

The Heat the Meters Do Not See

The gap between a building's bulk meter and its dwelling meters, and what Condition A7 does and does not let you do about it

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Executive summary

On most communal heat systems, the energy recorded at the building entry does not equal the sum of the dwelling meters.

Some of the difference is heat that escapes the system and warms nothing anyone wanted warmed. Some of it warms corridors, slabs and the walls of the flats the pipework runs through. Some of it is keep-warm operation at the heat interface unit, or meter tolerance, or two readings taken on different days.

If that cost is recovered through consumer charges, a decision has to be made about where it falls — expressly, or by default, out of whatever billing arrangement the building inherited. Recovery is not the only option: a cost can be absorbed, deferred or phased, and the framework permits recovery without requiring it.

Great Britain leaves the decision entirely to the operator. Ofgem's cost allocation guidance contains no rule for it — no split between a fixed and a consumption element, no cap on the share of a building's heat cost that may follow the dwelling meter, no efficiency threshold. The only constraint is that you must be able to explain where it landed.

Two other European jurisdictions concluded the decision could not safely be left to discretion. Germany fixes the consumption share between 50 and 70 per cent, so the fixed share must sit between 30 and 50 — a floor and a ceiling. Slovakia set a sensible default in 2016 but let building owners vary it without limit; the heat allocation industry itself named that discretion as the principal source of unfair bills, and in 2022 it was capped by law.

How much of a building's heat cost follows the dwelling meter is an allocation between charges, and A7 governs allocation between charges. Great Britain has neither a default nor a limit on that choice. An operator who puts the whole of it through the unit rate has made the choice both comparators legislated against, and under A7 has to be able to say why.

What none of this permits is rescaling a meter reading. A7 governs where a cost sits, not what a meter says. This paper is about the space between those two statements.

Three papers, two conditions

Ofgem's fair pricing framework rests on two authorisation conditions, and this series takes one paper each. **No Number to Hit** takes A6 — whether the charge is fair and not disproportionate. **Who Pays for the Pipe** takes A7 — how the charge is structured and attributed to costs. This paper takes one A7 problem arising from the measurement boundary: heat delivered but not recorded, and the cost that follows it. It can be read on its own.

A note on terms. This paper says *unrecorded heat* for heat delivered into a building that no dwelling meter records. It does not say *unmetered*, which in the companion papers means a network with no dwelling meters at all. The two are different problems and the distinction matters throughout.

A note on scope. The examples are predominantly residential and space-heating led, though A6 and A7 apply more broadly to Charges imposed on Applicable Consumers for heating,

cooling and hot water, subject to the conditions' exclusions. "Bulk meter" means a thermal energy meter at or near the building entry point — not a gas or electricity meter, and not any fuel-input measurement, which would capture generation losses that have nothing to do with in-building distribution. Any comparison needs matching periods, matching units and consistent boundaries.

Boundaries are not only physical. The building entry meter may also mark a commercial boundary between an upstream bulk supplier and a downstream operator. The entity incurring the cost, the entity able to control it and the entity imposing the consumer charge are not always the same person, and the allocation question falls to whoever is imposing the charge.

What the gap is made of

The difference between a building's bulk meter and the sum of its dwelling meters is not one thing. It contains at least the following, and they do not behave alike.

Distribution loss. Heat emitted from communal pipework into spaces that did not need heating, or at times when they did not need it. This is loss in the ordinary sense — energy paid for and wasted.

Incidental warmth. Heat emitted from the same pipework into spaces that benefit from it. Corridors and stairwells that would otherwise need heating. Flats whose risers and laterals keep them warm enough that their emitters run less than a neighbour's. Even here, a benefit received is not the same as a benefit that can be attributed accurately to a particular dwelling.

Plant and standing consumption. Keep-warm operation at a heat interface unit, storage losses, circulation running to maintain hot water availability.

Common-area load. Heating deliberately supplied to shared space.

Measurement artefacts. Meter tolerance at both ends, readings taken over mismatched periods, boundaries drawn in different places for the bulk meter and the dwelling meters, estimated or missing readings.

