

Electricity North West
(Construction and
Maintenance) Limited
introduces:



Bloom
energy[®]

Hydrogen-Ready Solid
Oxide Fuel Cell Technology

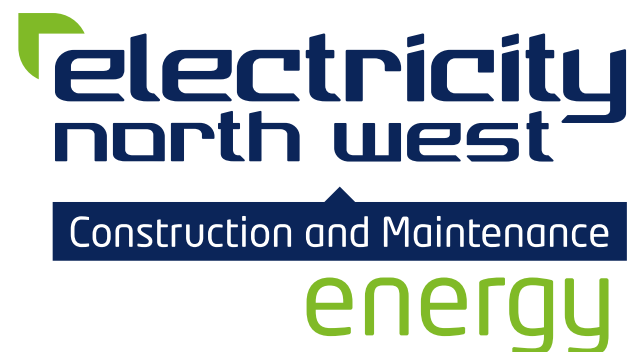
electricity
north west
Construction and Maintenance
energy

www.enwcml.co.uk



Introduction

ENWCML Energy help commercial businesses to identify, develop, design and install flexible distribution generation projects. ENWCML is operating in a dynamic, rapidly changing environment influenced by the shift towards a sustainable and renewable energy supply, supported by the UK Governments Net Zero pledge. As a reaction to this paradigm shift within the energy market, we have launched ENWCML Energy to assist our customers in adapting to these changes, helping them navigate the challenges whilst making informed decisions to achieve their carbon reduction targets. ENWCML Energy are perfectly positioned to help facilitate your organisations targets through the provision of low carbon energy solutions and on-site generation.



In response to the growth of the Hydrogen economy and the targets outlined in the UK's path to Net Zero Carbon we have taken a keen interest in the part Hydrogen will play in our future energy scenario. We have partnered with fuel cell technology provider, **Bloomenergy**® to promote the use of hydrogen behind the meter to generate clean AlwaysON power.

Bloom Energy is a global leader in Solid Oxide Fuel Cell technology (Energy Server), and micro-grid solutions, with over 500MW in operation at over 700 sites including mission critical installations with energy intensive clients. The technology has been responding to clients' requirements of resiliency, reliability, efficiency, and reduced emissions. It is constituting a major part of client roadmaps to Net Zero emissions, as the assets provides a future proof solution aligned to the development of hydrogen economy and environmental legislations. We supply, install and maintain Solid Oxide Fuel Cells, providing our customers with products and support throughout the life cycle of their systems.

Comprehensive Customer Care

BloomCONNECT

Bloomconnect is a set of data offerings available to customers with Bloom Energy Server installations. Bloomconnect provides data intelligence to help our customers make better energy and business decisions. Based on the needs of your organisation, Bloom is here to help you put together the best options for your energy management needs.

Highlighted Features

- REAL TIME DATA ACCESS TO BLOOM ENERGY SERVER SYSTEM TO MONITOR ENERGY GENERATION, EFFICIENCY, GAS CONSUMPTION, AND SYSTEM UPTIME
- COMPATIBILITY WITH MOST BUILDING MANAGEMENT SYSTEMS VIA MODBUS RTU COMMUNICATION PROTOCOL
- API INTEGRATION SUPPORT
- SECURE DATA

From Cell to Server Bloomenergy®

Based on our proprietary solid oxide fuel cell technology, Bloom Energy Servers convert fuel into electricity through an electrochemical process without combustion at the highest efficiency of any power solution available in the world today.

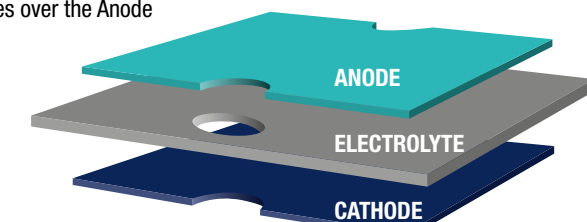
STEP 1 Fuel Cell

Fuel Cells convert fuel into electricity without combustion

A negative electrode (an anode) and a positive electrode (a cathode) sandwiched around an electrolyte undergo an electrochemical reaction to produce an electric current

FUEL

Natural Gas, Biogas or Hydrogen passes over the Anode



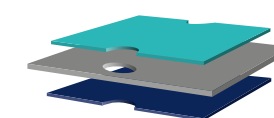
Oxygen ions react with the fuel in the fuel cell to produce electricity

