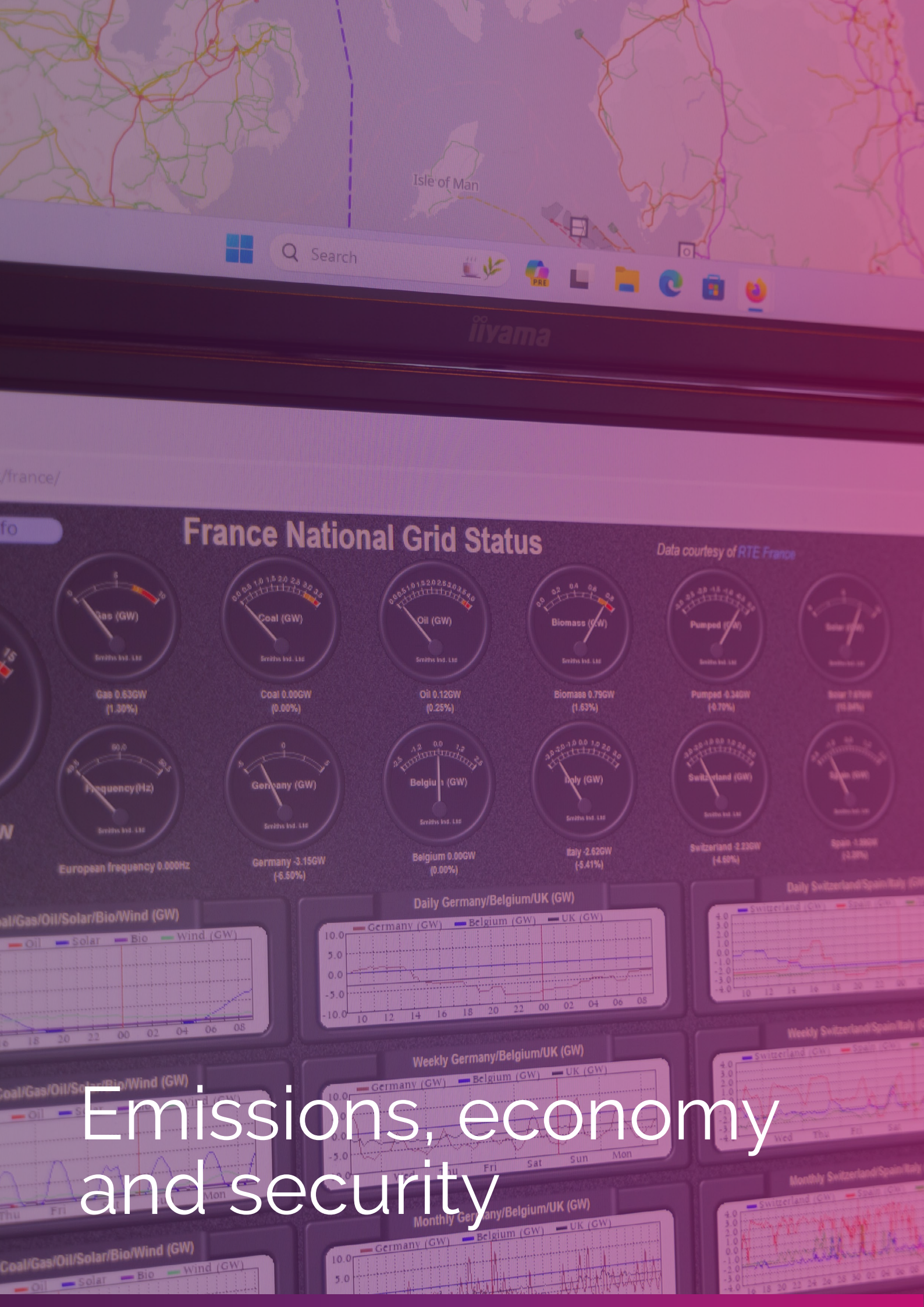
Flexitricity+ provides pass-through access to the major wholesale markets for both electricity and gas, so that industrial and commercial energy users can fix their energy costs and revenues at timescales that suit their businesses.