Those five need different answers. A single line called "losses" invites a single treatment for costs that differ in cause, in controllability and in who benefits.

Sidebar — two devices, two different measurements

A **thermal energy meter** at the dwelling or heat interface unit boundary measures the thermal energy crossing that point, using flow and temperature. It measures what passed the boundary. It does not measure heat arriving in the dwelling by any other route.

A **heat cost allocator** mounted on a radiator estimates the heat that radiator emitted. It is not a thermal energy meter and it measures a different quantity at a different place.

What follows for allocation depends on which device is installed and where the boundary sits. In Great Britain the duty to install heat cost allocators, thermostatic radiator valves and hot water meters was removed with effect from 27 January 2026.¹ That did not release existing equipment from its obligations: heat meters remain subject to the accuracy, maintenance and replacement requirements, and allocators can no longer demonstrate compliance with the meter installation obligation.

Where the gap is widest

Unrecorded heat is usually pictured as a problem of old buildings with uninsulated pipework. The sharper version is new.

A modern apartment block is built with a well-insulated external envelope and therefore a small space-heating demand. Its internal partitions between dwellings are light. Its internal gains — occupants, appliances, glazing — are large relative to that small demand. Communal risers and laterals pass through or beside the dwellings. Each of those is a consequence of building well. Together they mean a flat can stay warm with its own emitters barely running, and a thermal energy meter at that flat's boundary will record almost nothing.

Slovakia's consumer protection body states the effect directly: a flat with its radiators off records zero on its allocator, and still does not drop below sixteen to nineteen degrees in a hard winter, because it is taking heat from its neighbours.²

The consequence is distributional and it runs the wrong way round. Where all of a building's heat cost follows the dwelling meters, the dwellings that record almost nothing pay almost nothing, and the cost is carried by the dwellings that record most — which, in a block of this kind, are disproportionately the exposed ones: top floor, ground floor over unheated space, corner flats with three external walls. The residents least advantaged by their position in the building subsidise those best advantaged by theirs.

The phrase "low user" misleads here. A dwelling with a low meter reading on a communal system has not necessarily used less heat. It has received heat that nothing measured.

The observation that metered heat loads in new-build apartments can be functionally zero, and that the effect is most extreme there, is Marko Cosic's; the analysis drawn from it is the author's.

What A7 and its guidance say about it

Nothing specific.

There is no split between a basic and a consumption component, no cap on the share of a building's heat cost that may follow the dwelling meter, and no loss-specific allocation rule, recovery rule or efficiency threshold.

None of it sits outside the framework. A7.1 requires charges to be structured, and attributable to costs, consistently with a fair and not disproportionate outcome.³ The guidance's catch-all applies directly: where a cost does not fit neatly as fixed or variable, it should be allocated as cost reflectively as possible while balancing consumer impact, regulatory burden and data limitations — and the operator should be able to justify where it landed.⁴

Losses appear once in the wider evidence base. Respondents argued that network losses should count as cost drivers in benchmarking, one asking Ofgem to distinguish primary from secondary because secondary losses vary widely with building layout and installation quality.⁵ Ofgem declined the distinction and answered with a general criterion: a cost driver should be exogenous, meaning outside the network's control once operational.⁶ **The inference this paper draws, which is not a published Ofgem position:** loss fixed by inherited design looks exogenous, loss still controllable after commissioning looks less so, and the line does not fall neatly between primary and secondary since either can be driven by the other's cause.

Condition B2.10.8 requires the supply contract to set out heat network KPIs including network efficiency,⁷ while the framework contains no rule on who bears the cost of that inefficiency.

The British constraint

The overseas comparisons below are easy to over-read, so take the British limit first.

