

open energi

Dynamic Demand

2.0 Create a sustainable
energy future

Service overview



Rapid growth in distributed energy resources is creating a new global demand-side energy services market, forecast to be worth **\$221bn by 2026.***



10-20%

electricity bill savings with Dynamic Demand 2.0

Open Energi offer access to this emerging market. We connect and control distributed energy resources - from industrial equipment and energy storage systems through to on-site generation and electric vehicles - to save costs, earn revenue and cut carbon.

Our advanced technology platform fully automates this process, so you don't have to do a thing. Read on to learn more about how your business could benefit from our complete, end-to-end demand-side management service.



Dynamic Demand 2.0

One Platform.
Maximum Value.



Intelligent,
adaptable,
open



Open Energi's Dynamic Demand 2.0 technology platform aggregates and optimises distributed energy resources to deliver:

Ground breaking cost savings

- unlock demand flexibility, maximise on-site generation and automate energy efficiencies
- 'stack' revenues and savings across a range of markets and services
- reduce electricity bills by 10-20%

Powerful business intelligence

- fully interactive, data visualisation console
- complete visibility of asset performance
- advanced business analytics and reporting tools

Better, smarter control

- self-learning, artificial intelligence
- optimise performance at an asset and portfolio level
- up to 30% value uplift in asset performance compared to manual scheduling or built-in controls

Safe, proven technology

- over 7 years uninterrupted provision of real-time flexible demand-side capacity
- over 3,500 assets connected at over 400 sites
- zero disruption to operational processes

Unrivalled market access

- any asset able to respond to a signal and flexibly use, generate or store electricity can connect to any market
- designed to adapt and respond quickly to new market opportunities

A sustainable energy future

- integrate renewable generation efficiently at scale
- reduce carbon emissions
- empower businesses to accelerate system change

Our services

Project assessment



Project consultancy

Open Energi offers specialist consultancy services to help businesses assess and value project opportunities. We combine unparalleled knowledge of decentralised, digitalised energy management, with a quantitative approach built on over 7 years of technical innovation, data-driven insight and business analytics.

Our team of data scientists, analysts, engineers and market and policy experts give our clients access to a unique collection of skills and experience, grounded in practical insight and powerful business intelligence.

Feasibility study

An accurate assessment of the total flexibility available from a site's distributed energy resources is vital to develop a complete demand-side management strategy. Our expert engineering team conduct comprehensive site surveys to identify the size and scope of the opportunity.



Case study



Energy storage

Assets

Li-ion battery energy storage system

Services

Dynamic frequency regulation, Peak price management, Wholesale & imbalance optimisation

Energy storage systems are ideal assets for flexibility, with a defined storage capacity, discharge rate and known State of Charge (SoC). Open Energi have designed proprietary SoC management solutions which optimise revenue stacking across multiple markets, taking into account on-site generation and demand, site import and export limits and warranty requirements. Our advanced technology has delivered value uplift of 30% compared to standard scheduling software.

Choosing Open Energi to optimise our battery storage systems was an easy decision for Become Energy. Their track record speaks for itself, and they are incredibly well respected within the industry. In the time we have worked together, we have been hugely impressed by Open Energi's market and technical expertise and their commitment to continual improvement. The battery storage market is a complex space which is evolving fast. We have complete confidence that Open Energi, who share our values of integrity and humility, are the right partner for us.

Matt Allen

Founder and CEO
Become Energy

Our services Flex services

Balancing services

Frequency regulation is needed to continuously balance electricity supply and demand and ensure reliable power supplies. Dynamic Demand 2.0 aggregates distributed energy resources to provide a smooth, real-time frequency tracking service.

Energy trading

- **Wholesale optimisation**
Access price arbitrage opportunities on a day-ahead and intra-day basis.
- **Imbalance optimisation**
Manage 'imbalance' risk and take advantage of fluctuations in imbalance prices.
- **PPA matching (portfolio imbalance)**
Shift demand in line with a renewable Power Purchase Agreement (PPA) to maximise consumption, reduce residual balancing and decrease supplier imbalance risk.

