



Solar Energy Scotland Consultation Response

Heat In Buildings Bill

March 2024

About us

Solar Energy Scotland is the trusted industry trade body for solar energy in Scotland. Alongside Solar Energy UK, we represent a thriving member-led community of businesses and associates, ranging from ambitious and innovative SMEs to global brands.

Together with our members, Solar Energy Scotland works to shape policy to realise the potential of solar and energy storage in Scotland, and to work with Government and all stakeholders to deliver on climate change obligations and net zero greenhouse gas emissions by 2045.

Respondent details

- Respondent Name: Daroon Ramadani
- Email Address: dramadani@solarenergyuk.org
- Contact Address: The Conduit, 6 Langley Street, London WC2H 9JA
- Organisation Name: Solar Energy Scotland
- Would you like this response to remain confidential? No
- Submission Date: 08/03/2024

Question 1

1. To what extent do you support our proposal to prohibit the use of polluting heating systems in all buildings after 2045?

Strongly Support

While we strongly support and welcome a Heat in Buildings standard that includes both heating and energy efficiency, we are concerned that the scope of proposals are not sufficient to deliver the scale or pace of transition needed.

There is no mention of the use of onsite solar and storage technologies. These are primarily Solar thermal, which directly uses the sun's thermal energy to provide space and water heating, and solar PV – used in conjunction with clean heating solutions like heat pumps. Pairing heat pumps and heat networks with storage can make these systems more cost effective for consumers too. Solar and battery storage solutions would result in the more rapid delivery of home decarbonisation targets and a swifter transition away from polluting heating systems. Solar thermal, or solar PV and battery systems immediately make home energy production and usage more efficient.

The implementation of this proposal, which we largely welcome, provides long-term, stable policy commitment not only for private homeowners, landlords and tenants, but also for industry to invest in the significant scaling up required to decarbonise the nation and meet our net zero commitments. Likewise, where this bill provides certainty to the industry required to scale up to meet demand for Zero Direct Emission Heating (ZDEH) systems, it has the potential to go further still; by including details of the benefits of onsite generation and storage, and how these technologies can play a key role in the journey to net zero buildings, at low cost.

Solar technologies help alleviate fuel poverty in the transition to clean heating; a point which we are concerned is not considered strongly enough in these proposals. Whilst solar PV is not by itself a heating system, it is a powerful tool in reducing consumer bills and carbon emissions, especially when paired with electric heating and / or a domestic scale battery, for example in the roof. Such solar systems help to alleviate poverty by enabling power generation at a lower cost than grid electricity, helping to ensure the affordability of electric heating: in a typical heat pump heated Scottish home, the installation of a solar PV system would mean heating bills reduced by £961 per year, saving 34.1 tonnes of carbon across the system's lifetime [[Solar Energy Scotland – The Value of Solar Heat](#)].

Shetland Island Council says that Shetlanders will need to earn more than £100,000 to avoid fuel poverty, and solar thermal and solar PV can help tackle these challenges [[Shetland Islands Council - Fuel Poverty in Shetland to hit 96%](#)]. All this must be considered in light of Scottish Government's forthcoming Energy Strategy and Just Transition Plan, and their recently announced Solar Ambition of 4-6GW generation deployment by 2030.

The bill puts emphasis on being 'affordable, fair, and feasible'. There is not enough detail on how that will be met and what support will be facilitated in the form of qualified advice, and finance. Currently the bill recognises that the implementation of ZDEH or non-polluting heating systems will incur higher capital (CapEx) costs at the point of installation but does not adequately discuss the increased operational costs (OpEx) in terms of the running costs of moving a home to ZDEH – which will ultimately mean greater electrification.

The outlook for electricity price caps and price volatility means that, even with a significant uplift in energy efficiency measures, the running costs of moving to non-polluting heating systems – via mains electricity – will, in many cases, be higher – at least until we achieve full self-sufficiency / decarbonisation of the UK electricity grid, anticipated to be achieved in 2035.

