

Future Homes Standard. What does it mean for new homes?

RESIDENTIAL SECTOR
OCTOBER 2026



Future Homes Standard. Introduction.

The Future Homes and Buildings Standards published in March 2026 update the energy and ventilation requirements for new homes and buildings in England. The term “Future Homes Standard” is an umbrella term for a collection of regulations that includes Approved Documents Part O, Part L1 and Part F. This explainer outlines the implications of changes to Part L Volume 1 (2026) and the Standard Assessment Procedure SAP 10.3 for new dwellings. It does not provide a detailed review of Part L2, Part O or Part F. The response from the UK Government to the Future Homes consultation feedback notes that Part O updates will be considered further through 2026 and methodology detail relating to Part L2 2026 is expected later in 2026.

The most important changes for residential projects are the shift to a heat-pump-led notional dwelling, the introduction of Requirement L3 for renewable electricity generation, and a revised compliance position for District Heat Network (DHN) connections. Together, these changes materially uplift the Part L baseline and reduce the scope for achieving large “betterment” margins through relatively conventional design responses.

At a glance.

New Part L1 requirements for dwellings in effect from 24 March 2027 for non-Higher-Risk Buildings (HRBs) and 24 September 2027 for HRBs.

The notional dwelling’s heating source changes from gas boiler to low-carbon electric heat pump.

New Requirement L3 makes renewable electricity generation a standalone requirement for most new dwellings.

Buildings that are “relevant buildings” for the purpose of Regulation 7(4) are excluded from Requirement L3 “Renewable Energy Generation Functional Requirement (i.e. the provision of PV panels).”

Limiting fabric values are broadly unchanged, but the overall compliance baseline is substantially better performing in terms of carbon and energy.

The feasibility of District Heat Network (DHN) connections now depends heavily on whether a sleeving route is available.

Compliance is critically dependent on system efficiency, with performance required to closely match or exceed the notional dwelling.

SAP 10.3 is the approved methodology at launch; the Home Energy Model (HEM) is expected later, initially on a dual-running basis. HEM has been delayed with expected timelines for implementation being unclear at the time of writing.



Warwick Square, Earl's Court, London
Image: Earl's Court Development Company

Future Homes Standard. Timeline.

On 24 March 2026, the updates to Part L1 and Part L2 were published. These documents include the timeline for the introduction of the updated standards.

NON-HIGHER-RISK BUILDINGS takes effect from 24 March 2027

HIGHER-RISK-BUILDINGS takes effect from 24 September 2027

On these dates, transitional arrangements begin as defined by the Circular letter 01/2026, summarised below.

The current Part L (2021) requirements can be used if the following conditions are met:

Reminder

An HRB (in England) is defined as a building that:

- Is at least 18m high, or
- Has at least 7 storeys
- Has at least 2 residential dwellings
- Is a hospital or care home.

Non-Higher-Risk Buildings.

One of the following has been given for that building to the relevant authority **before 24 March 2027**:

- a building notice
- an initial notice
- an application for building control approval with full plans

And then, **before 24 March 2028**, the building work on that individual building is **commenced**.

“Commencement” means:

- For a **complex building**, work is commenced when the foundations supporting the building and the structure of the lowest floor level are completed.
- For a new building that is not complex, or a horizontal extension, work is commenced when the sub-surface structure, including all foundations, any basement, and the ground-floor structure, is completed.

[\[Read Regulation 46A\]](#)

“Complex buildings” means:

- A building which is to be constructed on the same foundation plinth or podium as any other building or structure.
- A building which has more than one storey below ground level.
- A building where the proposed use is primarily as a **public building** where the public or a section of the public has access to the building (whether or not on payment) provided that the building has a capacity for 100 or more visitors.

[\[Read Building Regulations 2010, PART 10\]](#)

“Public building” means:

- A shop or shopping centre.
- Premises where food or drink are sold for consumption on the premises, including a nightclub, social club or dance hall.
- A stadium, theatre, cinema, concert hall.
- A sports ground.
- An exhibition hall or conference centre.
- A hospital or premises for the provision of health care.

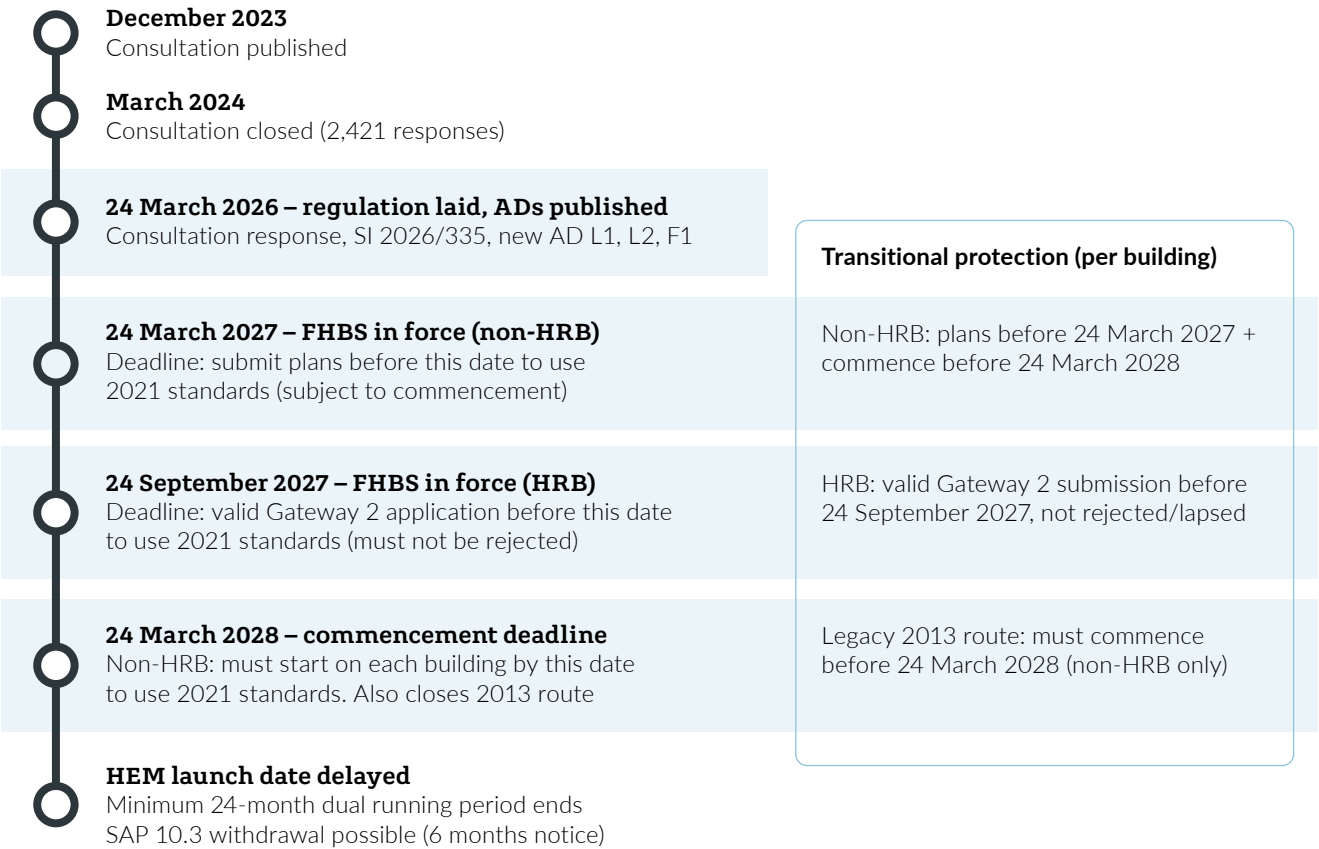
Higher-Risk Buildings.

