



Service Brochure

www.engineeringpowersolutions.co.uk

Electrical Engineering Consultancy & Design Services

Power System Specialists

The EPS team have over 100 years of combined experience ensuring the safety, reliability, and resilience of power distribution systems in the UK.

About Us

Based in Stockton-on-Tees, UK, Engineering Power Solutions is a founder-led consultancy committed to transforming the UK's energy infrastructure through innovative electrical engineering solutions.

We provide a range of consultancy services tailored to your specific project requirements. We work with you at every stage of the project lifecycle to ensure the safety, compliance, and efficiency of your electrical operations.



Our Expertise

Our engineers plan, design, and optimise electrical infrastructures across the UK and beyond. We guide our clients to safer, more reliable, and cost-effective operations. To achieve this, we leverage specialist software, including ETAP, DIgSILENT, CDEGS, PSCAD, and ELEK Cable HV.

Notable Projects

Substation Upgrade Project: Scotland, UK

EPS were engaged to enhance the resilience, fault protection, and safety compliance for 20+ substation sites across Scotland. This entailed:

- Replacing low voltage (LV) switchboards
- Installing diesel generators within substations
- Upgrading DC battery systems
- Installing condition monitoring on grid transformers
- Replacing protection and control panels
- Designing inter-trip earth fault protection
- Conducting substation earthing modelling and analysis for the 132kV circuit

These upgrades are critical to ensuring continued network reliability and operational safety across the substations. EPS's specialist power system engineers delivered a future-ready solution aligned with regulatory requirements and evolving grid demands.

Electrical Earthing Design: UK Based Gas Peak Lopping Station

EPS delivered the design of a compliant and resilient earthing system for a new peak lopping station site in the UK. Our objective was to deliver a technically sound solution that prioritised personnel safety, asset protection, and future scalability in line with the operational demands of a modern power generation facility. This entailed:

- Soil resistivity testing
- Calculation of ground return currents
- Designing an effective earth electrode system
- Making sure step and touch voltages around the compound remain within tolerable limits
- Performing Earth Potential Rise (EPR) calculations
- Verifying whether the site was 'HOT' or 'COLD' to guide subsequent safety measures that should be followed
- Determining whether the site is safe to energise

13+

Years in Operation

567+

Projects Completed

9+

Core Sectors

EPS Capabilities

EPS specialists have extensive experience delivering complex and mission critical projects on time and on budget across various industries and sectors. Clients come to us time and time again because of our broad technical expertise, reliability, and dedication. We offer a broad range of electrical engineering consultancy and design solutions, spanning from conceptual design and Front-End Engineering Design (FEED) through to detailed design.

Our services cover all voltage levels, including **400kV, 275kV, 132kV, 66kV, 33kV, 11kV, 6.6kV, 3.3kV, and 415V**, ensuring comprehensive support for projects of all scales and complexities. Working to all relevant industry standards and guidelines, we support a wide range of industries and sectors, including:



Transmission & Distribution



Onshore Renewables



Offshore Renewables



Battery Energy Storage Systems (BESS)



Offshore Oil & Gas



Data Centres



Power Generation



Water & Wastewater



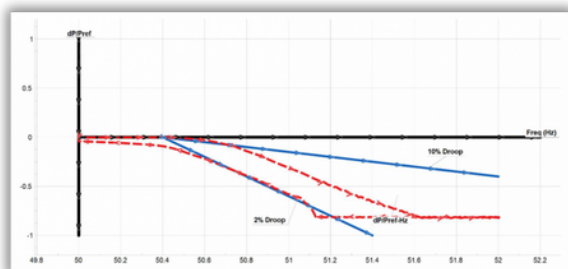
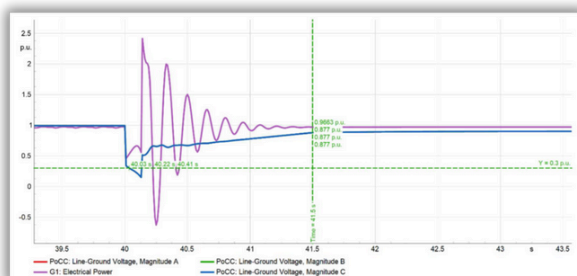
Manufacturing & Process



Petrochemicals & Pharmaceuticals

Services:

Power System Studies



Your Partner in Electrical Safety, Reliability, and Compliance

Power System studies are essential for safeguarding your electrical infrastructure and ensuring long-term reliability. Our Chartered Electrical Engineers specialise in assessing your system, addressing vulnerabilities, and delivering tailored solutions for optimal performance and future-readiness. Our experts leverage advanced software such as ETAP, DigSILENT, PSCAD, and EMTP-RV to provide precise analyses with actionable recommendations.