We recommend that further recognition be given to the role that onsite generation and storage can play in reducing the running costs of a building – particularly in circumstances where certain fabric and heating solutions are not applicable. We therefore propose that the level of resource afforded to the implementation of building fabric improvements and low carbon heating systems (through advice and finance) should also be afforded to support the deployment of onsite generation.

Crucially, solar and storage technologies will be essential in providing the flexibility needed to convert rural and remote homes to clean heating systems by 2045. These homes are more likely to be off-gas, and often have specific building constraints, costs or other circumstances that may require some additional time to make the transition. Onsite solar and storage technologies can provide an excellent solution to heat homes with electric heating. Onsite generation technologies also reduce the need for investment in broader electricity infrastructure, as the supply of, and demand for electricity are in the same place and can be installed by existing networks of solar and storage installers. Solar installation companies are expanding rapidly as part of the solar industry's broader growth and will make the clean heating targets more attainable. As point 2.20 of this consultation states, energy efficiency and reducing strain on the grid are key requirements to meet a minimum energy efficiency standard, and solar is a leading technology in this regard.

It should be recognised that the move away from polluting heating systems and the widespread electrification of heat, will also take place alongside our move towards our other net zero goals, including the electrification of transport. It should be recognised that the electrification of heat and transport will require significant investment in the electrical distribution networks as homes, buildings and communities require an increased electricity demand to not only heat their spaces but to cook their food, heat their water and charge their cars.

We have concerns that there is a misconception that solar generation cannot make a meaningful contribution to the electrification of heat due to intermittency. On the contrary, solar generation not only provides low carbon generation, it also enables greater grid flexibility; reducing demand on the existing grid infrastructure. Data gathered from industry leading solar design and sales software, suggests that as high as 87% of domestic solar systems are deployed with battery storage.

This provides a flexible energy system, supporting, rather than over-burdening, local grid infrastructure. This also supports the development of smart energy tariffs, allowing a lower cost transition to clean electricity, through the proliferation of smart meters that are used with solar and storage technologies. Consumers can use energy during periods of the day when energy is cheaper, as less people are using energy or there is more renewable energy being generated.

Furthermore, it is the case that whilst Scotland leads the way in terms of a low carbon electricity supply, that electricity is currently only approximately 22% of our total energy consumption.

[<https://scotland.shinyapps.io/sg-scottish-energy-statistics/?Section=WholeSystem&Chart=EnConsumption>]

Transport is 25% of Scotland's energy consumption and heat is a further 50%. It should be recognised that the decarbonisation of energy used in buildings and transport will result in a significant increase demand for electricity. Our electrical energy supply will only remain low carbon with a significant and continued growth in low carbon generation. Including the mechanisms to support low carbon power generation and storage within this bill, at the same time as low carbon heat and transport, is therefore vital for an affordable fair and feasible low carbon system.

It is also important to note that electric heating systems are only non-polluting if the grid is non-polluting – increasing demand on the grid without at the same time taking the opportunity to add clean energy generation makes the job of decarbonising the grid much harder.

2. To what extent do you agree that we should introduce a minimum energy efficiency standard to be met by private sector landlords by the end of 2028 (even if they are already using clean heating)?

Strongly Support

We welcome the clarity that these proposals will provide for the private rented sector – both landlords and tenants. The earlier date of 2028 is justified in terms of achieving the Scottish Government’s commitment to eradicate poor energy efficiency as a driver of fuel poverty. The 2021 Scottish House Condition Survey shows that the private rented sector has the highest proportion of very poorly insulated properties (15% with EPC rating of E to G).

The proposals should not come as a surprise to the sector, having been flagged since 2021 in the Heat in Buildings Strategy and the Fuel Poverty Strategy, in addition to earlier consultations on minimum energy efficiency standards for the private rented sector.