To remain on Part L 2021 requirements a valid application for building control approval must be submitted to the Regulator before 24 September 2027, and that application must not have been rejected before, on, or after that date.

Programme allowance.

Programme strategy is now more important than under previous Part L updates. For non-HRB schemes, “commencement” requires a genuine construction milestone rather than a symbolic start on site. For HRB schemes, Gateway 2 timing is the critical milestone. Early coordination of services strategy, roof use, utility capacity and procurement is essential if a project is seeking to retain the current Part L 2021 route.

Development and transitional timeline.



Future Homes Standard.

Timeline.

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HEM and SAP 10.3.

SAP 10.3 is the approved calculation methodology available at the launch of Part L1 2026. HEM is currently delayed and expected to follow later and will then run alongside SAP 10.3 for at least 24 months. Final withdrawal dates for SAP 10.3 have not yet been confirmed, and will be subject to a notice period.

Compliance metrics.

The three compliance metrics remain unchanged between Part L1 2021 and Part L1 2026. For each metric the assessed dwelling must perform better than a target set by a notional version of the dwelling, with compliance presented as the percentage improvement over the target rating:

1. Emission Rating:

Dwelling Emission Rating (DER)/
Target Emission Rating (TER)

2. Primary Energy Rating:

Dwelling Primary Energy Rating
(DPER)/ Target Primary Energy
Rating (TPER)

3. Fabric Energy Efficiency:

Dwelling Fabric Energy Efficiency
(DFEE)/Target Fabric Energy
Efficiency (TFEE)

A minimum PV requirement has been introduced as a separate requirement, Requirement L3, as detailed further in subsequent sections.



Botanical Place, West Byfleet, Surrey
Image: Dave Lee via FourPR

Future Homes Standard. Fabric.

To understand the changes in fabric performance parameters, it is important to distinguish between the limiting values set out in Approved Document Part L1 2026 and the fabric performance specification of the notional dwelling defined in SAP 10.3.

The notional dwelling is used to demonstrate compliance with the Building Regulations in terms of primary energy demand, carbon emissions, and fabric energy efficiency. It has the same size and form as the actual dwelling but adopts prescribed standards for fabric performance and building services.

While the limiting values in Part L1 2026 represent the minimum regulatory requirements, compliance is assessed by comparing the actual dwelling against the notional dwelling, which adopts more stringent performance standards. As a result, utilising limiting values in the actual building will not result in compliance.

Changes.

Fabric parameters are broadly the same as in Part L1 2021, although there are numerous functional changes that will impact the notional dwelling.

Minor adjustments have been made to the treatment of glazing between the notional and the actual dwelling, with the g-values, frame factor and overshadowing matching the actual dwelling. Previously the g-value was set to 0.63 with a fixed frame factor at 0.70.

The most notable fabric-related changes are:

- The notional air permeability improves from 5 to 4m³/m².hr @ 50Pa.
- The notional window g-value, frame factor and overshadowing now follow the actual dwelling rather than a fixed assumption.
- Window U-values for new dwellings are now based on the actual product size and configuration, or hot-box testing (real world test environment), rather than generic standard size values.

Practical limits.

The consultation response states that the reason there is no major adjustment to either the limiting values or the notional dwelling specification is that further tightening of fabric parameters is likely to have a material impact on viability, with a limited reduction in energy and carbon emissions. Given that low carbon heating systems are now required, there would likely be modest carbon and energy savings from further improving fabric energy efficiency performance. It is also considered likely that further tightening of fabric performance would work against any future embodied carbon regulation.

Limiting values.

As tabulated below, there is no change in the limiting values between those in the previous version of Part L1 and the new 2026 version.

Table 1: Limiting values

Limiting U-values (W/m ² .K)	Part L1 2021	Part L1 2026
All roof types	0.16	0.16
Wall	0.26	0.26
Floor	0.18	0.18
Party wall	0.20	0.20
Swimming pool basin	0.25	0.25
Window	1.60	1.60
Rooflight	2.20	2.20
Doors (including glazed doors)	1.60	1.60
Air permeability (m³/m².hr)		
At 50Pa	8.00	8.00

Notional dwelling specification.

Compliance cannot be achieved by aligning to these limiting values because the notional dwelling adopts higher performance levels. This means that compliance can only be achieved when the performance targets equal or better those in the notional dwelling.

Table 2: Notional dwelling specification

Notional U-values (W/m ² .K)	SAP10.2 (for Part L 2021)	SAP10.3 (for Part L 2026)
All roof types	0.11	0.11
Wall	0.18	0.18
Floor	0.13	0.13
Party wall	0.00	0.00
Window*	1.20	1.20
Rooflight	1.70	1.70
Doors (including glazed doors)	1.00	1.00
Air permeability (m³/m².hr)		
At 50Pa	5.00	4.00

*g-value and frame factor now as per actual dwelling. Under SAP 10.2, the g-value was set at 0.63 and the frame factor at 0.7. Typical values for live projects are lower for g-value and higher for frame factor, therefore the net impact on solar gain is likely to be similar to the previous regulations.

Future Homes Standard.

Fabric.

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Implications of changes.

In the case study that follows, performance against the Target Fabric Energy Efficiency (TFEE) changes only modestly between SAP 10.2 and SAP 10.3. The larger shift sits in the Dwelling Emission Rate (DER) and Dwelling Primary Energy Rating (DPER) performance as a result of changes to notional building services.

Examples.

To determine where the compliance threshold would sit, we tested the impact of the fabric parameters on a template design. Whilst compliance boundaries will vary from building to building depending on specification of particular elements as well as window to wall ratios, it is useful to identify variations in performance of this example using SAP10.2 and SAP10.3.

