ULTIO

SOLAR INSPECTION & ASSURANCE

IS YOUR SOLAR COMPLIANT?

Commercial solar PV

Service scope & offers

Documentation. Installation quality. Evidence.

From the first document review to handover and ongoing assurance.

Clear findings. Practical actions. Confidence in the evidence.

Proposed service framework | Scope, competence and terms confirmed per appointment

Choose the right level of review

Ultio helps commercial property owners, facilities teams, asset managers and installers understand the condition of solar PV systems and the evidence supporting their safe operation. Appointments can cover a new design, a completed installation or an existing asset.

01 Document Review Pack

A desktop review of the supplied project pack: design, calculations, certificates, commissioning, grid connection, warranties and handover records. **You receive:** a document register, evidence-gap matrix and prioritised information request. Includes one consolidated review and one close-out review of the agreed response submission.

02 Design & Site Requirements Review

Document Review plus comparison of the proposed design with company requirements, fire strategy, structural report, roof constraints and existing infrastructure. **You receive:** a design-interface review and a list of decisions or specialist confirmations needed before installation.

03 Installation Condition Review

Document Review plus an agreed visual site inspection and comparison with the available design. **You receive:** a photographic condition report, installation deviations and a prioritised action register. Drone, thermal surveys and electrical testing are separately selected modules.

04 Completion & Handover Review

Document Review, visual completion checks, commissioning-evidence review and a client handover checklist. **You receive:** a snag register and recommendation on technical readiness for client acceptance. Includes one desktop evidence close-out review; a return site visit is separately quoted.

05 Ongoing Assurance

An agreed programme of periodic records review, condition inspections, thermal surveys and remedial tracking. **You receive:** a condition trend, outstanding-action dashboard and forward maintenance recommendations. Frequency follows asset risk, conditions and available evidence.

Offers are priced per agreed site or portfolio. The proposal defines document volume, system size, inspection coverage, visits, tests, specialist input, reporting date and fee. No unverified accreditation, blanket compliance certificate or fixed statutory inspection interval is implied.

Start with the documentation

A1 Establish the project baseline

Record site address, owner and dutyholder, installation dates, installed DC and AC capacities, inverter details, export limit, connection point, system boundaries, project stage and known alterations. Establish which documents and revisions describe the installed system.

A2 Review the technical pack

Review layout and string drawings; single-line diagrams; cable schedules and calculations; protection settings; earthing and bonding details; module, inverter and mounting data; structural reports; fire-strategy interfaces; roof and product warranties; and applicable design approvals.

Review electrical certification and schedules, PV commissioning and test results, inverter settings, monitoring setup, DNO correspondence, export-limitation evidence, O&M; manuals, maintenance plans, asset serial numbers and emergency shutdown information. Check MCS evidence where applicable.

A3 Test consistency of the evidence

Compare capacities, equipment models, drawing revisions, MPAN and site details across the records. Identify missing signatures, incomplete schedules, unclear responsibilities, contradictory information, unrecorded changes and documents that cannot be linked to the asset.

A4 Deliverables and acceptance criteria

Issue a document register with revision and review status; a requirement-to-evidence matrix; questions for the installer or designer; and an action list separating missing evidence from demonstrated defects. Close-out requires a traceable document or response addressing each agreed item.

Inputs and boundaries

Client supplies the indexed project pack, relevant contract specification and known change history. Desktop review checks the supplied evidence; it cannot verify concealed work, actual site conditions or the authenticity of every certificate. Missing evidence is reported as unverified, rather than automatically described as non-compliance.

Company requirements & fire strategy

B Company and operational requirements

Compare the PV proposal or installation with the employer’s requirements, technical specifications, approved deviations, insurer conditions supplied by the client, landlord or lease consents, roof warranty terms and site operational procedures.

Check access restrictions, permit-to-work and isolation arrangements, shutdown windows, maintenance routes, roof-access controls, emergency contacts, asset ownership, monitoring responsibility and change-control arrangements. Identify requirements needing a decision by the client, insurer or landlord.

Output: a company-requirements matrix showing the relevant requirement, evidence, observed or proposed arrangement, discrepancy and decision owner. Contractual interpretation and insurance acceptance remain with the relevant parties.

