Summary of Findings: Consultation on proposals relating to Building Control approval for new buildings containing fossil fuel heating systems

Isle of Man Government

NET ZERO ISLE OF MAN

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Contents

Executive Summary

- Heating our buildings is one of the Island's largest sources of greenhouse gas emissions. To meet our statutory climate targets, it is essential that we move away from fossil fuels in this sector as quickly as possible. Building heating is also an area where decarbonisation offers the most impactful co-benefits: improving housing quality and energy efficiency lowers energy demand, lowers bills, creates employment and economic opportunities and improves health.
- The Climate Change Act 2021 includes a ban on the installation of fossil fuel heating systems in new buildings from 1 January 2025.
- The Climate Change Plan 2022-2027 contains an action '2.2 Bring forward the ban on fossil fuel heating systems in new builds to 2024'
- The date of the ban (ie. the date it becomes illegal to install a fossil fuel heating system in a new building) could only be changed by primary legislation - we did not have time to achieve this. So, as an alternative we proposed to bring forward the date from which Building Control authorities refuse new applications for new buildings containing fossil fuel heating systems, to 1 August 2023.
- The 2025 ban on the installation of fossil fuel heating systems **already exists in live legislation and has been publicly signposted since 2020**. From that date, **it will be illegal to install a fossil fuel heating system in a new building irrespective of whether applicants have obtained Planning or Building Control approval**. Therefore, it would be irresponsible to continue granting new approvals on plans to which the ban will apply, beyond the time when it becomes impossible or unlikely that the project can be completed in time.
- Due to industry lead-in times, bringing the date forward to 1 August 2023 would have achieved a reduction in installations of fossil fuel heating systems in new buildings during 2024, avoiding the associated 'lock-in emissions' thereby achieving the underlying aim of the action to 'bring forward the ban'.
- Avoiding emissions 'lock-in' is a critical proactive approach to decarbonisation of any sector. Once a fossil fuel heating system is installed, it will continue to produce emissions for its whole lifespan (typically around 15-20 years).
- In accordance with the requirements of the Climate Change Act 2021 and advice from the Attorney Generals, a consultation and a programme of engagement events were undertaken between March and May 2023. Specific effort was made to contact as many business stakeholders as possible, with events aimed at industry (eg. Construction Isle of Man members), drop-ins at industry frequented locations (eg. CuPlas Callow) and targeted radio signposting.
- This document and the recommendations it contains, are based on the outcomes of both the online public consultation and the direct engagement with property developers, heating system installers and other industry representatives.
- Overall there is an understanding and acceptance of the need for decarbonisation, both within industry and the general public. However, the context of the cost of living crisis cannot be overlooked and the most prevalent concerns were around cost despite ASHP providing lower running costs for homeowners than natural gas. Gemserv, an energy and sustainability consultancy, are preparing a report on the competitiveness of ASHPs compared with gas and oil boilers, using Manx prices. The report will be published

when it has been completed. Concerns around cost and affordability exacerbated the feeling that changes are happening quickly, with too little time to prepare, and in ways that would disrupt existing plans and budgets – particularly where the ban is already in place (1 January 2025). It was felt by many that moving this date, to which they have been planning and working, was unacceptable particularly as there a suitable framework of support, for both training and subsidising installation costs, does not yet exist. For information on the changes to the proposals recommended as a result of the consultation and engagement, please see the 'Conclusions & Recommendations' section.

- There was very little disagreement with the principle that all new buildings should be constructed accommodate low carbon heating systems. Neither the ban nor the proposals consulted on applied to replacement heating systems in existing buildings; however, this was perhaps the most frequently raised concern and some respondents confused the consultation with a consultation on the existing ban or existing buildings. People are very concerned about the suitability of air source heat pumps (ASHPs) and the costs associated with retrofitting them in **existing** buildings. The next stage of decarbonisation of the Island's buildings (decarbonising existing homes as opposed to new builds) must be handled carefully and a timeframe should be decided as soon as possible, so that people have the maximum time to prepare. More information on this is included in the 'Next Steps' section at the end of this document.
- Overall the main themes drawn out of the consultation are:
    - Costs of installation to the developers and this being reflected in higher sale prices
    - Skills and training needed for low carbon heating systems in the 190 new build homes built each year as well as retrofitting existing homes
    - Confidence in ASHP technology and reputation
    - Timings and more time being needed to prepare for the 2025 ban
- As a result of the consultation, we recommend not proceeding with the proposal to stop the approval of new Building Control application for new buildings containing fossil fuel heating systems on 1 August 2023 and to activate the amendments to the Building Control Act 1991, contained within the Climate Change Act 2021, to stop the approval of new Building Control application for new buildings containing fossil fuel heating systems on 1 January 2024.
- The consultation has given us more information on the wider issues around building decarbonisation; namely – the need to upskill/reskill workers in low carbon heating technologies, the misconceptions which exist around ASHP and the need for further education on this technology, the need for a clear roadmap for building decarbonisation and more support for homeowners to transition.

Introduction

Scope

The consultation covered three areas:

(1) Proposals to stop granting new Building Control approvals, for new buildings containing fossil fuel heating systems, from 1 August 2023.
(2) The definition of a 'fossil fuel heating system'.
(3) Whether businesses and private individuals felt that they understood and are prepared for the 2025 ban.

Stakeholders

The key stakeholder groups identified were:

(1) the public (as home and building owners);
(2) industries related to all stages of development and construction, from drafting plans to installing, maintaining or supplying fuel for heating systems; and
(3) stakeholders within government, primarily the Planning and Building Control teams (DEFA).

Engagement Undertaken

An online public consultation survey was held on the Consult Hub between 17 March and 12 May.

https://consult.gov.im/environment-food-and-agriculture/buildings-with-fossil-fuels/

A dedicated page on the website www.netzero.im/heatingsystems also aimed to set out the current situation and consultation proposals as well as answer key questions.

