



The Electrical Network is a critical element of any renewable energy project and must be subject to a suitable programme of inspection and maintenance to ensure safe and reliable operation, compliance with the requirements of the Electricity at Work Regulations 1989 and the Electricity Safety, Quality and Continuity Regulations 2002, UK only.



Natural Power can provide a range of substation inspection services to provide reassurance that critical components stay serviceable. These include:

- In-service visual inspection of all accessible equipment, including High Voltage (HV) and Low Voltage (LV)
- Partial discharge survey (UltraTEV Plus+)
- Thermal imaging survey (FLIR T420)

The inspections are particularly suited to HV switchgear, cable systems (including terminations and joints), power transformers, voltage/current transformers, surge arrestors, etc. Typical applications include:

- Planned maintenance
- Reactive maintenance
- End of warranty inspections
- Due diligence inspections
- Operational readiness (pre-handover) inspections

With the addition of partial discharge and thermal imaging surveys, the key benefits of the in-service substation inspection services are:

- They are relatively inexpensive
- Operations are not disrupted - system outage not required
- They can provide early warning of potentially costly failures, allowing the asset owner to address the problem during a planned outage
- They can provide an accurate reflection of the power system's performance under normal operating conditions including the effects of load, temperature and humidity

30
experienced
operations
personnel

**11kv to
400kv**
systems
supported

10
years experience in
on/offshore power
systems

30
sites managed
across the UK

Natural Power High Voltage Management



Inspections can be in the form of a basic 'health check' comprising of a visual inspection, partial discharge and/or thermal imaging surveys, with more detailed analysis available should the basic survey reveal potential defects.

Where a potential problem has been detected during normal operation or routine inspection, Natural Power can analyse the data gathered during the surveys,

recommend remedial action, and where necessary engage a suitable specialist from our network of service partners to provide a solution.

Our inspection team is comprised of trained and experienced renewable industry professionals with the following competencies:

- Trained in the use of the UltraTEV Plus+ partial discharge instrumentation by EA Technology
- Trained in the use of the FLIR T420 infrared camera by an authorised distributor (Red Current)
- High voltage operational safety
- CCNSG safety passport
- HSE first aid at work
- RenewableUK Working at Height
- Wind turbine safety rules
- Minimum appointment of nominated competent person under the Natural Power safety rules



For more information contact:

Alistair Parlett

High Voltage Systems Engineer

alistairp@naturalpower.com



naturalpower.com | sayhello@naturalpower.com

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