Where Supply Meters are installed, Ofgem's billing condition requires bills and billing information to be accurate and based on actual consumption, with at least one actual rather than estimated bill each year, subject to defined exceptions — where compliance is not reasonably practicable in all the circumstances, and for supported housing, almshouse accommodation, purpose-built student accommodation and certain pre-27 November 2020 leases.⁸

Where the Charges are Service Charges, Part Two of the condition modifies both the frequency requirement and the exception test: annual becomes once per Service Charge period, and the general exception is replaced by a technically possible and economically justified test, treated as satisfied where the estimated reasonable cost of billing does not exceed £100 per relevant consumer per year.⁹

The metering legislation now points the same way by omission rather than by instruction. The billing provisions of the Heat Network (Metering and Billing) Regulations 2014 were revoked for England, Wales and Scotland on 27 January 2026 and replaced by the authorisation conditions; the surviving provisions concern meter installation, accuracy, maintenance and replacement. The 2014 Regulations continue to apply in Northern Ireland.¹⁰

The boundary is this. **A7 governs where a cost sits.** Whether the cost of unrecorded heat and common-area load is recovered through the standing charge, or built into the unit-rate

cost base, or apportioned some other way between charges, is an A7 question and the guidance expects you to be able to explain your answer.

A7 does not govern what a meter says. It does not authorise replacing or rescaling a consumer's meter reading using floor area or any other apportionment method. Any such adjustment would need a separate legal basis, and would have to be considered against the billing condition, the metering legislation, the contractual terms and, where relevant, service charge law.

The boundary rules out one thing: touching the meter reading. It says nothing about how much of the building's cost that reading is used to allocate. That second decision sits inside A7, and it is the decision the next two jurisdictions took out of the operator's hands.

What two other jurisdictions did about it

Neither of the following is a British proposal, and neither regime is a direct analogue: both operate as building-level cost allocation rules, commonly using heat cost allocators, rather than as billing rules for thermal energy meters at a dwelling boundary. They are here for a narrower purpose. Both faced the same question — how much of a building's heat cost should follow the measurement? — and both concluded that the answer could not be left to whoever was doing the allocating.

Germany

The Heizkostenverordnung sets a general rule: between 50 and 70 per cent of the costs of operating a central heating installation are distributed according to recorded consumption, with the remainder allocated on a non-consumption measure such as living or usable floor area or enclosed volume. Seventy per cent is mandatory for buildings that do not meet the 1994 thermal protection standard, are heated by oil or gas, and have predominantly insulated exposed distribution pipework.¹¹

Read from the other end: the fixed share must be at least 30 per cent and no more than 50. The floor exists because some dwellings need more heat for reasons of position rather than behaviour — ground floor over unheated space, north elevation, exposed corner — and a rule that allocated everything by measurement would charge them for their location. The ceiling exists because a fixed share above half begins to approach flat-rate billing, in which nothing a resident does changes what they pay. German law refuses both extremes.

The same paragraph goes further. Where exposed distribution pipework is predominantly uninsulated, so that a substantial share of consumption goes unrecorded, users' consumption may instead be determined by recognised rules of technology — in practice the VDI 2077 pipe-heat supplement — and the calculated figure is then treated as recorded consumption. German law does not merely bound the metered share; it provides a route to correct the recorded figure itself. That route is narrow: written for exposed pipework, and held by the Federal Court not to extend to pipework concealed under plaster or in the structure, however badly the resulting pipe heat distorts the allocation.¹² The correction mechanism is not the transferable part of the German answer. The bounded share is.

Slovakia

Slovakia is the closer comparison, because it ran the British experiment first.

From 1 January 2017, Slovak law divided the cost of heat delivered for space heating into a basic component allocated by floor area and a consumption component allocated by measured or indicated data. Where allocators or heat meters of consistent type were installed, the basic component was 60 per cent and the consumption component 40 per cent — **unless the owners agreed otherwise**.¹³ There was no limit on what they could agree. A building could vote the basic component down as far as it liked, and put effectively the whole of the building's heat cost onto the allocator readings.