Stakeholders, such as Construction Isle of Man, were informed of the consultation and aided us in reaching businesses in the sector that would be impacted by the proposals and invite them to key engagement events. The Construction Isle of Man board and membership were informed and non-member construction firms, housing developers were contacted directly. Architects and agents formed the majority of the Planning User Group who were contacted by email and a presentation facilitated by DEFA Planning. Other firms were sent the consultation directly and many small firms attended the drop-in at CuPlas Callow.

The DEFA Planning and Building Control team and Building Control in Douglas and Onchan were also given a presentation and information to help advise and notify their customers. Isle of Man Energy were also directly informed. The Department for Enterprise Business Isle of Man mailing list was contacted. Key plumbing and heating suppliers were visited and given postcards to provide them and their customers with details of the proposals and the opportunity to respond to the consultation.

The following in-person engagement events were held:

- **Construction Isle of Man Board**
  February 2023
- **Planning User Group**
  15 March 2023
- **Construction Isle of Man March Forum**
  30 March 2023
- **Drop In Sessions**
  5 April 2023 - CuPlas Callow
  24 April 2023 - Get Online Centre
- **Future of Heat** (presentations & workshop)
  12th April 2023

How the results are interpreted

This document combines the results from the online public consultation, comments received during engagement events and responses received via email/letter.

It is important to note that the aim of the consultation was **not** to determine whether we need to decarbonise our building heating sector, but whether an accelerated timetable could be implemented. Our aim was to find a balance between rapid emissions reduction and a delivery timetable that could be borne by an industry and population that is already suffering rising costs and delays in the aftermath of the COVID19 pandemic and other global geopolitical crises.

Notes were taken at the engagement events of emerging themes; however, comments were not recorded verbatim. A full write up of the engagement events is included in this document as Appendix 1.

Example comments have been taken from the responses submitted via the Consultation Hub.

This document focusses on themes that have emerged and how we can address them.

Quality of consultation findings

It has been difficult to consult on a technical subject despite best efforts to explain the proposals in a clear way. Many respondents thought that the consultation related to the 2025 ban or existing buildings when in fact neither of these issues were being consulted on. The online consultation hub is a one-way channel which doesn't allow misunderstandings to be cleared up, unlike in person events.

Going forwards, the team will focus engagement efforts on those most likely to be impacted by the proposals using two-way channels to facilitate meaningful conversations and understand the key issues this segment has. Comments received verbally from key industry representatives at in-person events have influenced the recommendations. However, those persons/companies did not necessarily respond to the online survey.

Findings

Summary

- A total of 321 responses were received via the Consultation Hub.
- 8 responses were discounted due be being duplications or having obviously spurious names.
- 29 responses were received that contained no name or email address. In retrospect, the consultation should have required these responses, so they have been included in the summary of results and taken in good faith.

Details of attendance to the in-person events are included in Appendix 1.

Responses were also received by letter from Ramsey Commissioners, Isle of Man Energy and the Department of Infrastructure and a meeting held with Manx Utilities.

Respondents

Business and non-business responses

Question 5 asked: Are you or your business/organisation involved in the property development, construction, or heating industries?

Total responses

- No – 240 (75%)*
- Yes – 77 (24%)
- Not answered – 3 (1%)

*6 of these responses provided a business name despite answering 'No'. This has been interpreted as the response being in their personal capacity, rather than that of the business for which they work.

Breakdown of business type:	**No.**	**% of responses**
Other*	23	(22%)
Private individual undertaking a development eg. building own home	22	(21%)
Heating system installer, engineer or retailer	19	(18%)
Construction business/workforce	15	(14%)
Design or preparation of plans eg. architect	12	(11%)
Development company – engaged primarily in small projects, eg. individual buildings	8	(8%)
Development company – engaged primarily in large projects, eg. estates	3	(3%)
Heating fuel retailer	2	(2%)
Estate agent	1	(1%)

*Where respondents answered 'Other' a free text box was provided to explain. The 'Other' businesses included consultants, those involved in the renewables industry, refurbishment specialists, a local authority etc. Eight responses indicated here that they are 'homeowners', 'residents' or similar ie. not businesses as the question intended to capture.

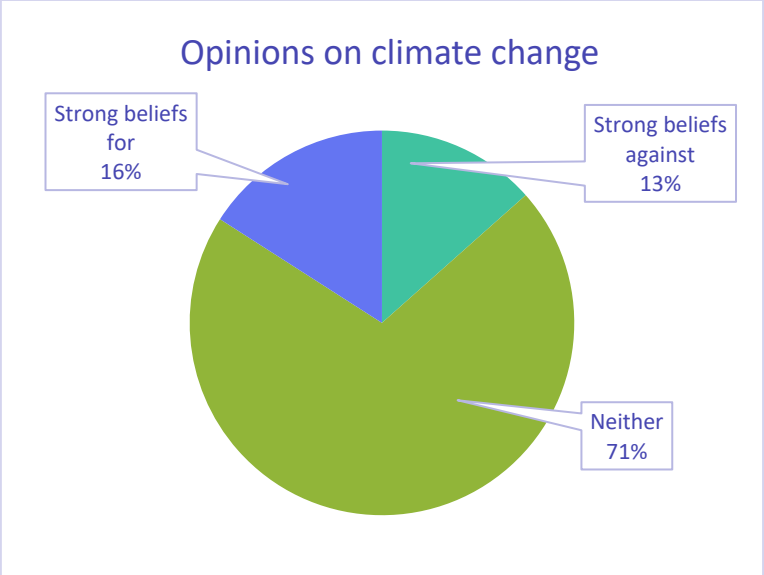
Belief in climate change

The consultation did not ask for respondents' beliefs in relation to climate change, as this was not the purpose of the consultation. However, typically every consultation which relates to climate change attracts polarised views – both in support of and in opposition to the measures on principle. Where respondents hold very strong views, they often respond to the consultation, not on the merits or otherwise of the proposals at hand, but on the principle of being either for or against any emissions reduction measures.