In addition, Flexitricity+ is an opportunity for electricity customers and small generator owners to optimise their flexibility on the day, by trading in National Grid's **Balancing Mechanism** (BM). For energy users, this is a major new revenue source.

Prices in the BM can reach £2,500/MWh, compared to around £50/MWh in wholesale markets. The market is used around 3,000 times per day at a cost of £350 million per year.

Flexitricity integrates energy trading with participation in ancillary and capacity services. Each customer site is recommended a bespoke package of services in order to optimise value from their available assets. Flexitricity+ is another piece of the puzzle and helps us build an ideal revenue stack for each customer.

Flexitricity is the first supplier in Britain to provide full, active participation in the BM for demand response customers. With the competition in reserve and response services increasing rapidly, trading is the key opportunity to future-proof your revenue and ensure you're making the most of your assets.



Emissions, economy and security

Emissions, economy and security

Flexitricity pioneered demand response as a cheaper, greener way to balance supply and demand in the national electricity system.

The energy industry is moving fast. As older, polluting power stations are replaced by varying renewables, British industry needs an economic, efficient way to keep the lights on.

Demand response is our answer to the energy trilemma. As part of a diverse energy economy, demand response reduces emissions, saves money and helps secure electricity supplies.

Balancing supply and demand

Electricity consumers don't ask permission every time they turn on a light. Large power stations can fail suddenly, and wind turbines only generate when there's wind. So National Grid must always have something in reserve to keep the electricity system in perfect balance.

A large volume of reserve comes from part-loaded fossil-fueled power stations, even though it is inefficient to burn gas or coal at part load. Additional reserve is provided by warming older power stations, which can take twelve hours or more. Often, this reserve is not used in the end.

Demand side flexibility

It's more efficient for electricity users and small generators to provide some of the flexibility that National Grid needs.

This is where Flexitricity comes in. No fuel is burned when a standby or CHP generator, or a flexible load, is waiting to be called upon. When they're needed, Flexitricity can activate these demand side resources very quickly.

Providing low-carbon reserve

Flexitricity monitors the status of clients' equipment from its Edinburgh control room. If a national demand peak is higher than expected, or if a large power station or interconnector fails, Flexitricity receives an electronic instruction from National Grid.

Flexitricity's central control system then communicates directly with customers' equipment through a Flexitricity outstation located on each site. This starts generation or turns down consumption within minutes or, in some cases, seconds.

Fit for purpose

With our diverse portfolio of services, Flexitricity can apply different demand side resources to the roles in which they will do the most good and earn the best returns.

CHP generators generally have periods of scheduled running. Outside those periods, they are a low-cost source of demand response. Along with flexible load, CHP is activated frequently. Standby generators are used much less, targeting the most severe energy shortage situations.

Working Together

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Once we've established realistic revenue opportunities for your sites, our engagement process is straightforward.

1

APPRAISAL

On-site technical appraisal leading to revenue projections and an engineering scope.

2

IMPLEMENTATION

Working with your contractors during engineering, commissioning and testing through to go-live.

3

OPERATIONS

Continuous monitoring, service operation and revenue generation.

4

SETTLEMENT

Performance monitoring, reporting and monthly payments.

5

TENDER CYCLES

Market analysis, tender management and contracting with National Grid and DNOs.

6

EXPANSION

Roll-out to other sites and development of other opportunities.

About Flexitricity

Flexitricity is the demand response pioneer. Our innovations have shaped demand-side flexibility since 2004.

Flexitricity created the first demand response portfolio in GB. We bring revenue to British businesses, increase asset reliability, reduce national CO2 emissions and help to secure energy supplies.

We pioneered open-market aggregated demand side services for electricity system balancing. Flexitricity firsts include aggregated STOR and FCDM; Footroom and demand turn-up; post-fault despatch for distribution networks; demand side Smart Frequency Control (SFC); and Balancing Mechanism access for demand side assets.

Flexitricity provides clarity amidst complexity, and an assurance of delivery backed by our unbeatable track record in the industry.

We are Britain's demand response leader.

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