The Slovak association of heat and water allocators, whose members performed the allocations, identified fourteen fundamental problems with the regime and named this one as the principal source of unfairness: the drafters had given owners the ability to change the split in any way they chose; owners decided by feel rather than expertise; and buildings frequently made their own position worse by an unsuitable decision. Their conclusion was that only a change in the law would fix it.¹⁴

It was changed. The decree that replaced it, in force for the 2023 billing year, was prepared with that same association, the Slovak Trade Inspection and the state energy agency, with the stated aim of dividing costs as fairly as possible. It kept the 60 per cent default and added the missing piece: owners may still vote to change the basic component, but it cannot fall below 30 per cent.¹⁵

The same decree also tried to put numbers on benefit received. It allocated the basic component to flats that had left the system, weighting floor area by a coefficient — most where the pipework runs through you, less where the flat is exposed or the distribution bypasses it, least in a converted roof space.¹⁶ That is the only published attempt this paper's author has found to quantify the question.

Those coefficient provisions have since been struck down, on a ground that leaves the physics untouched: the enabling Act let the Ministry set apportionment rules but not identify a new class of person to bear them, and an obligation of that kind must come from statute. The court declined to rule on whether the allocation was proportionate, and said it appears fully legitimate that owners of disconnected flats should bear part of the cost.¹⁷ The 30 per cent floor is unaffected.

What does and does not follow

Three of the following are safe. The fourth is this paper's argument, and is marked as one.

Ofgem's guidance prescribes no rule for this. That is a matter of record: it is not in the document.

To the extent the cost is recovered from consumers, it has to be attributed, and the attribution has to be explainable. A7.1 and the catch-all at paragraph 2.32 leave no room for treating this as outside the framework. The alternative choices — absorb, defer or phase — remain open.

It does not follow that billing wholly on dwelling-meter readings is non-compliant. The billing condition points the other way, and nothing in A7 displaces it. Nothing in this paper should be read as saying a British operator must hold back a fixed share, or may adjust a meter reading. Neither is available.

What does follow is a question about justification. How much of a building's heat cost is allowed to follow the dwelling meters is an allocation between charges, and therefore an A7 decision the operator is making whether or not they have noticed making it. Germany bounds that decision at both ends. Slovakia left it to discretion, watched the discretion produce unfair outcomes, was told so by the industry doing the work, and legislated a floor. Great Britain has no default and no limit — the position Slovakia occupied before 2022, and then some.

An operator whose answer is that the whole cost follows the meter has therefore taken a position that two comparable jurisdictions examined and declined to permit. That is not non-compliance, but it is a choice that needs a reason, and under A7 the reason has to be capable of being written down. "The meter said so" is an answer to a metering question. It is not an answer to an allocation question.

Sidebar — A7 does not operate alone

A reasoned A7 allocation cannot make lawful a charge that is prohibited elsewhere. Condition B6 controls actual-consumption billing and restricts when a separate charge may be made for a bill. Leases and housing legislation determine whether some service charge costs are recoverable at all. Price communications engage the billing and transparency requirements. A7 answers whether and how an underlying cost is fairly attributed; it does not disapply anything more specific.

Three error patterns

The meter taken as the whole account. Treating the dwelling meter reading as a complete record of the heat a resident received, and leaving the cost of everything outside the measurement boundary unexamined.

Losses treated as one thing. A single line called "losses", carrying distribution waste, common-area load, plant standing consumption and measurement error, allocated by a single method chosen for none of them.

The gap treated as an answer. Discovering that the bulk meter exceeds the dwelling meters by some large percentage and concluding from that alone that residents are being charged wrongly. The gap raises the question. It does not settle it.

What to do

Reconcile the gap. Compare bulk and dwelling-meter data over matching periods and consistent boundaries, then separate out distribution losses, common-area loads, plant and keep-warm consumption, missing data and measurement uncertainty so far as you reasonably can. The unreconciled difference is evidence that a decision is required. It is not the decision.

Know which devices you have and where the boundaries sit. Thermal energy meters at heat interface units, allocators on radiators, or neither. The question changes shape with each.

Decide how much of the building's heat cost follows the dwelling meters, and write down why. Standing charge, unit-rate cost base, or a documented mixture. There is no default to fall back on, which means there is also no defence in having followed one. If the answer is all of it, that is the answer that most needs the reasoning.

