Stage1Energy
INDEPENDENT FEASIBILITY

Commercial solar due-diligence checklist

For estates, asset management and procurement teams weighing rooftop PV on UK commercial buildings - one roof or a portfolio.

HOW TO USE THIS

Work through it before you commission surveys, accept an installer quote, or take a payback figure to committee. Anything you cannot tick is a question to put in writing. Anything in a red box is a reason to pause and get an independent verdict first.

1 Rights and data
2 Ranking and triage
3 Roof geometry and shading
4 Engineering flags
5 25-year financial case
6 Questions for installers
7 The written verdict
8 What a checklist cannot calculate

SECTION 1

Rights and data

Confirm the basics before any money goes on surveys or quotes. None of this needs a site visit.

CHECK	WHY IT MATTERS	STATUS
Roof rights Ownership, or lease consent for alterations	Who may install, who benefits from export revenue, and reinstatement at lease end.	☐ Yes ☐ No ☐ Unknown
Roof drawings Plans, as-built, or a measured aerial view	Usable area, roof zones and obstructions.	☐ Yes ☐ No ☐ Unknown
Consumption data Half-hourly CSV, or annual kWh	Self-consumption drives the return. Export-heavy sites look worse than load-matched ones.	☐ Yes ☐ No ☐ Unknown
Grid connection MPAN, supply capacity, fuse rating	Sets the likely DNO route (G98 or G99) and any export limit.	☐ Yes ☐ No ☐ Unknown
Roof condition Age, covering, known defects, remaining life	A roof due for replacement inside the system's life changes the order of works.	☐ Yes ☐ No ☐ Unknown
Strategic fit Capex policy, ESG reporting, net-zero pathway	Defines the hurdle the project has to clear and who signs it off.	☐ Yes ☐ No ☐ Unknown

SECTION 2

Ranking and triage

With more than one building, run the checklist as a filter. Spend on the roofs most likely to deliver, not the biggest ones.

CHECK	WHAT GOOD LOOKS LIKE	STATUS
Filtered on rights and lease	Sites without roof rights or with a short lease are parked before any analysis.	☐ Done ☐ Not yet
Ranked on decision value	Order reflects load match, roof condition and grid route, not roof size alone.	☐ Done ☐ Not yet
Shortlist sized to budget	Full feasibility on the top five to ten sites, not every address at once.	☐ Done ☐ Not yet
One method across sites	The same assumptions on every building, so the comparison means something.	☐ Done ☐ Not yet

SECTION 3

Roof geometry and shading

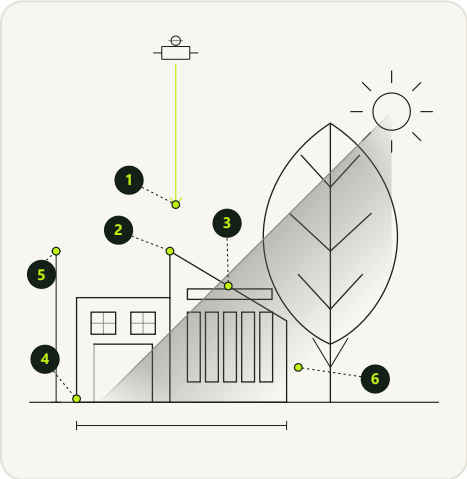
A flat outline of the building overstates usable area. Ask how the layout was drawn.

CHECK	ASK	STATUS
Usable area is net	Is the area stated after edge setbacks, access routes and obstruction buffers, not gross footprint?	☐ Yes ☐ No ☐ Unknown
Measured heights	Were roof planes, plant and parapets taken from measured elevation (LiDAR), or guessed from imagery?	☐ Yes ☐ No ☐ Unknown
Near-field shading	Are trees, adjacent buildings and roof plant modelled, with winter and summer sun positions?	☐ Yes ☐ No ☐ Unknown
Shading in the yield	Does the stated yield say whether shading loss has been taken off the headline figure?	☐ Yes ☐ No ☐ Unknown

SECTION 4

Engineering flags

Four screens that most often change a pursue into a conditional or a park. Rate each one and note the next step.