It is important to note that we are no longer debating the existence of climate change or that is it being caused primarily by human activities. The scientific evidence is sufficient that Tynwald enacted the Climate Change Act 2021, our interim targets and approved the Isle of Man Climate Change Plan 2022-2027. The aim of consulting on matters related to climate is to determine the best, most beneficial ways to achieve emissions reduction and not whether those reductions must be made.

We undertook manual analysis of the responses and categorised them as:

- 'Strong beliefs against' where the comments indicated denial or scepticism of climate change
- 'Strong beliefs for' where the comments indicated strong views, or in some cases anxiousness/worry in relation to climate change.
- 'No strong beliefs' where the comments did not indicate strong beliefs either for or against.



Question 17 asked: Overall, do you support the proposals to refuse Building Control applications from 1 August 2023 to prepare for the fossil fuel heating systems ban in new buildings by 1st January 2025

The total responses showed 58% did not support the proposals, 40% supported the proposals and 2% did not answer.

Even when the answers to this question were adjusted to exclude those with strong views about climate change (whether disbelief or strong belief) the results remained almost the same (differing by less than 2%).

This indicates that the results were not weighted on the basis of whether or not the respondents believed in climate change.

Misunderstanding

The proposals were complicated and so care was taken to explain them clearly, in laypersons' terms and an infographic was provided alongside the survey.

Do you feel that you understand the proposals made in this consultation? - Q13

- No – 27 (8%)
- Yes – 282 (88%)
- 11 – Not answered (3%)

27 responses* (8% of total) were identified as not having understood the proposals; 4 had indicated they didn't understand – and an additional 22 were determined manually by identifying comments that raised concerns in relation to replacement heating systems in existing buildings. While the proposals and the 2025 ban do relate to extensions, this is explored separately in the 'Extensions' section: the comments discussed here relate to replacement heating systems in existing buildings and are therefore not relevant to the 2025 ban or the proposals.

For example:

- *"air heat pumps do not work on retrofitted older properties"*
- *"To install a heat pump in an existing property all the existing radiators will need to be replaced and increased in size. This is very disruptive to an existing property."*
- *"The majority of existing properties do not have the insulation required for a low temperature heat unit (heat pump) to heat the property efficiently."*

24 of the respondents identified as having misunderstood the proposals, also indicated that they did not support them. If these were discounted, the levels of overall support for the proposals changes to 50% against, 40% for (as opposed to 58% against, 40% for).

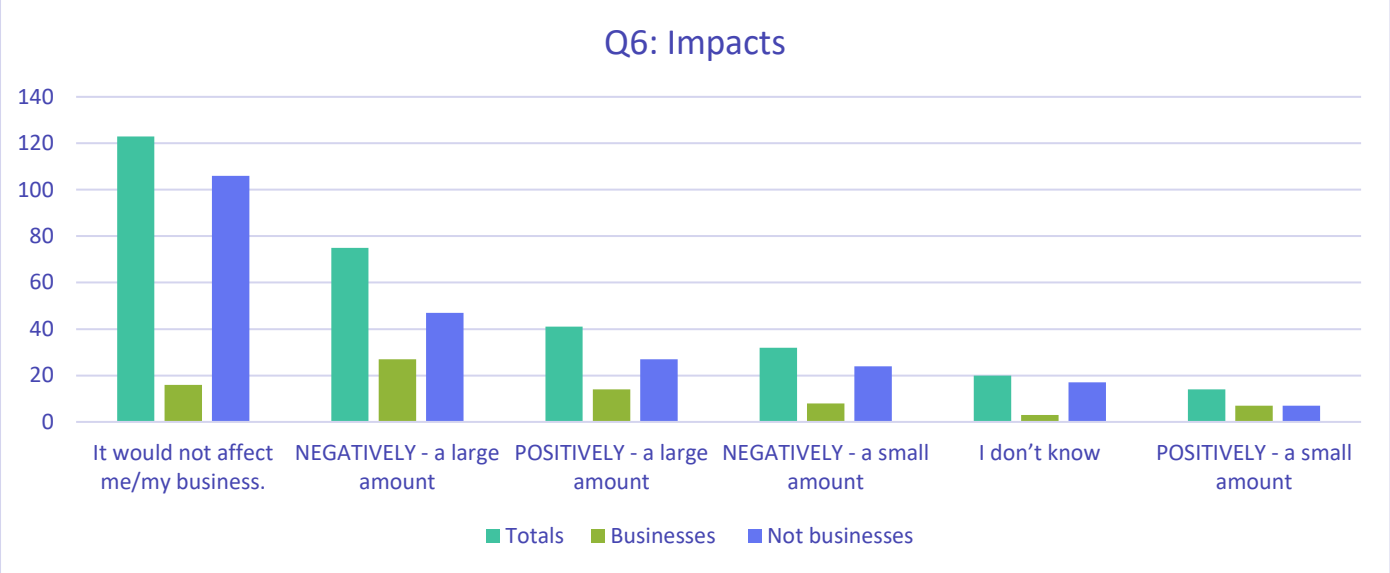
Impacts and Concerns

Businesses

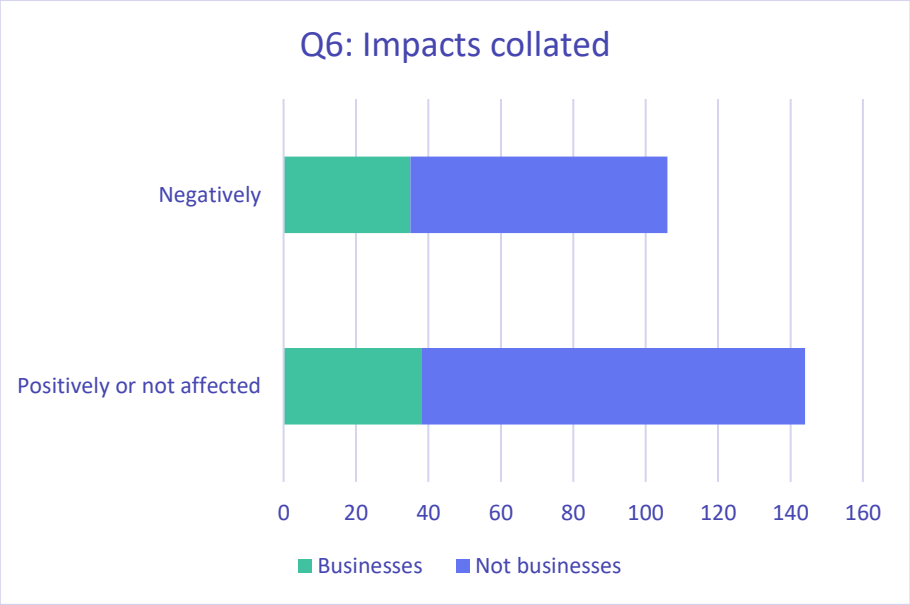
Question 6 asked: How would it affect you or your business if new Building Control applications, containing fossil fuel heating systems in new buildings, were refused from 1 August 2023?