Look hardest at the newest buildings. The blocks where the metered share is smallest are the ones where an all-through-the-unit-rate allocation does the most distributional damage, and they are the least likely to have been examined because they are the ones assumed to be efficient.

Treat controllable loss as controllable. Operating temperatures, controls and maintenance — to the extent they sit within the authorised person's control, which on a divided estate may be less than it looks. Reducing loss beats allocating it well, and it is what the cost efficiency principle points at.

Do not use A7 to rescale consumption. The billing condition has its own machinery for estimated bills and for readings that do not look reasonably accurate.¹⁸ Use that where it applies. What A7 does not permit is replacing metered consumption with a floor-area or benefit-based allocation because the metered outcome looks unfair.

What this means

For residents, this is the part of a heat bill that is rarely explained, because on most bills there is nothing to point at. The energy is real. Where its cost is recovered from consumers, the allocation may never have been made explicitly, and it may never appear on the bill.

For operators, the risk is not disagreement with your treatment but having no treatment at all — no figure, no reasoning, no record — on a cost that may be material, and on a question two other jurisdictions have put into legislation.

A note on shelf life

The fair pricing and cost allocation guidance is expressly iterative, and Ofgem has said it intends to keep developing it.¹⁹ The Heat Network Technical Assurance Scheme is intended to introduce technical requirements and assurance arrangements relevant to network efficiency, which this guidance deliberately leaves out; its final design remains pending and launch is currently planned for 2027.

This paper states the position as at September 2026, against the guidance published on 13 January 2026.

Where to go next

- The **Tariff Calculator** at tariff.heatnetworkcompliance.co.uk, free to use, which separates standing charge and unit rate components and lets you vary how much of the cost is recovered through each.
- The **A7 cost allocation policy template** in the Policy Generator, which structures the reasoning the framework expects you to be able to produce.
- **Who Pays for the Pipe**, on Condition A7 and cost allocation generally.
- **No Number to Hit**, on Condition A6 and the fairness test.

Footnotes

1. Regulation 6 of the Heat Network (Metering and Billing) Regulations 2014 was omitted for England, Wales and Scotland by SI 2026/7 with effect from 27 January 2026, with an express provision that suppliers previously subject to that duty are no longer under it.
2. Spoločnosť ochrany spotrebiteľov (Slovak consumer protection society), commentary on the revised heat allocation rules: a flat whose radiators are switched off draws no heat from the heating system and its allocator records zero, yet the temperature in the flat does not fall below approximately 16 to 19 degrees even in a hard winter, because heat is taken from neighbouring flats. Cited as a plain statement of the physics from a consumer body, not as a technical measurement.
3. Authorisation Condition A7.1, Appendix 2 to Ofgem's decision *Heat networks regulation: authorisation conditions*, 13 January 2026.
4. *Heat networks fair pricing and cost allocation guidance*, 13 January 2026, paragraph 2.32, read with paragraphs 2.7 and 2.34.
5. *Response to consultation on heat networks regulation: fair pricing protections*, Ofgem, 29 September 2025, chapter 3, respondent submissions on efficiency metrics as cost drivers.
6. 2025 fair pricing response, chapter 3, Ofgem response on feasibility.
7. Authorisation Condition B2.10.8.
8. Authorisation Conditions B6.2, B6.4 and B6.6.
9. Authorisation Conditions B6.20, B6.21 and B6.22; B6.22 lists the costs to be counted in the estimate.
10. Regulation 9 (billing) of the Heat Network (Metering and Billing) Regulations 2014 was omitted for England, Wales and Scotland by SI 2026/7 from 27 January 2026, along with regulations 3 and 6; regulations 5 and 7 survive.
11. Verordnung über Heizkostenabrechnung (Heizkostenverordnung), §7(1), sentences 1 to 4. The technical procedure referred to is VDI 2077, supplementary sheet on pipe heat (*Rohrwärme*). The characterisation of what each end of the band achieves is the author's reading of the provision's structure, and is consistent with standard German commentary.
12. BGH, 15 November 2019, V ZR 9/19.
13. Vyhláška MH SR č. 240/2016 Z. z., in force 1 January 2017 to 31 December 2022: where comparative heat allocators of the same type or heat meters of the same accuracy class were installed, the basic component was 60 per cent and the consumption component 40 per cent of the total cost of heat delivered for space heating, *unless the owners of flats and non-residential premises agreed otherwise*. The decree set no limit on what could be agreed. Repealed by Vyhláška č. 503/2022 Z. z.

