# The Energy Review as an Act of Discovery

**GUIDING QUESTION** *Open your energy review and spend five minutes looking for one thing: a measurement taken inside the building. Not a bill, not a nameplate rating, not a figure calculated from either: a reading from an instrument somebody placed on a circuit or a pipe. If there is none, then everything that document says about where your energy goes is a reconstruction, and it can only be as good as the assumptions of the person who built it.*

Property: _____ Completed by: _____ Date: _____

*How to use this sheet: work through the five parts with the people who own the process. The text in the left-hand columns comes from the book; the empty columns are for what is true in your property.*

## 1. Verification Pact: what is commonly believed, what actually holds, and your property

| What is commonly believed | What actually holds | In our property |
|---|---|---|
| «We have a thorough energy review.» | If it contains no measurement taken inside the building, it is a reconstruction. The requirement names measurement first. | |
| «The breakdown is accurate to a tenth of a per cent.» | Scaling estimates to match the bill makes the total right and says nothing about the distribution. | |
| «We would need to install meters.» | In most markets the fiscal meter has been recording at intervals for years and the record is yours for the asking. | |
| «We commissioned an audit, so the review is done.» | An audit is an input to the review. The review is the organisation's own analysis, and it has to be able to redo it. | |
| «The bills tell us what we consume.» | They tell you how much. Almost everything you can act on lives in when, where and in what combination. | |
| «Updating means repeating the whole exercise.» | Not all parts have to be updated at the same time. Reopen the part that moved. | |

## 2. What the standard requires, and what demonstrates it

*From Table 1.9.a. The third column of the book (what is method, not requirement) is left out here: write what your property actually holds as evidence.*

| What is required | What demonstrates it in a hotel | In our property |
|---|---|---|
| **Analysis on the basis of measurement and other data** | At least one figure obtained from an instrument inside the building | |
| **Current energy types identified** | Every carrier listed, including the ones nobody bills separately | |
| **Past and present use and consumption evaluated** | A series long enough to contain every season the property runs | |
| **Significant uses identified from the analysis** | A list that changed when the measurement arrived | |
| **Opportunities determined and prioritised** | An order, with the reason for the order stated | |
| **Future use and consumption estimated** | A projection that names its assumptions and can be checked against later | |
| **Updated at intervals and on major changes** | One part reopened without redoing the rest | |
| **Methods, criteria and results retained** | A page saying how each figure was obtained | |

## 3. The instrument: Table 1.9.b, What each source can and cannot see

*The instrument of this subchapter. Choose the source after you have chosen the question.*

| Source | What it shows | What it cannot show | Cost |
|---|---|---|---|
| **Monthly bills** | How much crossed the boundary; whether it is rising | When, where, in what combination, what runs at night | None |
| **Interval data from the fiscal meter** | The shape of the day and the night; peaks; simultaneities | Which department or machine | Usually none; ask the supplier |
| **Nameplate ratings and hours** | What a machine could draw | What it does draw, or for how long it really runs | None, and the least reliable |
| **Temporary clamp metering** | What one circuit actually draws, for a fortnight | Anything outside that circuit or that fortnight | Borrowed, or very small |
| **Permanent sub-metering** | A department or a system, continuously | Anything nobody has asked a question about | Substantial; decide the questions first |
| **Walking the plant at night** | What is running that nobody expected | Quantities | One night |
| **Control system logs** | Set points, schedules, overrides and when they changed | Consumption, unless the system meters it | None, if the system is already there |
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*The rows above are the book's; the empty rows are for lines your property needs to add.*

## 4. Common mistakes: self-check

| Common mistake | Present here? (Yes / Partly / No) | Where we see it |
|---|---|---|
| Building the entire review from bills and nameplate ratings, and calling it an analysis. | | |
| Reporting a reconstructed breakdown to a precision the method cannot support. | | |
| Never asking the supplier for the interval data that already exists. | | |
| Treating a commissioned audit as though it were the organisation's own review. | | |
| Projecting the future from an unmeasured present and presenting it as a forecast. | | |
| Installing meters before deciding which questions they are there to answer. | | |

## 5. Action plan

| Step from the book / gap found | Action in our property | Owner | Deadline |
|---|---|---|---|
| Ring the supplier and ask for the interval data from the fiscal meter. It is usually free. | | | |
| Plot the lowest night hour of each night across a month, and compare it to what your review assumed. | | | |
| Look for shapes (peaks, plateaus, simultaneities), not for totals. | | | |
| Mark every figure in the review as measured, estimated, scaled or assumed. | | | |
| Borrow two clamp meters for a fortnight before buying anything. | | | |

| Step from the book / gap found | Action in our property | Owner | Deadline |
|---|---|---|---|
| Write the future estimate with its assumptions visible, so it can be checked later. | | | |
| Reopen one part of the review when one part of the building changes. | | | |
| Make sure somebody inside the property can redo the analysis without the consultant. | | | |
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## In brief

The requirement names measurement first and other data second, and a review built entirely on bills and nameplate ratings has taken the second term and left the first. Such a review can be arithmetically flawless, standard in method and honest about its assumptions, and it will still be a reconstruction of a building rather than an observation of one.

*Source: The Helm and the Lens, Volume 4a: The Helm, subchapter 1.9. This sheet does not reproduce the text of the standard; work with your own copy of ISO 50001:2018 from an authorised source.*