It is, however, essential that the primary legislation is introduced as soon as possible. Draft secondary legislation (regulations) and accompanying guidance should also be published as early as possible to ensure landlords have sufficient time to prepare for compliance.

It is also important to consider the potential impact of other private rented sector policies on the Heat in Buildings proposals and the Scottish Government should ensure regulations are appropriately aligned to deliver policy objectives. The Scottish Government should ensure that tenants have sufficient protection, so they are not faced with unreasonable rent increases or eviction to enable upgrades. Landlords will also need support, including financial incentives and advice to ensure the new standard is met in a way that is affordable and fair to all.

3. To what extent do you agree that we should introduce a minimum energy efficiency standard to be met in owner-occupied homes (which still have a polluting heating system) by the end of 2033?

We strongly support the introduction of a minimum energy efficiency standard for owner-occupied homes which must be met by the end of 2033.

It is important to apply the same standard to all private-sector homes for the following reasons:

- No incentive for private landlords to leave the private rented sector to avoid regulation
- Encourages action in multi-tenure properties, particularly for whole building approaches.
- Supports a just transition so all people benefit from living in a warm, affordable to heat home.

- Contributes to the achievement of fuel poverty targets and eradicating poor energy efficiency as a driver of fuel poverty – thus ‘fuel poverty proofing’ properties.
- Encourages homeowners to make their homes ‘renewable ready’ so that their zero emissions heating system will be as cost-efficient, both to buy and run, as possible.

We believe the regulations should apply to ALL homes, including empty homes, holiday lets and agricultural tenancies (although there may be a case of later compliance date for agricultural tenancies).

Although we support the proposal that the energy efficiency standard will only apply to homes that still have a polluting heating system, we do have concerns that this may result in some owner occupiers having higher running costs, which mean higher bills and more pressure on the grid. This can be addressed through the installation of onsite generation; reducing running costs and reducing impact on the grid.

It is essential that attractive financial support and quality advice is available to encourage a ‘whole house’ approach – cutting energy demand AND switching to clean heating.

4. Do you agree with our proposal to set a minimum energy efficiency standard that can be met by either installing a straightforward list of measures, or showing a good level of energy efficiency based on a reformed EPC fabric efficiency metric?

Somewhat Support

We recognise the potential merits of a ‘list of measures’ as it is simple to communicate and achieve, however we are concerned about the number of potential caveats and lack of applicability to many solid wall homes in rural areas and tenements, and the absence of low carbon onsite heating (space and water) solutions that can increase efficiency beyond that of the measures on the list, making homes immediately more energy efficient and which can still be financially viable and attractive to homeowners and landlords.

A reformed EPC fabric efficiency metric should also include domestic hot water demand – an important consideration for overall energy demand in a home and must be included when considering overall energy efficiency. The proposals in this consultation currently exclude hot water demand, which is a significant omission, and a shortsighted decision, if we are to truly achieve clean heating.

This omission also unfairly discriminates against solar thermal and solar PV (plus diverter) technology by eliminating from consideration some of the best ways of reducing the energy demand of a building. This also pre-empts the conclusions of the Scottish Government EPC Reform Consultation 2023 which consulted on the inclusion of domestic hot water demand within fabric ratings for EPCs.

According to the Energy Savings Trust, hot water demand accounts, on average, for 17% of total household energy demand; this proportion of demand is likely to increase as houses are insulated and less energy is required for heating the home. Excluding hot water demand overlooks a significant part of household energy use, undermining the overall purpose of the EPC. [[Energy Savings Trust – How saving water at home can help you save energy too](#)]

A reformed EPC fabric efficiency is a useful tool in assessing the thermal efficiency of a property. However, it should not be used as a measure of the affordability of a property. Ultimately this is dependent on the type of heating system used, and fuel / power prices, among other factors. The contribution that onsite generation and storage can make to the transition to non-polluting heated buildings should be recognised.

