

An introduction to  
**Electricity North West**  
(Construction and  
Maintenance) Limited



**electricity**  
north west

Construction and Maintenance

[www.enwcml.co.uk](http://www.enwcml.co.uk)



Welcome to

# Electricity north west

Construction and Maintenance

Electricity North West (Construction & Maintenance) Ltd (ENWCML) is a specialist power engineering company and Independent Connections Provider (ICP), delivering electrical engineering solutions for businesses and public-sector organisations from Low Voltage to 132kV.



ENWCML is the market leading provider of High Voltage (HV) COMA (Control, Operation and Maintenance Agreement), with over 30 years of experience helping customers to construct and efficiently maintain and safely operate private network that sits behind their electricity meter.

We are on hand 24 hours a day, 365 days a year to assist with any need; from rapid fault response (including parts management) to light refurbishment, through to large scale construction projects and infrastructure reinforcement and expansion.

There is no denying the challenges facing our commercial, industrial and retail electricity users are increasing.

- 1 Rising energy prices
- 2 The need for increased capacity to feed system automation, Electric Vehicle demands and the move to electrification of some utilities such as heat
- 3 Government policy changes and the social and economic pressures of decarbonising our businesses

### Health and Safety

With our own in-house Health, Safety, Environment and Quality (HSEQ) team responsible for the implementation of policy and standards, we work to some of the most stringent safety standards in the industry. Our operational procedures, safety standards and delivery capability has enabled the company to attain the following accreditations:





**Owners or operators of high voltage equipment must ensure that their equipment is maintained and operated safely to minimise the risk of injury to personnel, as defined by the Electricity at Work Regulations 1989.**

When operating at High Voltage (HV), the users must comply with the Electricity at Work Act and Health and Safety at Work Regulations which ensures a safe network for their employees and their business. ENWCML can help customers to facilitate and meet these requirements by offering and managing a COMA (Control, Operation and Maintenance Agreement) with the qualified staff, including Senior Authorised Engineers completing all works to DNO and HSE safety standards.

With a COMA, we ensure that you have all of the policies, procedures and operational systems in place in order for the HV network to operate safely so you can concentrate on running your business.

*Packages include:*

- Annual cleaning and inspection of your high voltage substations
- Full report after inspections & maintenance
- Comprehensive and fully approved safe system of work

- Full operational policies and procedures covering the installation, commissioning, maintenance and operation of high voltage equipment
- All work will be carried out by fully trained and authorised personnel qualified to the highest industry standards

*Other High Voltage Services include:*

**DESIGN AND CONSTRUCTION**

We have extensive experience in both public and private sectors of designing, installing, constructing, commissioning and energising high voltage electrical infrastructure for 11kV, 33kV and 132kV private networks. Our range of experience covers the Oil & Gas, Petrochemical, Renewable Energy Nuclear, Chemical, Steel, Pharmaceutical and large Industrial and Commercial facilities in the Private sector and NHS, Local Authority and Transport in the public sector.

We are able to deliver high voltage principal contractor projects and then undertake the duties with regards to CDM. Our projects range from cable installations, transformer changes or upgrades and switchgear

replacement through to very complex design & build projects, offering a total turnkey electrical high voltage solution.

**EPC SERVICES**

Engineering, Procurement and Construction (EPC) is a service we provide for the construction of large infrastructure projects. As a construction and maintenance business we are well placed to provide turnkey solutions for developers and funders of any generation projects. Our financial strength allows us to work with the strictest of investment criteria and provides you with a bankable counterparty to deliver your project.

**PRIVATE NETWORKS**

We design and build all types of private HV networks. Our staff are trained and authorised to the highest standards and will carry out the preparation of tender drawings and documentation, programming of proposed works to incorporate local network constraints and site-specific limitations.

**TRANSFORMER UPGRADES**

Our high voltage installation teams are highly experienced in installing and commissioning power transformers throughout the UK for leading transformer manufacturers across the energy sector and industrial private networks. We provide a comprehensive range of cold rolled grain oriented (CRGO), double wound distribution transformers supplied both liquid filled (Oil or Midel) or dry type (Cast Resin).

We also supply a range of Amorphous Transformers which industry leading ultra-low loss products. They avoid energy wastage through transformer losses and help organisations reduce their operating costs and their emissions.

**SWITCHGEAR INSTALLATION & REPLACEMENT**

We can support you with the installation, maintenance and safe operation of the switchgear throughout your network. Our high voltage maintenance solutions cover both legacy and new equipment. Retrofitting old oil insulated switchgear is an established cost-effective and reliable process. Once installed, new equipment reduces HV maintenance and the overall operational costs of sites by means of reducing shut down times and provides improved system reliability and operational safety.

**SUBSTATION CIVIL AND ELECTRICAL INSTALLATION & CONSTRUCTION**

Our substation civil and electrical installation and construction services provide integrated HV (High Voltage) electrical installation, from HV switchgear, transformers to LV distribution boards, including cabling, terminations, cable jointing, testing and commissioning.

Our highly experienced and competent engineering team is comprised of highly qualified and trained electrical engineers and technicians. We can deliver a wide range of services in-house, ensuring cost-effective engineering solutions and the delivery of an on-time and safe construction project.

**OIL SAMPLING**

As part of the COMA agreement an annual substation clean and inspection will take place during which an oil sample will be taken. The sample is sent to an independent laboratory for testing. Once testing is carried out a report will be produced that will flag any potential issues with the transformer, then action can be taken to prevent a fault or unnecessary down time.

**PROTECTION & GRADING/ EARTHING STUDIES**

We have extensive knowledge and experience in specialist earthing. We offer earthing solutions, ranging from a field-based soil resistivity survey (to assist with the initial design process), through to installation and commissioning. We can assist in all aspects of electrical design, from feasibility studies of network capacity, to small substation design and build, through to detailed design and installation of 132kV primary substations.