The case study examined five fabric specifications for dwellings with electric panel Space Heating (SH) and Air Source Heat Pump (ASHP) Domestic Hot Water (DHW):

Table 3: Fabric parameters (shading highlights each incremental improvement in performance)

Parameter	Units	Fabric 1 (limiting values)	Fabric 2	Fabric 3	Fabric 4	Fabric 5
Exposed roof	W/m ² .K	0.16	0.15	0.12	0.12	0.10
External wall	W/m ² .K	0.26	0.22	0.18	0.18	0.15
Exposed floor	W/m ² .K	0.18	0.15	0.10	0.10	0.10
Party wall	W/m ² .K	0.00	0.00	0.00	0.00	0.00
Party floor	W/m ² .K	0.16	0.15	0.15	0.15	0.10
Sheltered wall	W/m ² .K	0.00	0.00	0.00	0.00	0.00
Glazing u-value	W/m ² .K	1.60	1.40	1.20	1.20	1.00
Opaque door u-value	W/m ² .K	1.60	1.20	1.00	1.00	1.00
Glazing g-value	N/A	0.40	0.40	0.40	0.40	0.40
Glazing frame factor	%	0.80	0.80	0.80	0.80	0.80
Air permeability	m ³ /m ² .hr @50 Pa	3.00	3.00	3.00	3.00	3.00
Thermal bridges	W/m.K	Notional	Notional	Notional	Enhanced	Enhanced

The performance of each of the groups gradually increases. Fabric 1 sets parameters at the limiting standards, with Fabric 3 being very close to the notional dwelling specification and Fabric 5 being significantly better performance, similar to the envelope performance required to achieve Passivhaus certification.



Plans for East Bank Hull, Yorkshire
Image: CJCT Studios and Virtual Resolution

Table 4: Comparative results for each system and fabric option

		Emissions (DER/TER)		Primary Energy (DPER/TPER)		Fabric Efficiency (DFEE/TFEE)	
		SAP 10.2	SAP 10.3	SAP 10.2	SAP 10.3	SAP 10.2	SAP 10.3
SH: Elec panel DHW: ASHP	Fabric 1	55%	-48%	10%	-48%	-21%	-26%
	Fabric 2	57%	-40%	15%	-40%	-10%	-14%
	Fabric 3	60%	-31%	21%	-31%	4%	2%
	Fabric 4	61%	-28%	23%	-28%	10%	9%
	Fabric 5	62%	-24%	25%	-24%	17%	17%

The results above suggest that a reasonable starting point for new projects would be those fabric values identified by Fabric 3 as that is when compliance can be demonstrated against the DFEE/TFEE metric.

The impact of the system choice is described in the section on Systems.



Station Hill, Reading
Image: Callison RTKL

Future Homes Standard. Systems.

The most significant change to building services in Part L1 2026 is the shift in the notional dwelling's heating source from a gas boiler to a low-carbon electric heat pump. For dwellings with individual heating systems, the SAP 10.3 notional dwelling uses an individual Air Source Heat Pump (ASHP) with a Seasonal Coefficient of Performance (SCoP) of 2.50 (250% efficiency). For communal systems, the notional dwelling uses a communal heat pump with 300% efficiency and a Distribution Loss Factor (DLF) of 1.15. Combined with the lower electricity carbon factor in SAP 10.3, this materially changes which system types can compete with the notional dwelling.

Distribution Loss Factor

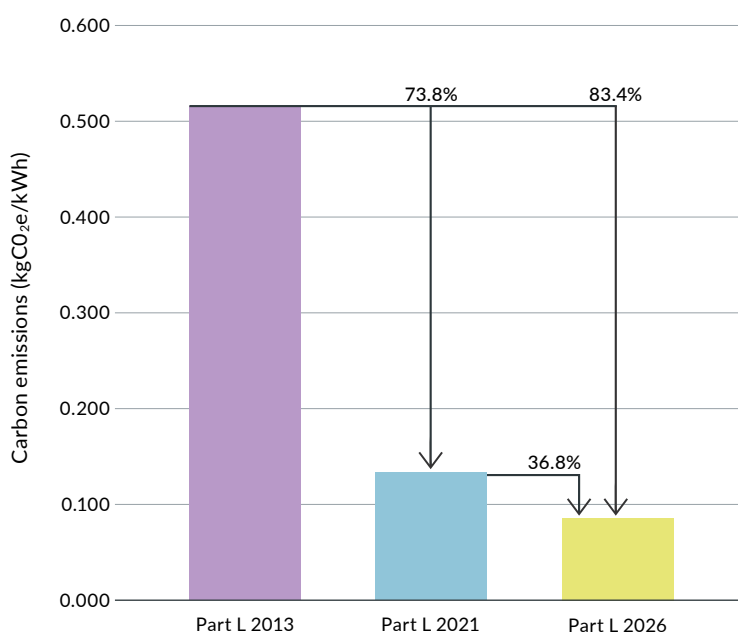
The Distribution Loss Factor (DLF) is a metric that indicates the efficiency of the delivery system from the heat generator to the heat emitter. The value is expressed as heat generated/heat delivered, so a DLF of 1.50, for example, means that 1.50kWh of heat was generated for every 1.00 kWh delivered, resulting in an approximate 33% loss.

Part L1 2026 also sets very low carbon and primary energy thresholds for heating and hot water fuels in new dwellings: 0.086kgCO₂/kWh and 1.969kWhPE/kWh respectively. In practical terms, this makes direct fossil-fuel-based heating practically impossible to select and places much greater emphasis on low-carbon electric systems or qualifying heat network connections.

Definitions

- Communal heating systems
= single building
- Heat networks
= multi-building/
district scale

Figure 1: Carbon Emissions Factors for electricity from Part L 2013, 2021 and 2026



Future Homes Standard. Systems.

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The implication for design teams is that building services selection now has a much stronger effect on compliance margins. Under Part L1 2021, many schemes could comply with a relatively conventional package supported by fabric betterment. Under Part L1 2026, the notional dwelling already assumes a low-carbon, efficient heating system. Any proposed design that performs below this benchmark will need compensation elsewhere through better fabric, lower auxiliary energy, improved controls or additional on-site generation. There is limited opportunity to improve beyond the notional specification due to its already high-performance baseline. As a result, the ability to use performance below the notional specification is significantly restricted.

Ventilation requirements are also more stringent. The notional dwelling assumes decentralised Mechanical Extract Ventilation (dMEV) with very low fan power. This means that some packaged or ventilation-led systems can carry a higher electrical energy use than the notional case, even where the heating side of the system is efficient. For example, this is particularly relevant to Exhaust Air Heat Pump (EAHP)s, where SAP can recognise the heat-pump benefit but still compares the package against a very low-energy dMEV notional position, meaning that the system overall may not perform well against the notional dwelling performance.

SAP 10.3 also introduces a relaxation in the notional dwelling performance for active cooling where a Part O overheating assessment indicates that cooling is required. This does not make active cooling a default route, but it does mean the interaction between Part L, Part O and cooling strategy is now more explicit than under the previous regulations.

The overall impact of these changes reduces the scope for achieving large betterment margins above Part L through simple system substitution alone. The strongest outcomes are likely to come from treating heating, domestic hot water, ventilation, airtightness and PV as a single compliance package rather than as separate design decisions.

Examples.

The following sections will explore the impact of system selections on Part L1 2026 compliance through the use of two case studies:

- **Case Study 1:** A 40-dwelling residential building with a modelled residential floor area of 2,290m² (average dwelling floor area of ~57m²) comprising smaller 1- and 2-bed apartments with low heat losses, in the North of England.
- **Case Study 2:** A 45-dwelling residential building with a modelled residential floor area of 2,820m² (average dwelling floor area of ~62m²) comprising a range of 1- and 2- bed apartments in London.