The chart below shows the total responses to this question, and those given by business and non-business respondents.

27 of the total 77 business responses indicated that it would affect them or their business "NEGATIVELY – a large amount". This was the most common response for businesses.



However, the total of those business not affected or affected positively totals 38, in comparison to 35 affected negatively. The chart below combines those not affected and affected positively by the proposals versus negatively for businesses and non-business.



Question: I am concerned that the refusal of new Building Control applications, containing fossil fuel heating systems in new buildings, from 1 August 2023, will: [multiple choice list of concerns supplied, see table below]

This question allowed multiple answers. Interestingly, the distribution of concerns was largely the same between the business responses and the non-business responses. In the below table, the responses (business/non-business) which showed higher concern are marked in pink, lower concern in green; however, the differences are minimal.

Listed Concern (multiple choice)	% of each category who selected the listed concern		
	Total	Business	Non-business
Increase the cost to build new buildings	18%	17%	19%
Increase the sale price of new buildings	16%	14%	16%
Not enough installers trained in low carbon heating options	14%	14%	13%
Create additional work or costs for affected businesses	11%	12%	11%
Not provide enough time for affected businesses to adapt	11%	12%	11%
Delay construction of new buildings	10%	9%	11%
Delay to processing of Planning or Building Control applications	8%	7%	8%
Not reduce emissions quickly enough	5%	5%	6%
Not reduce the number of fossil fuel heating systems being installed before 2025	5%	7%	4%
Me/my staff won't be adequately trained in time to fit alternatives	1%	3%	1%

61 responses (19% of total) did not indicate any of the specific concerns. Of those 61 responses, 4 were businesses and 57 were not.

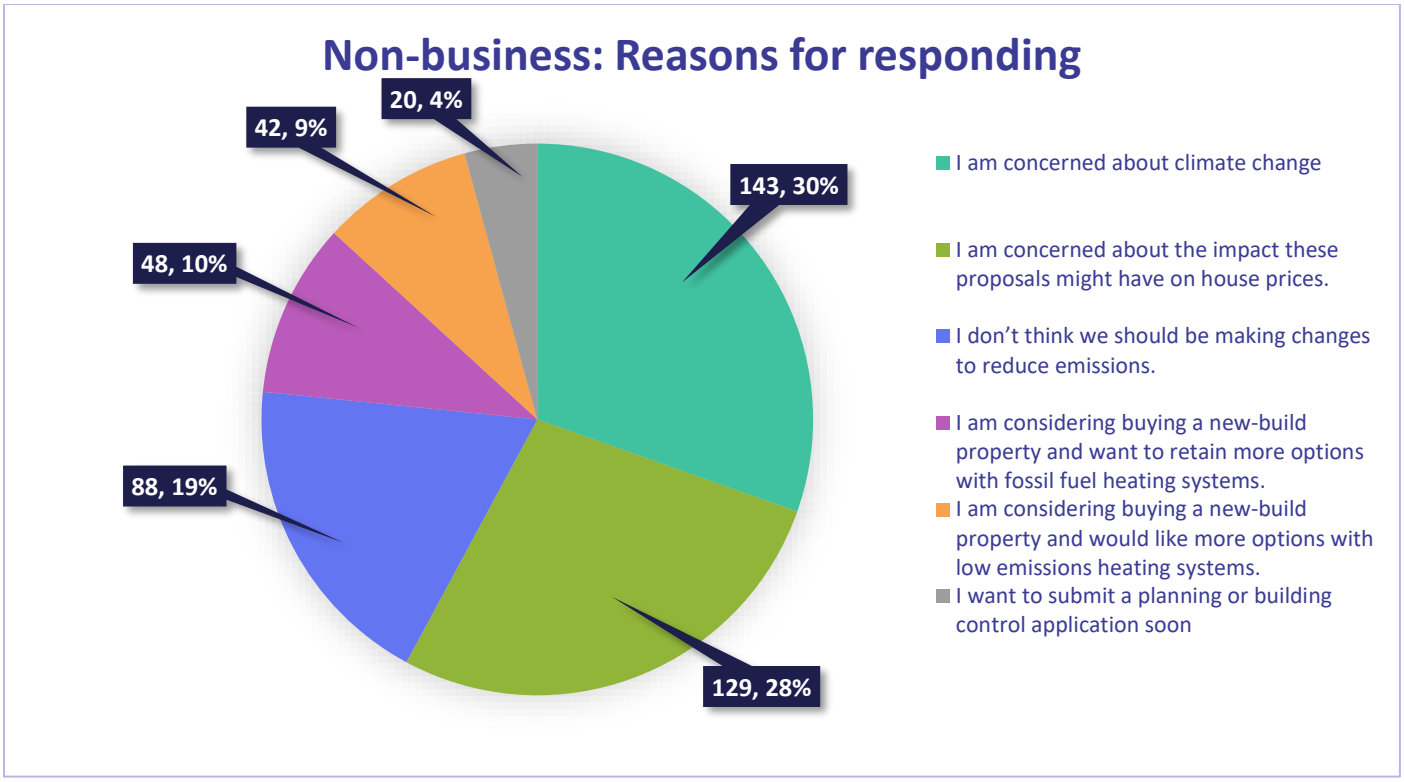
The above table ranks the concerns in order, from most frequently chosen to least.