AMBIENT AIR

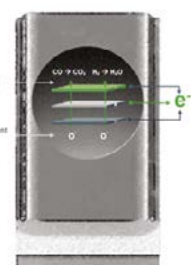
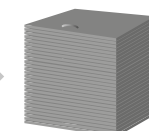
Air passes over the Cathode

STEP 2 Module

Combined to form a fuel cell stack



The fuel cells are converted into a stack and combined to form a module



THE Bloomenergy®

PLATFORM

Meet today's energy challenges head on with clean, resilient microgrid solutions

Bloom Energy delivers clean, cost-effective, AlwaysON power through an innovative on-site fuel cell platform.

Serving as a secure localized source of power, our platform offers increased energy independence, providing a powerful combination of reliability and resiliency, sustainability, and cost predictability.

Fuel cell technology is a critical foundation for building microgrids of varying complexity offering significant benefits to the communities, businesses, and utilities they are part of.



MISSION STATEMENT

**MAKE CLEAN, RELIABLE
ENERGY AFFORDABLE
FOR EVERYONE IN THE
WORLD**

NO COMBUSTION

Enables road map to Net-Zero by 2050

54% EFFICIENCY*

*Cumulative throughout term

700+

Happy client sites in operation

FUTURE PROOF

Accepts up to 100% H2 fuel

UPS QUALITY

Customizable load interface

Key Advantages

Our technology delivers a powerful combination of resiliency, sustainability, and predictability that no other power generation solution can match. Compared to alternative solutions - grid power, diesel generators, CHP, solar, batteries - Bloom provides unparalleled value to the customer.