The case studies provide useful examples to understand how the move from the current Part L1 2021 changes the emphasis from a building regulations compliance perspective. In both cases, various systems have been modelled using SAP 10.2 (Part L1 2021) and SAP 10.3 (Part L1 2026) to compare the performance of the strategy.

In all scenarios modelled, the fabric parameters are consistent. As demonstrated in the previous section, the fabric performance is broadly similar between SAP 10.2 and SAP 10.3; and this does not change due to the system variations. The carbon and primary energy results are however, far more sensitive to the calculation version and to treatment of District Heat Networks (DHN).



Capella, Lewis Cubitt Park, London
Image: Billy Bolton for Allies & Morrison

Future Homes Standard. Systems.

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Case Study 1: Humberside, North of England.

For Case Study 1, three principal heating strategies have been assessed. All options include Mechanical Ventilation with Heat Recovery (MVHR) and no PV:

1. EAHP providing Domestic Hot Water (DHW) and electric panel radiators providing Space Heating (SH)
2. An ASHP communal heating system, tested with the following efficiencies and DLF:
 - a. 250%, DLF 1.5 (low efficiency and high loss)
 - b. 300%, DLF 1.15 (high efficiency and low loss)
3. A gas boiler and CHP powered DHN, with two variants:
 - a. Sleeved DHN
 - b. Unsleeved DHN

The table below summarises the compliance results for Emissions (TER/DER) and Primary Energy (TPER/DPER) for each strategy against Part L1 2021 and 2026.

Table 1: Case Study 1: DER and DPER results for each strategy against Part L1 2021 and 2026

Strategy	Emissions (TER/DER%)		Primary Energy (TPER/DPER%)	
	Part L1 2021	Part L1 2026	Part L1 2021	Part L1 2026
1 EAHP, Electric Panel, MVHR	64.02	9.37	30.31	9.37
2a Communal (Low eff.)	61.49	-11.32	23.15	-11.35
2b Communal (High eff.)	66.99	3.93	34.11	3.95
3a DHN (unsleeved)	19.65	-341.75	20.81	-0.61
3b DHN (sleeved)	19.65	8.56	20.81	4.78

STRATEGY 1

With EAHP and electric panel heaters, the assessment complies under SAP 10.2 and SAP 10.3, but the reported margin reduces significantly in SAP 10.3. The DER/TER betterment reduces from 64% to 9%. This drop is due to the TER reducing sharply in the 2026 assessment, while the DER only drops slightly. A similar pattern occurs for primary energy: with a DPER/TPER betterment of 30%, falling to 9%. The overall result remains compliant for this case study due to the low heat losses in these dwellings, but with significantly less margin.

The communal heating options and the district heating options show a more pronounced change.

STRATEGY 2

For a communal ASHP heat network, the performance parameters are vital to achieving a compliant solution. The first example utilises a DLF of 1.50 in line with the SAP 10.3 guidance (where the system is not listed on the Products Characteristics Database PCDB) and an ASHP efficiency of 250% and shows significant non-compliance. This is where system performance is critical, as improving the DLF to 1.15 and the efficiency to 300% to align with the notional building results in marginal compliance.

It is therefore clear, where values deviate from the notional performance specification for systems, a compliance route becomes extremely challenging.

STRATEGY 3

Under SAP 10.2 the unsleeved and sleeved DHN connections (fed via a mixed heating source connection, including gas boilers and CHP) achieve compliance with a 19.7% betterment. However, under SAP 10.3, the unsleeved heat-network approach does not comply with the carbon and primary energy metrics: resulting in a significant non-compliance, (-341.8%) for the Emissions metric, and a marginal non-compliance for the Primary Energy metrics.

When this changes to a sleeved DHN, the SAP 10.3 comparison is particularly noteworthy. The proposed DER and DPER remain the same, however, the notional targets change dramatically, resulting in significant shifts in performance. This shift demonstrates that the classification and accounting treatment of the heat network has a material effect on the compliance outcome, even where the proposed dwelling performance is itself unchanged. What changes is the target compared against. Sleeving arrangements will need to be agreed with DHN operators from the earliest opportunity if a connection is to be considered.

Future Homes Standard. Systems.

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Case Study 2: London.

Case Study 2 has tested 5 principal strategies. All options include Mechanical Ventilation with Heat Recovery (MVHR) and no PV.

1. EAHP providing Domestic Hot Water (DHW) and electric panel heaters providing space heating (SH)
2. Individual ASHP
3. A communal ASHP heating system, tested with the following efficiencies and DLFs:
 - a. 315% Efficiency, DLF 1.50
 - b. 315% Efficiency, DLF 1.15
 - c. 425% Efficiency, DLF 1.50
 All options include an electric back-up boiler providing 5% of the space heating and DHW
4. Ground Source Heat Pump (GSHP) communal heating system, efficiency 550%, DLF 1.50
5. Ambient loop ASHP to Water Source Heat Pump (WSHP) communal heating system, combined efficiency 228%, DLF 1.05

Table 2: Case Study 2: DER and DPER results for each strategy against Part L1 2021 and 2026

Strategy		Emissions (TER/DER%)		Primary Energy (TPER/DPER%)	
		Part L1 2021	Part L1 2026	Part L1 2021	Part L1 2026
Individual heating strategies (Notional: 250% efficiency)					
1	EAHP + Electric Panel Heaters	66.30	-7.16	34.76	-7.09
2	Individual ASHP	73.28	12.70	47.56	12.71
Communal heating strategies (Notional: 300% efficiency, DLF 1.15)					
3a	ASHP: 315%, DLF 1.50	66.82	-21.95	34.61	-21.97
3b	ASHP: 315%, DLF 1.15	73.55	2.78	47.85	2.69
3c	ASHP: 425%, DLF 1.50	73.04	0.85	46.86	0.85
4	GSHP: 550%, DLF 1.50	80.35	27.68	61.24	27.66
5	Ambient loop: 228%, DLF 1.05	70.62	-8.02	42.08	-8.07

We also assessed a variant of 'Strategy 5' to determine the system efficiency required to achieve compliance. It was found that an **efficiency of 255% would comply** with a margin of 1.5% DER/TER and 1.4% DPER/TPER.

Individual heating strategies.

STRATEGIES 1 AND 2

Whereas in Case Study 1 (North of England) the EAHP and electric panel heaters option demonstrated compliance, this case study leads to non-compliance under SAP 10.3 for the Emissions and Primary Energy metrics due to the mix of unit sizes which are generally larger than those in Case Study 1. The Case Study 1 dwellings have lower heat loss and therefore the relative importance of the heating energy is less. This may be a critical consideration when establishing an energy strategy, as in some cases electrical panel radiators may be favourable, but with larger heating demands they may not be compliant.