Key Services

- Load Flow Analysis
- Short Circuit Studies
- Harmonic Analysis
- Transformer Energisation Studies
- Protection Coordination Studies
- Quasi-Dynamic Simulation Studies
- Reliability & Contingency Analysis
- Insulation Coordination
- Electromagnetic Transient (EMT) Studies
- Transient Motor Starting

Services:

HV/LV Electrical Design (400V-400kV)



Future-Ready, Safe, and Compliant Power System Designs

At EPS, we provide fully integrated Electrical Design services across the entire project lifecycle. From concept to commissioning, our designs ensure technical compliance, operational reliability, and long-term maintainability for your electrical infrastructure. Our experienced team supports projects across power generation, renewables, heavy industry, and critical infrastructure — delivering solutions that are technically robust, cost-effective, and tailored to your specific operational needs.

Key Services

- Feasibility Studies
- Conceptual Design
- FEED Studies
- Detailed Design
- Primary Layouts
- Substation Design
- Cable Sizing
- Cable Routing
- Equipment Specification & Selection

Services:

Grid Code Compliance & Connection Studies



Supporting Safe & Compliant Grid Connections

We help developers, generators, and large energy users successfully connect to the UK grid. Our Grid Code Compliance & Connection Studies ensure your project meets all relevant technical standards and regulatory obligations – from feasibility to energisation. Whether you're connecting renewable generation, energy storage, or industrial load, our services reduce risk, avoid costly delays, and facilitate smoother engagement with National Grid and DNOs.

Key Services

- (ENA) EREC G99 Studies
- (ENA) EREC G5/5 Studies
- P28 Voltage and Flicker Studies
- P29 Voltage Unbalance Studies
- Power Quality Analysis
- Protection Settings & Interface Studies
- Reactive Power and Power Factor Compliance Support
- Fault-Level Studies
- Availability & Curtailment Studies
- Contingency Studies

Services:

Earthing Modelling & Design



Designing Safe & Resilient Electrical Earthing Systems

We are specialists in Earthing Modelling & Design for critical infrastructure and energy systems. Our services ensure personnel safety, equipment protection, and fault current control – delivering designs that are technically robust, standards-compliant, and tailored to site conditions. Whether you're planning a new substation, upgrading existing assets, or developing a utility-scale renewable site, we provide the tailored insights and accurate modelling required for reliable earthing system performance.

Key Services

- Electrical Earthing System Design
- Earthing Survey Audits
- Soil Resistivity Testing
- Earth Potential Rise (EPR) Studies
- Fall of Potential (FoP) Studies
- Fault Current Distribution Modelling
- Rise of Earth Potential (ROEP) Studies
- Touch and Step Voltage Calculations
- Lightning Protection Design
- CAD Drawings & Earthing Layouts

Services:

Arc Flash Studies & Risk Assessments



Protecting Your Personnel and Minimising Downtime

We deliver Arc Flash Safety & Risk Assessments across the UK's industrial, commercial, and energy sectors. Our studies are designed to prevent injury, reduce liability, and ensure safe working practices around energised equipment. With deep expertise in high and low voltage systems, we provide pragmatic solutions that meet safety standards, improve operational reliability, and protect your people and plant.

Key Services

- Arc Flash Energy Calculations
- Arc Flash Mitigation Studies
- Switchgear Risk Assessments
- Arc Flash Awareness Training (Onsite & Online)
- Provision of Arc Flash Labelling

Your Trusted Partner for Efficient, Safe, and Scalable Power Systems

When time is critical, EPS delivers fully compliant electrical designs aligned with BS, IEEE, and ENA standards. Our chartered engineers rapidly mobilise to support your projects, providing clear, actionable reports backed by advanced simulation tools. We fast-track delivery without compromising regulatory compliance or technical precision.

Lets discuss your project requirements. Schedule a call with our experts today:



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