1. Roof geometry from LiDAR
2. Wind uplift at the roof edge
3. Structure
4. DNO route
5. Planning and height
6. Near-field shading

FLAG	CHECK NOW	SEVERITY
Wind	Eaves height, exposure, and how many panels sit in edge and corner zones, where suction is highest. Ballast adds load; fixings add penetrations.	☐ Low ☐ Medium ☐ High
Structure	Roof type, age and deck. Has anyone stated spare capacity for the added dead load, or has clearance just been assumed?	☐ Low ☐ Medium ☐ High
DNO / G99	System size against the G98 limit (about 3.68 kW per phase). Above it, G99 needs a formal application; allow three to six months, longer with reinforcement.	☐ Low ☐ Medium ☐ High
Planning	Class J permitted development: panels within 200 mm of the roof plane. Check for conservation areas, listed buildings and Article 4 directions.	☐ Low ☐ Medium ☐ High

SECTION 5

25-year financial case

A payback figure is only as good as the assumptions beneath it. Each of these should be stated in writing.

CHECK	WHAT TO LOOK FOR	STATUS
Self-consumption ratio	Based on your load data, not a default percentage.	☐ Stated ☐ Missing
Tariffs and escalation	Import rate, export rate and the escalation assumed over 25 years.	☐ Stated ☐ Missing
Capex as a band	A range, with returns shown across it, so you can see if the decision survives the high end.	☐ Stated ☐ Missing
Scope of capex	Structural work, DNO fees, scaffolding and monitoring included or explicitly excluded.	☐ Stated ☐ Missing
Degradation and replacements	Panel degradation and an inverter replacement inside the 25 years.	☐ Stated ☐ Missing
NPV, IRR and payback together	All three, with the discount rate named. Payback alone hides the shape of the cashflow.	☐ Stated ☐ Missing

PAUSE BEFORE SPENDING MORE IF YOU SEE

- Payback under five years with no consumption data cited
- "No planning needed" on a tall building in a conservation area
- Structural clearance assumed without roof type or age
- G99 treated as automatic on a constrained estate
- Portfolio ranking based on roof size alone

SECTION 6

Questions for installers

An installer quote is a sales document. Ask for these in writing before treating its numbers as a basis for the decision.

QUESTION	ANSWERED IN WRITING
What net roof area did you assume, after setbacks?	☐ Yes ☐ No
What self-consumption ratio, and from which data?	☐ Yes ☐ No
Which tariffs and escalation rates?	☐ Yes ☐ No
What is excluded from the price?	☐ Yes ☐ No
Who carries the performance risk on generation?	☐ Yes ☐ No
Would you be paid the same if the answer were "do not proceed"?	☐ Yes ☐ No

SECTION 7

The written verdict

The output a committee can act on is a recommendation, not a slide of numbers. It should end in one of three answers, with the assumption that would change it.

Pursue

The case holds across the capex band. Next step: surveys and procurement.

Pursue with conditions

The case holds if a named item is confirmed - often structure, grid or planning.

Park

Not worth further spend now. Just as useful: it stops budget going on the wrong roof.

CHECK	STATUS
One of the three answers is stated plainly	☐ Yes ☐ No
The assumption that would change it is named	☐ Yes ☐ No
Every material figure traces to a source	☐ Yes ☐ No
Whoever wrote it has no stake in the install	☐ Yes ☐ No

SECTION 8

What a checklist cannot calculate

This list tells you what to ask. It cannot answer the questions that decide the case:

Shading paths	Where shadows from trees, neighbours and plant actually fall across the year, from a 3D model of the site.
Load match	How much generation your building uses on site, hour by hour, against your half-hourly data.
Uplift by roof zone	Whether edge and corner rows need more ballast or fixings, before the job is priced.
The 25-year case	NPV, IRR and payback across the capex band, with every assumption named.

NEXT STEP

Get an independent verdict on the roof.

A Stage1Energy assessment rebuilds the site in 3D from LiDAR, models shading and site-specific yield, runs the 25-year financials, screens wind, structure, DNO and planning, and ends in a written pursue, conditional, or park verdict. No panels sold, no referral fees. Paid the same for a yes or a no.

Join the waiting list

How the assessment works

This checklist supports early-stage decisions. It is not design, procurement or construction advice. Stage1Energy assessments are feasibility screenings: generation is modelled at P50 with a site-specific P90, capex is quoted as a band, and structural, wind, grid and planning content identifies risks and next steps for verification by appropriately qualified professionals. Stage1Energy Ltd, registered in Wales, company no. 17222440. tedevans@stage1energy.com