14. Association of Heat and Water Allocators of Slovakia (ARTAV), published commentary on fairness in heat cost allocation, 2021: the association identified fourteen fundamental problems with the regime under 240/2016 and named the free choice of basic and consumption component as the principal source of unfairness, observing that owners decide the split on impression rather than expertise and often worsen their own position, and that only legislative change would resolve it. This is trade commentary from the sector performing the allocations, not a government finding, and is cited as such.
15. Vyhláška MH SR č. 503/2022 Z. z., §8(1): basic component 60 per cent by default, variable by owner decision but not below 30 per cent. Applied first to the 2023 billing year; the provisions discussed took their current form with effect from 15 December 2024, and the decree was further amended by 337/2024 Z. z. On the decree's preparation and purpose, Slovak Innovation and Energy Agency (SIEA), *Rozpočítavanie nákladov na teplo a teplú vodu má nové pravidlá*: prepared in cooperation with ARTAV, the Slovak Trade Inspection and SIEA, with the aim that costs be divided as fairly as possible.
16. Vyhláška MH SR č. 503/2022 Z. z., §7(5), §8(4) and §8(5), with the coefficients at Annex 3.
17. Constitutional Court of the Slovak Republic, PL. ÚS 1/2026-53, 6 May 2026, on a petition by a group of 32 members of the National Council. On the limits of the enabling power see paragraphs 31 to 35; on the legitimacy of a statutory obligation and the refusal to rule on proportionality, paragraph 39; on the payment being consideration for heat delivered rather than a tax or levy, paragraph 38; on heat transfer running in both directions, paragraph 29; on loss of effect and the six-month period for the Ministry to bring the decree into line, paragraph 40. Published in the Collection of Laws as 119/2026 Z. z. on 11 June 2026. The ruling concerns the allocation of the basic component to disconnected and individually heated flats. It does not disturb the minimum basic share discussed above.
18. Authorisation Conditions B6.3 and B6.5.
19. Guidance, paragraph 1.12.

Acknowledgement

The treatment of heat delivered into a building but not recorded at dwelling meters, the comparison with the Slovak and German apportionment rules, and the observation that the effect is most extreme in new-build apartments were prompted by Marko Cosic of Meterpoint, who also prompted the change to the Heat Network Compliance Tariff Calculator that allows the weighting between standing charge and unit rate to be varied. The analysis drawn from all of it, and any errors in it, are the author's.

Sources

- Ofgem, *Heat networks regulation: authorisation conditions* — decision and Appendix 2, 13 January 2026.
- Ofgem, *Heat networks fair pricing and cost allocation guidance*, 13 January 2026.
- Ofgem, *Response to consultation on heat networks regulation: fair pricing protections*, 29 September 2025.
- The Heat Network (Metering and Billing) Regulations 2014, as amended by SI 2026/7.
- Verordnung über Heizkostenabrechnung (Heizkostenverordnung), Germany, §7; VDI 2077 supplementary sheet on pipe heat; BGH, V ZR 9/19.
- Vyhláška MH SR č. 240/2016 Z. z. (Slovak Republic), repealed; Vyhláška MH SR č. 503/2022 Z. z., as amended; Constitutional Court of the Slovak Republic, PL. ÚS 1/2026, 6 May 2026.

- Association of Heat and Water Allocators of Slovakia (ARTAV) and Slovak Innovation and Energy Agency (SIEA), published commentary on heat cost allocation.

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