C Fire-strategy interface review

Compare the layout and equipment locations against the supplied fire risk assessment and fire strategy. Review interfaces with compartment lines, fire-resisting construction, roof build-up, rooflights, smoke vents, access routes, escape provisions and firefighting arrangements.

Review the evidence for cable penetrations and fire stopping, inverter and isolator locations, combustible surroundings, warning signs, shutdown information and residual PV generation hazards. Where BESS is present, identify battery siting, separation, ventilation and emergency-response interfaces for specialist assessment.

Output: a marked-up interface schedule, discrepancies requiring clarification, and referral items for the competent fire-risk assessor or fire engineer. Any distances or design restrictions are taken from the applicable project requirements, not a universal assumed clearance.

Inputs and boundaries

Require the current fire strategy, fire risk assessment, roof specification, relevant drawings and company policies. This is an interface and evidence review; it does not create or certify a fire strategy, determine a roof fire classification, or replace the dutyholder’s fire risk assessment. Specialist changes must be approved by the responsible professional.

Structural evidence & workmanship

D Structural report against design and installation

Check that the structural report addresses the correct building, roof type, array layout, mounting system and equipment weights. Compare the documented design assumptions with the proposed or observed module arrangement, ballast, support positions, fixing pattern and roof zones.

Review evidence addressing permanent and imposed loads, wind uplift, roof condition, local support or fixing capacity and any restrictions stated by the structural engineer. Identify changes in panel count, mounting, ballast or layout that may invalidate the report’s assumptions.

Check documentation for fixing tests where specified, installation photographs, waterproofing details and roof-warranty conditions. **Output:** a structural-assumption comparison and deviation register for the structural engineer to resolve.

Review is an evidence comparison, not structural recalculation or certification. Hidden fixings, underlying roof strength and design adequacy require suitable access and a competent structural engineer’s assessment where necessary.

E Installation quality and condition

Inspect agreed accessible areas for damaged modules; alignment; visible clamps, rails and fixings; corrosion; drainage obstruction; cable support and protection; connector compatibility evidence; segregation; enclosure condition; water ingress indicators; labels; and manufacturer-required access or ventilation.

Compare equipment models, installed quantities, cable routes and inverter positions with drawings. Review recorded tightening or torque checks and mounting quality records. Flag rooflight exposure, bird activity, debris, shading and maintenance-access issues where observed.

Output: a location-referenced photo report, workmanship snag list and recommendations for corrective work or further investigation. Findings distinguish observed defects, suspected defects and inaccessible areas.

Inspection coverage

The proposal states whether accessible assets are inspected in full or by a defined sample, and identifies roof access, drone coverage and concealed areas. Visual checks cannot establish torque, concealed fixing quality or electrical integrity. Dismantling and physical testing require a separate agreed method.

Electrical safety & infrastructure

F Wiring Regulations assessment

Review the relevant BS 7671 requirements, including Section 712 for PV, alongside manufacturer instructions and the installation's design basis. Check the evidence for cable sizing, voltage drop, fault protection, isolation, earthing and bonding, protective-device selection, surge protection and identification.

Examine design interfaces for AC and DC ratings, maximum string voltage and current, connector compatibility, RCD selection where required, bidirectional power flow and inverter or battery operating modes. Compare certificates and test schedules with the actual circuits included in the agreed scope.

Assessment levels: desktop evidence review; visual site review; or separately specified electrical inspection and testing. A definitive conclusion requires sufficient evidence and any necessary testing by competent personnel. Unverified items are explicitly listed.

G Existing infrastructure and integration

Review the connection point, switchboard and distribution-board ratings, busbar loading evidence, circuit protection, fault-level data, discrimination evidence, cable routes, metering, CT arrangement and available capacity. Confirm the asset boundary and responsibility for upstream equipment.

Review interactions with existing generation, EV charging, BESS, standby generators, UPS and changeover systems. Identify export-control, EMS, loss-of-mains, islanding, neutral/earthing and monitoring interfaces requiring design confirmation or functional testing.

Output: an electrical evidence matrix, infrastructure constraints schedule and recommended test or design actions. Detailed load-flow, fault-level, protection-coordination or power-quality studies are separately commissioned.

Testing and safety boundaries

Agree circuits, test methods, isolation, shutdowns and reinstatement before work. An Ultio condition report is not an EIC or EICR. Formal electrical reports or certification are provided only when specifically commissioned and supported by the required inspection, testing and competent signatory. HV equipment and intrusive work are outside the default scope.