Transition to low carbon heating systems should be encouraged by allowing access to support and low-cost finance. Consumer Scotland shows that solar is remarkably popular, but these low cost measures are only possible if greater availability of low-cost finance is made available [<https://consumer.scot/blogs/energy-consumers-and-the-transition-to-net-zero/>]

This is evidence that solar and storage are particularly low cost, low regret and popular options for the public to implement and any support in the form of resource and low cost finance should be afforded to these complimentary technologies as well.

5. What is your view on the initial proposed list of measures to meet the minimum energy efficiency standard?

Somewhat Oppose

One of the best ways to decarbonise a home and increase the efficiency of its heating system is through low carbon heating technology, such as solar thermal and solar PV. These technologies can be used in conjunction with heat pumps or infrared space heating, while onsite storage can increase the efficiency and utility of onsite generation, while also reducing energy costs.

While the capital costs of these technologies tend to be more expensive than some of the measures on the list, in some circumstances they can be cheaper (e.g., compared to significant changes to the building fabric, for example), or have pay-back times that make the option more attractive to homeowners and landlords who benefit from money off bills both now and in the future. The current list limits that flexibility.

Solar and storage systems are also less invasive solutions than some of the listed measures, such as loft and cavity insulation. The absence of any mention of low carbon heating solutions dis-incentivises their use and gives a negative signal to industry, which can damage the long-term attainability of clean heating and energy efficient homes, and does not take into consideration the various use-cases where they would be more attractive to homeowners than the more invasive measures on the list.

As answered in Question 4 above, domestic hot water demand should be included in considerations of a minimum efficiency standard. The current list of measures continues to exclude it and thus the technologies that can address it.

Solar is also an excellent solution for homes with electric heating – whilst electric storage and wet electric heating is less efficient than a heat pump (in some properties), installing solar and storage on homes with electric heating can reduce demand and bills, ensuring tenants in hard to heat properties aren't left waiting for solutions. Some properties in rural and remote places may not be suitable for a heat pump and electric heat, and solar and storage could be a more cost-effective solution for those tenants. Indeed, and as stated above, solar can be used in combination with a variety of heating technologies, like direct electric, infrared, and solar thermal heating as examples – this flexibility makes it ideal to cover for rural and remote areas with the heating complications that come with that.

6. Do you think that properties for which most or all of the measures on the initial proposed list are not relevant should be required to meet an equivalent minimum energy efficiency standard?

Tick box saying: Yes – they should be required to meet the standard and additional measures should be included on the list (such as solid wall insulation, solid floor insulation and flat roof insulation), but they should only be required to install some of these where feasible and cost effective.

7. Do you think that an alternative approach to setting the minimum energy efficiency standard is required?

Yes.

As in our answer to question 4, we believe onsite generation and storage, which immediately increases the efficiency of a home's heating system, should be considered, and that hot water demand must be included in any efficiency standard or EPC metric.

8. Do you agree that the use of bioenergy should continue to be permitted in certain circumstances?

Yes, it should be permitted for those buildings already using it.

Yes, we agree that the use of bioenergy should continue to be permitted in certain circumstances. These should be limited to buildings with existing individual bioenergy systems.

We understand that existing and new systems connected to a bioenergy heat network are considered Zero Direct Emissions Heating (ZDEH) as set out in the Heat Networks (Scotland) Act. Consideration should be given to ensuring smaller heat networks are supported to transition to clean heat where appropriate.

Indeed, solar onsite generation technology, combined with battery storage, is an excellent way of rolling out cleaner energy to these hard to reach and hard to heat homes.

There will be very few, if any, homes in Scotland for which no other clean heating system is available, particularly when solar thermal and generation is included. Where that is the case, it should be addressed through an exceptions process to avoid the creation of potential loopholes.

All systems would need to evidence the bioenergy comes from a sustainable source.

9. To what extent do you support the requirement to end the use of polluting heating following a property purchase?

Strongly support.

The transition to clean heat must be accelerated, and the proposed backstop date of 2045 on its own will not be enough to encourage action and achieve the necessary emissions reductions in the next decade.