Capacity services

Dynamic Demand 2.0 dispatches assets for capacity reserve schemes in line with market obligations. Where necessary, we can devise strategies to maximise obligation fulfilment for the duration required.

Peak price management

Dynamic Demand 2.0 minimises electricity costs and maximises income opportunities during peak price periods by reducing consumption or dispatching generation assets in response to price signals.

Site constraint management

Using behind-the-meter flexibility to manage a site's import and export limits can be extremely valuable. Open Energi's local intelligence delivers bespoke site optimisation strategies.

System operator constraint management

New, local flexibility markets are emerging, and Dynamic Demand 2.0 can manage and stack participation of assets in these markets alongside other services.

Real-time service stacking

Dynamic Demand 2.0 uses artificial intelligence and data-driven insight to 'stack' revenues and savings. The platform's central intelligence optimises assets at an individual and portfolio level, to maximise operational efficiencies and savings.

Market access

Open Energi can manage market access on behalf of clients, including balancing markets, energy trading, capacity markets and emerging peer-to-peer and flexibility trading platforms.

Energy efficiency

Dynamic Demand 2.0 uses sub-second metering data and machine learning to identify and automate operational efficiencies and optimise asset performance to cut costs and carbon.



Case study



Industrial heating

Assets

Bitumen tanks

Services

Dynamic frequency regulation, Peak price management, Wholesale & imbalance optimisation,

Bitumen tanks at asphalt plants hold road surface coating at a high temperature (160 degrees centigrade) ready for delivery to trucks. The thermal storage of these tanks means electricity consumption can be temporarily shifted without affecting the product, to deliver electricity cost savings of 10-20%.

Aggregate Industries has pioneered the use of Open Energi's technology since we started working together in 2012. Dynamic Demand 2.0 is exciting because it enables us to stack our assets and participate in multiple Demand-Side Response markets at once, working with National Grid and our energy supplier. As the UK's energy system transitions to a more decentralised, decarbonised and digitalised future, the more businesses that collectively manage their demand in this way, the more impactful we can all be.

Donna Hunt

Head of Sustainability
Aggregate Industries



Our services

Asset optimisation & maintenance

Business intelligence

Open Energi offer unparalleled insight into asset performance. Our operation and analytics consoles combine high resolution metering with powerful data analytics to provide:

- complete visibility of asset performance – second-by-second
- flexibility revenue and savings tracked against KPIs
- asset fingerprinting, benchmarking and efficiency scores
- monthly reports, custom analysis and data access

Operation & Maintenance

Open Energi's highly skilled engineering team conduct regular site visits to ensure asset performance is maintained, and can provide ongoing operation and maintenance services as required.

- 24/7 asset monitoring
- Regular maintenance visits
- Fully qualified, experienced engineers
- 24-hour contact centre



Case study



Water utility

Assets

Activated Sludge Plants (ASPs), water pumps

Services

Dynamic frequency regulation,
Peak price management

Wastewater treatment sites use a lot of power but can be flexible about when they use it. For example, air blowers on ASPs can be managed to offer flexibility in precisely when they cut in, especially for those with variable speed drives. These processes must be tightly controlled given minor fluctuations in output can result in significant penalties. Open Energi have been able to identify flexibility in these processes and implement rigorous solutions through our engineering excellence, to cut costs and carbon.

Water and wastewater treatment is a really energy intensive process – power is one of our biggest operating costs – so we’re looking both inside and outside our business to see how we can work smarter. That means using less power and being willing to be flexible in the way we use that power.

The best thing about being an Open Energi customer is that you really feel like you’re helping solve the bigger problem of energy demand. By controlling consumption instead of generation, you open the door for more renewable energy generation. You become an enabler of a more sustainable future.

Andy Pennick
Energy Manager
United Utilities

Who we work with

Industrial & Commercial energy users

Almost all businesses have some degree of flexibility in when they consume or generate electricity, which gives them the opportunity to shift their demand for short periods of time without any disruption to business operations. By taking control of this process flexibility, which also includes on-site generation, energy storage and electric vehicle charging, businesses can manage their demand to cut costs and carbon.