The other option tested (individual ASHP) demonstrates compliance under SAP 10.3, albeit with a significantly lower margin than demonstrated for SAP 10.2. The success of these systems is primarily driven by the efficiencies, which in this example exceed the notional dwelling efficiency.

Communal heating strategies.

STRATEGY 3

The three communal ASHP scenarios tested show the importance of both the system efficiency and the DLF. In the first example (3a), although the efficiency (315%) exceeds the notional value, the default DLF of 1.50 (vs the notional value of 1.15) leads to significant failure.

In the second example (3b), where the DLF is reduced to 1.15 in line with the notional, a marginal compliance is achieved. In Part L 2021, the overall result uplift between the two DLF scenarios is approximately 6% for the DER, however in Part L 2026 the uplift is ~25%, showing the more significant impact of the DLF under SAP 10.3.

The third example here utilises an efficiency of 425% with the default DLF. This scenario provides a <1% pass under Part L 2026, however does demonstrate that where a DLF is not calculated and the default value is used, a significantly higher heat pump efficiency is required to compensate and secure compliance.

STRATEGY 4

Ground Source Heat Pumps (GSHPs) are able to offer higher efficiencies than ASHP systems. They are therefore able to offer improved performance under Part L 2026. In this Case Study the GSHP offers ~27% margin over both Emissions and Primary Energy metrics.

STRATEGY 5

Although ambient loop systems offer significantly lower distribution losses, represented by the modelled DLF of 1.05 in this example, the cascading efficiency between the central ASHP and the in apartment Water Source Heat Pump (WSHP) may lead to system efficiencies lower than the 300% notional case. In this case study, the lower DLF was not sufficient to compensate for the relatively low 228% efficiency, leading to failures of ~8% for both metrics. An efficiency of 255% would be required to achieve compliance.

Future Homes Standard. Systems.

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Conclusions.

The following conclusions can be drawn regarding the impact of heating systems on Part L 2026 compliance:

- Heat pump based individual heating strategies can demonstrate compliance where the efficiency meets or exceeds the notional 250%.
- In some instances, an EAHP providing hot water and electric radiators providing space heating be compliant but this is reliant on low space heating demand making the size of the dwelling and the fabric performance critical.
- For communal systems, both the system efficiency and the DLF are crucial in achieving compliance.
- In many instances this means that it will be necessary to have the heat network added to the Products Characteristics Database and have the DLF formally calculated and validated to avoid having to use the default 1.50 DLF.
- Alternatively, a heat pump with an efficiency significantly higher than the notional may be able to compensate for use of the default DLF. This means GSHP may be a lower risk route to compliance.
- Ambient loop systems may struggle to meet the new Part L 2026 requirements due to the lower cascading efficiency.
- A sleeved DHN connection provides a route to compliance, even where the heating sources have lower efficiencies.
- By contrast, the unsleeved district heat option faces the same challenges with efficiency and DLF as the communal heat network.

The performance of the systems is critical regardless of the overall strategy. Where individual heating system options are selected that cannot meet or exceed the notional specification, they will result in compliance failures. Communal heating options will demonstrate compliance only when sufficiently high heat-generation efficiency and sufficiently low distribution losses are achieved.



Botanical Place, West Byfleet, Surrey

Image: Dave Lee via FourPR

Future Homes Standard. Sleeving.

The revised sleeving route is one of the most important changes for projects considering a District Heat Network (DHN) connection. It allows a new dwelling or building to connect to a DHN where the operator can demonstrate, through a validated declaration, that at least 90% of the thermal energy allocated to the development will come from qualifying new or unused low-carbon capacity. Sleeving is therefore both a compliance mechanism and a policy lever: it supports continued heat-network connection while encouraging network decarbonisation.

Where a valid sleeving declaration is in place, the notional dwelling can use the same carbon and primary energy factors as the actual DHN. Without sleeving, Part L 2026 compares the dwelling against the default low-carbon heat-pump route, which can make compliance significantly harder for buildings connecting to gas-led or mixed-fuel networks.

The key message is that a DHN connection is no longer a low-risk route to compliance. Sleeving viability should be tested early, including operator engagement, third-party validation, availability of qualifying low-carbon capacity, and the route to evidence future plant where relevant. Sleeving only applies to DHNs; communal heating systems (within a building) are compared against a notional low-carbon communal system.

Sleeving declaration – key requirements:

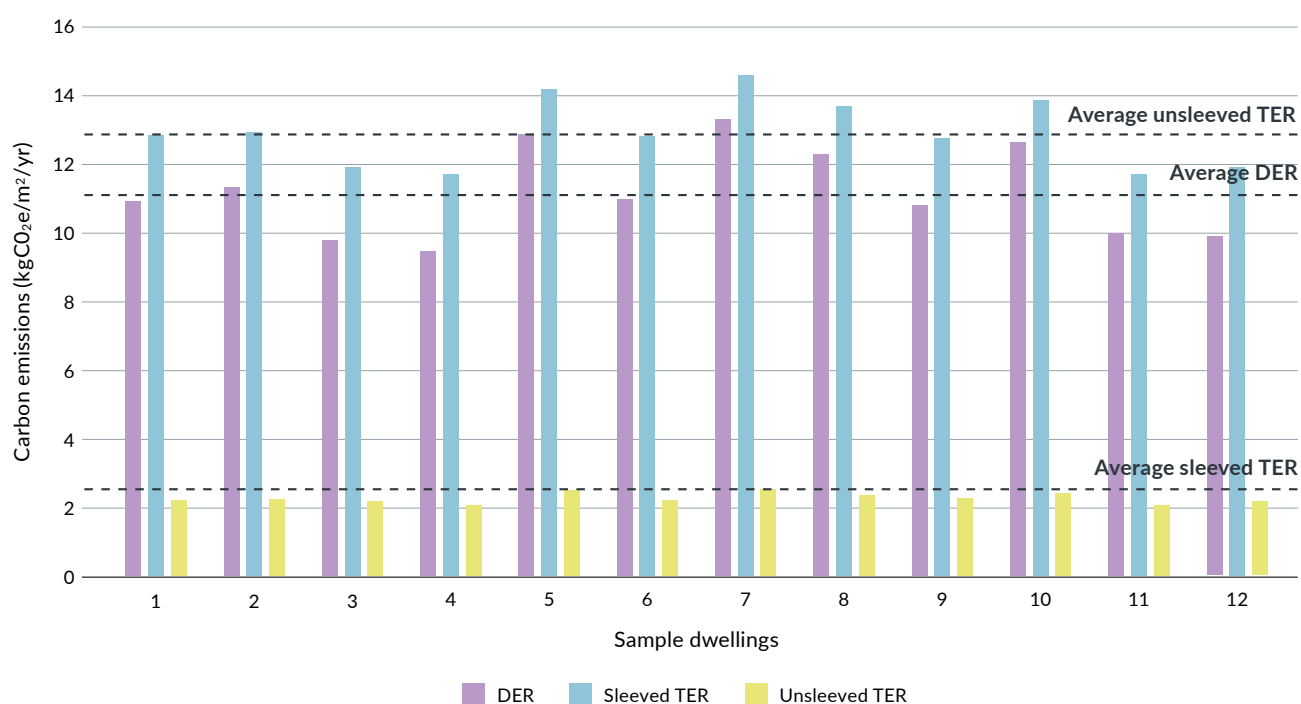
- Both space heating and hot water must be supplied by the DHN.
- Annual dwelling heat demand and the proportion met by the network must be stated using the same approved methodology.
- At least 90% of heat delivered must come from qualifying new or unused low-carbon capacity.
- The sleeved capacity cannot be double counted against other live or completed applications.
- Where future plant is relied upon, it must be committed and brought online within five years, supported by planning and contractual evidence.