The time of purchase is a sensible trigger for the following reasons:

- This is a time when the buyer will already be considering renovations and upgrades to the home – so installing energy efficiency and heat measures can be incorporated into these plans, making it less disruptive and more cost-effective.
- The buyer has access to the equity in the home by a) negotiating a lower sales price to allow for the costs of meeting the standard; and/or b) including the costs as part of the mortgage.

By placing the obligation on the buyer, the buyer can choose whether or not to buy a property that will require action in order to comply with the regulation. The seller can choose to comply with the regulation in advance of the sale as a way to make the property more attractive to buyers or can choose to leave the obligation with the purchaser.

The consultation does not propose a start date for this requirement. In order to maximise economic benefits and meeting Scotland's interim climate target, we believe it should be as early as possible.

10. We are proposing to give those purchasing a property a 'grace period' to end their use of polluting heating. Do you agree with this proposal?

Yes – Grace period should be 2 years

We support providing a grace period to end the use of polluting heating following the purchase of a property. This is a helpful measure which will allow homeowners and landlords to get advice, quotes, and the best design possible for their home. Households should be encouraged to undertake this work as part of other renovations – so any redecoration or new flooring would take place after the heating system installation.

We believe the grace period should be two years initially to allow the supply chain to grow and for greater public awareness and understanding of the regulations. There should be a review point with the aim of shortening this grace period to 12 months if it is pragmatic (in terms of reasonable time to get a ZDEH system installed, including appropriate energy efficiency measures).

We think a shorter period is advisable to take advantage of the opportunity of the purchase to instigate the upgrade, and also to track progress for enforcement. A longer grace period will delay action too much in terms of building up the supply chain, lowering prices, and tackling the climate emergency.

11. To what extent do you support our proposal to apply a cost-cap where people are required to end their use of polluting heating following a property purchase?

Somewhat oppose

We believe that there is a need for research into options and the potential impact of cost-caps prior to any decision being made. As things stand, we believe that a cost-cap is a blunt tool and will not achieve the objective of fair and pragmatic regulation. If technical modifications or exemptions are available where costs may be higher, then a cost cap should not be required.

We are concerned that a cost-cap creates a risk that 'expensive to upgrade' or 'hard to reach' individuals are left behind in the clean energy transition. These properties will remain cold, damp and draughty, placing the occupants in or at risk of fuel poverty and reliant on increasingly out of date heating systems.

12. Which of the following methods of applying a cost-cap do you support?
None

Please see our comments to Question 11.

13. To what extent do you support the proposal that the Scottish Ministers should be given powers to extend the circumstances in future (beyond a property purchase) in which people could be required to end their use of polluting heating? This could be, for example, preventing the installation of new fossil fuel boilers when replacing the heating in your home or business premises.

Strongly support

We believe powers should be created in the Heat in Buildings Bill for introducing further policies to drive the replacement of polluting heating systems, if necessary, to deliver further emissions reductions and enable a steady scaling up of the industry to deliver the final 2045 goal.

4. To what extent do you support our proposal to provide local authorities (and Scottish Ministers) with powers to require buildings within a Heat Network Zone to end their use of polluting heating systems by a given date?

Strongly support

We would welcome the inclusion of this proposal in the Heat in Buildings Bill as it is reasonable to require homeowners (and other buildings owners) to end their use of polluting heat when a viable alternative exists.

15. To what extent do you support our proposal to provide powers to local authorities (or Scottish Ministers) that require developers to connect new buildings within Heat Network Zones to a heat network?

Strongly support

We support this proposal as it would provide additional certainty and support business cases for heat network development.

16. To what extent do you support our proposal to require occupiers of non-domestic properties to provide information about unused heat on their premises?

Strongly support

We support this proposal as maximising the use of recoverable and waste heat enhances resilience, has the potential to increase the viability of heat networks and reduce energy costs.

17. To what extent do you support our proposal to potentially require buildings with unused heat to provide this to a local heat network?