Non-business

Question 16 asked "If you are NOT responding in relation to a business – why are these proposals important to you?"

A range of multiple-choice options were provided and respondents could choose all that applied.

The two most common responses were 'I am concerned about climate change' (143, 30%) and 'I am concerned about the impact these proposals might have on house prices' (129, 28%).

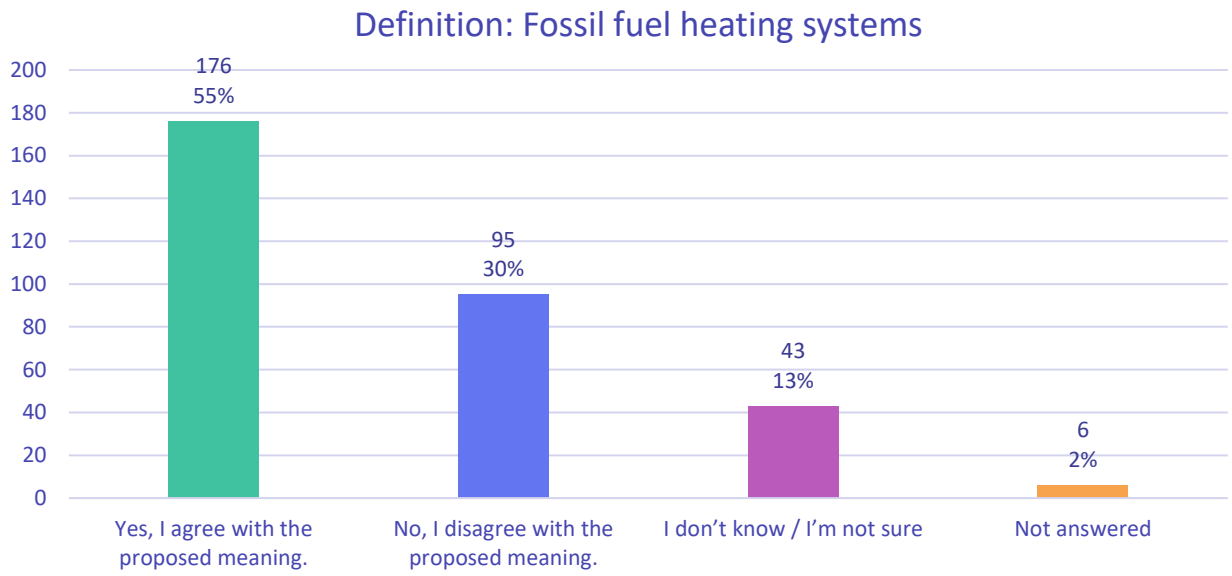


Definition of fossil fuel heating system

Inclusions

The Climate Change Act 2021, in which the 2025 ban is contained, does not provide a detailed definition of a 'fossil fuel heating system'. The consultation proposed a list, as follows:

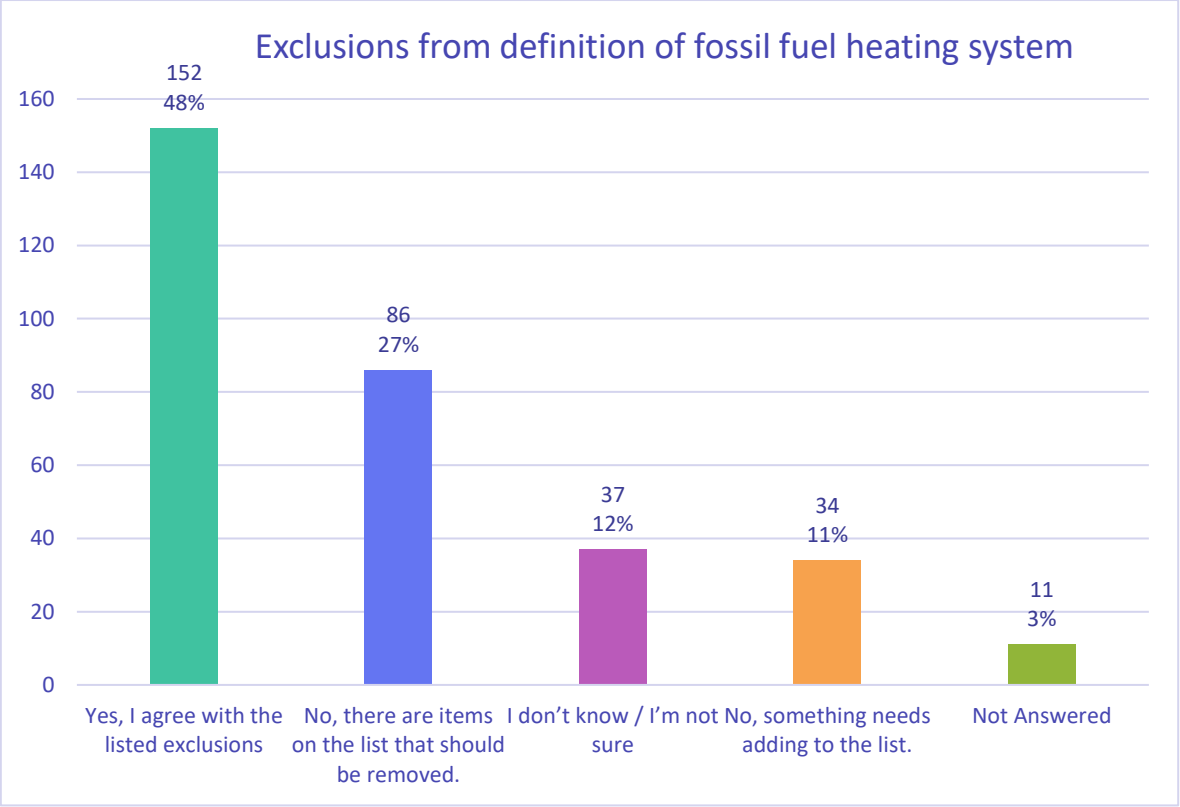
IS a fossil fuel heating system (ie. will NOT be permitted)
New or pre-used boilers capable of providing heat and/or hot water through the combustion of fossil fuels (other than for high temperature applications for commercial or industrial purposes). NOTE: This includes fossil fuel heating systems that *could* use low carbon fuels, such a hydrogen ready gas boilers or oil boilers that *could* use biofuels. At present, neither hydrogen nor biofuels are available for building heating on the Isle of Man. Allowing the continued installation of such heating systems would mean allowing the continued use of natural gas and oil to heat buildings, until low carbon alternatives become available. Once the future of hydrogen and biofuels for home heating becomes clearer, these provisions could be revisited.
Supply and storage components of fossil fuel heating systems (eg. oil tank, gas supply), whether or not the boiler component is also installed. NOTE: These parts of a heating system, although they do not themselves burn fossil fuels, are included within the ban to discourage retrofitting with fossil fuel heating systems.
Oil or gas fired appliances that can also be used for cooking, if they are connected apparatus that supplies heat or hot water.