*When designing a suitable earthing system, we obtain the following minimum information:*

- Soil Resistivity
- Expected Fault Current and Fault Current Characteristics
- Fault Current Duration



# HIGH VOLTAGE SERVICES

Place the care of your power equipment in safe hands

**All high voltage COMA packages include a dedicated 24/7 emergency call out service which provides a quick and efficient response in the event of an emergency on your high voltage private network.**

*Our HV Installation Services:*

- HV AND LV CABLES
- HV JOINTING
- DESIGN OF ELECTRICAL NETWORKS
- EARTHING SYSTEM DESIGN & STUDIES
- P28 VOLTAGE IMBALANCE STUDIES
- G 5/4 HARMONIC STUDIES: STAGES 1, 2 & 3
- PROTECTION DISCRIMINATION STUDIES
- FAULT LEVEL CALCULATIONS

- G59 PROTECTION TESTING
- DISSOLVE GAS ANALYSIS OF INSULATING OIL
- SUBSTATION CONDITION REPORTING
- DESIGN REVIEWS
- PARTIAL DISCHARGE TESTING SURVEYS
- HV SWITCHGEAR
- HV TRANSFORMERS
- THERMOGRAPHIC SURVEYS

- GENERATION & ASSOCIATED SERVICES
- LV FEEDER PILLARS
- LV SWITCHGEAR
- HV AND LV PANEL BOARDS
- CONTROL CABLE INSTALLATION
- INDEPENDENT CONNECTIONS PROVIDER (ICP)





Electricity North West (Construction and Maintenance) Ltd have the expertise and tools required to install, repair and maintain all types of installations, including tailored LV maintenance packages and services which suit your individual or site requirements.

## Primary Low Voltage Main Incoming Panel and Breaker Maintenance

You can be confident that our team of engineers and technicians know all of the necessary safety measures needed to ensure that your LV switchgear and equipment will be expertly managed.

Our 'One Agreement' approach allows you to combined High Voltage COMA with your LV Maintenance, PFC servicing and EICR Electrical Inspection Condition Reports (fixed wire test).

*Benefits:*

- Reduced downtime as we will plan the LV service activities in line with your HV maintenance to ensure everything is done at the same time where possible
- One point of contact for any questions from your HV to LV infrastructure

- Maintenance in line with manufacturers guidelines and compliant with the Electricity at work regulations
- Work can be carried out to suit production and site demands

*Other Low Voltage Services:*

### DESIGN AND CONSTRUCTION

Low voltage design and construction is a site critical, complex, engineering process that allows an initial concept to be developed into a well-engineered, economic, sustainable and safely delivered solution for your electrical infrastructure.

### POWER FACTOR CORRECTION

A PFC aims to improve power factor, and therefore power quality. It reduces the load on the electrical distribution system, increases energy efficiency and reduces electricity costs. It also decreases the likelihood of instability and failure of equipment.

### THERMAL IMAGING

A PFC aims to improve power factor, and therefore power quality. It reduces the load on the electrical distribution system, increases energy efficiency and reduces electricity costs. It also decreases the likelihood of instability and failure of equipment.

# LOW VOLTAGE SERVICES

### ELECTRONIC INSPECTION CONDITION REPORT

An EICR is an in-depth inspection of your property's electrical systems and installation. The report assesses the competency of your electrics by different categories.

## Helping businesses improve resilience and move towards Net Zero Carbon

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 companies targets through the provision of low carbon energy solutions and on-site generation.

*Our services include:*

### BEHIND THE METER GENERATION

On-site generation of power can be derived from a range of technological solutions. Depending on the process it's designed to power will dictate which technology is best suited for your application.

### SOLAR PV

A cost effective, reliable and versatile solution for distributed generation and self-sufficient energy.

### DECARBONISE YOUR BUSINESS

We can provide case studies and examples of how businesses in your sector have decarbonised their operation.

### NETWORK GENERATION

ENWCML Energy are actively developing decentralised energy plants that offer a localised solution to the increasing electricity demand. They provide standby flexible electricity which at times of peak demand ensure we have the energy when and where it is most needed.

### LED LIGHTING

Installing energy efficient LED lighting will limit operational costs through reduced downtime and lower energy consumption, keeping your employees safer and improving productivity whilst reducing your carbon footprint.

### ENERGY PROCUREMENT

ENWCML Energy can assist you in purchasing green energy tariffs which are REGO backed to improve your green credentials.

### DEMAND SIDE RESPONSE

As more renewable energy sources come online, our power infrastructure needs more flexibility. Grid operators need new ways to balance energy demands and Demand Side Response is the solution.

### ELECTRIC VEHICLE CHARGING

An end-to-end Electric Vehicle Solution for your business from set-up, management, and optimisation, saving business costs and helping reduce carbon emissions from your business and local community.

### HYDROGEN FUEL CELL TECHNOLOGY

In response to the growth of the Hydrogen economy and the targets outlined in the UK's path to Net Carbon Zero 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, Bloom Energy, to promote the use of hydrogen behind the meter to generate clean always on power.



# External Partnerships

ENWCML have agreed strategic partnerships with key delivery partners, carefully selected to meet the same standards of expertise, safety and compliance as we expect to deliver in our direct core business services.

We demand the same high health and safety standards and customer support levels as ENWCML, whilst recognising the added value new and wider services in areas such as renewables bring to our portfolio, thereby expanding the industry leading deliverable solutions for our customers.

## Delivering electrical engineering solutions for public and private organisations



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

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



Registered in England and Wales. Registered Number 07382637.



For more information about  
our products and services visit  
[www.enwcml.co.uk](http://www.enwcml.co.uk)