As stated in our response to question 16, such an approach would enhance resilience as well as viability of heat networks.

Utilising waste heat also creates a potential opportunity to reduce costs to end users, helping to tackle high energy costs as a driver of fuel poverty.

18. We will need to have a way to monitor if people are meeting the Heat in Buildings Standard, and discussed two options for this. Which do you support?

A combination of the two

19. We will need to have a way to enforce the Heat in Buildings Standard. We discussed possible options to help achieve compliance. What are your views on these ideas?

I do not support the suggested enforcement tools, but have another suggestion (please provide below).

Enforcement should only be used as a last resort. To minimise the need for enforcement, the Scottish Government must ensure that an effective enabling framework (awareness raising, advice, support and financial mechanisms) is in place.

20. To what extent do you support our proposals to modify the Standard or exempt certain people from the need to meet the Heat in Buildings Standard?

Somewhat Support

Overuse of exemptions will impact on the effectiveness of the regulations and potentially undermine the credibility, fairness and certainty that they are meant to provide.

We believe that the need for an exemption should be seen as a signal for extra support – advice, hand-holding and/or financial support. Every effort should be made to assist the homeowner or landlord to meet the standard, with exemptions used only as a last resort.

We believe that an appeals process is a better way to modify/exempt some people from the standard, rather than the creation of exemption criteria. There should be an easy to navigate process to evidence the need for an exemption, with support available for vulnerable households.

Where exemptions are granted, they should be either an ‘abeyance’ (delay) or ‘variance’ (modification of the standard) and not a permanent exemption. All should be time limited given both technology and personal circumstances can change quickly.

21. Which people, businesses, or types of buildings, if any, should be eligible for a modified standard or exemptions?

There may be situations where technical exemptions are appropriate, such as definite plans for demolition or major renovation in the near future. Exemptions may also be appropriate where a required energy efficiency measure is not feasible for the property type.

22. To what extent do you support our proposals to give certain people extra time to meet the Heat in Buildings Standard?

Neither support nor oppose

See answers to previous exemption questions, 20 and 21.

Generally, we do not believe it is sensible to identify certain characteristics of households which require extra time – better to have an efficient process which supports people to meet the standard and when that is not possible, to identify the appropriate solution (extra time, variance).

However, it may be appropriate to give certain people extra time where there are grid constraints which could delay connection of a heat pump. Additional time should not, however, run beyond the 2045 backstop for ending use of polluting heating.

23. Which people, businesses or types of buildings, if any, should be eligible for extra time?

See our response to Question 20–22. As building archetypes are so varied, and often have been added to over time, individual solutions are necessary rather than blanket exemptions. The aim should be to get the vast majority of properties to meet the standard.

24. To what extent do you support our proposal to require all buildings owned by a Scottish public authority to be using clean heating systems by 2038?

Strongly support

It is important that public sector bodies take leadership and should apply the standard to their own buildings, demonstrating their benefit to others.

25. We are considering the following further duties on public sector organisations to support planning for the transition by 2038:

No comment

26. Do you agree with our proposals to include powers in the proposed Heat in Buildings Bill to change the current requirement in legislation for a narrowly-defined renewable heat target?

Don't know

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No comment

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Don't know

We are not clear what these proposals would look like, however note that it is critical that the renewable heat target and progress towards meeting it is transparent and takes account of heat provided by heat pumps, solar thermal, solar PV and a diverter, heat networks and other zero emissions heating systems – including those with onsite generation adjacent, making them very energy efficient.

27. Do you agree that the Heat Networks (Scotland) Act 2021 should be amended in light of the passage of the Energy Act 2023?

Yes

We agree the Heat Networks (Scotland) Act 2021 should be amended in light of the passage of the Energy Act 2023 to ensure consistency in terms of definitions.

28. Are there any further amendments to the Heat Networks (Scotland) Act 2021 that the Scottish Government should consider?

No comment