RESILIENCY

MODULAR, BUILT-IN REDUNDANCY

UP TO TIER 4 / MISSION CRITICAL RESILIENCY IN MICRO-GRID CONFIGURATION

UP TO 99.999% SERVER UPTIME

AVERAGE ELECTRICAL EFFICIENCY @54% LHV DURING THE TERM

POWER QUALITY & LOAD FLEXIBILITY

INVERTER BASED GENERATION - UPS QUALITY

NO VOLTAGE REGULATION ISSUES - ENABLES ON-SITE GENERATION @ GRID RESTRICTED CONNECTION POINTS

FLEXIBLE LOAD INTERFACE

SUSTAINABILITY

NO COMBUSTION - VIRTUALLY NO NOX, SOX, VOC'S, NMHC'S

NO WATER REQUIRED DURING NORMAL OPERATION

NO HAZARDOUS MATERIALS, LIQUID CHEMICALS

98% RE-USABLE MATERIAL

FACILITATES ENVIRONMENTAL PERMITTING

**FUTURE
PROOF
TECHNOLOGY
ENABLING NET
ZERO BY 2050
TRANSITION**



100+
Microgrids Deployed



1,900
Customer Outages Avoided



99.999%
Energy Server Uptime



2.3M
CO₂ Emissions Reduced



>99%
Reduction in NOX/SOX/PM



RENEWABLE
BIOGAS



CARBON
CAPTURE



NATURAL GAS
FUEL CELLS



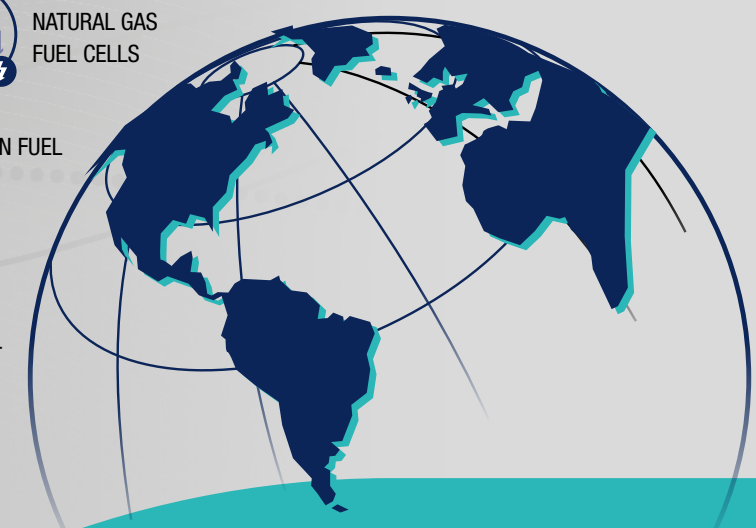
HYDROGEN FUEL
CELLS



DECARBONISING TRANSPORT



ELECTROLYZERS

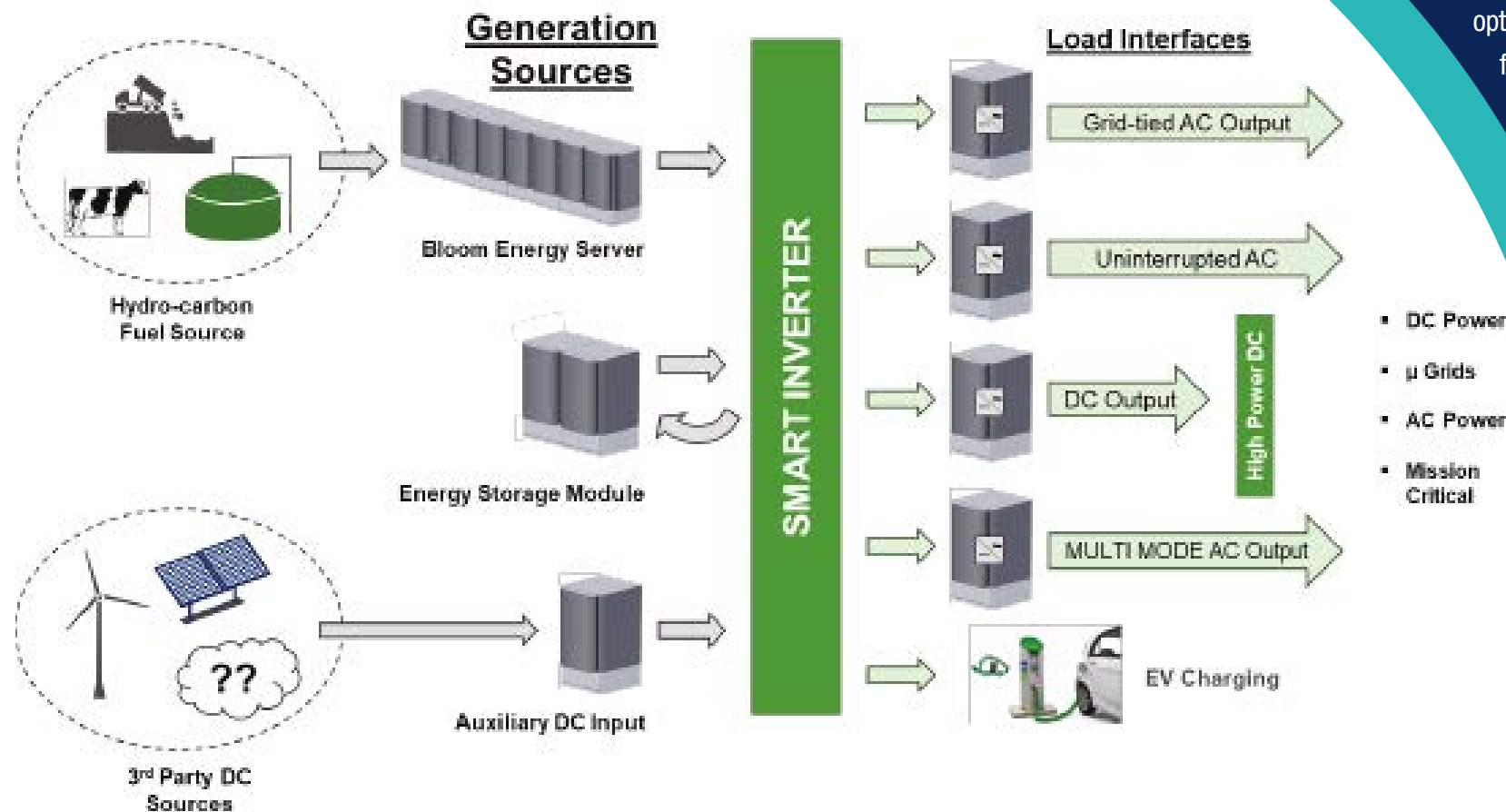


Personalised Power

Customizable. Flexible. Adaptable

We take all the functions of today's centralized power infrastructure – the transmission, the distribution, the substations, the batteries, the back-up equipment – and integrate it into a single distributed generation platform.