Dynamic Demand 2.0 aggregates and optimises distributed energy resources to reduce electricity bills by 10-20%.

Energy suppliers and traders

Dynamic Demand 2.0 creates new opportunities for suppliers to work with customers for mutual benefit. In an increasingly volatile market the ability for suppliers to use a customer's demand flexibility to minimise "imbalance" penalties and take advantage of price arbitrage opportunities can reduce risk and costs for both parties. Dynamic Demand 2.0 connects supplier trading systems and business assets to ensure that flexibility in customer demand can be reliably and safely dispatched, in real-time.

System operators

Balancing electricity supply and demand and managing growing levels of renewable and distributed generation are creating new challenges for system operators at both the Transmission and Distribution level. New sources of flexibility are needed to help ensure these technologies can be cost-effectively integrated and managed at scale within system constraints. Dynamic Demand 2.0 delivers flexible demand-side capacity to provide dynamic frequency regulation, capacity and constraint management services to system operators.

Infrastructure developers

Open Energi work with developers of energy storage projects, electric vehicle charging infrastructure, renewable energy and generation projects, to optimise assets and enhance customer value. We assess project opportunities and optimise asset performance to deliver lifetime project savings in the region of 30%.

Technology manufacturers

Open Energi work with leading technology manufacturers, such as energy storage and UPS system providers, to maximise the value of their assets. Our Dynamic Demand 2.0 software can be licensed and integrated with assets to optimise value across a range of services and deliver up to 30% value uplift versus standard energy resource scheduling software.



Case study



Generation

Assets

Combined Heat and Power (CHP)

Services

Peak price management,
Wholesale & imbalance optimisation

Waste-to-energy sites using Anaerobic Digestion to convert food waste into methane gas and power CHPs can use their flexibility to respond to price signals and deliver valuable savings and income.

Open Energi were early pioneers in National Grid's FFR (Firm Frequency Response) market. In 2011 they became the first participant to provide dynamic frequency response from demand-side assets; like air conditioning systems, water pumps and bitumen tanks. Their cutting-edge technology provides new sources of flexibility and is vital in helping National Grid meet the technical challenges of moving to a renewables-based electricity system.

Claire Spedding

Head of Business Development
National Grid



Our approach

Customer journey

Discover

- Conduct site surveys
- Identify suitable assets
- Understand process constraints
- Quantify asset value

Our expert engineers carry out a comprehensive survey of client site(s) to produce a detailed Feasibility Report which identifies suitable assets, process constraints and the potential value across the portfolio.

Design and develop

- develop optimal strategy
- design control algorithms
- develop integration solutions
- install technology

Combining survey data, with electricity contract details, and our industry insight, we recommend the optimal commercial strategy.

Once this is agreed, we work closely with our clients to ensure assets are seamlessly connected to Dynamic Demand 2.0.



Operate and optimise

- optimise electricity demand
- improve asset performance
- operate and maintain assets
- deliver powerful business insight

Once connected, Dynamic Demand 2.0 aggregates and optimises client assets in real-time to continually maximise value.

Our highly skilled engineers conduct regular site visits to ensure asset performance is maintained, and can provide ongoing operation and maintenance services as required.

Our interactive data visualisation console enables clients to monitor and compare the performance of sites and assets at the click of a button. It provides powerful business analytics which can help identify energy savings, support business reporting and drive employee engagement.

Our team

Open Energi is committed to developing innovative technical and commercial solutions which deliver value for our clients. We have built a team of data scientists, software developers, electrical engineers and market and policy analysts who give our clients access to a unique collection of skills and experience, with unparalleled knowledge of decentralised, digitalised energy management.

Our open, collaborative approach is built upon our core values of innovation, trust and quality, and has enabled us to work with our clients and partners to pioneer new solutions and unlock new opportunities.

Talk to us today to learn
how your business
could benefit from
Dynamic Demand 2.0.

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