UPGRADE FEASIBILITY STUDY / ILLUSTRATIVE CASE

Which upgrade fits the hours the equipment actually runs?

The management decision

Base the investment decision on realistic operating conditions. Ask what would have to be true for the more expensive option to earn back its additional cost.

A supplier's estimated saving can look attractive until you compare it with the hours your equipment actually runs. Installation costs, space, production needs and downtime can also change which option is worthwhile. A feasibility study helps you set a realistic basis for comparing upgrades and see which assumptions matter most to the investment.

Worked example

A verified 4 kW reduction for 2,000 hours would avoid 8,000 kWh in a year. At 1,200 operating hours the same equipment change would avoid 4,800 kWh. The hours can matter as much as the performance rating.

Example figure	What it represents
4 kW	Reduction in demand
8,000 kWh	At 2,000 running hours
4,800 kWh	At 1,200 running hours

What changes the answer

At 1,500 hours the result is 6,000 kWh. Use the buyer’s actual energy and installation costs to find the number of operating hours at which the preferred option changes.

Upgrade feasibility study

What to commission

Compare the existing installation with two proposed upgrade options under the same operating hours and output assumptions.

We assess the available energy and cost information, test more than one operating pattern and identify missing evidence. We explain which information a supplier or the site team needs to confirm before you can rely on the comparison.

How to judge the result

The sponsor can vary running hours and identify the assumption or supplier answer that could change the preferred option.

Apply local prices, installation costs and verified operating hours. Test the options using a shorter operating year as well as the central estimate.

Decision worksheet

Project detail	Starting point for your team
Decision owner	Capital projects sponsor. Name the person who will approve the next step.
Records to gather	Current equipment data, typical running hours and the options or quotes you are considering.
Agreed output	An options report and workbook with estimates, assumptions and questions for follow-up.
Decision date	Record the deadline, any unresolved assumption and who will confirm it.

Discuss this case

Tell us what you are considering replacing, why it is on the agenda and when the investment decision is due. Indicate any constraints on installation or shutdown. An outline of the candidate options is enough for an initial discussion.

Email info@oxetc.co.uk and mention ENG-02. All figures in the worked example are illustrative.