Even where sleeving is used, the actual compliance submission must still calculate carbon and primary energy factors for the whole network, not just the sleeved low-carbon element. That distinction is important at both design and as-built stages.

Example.

A sample of apartments has been tested using SAP 10.3 to assess the impact of sleeving in detail. The results show that the Dwelling Emission Rate (DER) is unchanged between the two scenarios, but the Target Emission Rate (TER) reduces substantially when the network is not sleeved, resulting in a non-compliant solution.

Figure 2: Impact of 'sleeving' on Target Emission Rate (TER)



The above results are based on connection to a DHN within SAP's Product Characteristics Database (PCDB). The table below shows how the values reported for the DHN cannot compete with the electric heat pump.

	Distribution Loss Factor (DLF)	CO ₂ intensity (kgCO ₂ /kWh)	Primary Energy Factor (PEF)
Heat network (PCDB)	1.32	0.242	1.44
ASHP	N/A	0.086	1.969

The values included within the PCDB are not always reflective of the network's current performance and it is permissible to overwrite these with valid data provided directly by the network operator. It should be noted that Carbon Emissions Factor (CEF) and Primary Energy Factor (PEF) calculations need to be provided regardless of any sleeving declaration. The calculations should show the CEF and PEF factors of the whole network including heat generating plant that is not included in the sleeving declaration.

Future Homes Standard. Sleeving.

CONTINUED

Implications.

The sleeved option may be included to incentivise DHN operators to add low carbon heat sources to their energy mix. Without doing so, the DHN operators are likely to find that their network is not feasible for connection to new development. This is particularly important given that current planning policy is strongly in favour of DHN.

Carbon emissions and primary energy factors.

The reset in the carbon factor of electricity is one of the main reasons why the compliance landscape changes so significantly under Part L 2026. Electricity and heat from electric heat pumps now carry a carbon factor of $0.086\text{kgCO}_2/\text{kWh}$, compared with 0.136 previously, while mains gas remains at $0.214\text{kgCO}_2/\text{kWh}$. This sharply improves the relative position of electrically driven low-carbon systems in the Emissions calculation.

Primary Energy tells a slightly different story. Electricity now carries a Primary Energy Factor of $1.969\text{kWhPE}/\text{kWh}$, compared with $1.120\text{kWhPE}/\text{kWh}$ for mains gas. This means that a good heat-pump efficiency still matters. Low-carbon compliance is no longer achieved simply by switching the fuel; it relies on combining the lower carbon intensity of electricity with an efficient system.

For heat networks, the outcome depends on the fuel mix, distribution losses and the evidence available to support the claimed performance. Some recovered heat sources can be attractive in carbon terms, but their practical compliance value still depends on how the network performs as a whole.

Part L1 2026 also makes clear that, for heating and hot water systems in new dwellings, services should either use fuels at or below $0.086\text{kgCO}_2/\text{kWh}$ and $1.969\text{kWhPE}/\text{kWh}$ or be provided by a DHN. This does not create a universal ban on fossil fuels in every circumstance, but it makes direct fossil-fuel-led systems extremely difficult to justify for new dwellings.

Figure 3: Carbon emissions factors for typical fuel sources

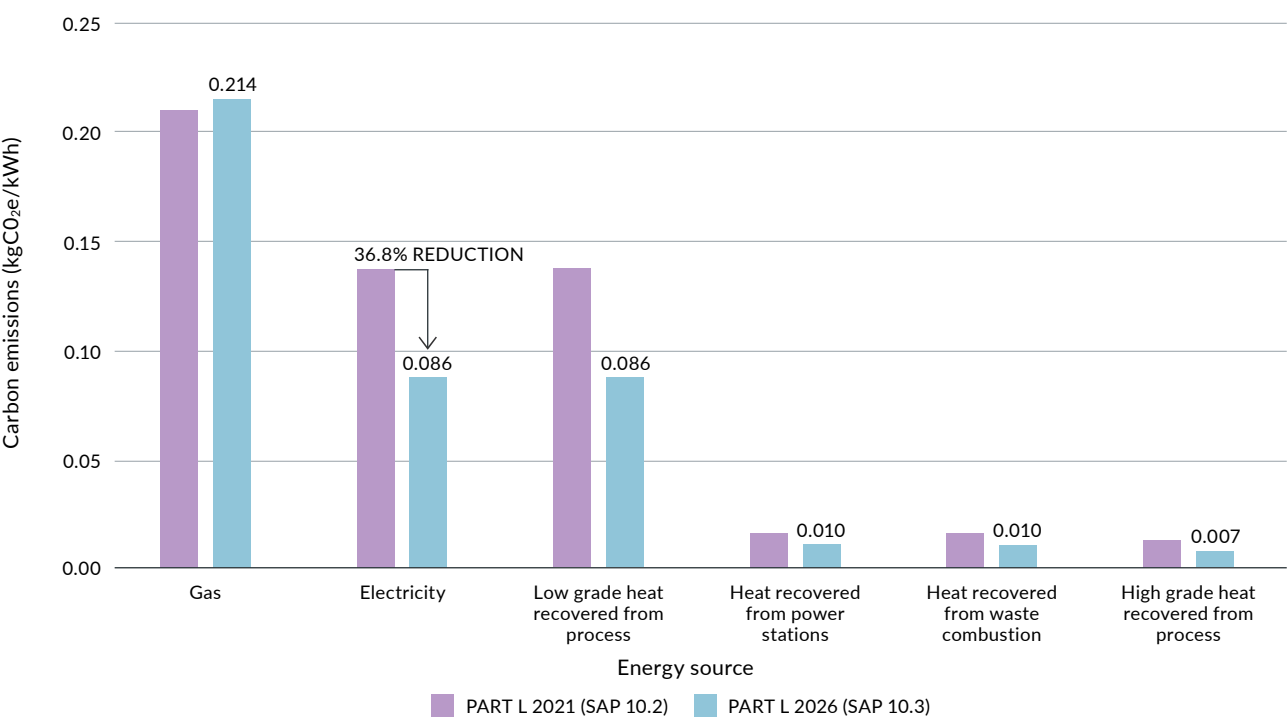
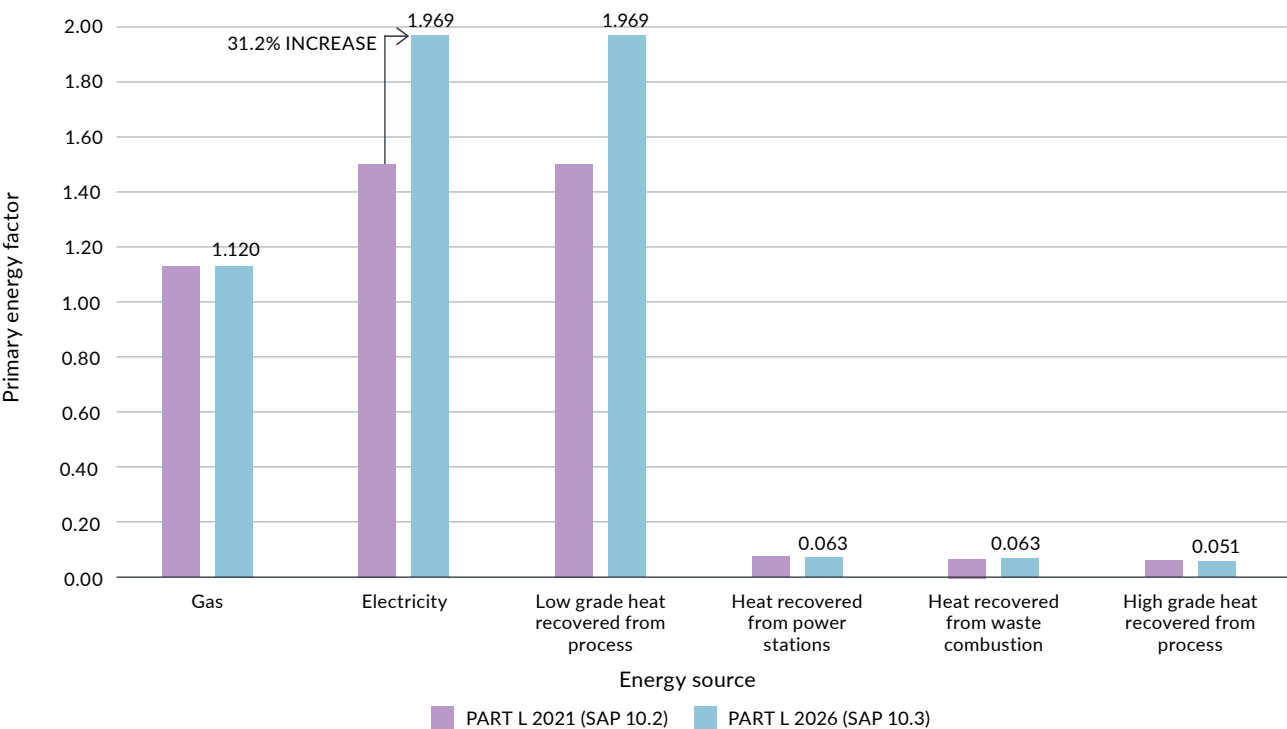