Thermal & drone inspections

H PV array thermal screening

Survey the agreed array using suitable thermal and visual imaging to locate temperature anomalies and visible issues. Record operating status, relevant environmental conditions, survey coverage, camera details and factors affecting interpretation. Link observations to an array map or asset reference.

Output: paired thermal and visual images where practicable; anomaly locations; observed temperature information with limitations; inspection conditions; and recommended checks. Thermal patterns support investigation; they do not alone prove the root cause, quantify annual energy loss or certify compliance.

I Electrical connection thermal screening

Review agreed accessible AC/DC connection points, inverters, isolators, distribution equipment and, where included, EV or BESS interfaces under suitable operating load. Record load information where obtainable and identify unusual temperature patterns requiring investigation.

Live equipment is accessed only under a competent, risk-assessed method. Covers are not routinely removed as part of a basic screening visit. Thermal windows, guarded access, permits, shutdowns and specialist support are agreed where needed.

Drone visual survey module

Capture agreed roof and array views to document visible module damage, layout, cable-route visibility, debris, bird activity and access constraints. Drone imagery does not replace close inspection where detail is obscured or resolution is insufficient.

Conditions, rescheduling and limits

The quotation defines area coverage, image resolution or intended defect scale, access and flight requirements, weather and operating conditions, and the return-visit policy. Unsuitable sunlight, wind, rain, reflections, low electrical load or system shutdown may require rescheduling or a qualified report.

Outdoor PV thermography is planned with reference to IEC TS 62446-3 as applicable. Drone operations require the appropriate permissions, operational arrangements and competent operator. No claim of complete defect detection is made.

MCS, DNO & commissioning evidence

J1 MCS documentation, where applicable

Establish whether MCS certification applies to the project, contract or funding/export arrangement and which scheme version was relevant. Review the certificate details, installer and product evidence, system capacity, installation address and commissioning/handover information for consistency.

MIS 3002:2025 Issue 2.0, published in March 2026, states a maximum DC output of 50 kWp within its scope. Larger commercial installations must not automatically be described as requiring an MCS certificate. Where useful, agreed quality benchmarks can be reviewed without presenting that review as MCS certification.

J2 DNO permissions and connection requirements

Review the applicable G98/G99 route or legacy connection basis, application, accepted offer, permitted generation capacity, export limit and project-specific connection conditions. Check that site details, equipment and aggregate generation/storage match the records.

Review relevant type-test evidence, protection settings, commissioning submissions, witness-test requirements and outstanding DNO actions. Where G100 export limitation applies, review design information, CT location and orientation evidence, settings, fail-safe behaviour and commissioning records.

Check whether additions, inverter replacements, storage, changed settings or altered export capacity have been referred to the DNO where required. Clearly distinguish installation commissioning records from evidence of DNO acceptance or permission.

J3 Commissioning and performance baseline

Review PV test results, string identification, inverter operation, alarm records, monitoring communications and export-control evidence. Compare the reported test coverage with the asset register and single-line diagram. Performance analysis needs suitable time-series data and an agreed baseline.

Deliverables and boundaries

Issue an approval/evidence register, missing-record schedule and actions for the installer, client or DNO. Ultio’s review does not issue MCS certification or grant DNO approval. Applications, witness testing, protection testing and re-commissioning are separate services requiring defined competence and scope.

Completion, handover & ongoing care

K Completion and handover readiness

Compare the installation and completed records with the agreed scope, approved design, changes and acceptance criteria. Review snag status, commissioning evidence, as-built drawings, O&M; manuals, warranties, asset register and outstanding third-party approvals.

Check that the owner receives monitoring access, relevant training, emergency shutdown information, maintenance requirements, service contacts and clear responsibility for unresolved items. Review the evidence supporting rectification and identify items requiring a site revisit or retest.

Output: a handover checklist and technical-readiness recommendation: ready within the reviewed scope; ready subject to specified agreed actions; or not ready pending identified matters. The client or contract administrator retains the contractual acceptance decision.

L Ongoing asset assurance

Agree a risk-based programme of document updates, condition inspections, thermal surveys, monitoring review and action close-out. Consider manufacturer requirements, site conditions, asset history, insurer requirements supplied by the client and previous findings.