Bloomenergy®



Funding Solutions

Conrad Energy is a full-service energy company focused on renewable and low carbon generation, grid services, battery storage, and energy services. We supply energy to commercial customers and our onsite, behind the meter power plants enable our customers across the UK to save money and reduce carbon emissions.

We are one of the largest flexible generation operators in the UK, with around 700MW of storage and flexible generation plants operational across 50 locations. We have a large and diverse pipeline of projects secured via organic development and acquisition. We have plans to own and operate more than 2000MW of storage and generation to support the transition to net zero.

Conrad Energy fund everything required to develop, construct, own and operate on-site, behind-the-meter generation assets and supply our customers with any residual power requirements through our own energy supply business. Our in-house trading desk and optimization team gives our customers access to flexibility markets and new revenue streams - using new and existing assets.

We put our expertise in permitting, construction, operations and maintenance to work, building long term partnerships with our customers for today and the future.

We structure Power Purchase Agreements (PPA) which allow commercial and industrial businesses to make significant savings and drastically reduce the impact of energy price volatility.

We have the industry experience and technical know-how to make the most of all market opportunities, using our innovative and proprietary 'VISION' algorithmic trading platform to deliver market leading results whilst keeping our customers fully informed.

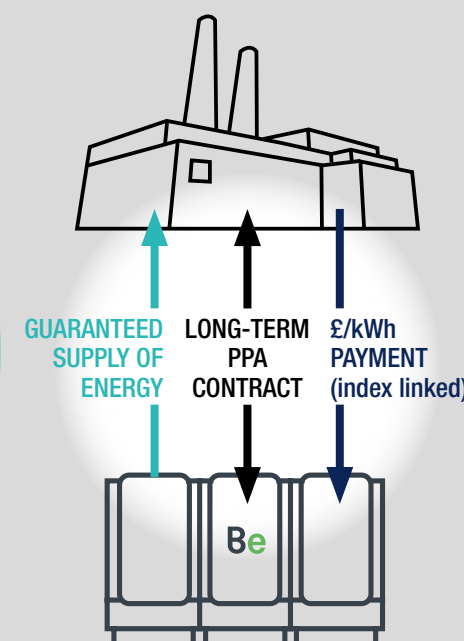


Power Purchase Agreement

Power Purchase Agreement (PPA) is an arrangement where the customer pays only for the electricity that is produced by the Bloom Energy Platform. It requires no upfront capital and the customer assumes no technology risk. Typically contract lengths are 15-20 years long.

This is a good option if you:

- Value maximizing long-term predictability
- Prefer a solution with no upfront capital expense
- Have long term commitments to facilities
- Want off-balance sheet transactions



On Site Generation

THE RISK FREE TEST PROCESS TO ANSWER THIS QUESTION FOR YOU

GATHER
DATA, LIST
ASSETS & BILLS
ANALYSIS

STAGE 1

DESKTOP
PROPOSAL

STAGE 2

SITE VISIT
& FEASIBILITY
STUDY

STAGE 3

FINAL
PROPOSAL

STAGE 4

CONSTRUCTION
PHASE

STAGE 5



Operational Considerations

HIGH AVAILABILITY - HOT SWAPPABLE CELLS DURING MAINTENANCE

5-8 YEAR MAINTENANCE CYCLE

UPS QUALITY OUTPUT - AVOIDING VOLTAGE REGULATION ISSUES, HARMONICS

IMPROVED SITE HSE - NO RISK OF HAZARDOUS SPILLS OR LIQUID CHEMICALS - LOWER EMISSIONS, NOISE LEVELS, LP GAS /LV ELECTRICAL SYSTEM TIE-INS - NO COMBUSTION

OUTDOOR DESIGN - NO NEED FOR ENCLOSURES OR BUILDINGS

DEMONSTRATED CONTINUOUS OPERATION DURING NATURAL DISASTERS

REMOTE OPERATION & MONITORING

NO WATER IS REQUIRED DURING OPERATION

Call: **0845 0702520** to
arrange your survey now or
email us at:
sales@enwcml.co.uk

Registered address:

Electricity North West (Construction & Maintenance) Limited,
Borron Street, Portwood, Stockport, Cheshire SK1 2JD.



**electricity
north west**
Construction and Maintenance
energy

For more information about our products
and services visit: www.enwcml.co.uk