Figure 4: Primary energy factors for typical fuel sources



Future Homes Standard.

Photovoltaic panels.

One of the clearest changes in Part L1 2026 is the introduction of Requirement L3 for renewable electricity generation. For most new dwellings and buildings containing dwellings, PV is no longer simply an optional route to improve emissions or energy performance, it is now a standalone regulatory requirement. Where a system is required, it must be installed on the building or within its curtilage, designed so that generated electricity is available for residents' use, and capable of delivering a reasonable output.

For individual dwellings, the guidance indicates that a reasonable output is achieved either by PV at 0.22kWp/m² over 40% of the dwelling's footprint, or by PV over the reasonably practicable roof area at the same output density. The benchmark assumes panels orientated south-east to south-west, at a pitch of 45°, and not overshadowed.

In practical terms, 0.22kWp/m² equates to around 4.5m² per kWp, at approximately 22% module efficiency. For a typical 100m² two-storey house, this equates to around 4.4kWp, or approximately 20m² of panel area.

For buildings containing one or more dwellings, the same 0.22kWp/m² principle applies, based on an equivalent footprint area derived by dividing the total floor area by the number of storeys. The guidance also requires that the electricity is made available to residents of the dwellings, either directly or through communal spaces where the electricity can be used for residents' benefit. This is likely to be one of the more challenging issues for apartment buildings and will require early coordination of metering, landlord supply and communal loads.

Government deliberately moved PV out of the notional dwelling and into a separate functional requirement because the consultation-stage PV assumption was considered impractical in many situations. The final approach therefore retains a strong PV requirement, but allows justified reductions where roof form, architectural features or site constraints genuinely limit output.

Where the benchmark output cannot be achieved, the design is expected to maximise renewable generation by considering higher-performance panels, alternative orientations and roof-layout changes. Lower provision can be acceptable where it is suitably evidenced, to the point that less than 720kWh/year is not achievable, the requirement is removed.



Plans for East Bank Hull, Yorkshire
Image: CJCT Studios and Virtual Resolution

A major qualification for the higher-rise residential market is that Requirement L3 does not apply to buildings that are “relevant buildings” for the purpose of Regulation 7(4), being those in this case that are greater than 18m in height. Government has reduced the proposed exemption threshold from 50m to 18m above ground, aligning it with the Building Safety Act. **For many residential buildings over 18m therefore, this means the new PV requirement is not merely relaxed; it is no longer applicable.**

This is a significant distinction for urban apartment schemes. Where L3 does not apply, PV may still be installed where it is technically feasible and safe, but it is no longer mandatory under Part L1 2026. The SAP 10.3 methodology also means that the notional PV position follows the actual building up to a cap of the 40% footprint equivalent identified above, so excluded buildings without PV are not penalised by a separate notional PV assumption.

Future Homes Standard. Photovoltaic panels.

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Implications for residential buildings over 18m:

- **Requirement L3 does not apply** to "relevant buildings" under Regulation 7(4), making this one of the most important exclusions in Part L1 2026.
- **PV is not prohibited** on these buildings; it can still be installed where technically feasible and safe.
- **Excluded buildings are not automatically penalised in SAP** by a separate notional PV assumption, because SAP 10.3 carries notional PV through from the actual building up to a cap.
- **Below 18m, apartment buildings must comply with L3**, and the alternative flexibility routes then become important: reasonably practicable roof area, directly connected off-building generation, and the exceptional-circumstances route where even 720kWh/year per dwelling cannot be achieved.

Practical constraints and reasonable provision.

Government guidance published in September 2026 clarifies the interaction between Requirements L2 and L3. Any renewable generation system installed to meet L3 must also be appropriately sized for the site and available electrical infrastructure. Relevant considerations can include on-site electricity demand but critically, also the available infrastructure and Distribution Network Operator (DNO) export limits. As a result, a suitably evidenced system may have an output below the L3 benchmark where site-specific infrastructure constraints justify this.

Conversely, lower generation potential is not in itself sufficient reason to exclude PV. The guidance published in September 2026 confirms that north-facing and heavily overshadowed roof areas should generally still be considered when determining the reasonably practicable roof area, as the approved methodology already accounts for the effects of orientation and overshadowing on annual generation.