Exceptions

The consultation also proposed a list of heating systems to be excluded from the definition of a fossil fuel heating system.

IS NOT a fossil fuel heating system (ie. will be permitted)
Any low emissions heating system, including: • air or ground source heat pumps; • heat networks; • solar thermal and solar thermal storage systems; • electric storage heaters; • electric boilers; • fuel cells; and • direct electric heaters (including electric panel heaters, electric fan heaters, thermal fluid-filled radiators, and electric radiant heaters).
Systems designed for high temperature applications for commercial or industrial purposes.
Freestanding heating appliances (eg. electric oil filled radiators, gas heaters that house a small bottle of gas etc.)
Components of heating systems that do not themselves burn fossil fuels eg. internal pipework, radiators, valves etc. (with the exception of supply and storage components).
Open fires and multi-fuel/wood burning stoves, whether or not connected to apparatus that supplies heat or hot water. This includes AGAs and similar appliances that do not use oil or gas.
Biomass boilers (ie. boilers that use renewable biomass fuels such a woodchips)



The most common reasons for disagreeing with either the list of inclusions or the list of exceptions were as follows:

Response themes

Timing

Responses highlighted the challenges around bringing in a change so quickly.

"Some planning applications will straddle beyond 1st August 2023 within larger development sites. The concession, where planning permission has already been secured would allow time in which to react to future installations and incorporate these within amended house designs in good time for implementation. However this does not account for planning applications which straddle the 1st Aug 23 deadline." Dandara

"As long as the original 1st January 2025 date is retained and a transitional period brought into force under amended Building Regulations the industry will have sufficient time in which to react and have resources in place. The proposal to bring this forward 18 months with only 4 months' notice is completely unworkable." Dandara

During engagement events with industry, it was frequently pointed out that the drawing of designs and decisions around building layout and heating systems is often undertaken many months prior to the submission of Planning and Building Control applications. The inconvenience and cost to developers and private individuals planning own-builds or extensions was seen as unreasonable – particularly as the industry are aware of and 'working to' the 2025 ban. It was seen as unfair to "*move the goal posts*".

Cost – houses, heating systems and electricity

The two most commonly selected, listed concerns related to the price of building new properties and the sale price. In addition, 30 of the free text responses to this question expressed concern around the cost of low carbon heating systems. Six of the free text responses called for grants/financial support. The need for grants/financial support came through strongly from industry at the engagement events; however, this was typically in relation to replacement heating systems in existing buildings and not the 2025 ban or the current proposals.

Question 15 also asked: Are there any ways, not already mentioned, that the proposed changes might affect your business? This was a 'free text' response, and the most commonly raised concern was the price of electricity.

Example comments:

"I was intending to replace my Oil Boiler with an ASHP, however, the recent explosion in Electricity prices means this is no longer financially viable. The Green Living Grant did not provide any support towards the high capital cost of installation. Moreover, an ASHP on the IOM does not generate as significant environmental benefits given our electrical power is mostly generated from gas."

However, some comments also acknowledged that the shift toward ASHPs would drive demand and contribute to lowering prices over time:

"As an Architect I have been trying to persuade my clients to go down a more energy efficient design approach but installation cost of ASHP's etc. is always a big concern and limiting factor. If it becomes legislation this should over time bring costs down."

It should be noted that running costs for homeowners once an ASHP has been installed are significantly lower (currently £756 cheaper per annum) than the equivalent gas boiler and any increase added to the house price by the developer would more than likely repaid by the savings in energy bills. The cost of installing an ASHP in a new build is significantly cheaper than installing one in an existing home. As demand for ASHP rises, costs are predicted to fall with the UK Government aiming to achieve price parity with new gas boilers by 2030.

Training / Insufficient installers

Of the total 77 responses from business, 16 identified themselves as 'Heating system installer, engineer or retailer' – 9 of these selected 'Not enough installers trained in low carbon heating options' as a concern and 5 selected 'Me/my staff won't be adequately trained in time to fit alternatives'. Although this is a small cohort of 'Heating system installer, engineer or retailers' this shows that over half are concerned about training. This theme also came through strongly in the engagement events with industry; however, opinions were divided between whether it would be better to set up a training facility on-Island or increase financial support for training off-Island.

"Training for oil and gas installers should be provided free of cost to get the skills required to install the new systems."

"Training Facilities:- non existing on island at present. Having to go off island for Gas Safe & Oftec training will further discourage interest due to expense, loss of earnings and inconvenience."

"Do not have the relevant training in alternative heating sources and there is none available on Island. The Government cannot offer local training in fossil fuel installation as it is so to meet the expense of off-Island training of approximately £3,000 taking into account time off work, travel and accommodation is not affordable to a small business. The VTAS scheme only offers 30% of the training itself, with no support for the additional expenses."

"It should run to the original 2025 to allow adequate time for training and development of the installers."