Track recurring faults, alarms, roof or mounting deterioration, changes to site infrastructure and unrecorded system modifications. Revisit the fire, structural and DNO evidence when changes may affect the original assumptions or approval basis.

Output: an updated action register, condition trend and recommended maintenance or investigation plan. A recurring service does not imply continuous monitoring or emergency response unless expressly contracted.

Optional specialist modules

Separately specify electrical inspection/testing or EICR; PV string and I-V curve testing; power-quality logging; protection or G100 functional tests; detailed performance analysis; structural engineering; fire-engineering input; and remedial verification. Roof surveys, EV and BESS assessments can be added with their own boundaries.

Specialist work is offered only once the required personnel, competence, insurance, access and reporting responsibilities have been confirmed. This framework does not claim that Ultio already holds any particular accreditation or specialist appointment.

A consistent, useful report

Every report should tell the client what to do next

Include an executive summary; asset and scope description; inspection date; reference documents and revisions; methods and coverage; exclusions; findings with photographs or document references; responsible action owner; recommended timescale; and close-out evidence requirements.

Use separate evidence statuses: **supported within scope**, **non-conformance identified**, **not verified**, and **not applicable**. Record the specific basis for each conclusion. Do not convert unavailable information into a pass.

Prioritise actions without implying an EICR

Immediate: suspected danger requiring prompt escalation and competent assessment of protective action. **High:** material safety, approval or operational issue requiring an agreed urgent response. **Planned:** maintenance, quality or documentation improvement. These are Ultio action priorities, not EICR C1/C2/C3/FI codes.

Before appointment

Confirm the site and jurisdiction; system capacities and boundaries; selected modules; document count and revisions; access and inspection sampling; testing and outages; specialist roles; deliverables; reporting timetable; fee and payment terms; travel/access costs; weather policy; review rounds and revisit charges.

Client responsibilities

Provide accurate records, known defects, site permissions, relevant company/insurer requirements and a nominated contact. Arrange inductions, access, permits and operational cooperation. Identify asbestos or fragile-roof information and restrictions relevant to safe inspection.

Commercial basis and change control

Quote desktop work against a defined document allowance, site work against asset coverage and visits, and specialist modules separately. State VAT treatment explicitly. Added assets, missing records, redesign, inaccessible areas or repeat visits are agreed variations. Agree reliance, confidentiality, liability and insurance terms in the appointment.

The service conclusion is limited to the appointed scope, accessible evidence and conditions at the time. It is not a guarantee of future performance, insurer acceptance or whole-site statutory compliance.

Technical basis & reference notes

The references below inform the service framework. At appointment, confirm the applicable jurisdiction, installation date, design basis, current publications and transitional provisions. Standards, legislation, scheme rules, manufacturer instructions and contract requirements are distinct sources of obligations.

Electrical safety and PV documentation

BS 7671:2018+A4:2026 has been published. Record the edition applicable to the assessment; an older installation is not automatically unsafe merely because the standard has changed. Use competent judgement and necessary inspection/testing. BS EN 62446-1 provides a reference for PV documentation, commissioning tests and inspection.

IET: BS 7671 publications and guidance
BSI: BS EN 62446-1:2016+A1:2018
HSE: Electricity at Work Regulations guidance

Thermography, certification and grid connection

IEC: IEC TS 62446-3:2017 — outdoor PV infrared thermography
MCS: MIS 3002:2025 Issue 2.0 — Solar PV Installation Standard
National Grid Electricity Distribution: G99 connection procedures
National Grid Electricity Distribution: Export limitation schemes

The relevant network operator’s offer and the applicable ENA requirements control the project-specific grid review. Confirm regional requirements, including Northern Ireland where relevant, rather than assuming one connection procedure covers every UK site.

Building, structural and fire interfaces

Use the project-specific structural report and fire strategy, applicable building requirements and relevant professional advice. Approved Document B is guidance for England; different national requirements must be checked for Wales, Scotland and Northern Ireland. Confirm commencement dates and transitional provisions.

GOV.UK: Approved Document B — fire safety
GOV.UK / Building Safety Regulator: Research on solar PV panels and roof fire behaviour

Public summaries and source documents were checked for this framework. Actual technical assessments require access to the full applicable standards and project records. This brochure is a proposed service specification, not a completed compliance assessment.