'Smart technology'.

Battery storage is not required by Part L1 2026 and is not included in the notional dwelling. Even so, storage may offer operational value where export constraints, landlord supply arrangements or time-of-use optimisation are material to the energy strategy. It is anticipated that battery storage and other smart technologies are expected to be represented more fully when HEM becomes available. Smart technology is likely to be introduced on new EPCs as part of the outcome of the EPC reform consultation.



The Cascades, Earl's Court, London
Image: Earl's Court Development Company

Future Homes Standard. Conclusions.

Part L1 2026 does not rely on a significant improvement in building fabric values. Instead, it resets the compliance baseline around a low-carbon services package: a heat-pump-led notional dwelling, a new renewable electricity requirement, and a much stronger compliance position for heat-network connections. This is a more demanding baseline, resulting in homes that are low carbon and efficient by design.

Programme, roof strategy, services selection and heat-network route now have a much stronger influence on compliance certainty than under Part L 2021. The efficiency of products such as heat pumps will also influence compliance significantly. High betterment margins over Part L are likely to become harder to achieve, not because absolute performance is worse, but because the baseline is significantly stronger.

This may have important consequences for local planning policy. Many local energy policies have been written around the assumption that significant betterment over Part L can routinely be demonstrated. Under the new regulations, that assumption is likely to become less reliable, and policy approaches may need to shift toward absolute outcomes or to lower betterment margins. This marries with the direction of the National Planning Policy Framework (NPPF) which reduces the ability of local authorities to seek performance levels that go beyond the Building Regulations.

The NPPF published in August 2026 nevertheless allows local planning authorities to set energy-efficiency standards above current or proposed Building Regulations where these are supported by a clear and robustly costed rationale demonstrating that they will not adversely affect development viability or deliverability. For dwellings, such standards should be expressed as a percentage uplift over the Target Emission Rate using a specified version of SAP or another approved calculation methodology.

This position creates an important tension for future local policy: if planning authorities continue to seek performance beyond Building Regulations, and the substantially stronger Part L1 2026 baseline makes large percentage improvements increasingly difficult to achieve, then local policy targets may need to be reconsidered to ensure that the level of betterment sought remains achievable.

Overall, the Future Homes Standard places the new-build residential sector on a clearer low-carbon trajectory. It is likely to accelerate the move toward heat pumps, greater on-site renewable electricity generation, and better integration between fabric, services and utility strategy. Attention may then turn more strongly to those areas where regulation remains less developed, including existing buildings, in-use performance, resilience and embodied carbon.

The performance gap remains an important unresolved issue. Government has signalled a further call for evidence and future proposals on building performance evaluation and post-construction testing, so this should be treated as an area of potential further change.

Future Homes Standard.

Glossary.

AD	Approved Document
ASHP	Air Source Heat Pump (can either be one unit per dwelling, or a centralised system serving all dwellings in a building)
BSA	Building Safety Act
BSR	Building Safety Regulator
CEF	Carbon Emissions Factor (the carbon intensity of fuels, such as grid electricity i.e. the amount of carbon emissions resulting from 1kWh of delivered energy)
CHP	Combined Heat and Power
Communal Heating System	A system serving multiple dwellings within a building, distinct from a District Heat Network
CO₂e	CO ₂ equivalent is a measure of comparative carbon for other greenhouse gases for example the equivalent amount of carbon dioxide for an emission of methane.
DER	Dwelling Emission Rate (the carbon emissions associated with the actual dwelling)
DFEE	Dwelling Fabric Energy Efficiency (the fabric energy efficiency associated with the actual dwelling)
DHN	District Heat Network
DHW	Domestic Hot Water
DLF	Distribution Loss Factor (associated with communal heating systems and heat networks – a measure of heat loss)
DNO	Distribution Network Operator
dMEV	Decentralised Mechanical Extract Ventilation (typically multiple units per dwelling, located in each room providing local extract, e.g. kitchen, bathrooms)
DPER	Dwelling Primary Energy Rate (the primary energy use associated with the actual dwelling)
EAHP	Exhaust Air Heat Pump (one unit per dwelling, can be coupled to a MVHR unit or ducted to ambient air)
EPC	Energy Performance Certificate
FHBS	The Future Homes and Buildings Standards
GSHP	Ground Source Heat Pump
g-value	Measure of solar transmittance
HEM	Home Energy Model (the future methodology to determine compliance with Part L1 2026)
HRB	Higher-Risk Building (as defined by the Building Safety Act)
kWh	Kilowatt-Hour (the units of delivered energy)
kWhPE	Kilowatt-Hour of Primary Energy
kWp	Kilowatt-Peak (the maximum power output of a PV system)
MVHR	Mechanical Ventilation with Heat Recovery (typically one unit per dwelling, located in a utility cupboard serving the whole dwelling)
Notional Dwelling	A theoretical dwelling with the same size and form as the actual dwelling but with defined fabric and system parameters.
NPPF	National Planning Policy Framework
Part F	The Building Regulations 2010, Approved Document F: Ventilation, Volume 1: Dwellings (2026 edition)

Part L/Part L1	The Building Regulations 2010, Approved Document L: Energy and Greenhouse Gas Emissions, Volume 1: Dwellings (2026 edition)
Part O	The Building Regulations 2010, Approved Document O: Overheating, (2021 edition)
PCDB	Products Characteristics Database
PEF	Primary Energy Factor (the primary energy intensity of fuels, such as grid electricity i.e. the amount of energy required to create 1kWh of delivered energy)
PV	Photovoltaic panels
Relevant building	Any building that has a storey at least 18 metres above ground level (excluding roof-top plant areas or storeys consisting exclusively of plant rooms) and contains any of the following: One or more dwellings (such as flats or apartments); An institution (such as a hospital, home, or school); A room for residential purposes (such as student accommodation, care homes, sheltered housing, or hotels)
Requirement L3	The new Building Regulations requirement for renewable electricity generation applying to most new dwellings and buildings containing dwellings
SAP	Standard Assessment Procedure (the current methodology used to determine compliance with Part L1) – Version 10.2 (for use in assessments against Part L1 2021) – Version 10.3 (for use in assessments against Part L1 2026)
SCoP	Seasonal Coefficient of Performance (associated with heat pumps – a measure of energy efficiency)
SEER	Seasonal Energy Efficiency Ratio is a measure of cooling efficiency taking into account the annual range of ambient conditions
SH	Space Heating
Sleeving	The Part L mechanism through which qualifying new or unused low-carbon capacity on a District Heat Network can be allocated to a development
TER	Target Emission Rate (the carbon emissions associated with the notional dwelling)
TFEE	Target Fabric Energy Efficiency (the fabric energy efficiency associated with the notional dwelling)
TPER	Target Primary Energy Rate (the primary energy use associated with the notional dwelling)
U-Value	Measure of thermal conductance (W/m ² .K)
WSHP	Water Source Heat Pump

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