"Heat pumps are the obvious answer to domestic heating/hot water, however given the skills and costs disparity between boilers and heat pumps the government has to take action to accelerate this change, the government should match bringing forward the end date for boilers with financial support to offset heat pump capital costs and provide grants for installer training."

"give incentives to make it greener and training courses for free to building trade to get green incorporated to builds, make it cheaper and more attractive option"

ASHP reputation

Another common theme was concerns about the suitability of Air Source Heat Pumps (ASHPs). Some comments related to the fitting of ASHPs in existing buildings, to which the ban and the proposals do not apply (see 'Misunderstanding' section). However, these concerns are valuable as they can help us to prepare, and ensure that the Manx public and industries are also prepared, for the next stages of decarbonisation.

Low confidence in ASHPs

"I have no confidence in the effectiveness of non oil/gas heating systems. Specifically I don't believe air source heat pumps provide effective heating when outside air temperature is close to freezing or below freezing."

"They are not suitable for many types of premises. Electric storage heating will not provide the instant heat required with volatile temperatures changes seen in IOM."

"I'm not convinced about air source heat pumps and would worry about their performance and reliability."

ASHP have been used in Scandinavia for over four decades and roll out elsewhere in Europe has rapidly accelerated in the last few years. The UK is now following suit with heat pumps right at the heart of a government policy to decarbonise heating that has an ambition to end the sale of gas boilers altogether by 2035, and to do so in new homes by 2025.

Running costs

There were mixed opinions on the running costs of ASHPs:

"It's a no brainer, heat pumps are greener and cheaper to run. Low Interest loans would help with higher upfront cost."

"…the running costs will be triple that of gas or oil"

"On the flip side, the equipment is more efficient to run and will result in energy and cost savings."

"Not enough options are offered at present with alternative heating technology. Issuing sound, researched and peer assessed data would help about cost of running such technology and crush any myths about these figures."

Calculations run by the Climate Change Transformation Team show that ASHP have considerably cheaper annual running costs than gas, less so for oil customers. Decarbonisation, particularly in existing properties beyond the ban, will be hampered by high electricity costs and low oil costs.

Electricity – supply and cost

83 responses (26%) cited that the national electricity supply is generated from fossil fuels. This was a common reason for disagreeing with the definition of a 'fossil fuel heating system' and the proposals in general. Several themes emerged:

(1) A feeling of unfairness that personal use of gas and oil is being restricted, while the national supply continues to be produced by burning fossil fuels.
(2) A strong call for urgent decarbonisation of our energy supply.
(3) Concern about:
    a. The price of electricity
    b. The ability of the national network to cope with the increased demand for electricity

Example comments:

"It is unfair to effectively push the use of Electricity in favour of gas when electricity is currently still produced from gas and running electric heating from electricity produced from gas has a higher carbon footprint than direct heat."

"I generally agree with the statement and meaning, but would take it further. There should be zero carbon emissions at the source of use. Essentially, new heating systems should be solar, wind or water powered. Alternatives to those should be evaluated on the same basis. Zero emissions."

"If electric boilers/heaters are excluded, the production of electricity in IOM needs to be fossil fuel free."

"Electric is all supplied with fossil fuels on iom at present. We need wind farms, tidal to create natural electricity supply"

"I am concerned about high electricity prices and using electricity for the only heating source"

"in certain places on this Island the electrical grid cannot cope with the ASHP requirements"

"would the islands power systems be able to handle the extra load of all these systems. For the first while it might be ok but as more and more houses move over it will increase the power demand massively."

These comments show that people are aware of the importance of decarbonising our electricity supply, but suggest two areas where improved understanding and awareness are needed:

(1) The efficiency of heat pumps
(2) Manx Utilities work to plan and deliver on the Climate Change Plan 2022-2027's commitment to decarbonise our electricity supply by 2030 and implement at least 20MW of local renewable generation by 2026.

Decarbonisation of national supply

Manx Utilities have published their Future Energy Delivery Strategy, which outlines the steps needed to achieve the sectoral decarbonisation commitments made in the Climate Change Plan 2022-2027.

Responses to the consultation indicated that neither the commitment in the Plan nor the Future Energy Delivery Strategy were widely known about.

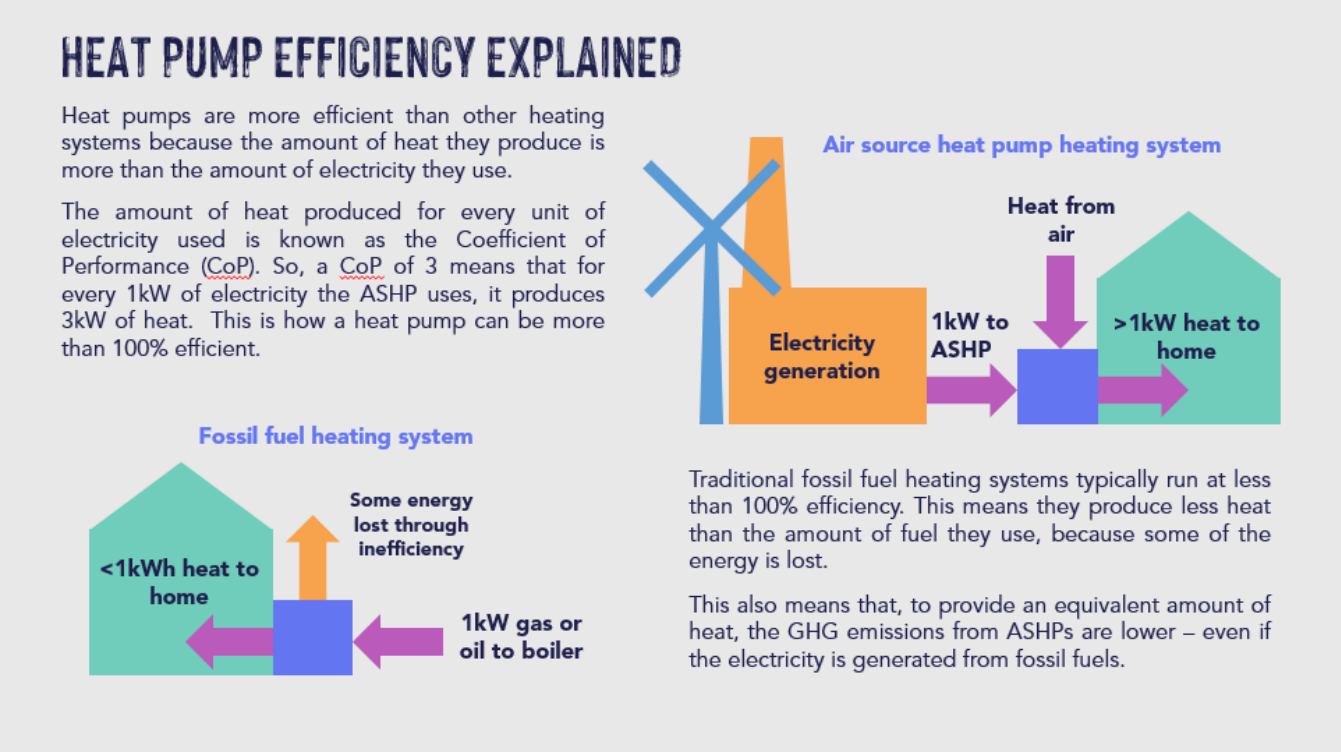
The average lifespan of a fossil fuel heating system is 15-20 years. So, a system installed in 2023 could still be in use in 2043, by which time the national electricity supply should have been delivering carbon neutral power for 13 years. This means that every fossil fuel boiler installed before 2030 generates years of unnecessary, avoidable emissions.

Heat pumps in particular, offer a reduction in emissions even while the Island's electricity supply is awaiting full decarbonisation, as explained in the following section.

Heat pump efficiency

Some comments and discussions during engagement events highlighted a misconception that the emissions from a gas or oil boiler in a building are the same as those resulting from an ASHP running on fossil fuel generated electricity. This is not correct.

The efficiency of ASHPs means that the emissions are considerably lower.



Therefore, current use of fossil fuels to generate our national electricity supply is not seen as an appropriate reason to delay or avoid measures to stop/restrict the installation of fossil fuel heating systems in buildings.

Hydrogen and liquid bio-fuels

27 (8%) respondents believed that hydrogen-ready gas boilers and/or liquid-biofuel-ready oil boilers should be permitted.

Here are some examples:

"Time needs to be allowed for the development of HVO and alternative oil. Also for hydrogen."

"Low carbon energy forms such as hydrogen should be permitted."

"low carbon fuel sources such as hydrogen, also recycled fuels such as some bio fuels should be approved for use"

Research[1] suggests that hydrogen is largely unsuitable for, and therefore unlikely to play a major role in, the decarbonisation of building heating. In addition, the cost of transportation and storage makes hydrogen an unlikely home heating solution, particularly for the Isle of Man[2].

In addition, the most common production method for hydrogen is not a low emission process[3].

The drawbacks of hydrogen were acknowledged in several comments:

"Hydrogen has no future in home heating, and should not even be entertained in any debate about the subject. There is clear peer reviewed evidence that demonstrates that home heating should be electrified and is in order of magnitude higher in terms of efficiency when compared with hydrogen. Not to mention the obvious benefits around safety. Green hydrogen should only be used to decarbonise existing grey hydrogen and for use in hard to abate areas. Please see the green hydrogen ladder by Michael Liebreich."

"[the definition] should also include any boiler which may be adapted to burn 'coloured' Hydrogen, as making Hydrogen from fossil fuel (oil, natural gas, methane etc.) means using a process that releases more carbon into the atmosphere. There is more chance of Hydrogen leaks due to the size of the molecule and nature of Hydrogen to 'seek' gaps and the effect on materials used in current gas network. Also permanently open ventilation holes will be required "in case" of a hydrogen leak. This goes against Part L of the Building Regulations, Conservation of Energy. Air Tightness regulations could not be met with permanently open vents while closed vents become a safety risk, neither are compatible with the other."

"Hydrogen and biofuels are not really a sensible alternative to efficient systems like air and ground source heat pumps. I feel like provision of these fuels to replace natural gas or oil is a false promise that will never materialise and if they do it won't decrease the environmental impact."

Liquid-biofuels are more likely to become available on the Island and could play an important role, especially in relation to replacement heating systems in old and difficult to treat properties. The 2025 ban and the current proposals relate only to new buildings. Planned advances in Building Control standards relating to the energy efficiency of new buildings should create an environment where all new buildings can accommodate ASHPs or other low carbon heating systems. If we adhere to a principle that all new buildings should be designed to accommodate fully low carbon heating systems - the installation of oil boilers in new buildings, in preparation for liquid biofuels becoming available, is unnecessary and counter productive. However, provision can be made to ensure that liquid biofuel systems are permitted for replacements in existing buildings in future.

Coal, wood and biomass

47 (15%) respondents said that coal, wood and/or biomass heating appliances/systems should be banned. Pollution and air quality were the most frequent reason.

"Given the recent evidence around air pollution effects from "Open fires and multi-fuel/wood burning stoves" the government should consider adding these to the list."

"Open Fires, Multifuel Stoves, Wood Stoves, AGAs and Biomass Boilers should be removed as they have a detrimental effect on local air quality and emit unfiltered (usually) emissions"

[1] http://www.janrosenow.com/uploads/4/7/1/2/4712328/is_heating_homes_with_hydrogen_all_but_a_pipe_dream_final.pdf
[2] https://www.netzero.im/media/d4xb3dpl/isle-of-man-report-dec-2021-final-combined-v2-compressed.pdf
[3] https://www.forbes.com/sites/rrapier/2020/06/06/estimating-the-carbon-footprint-of-hydrogen-production/?sh=32e01e5924bd

"It is way past time that open fires burning house coal, i.e. not smokeless, should be banned. The pollution caused by smoke from such fires is dreadful and should be a thing of the past. This is particularly the case if people are tempted to also burn household waste and plastics."

Wood and biomass are not fossil fuels and so it would be *extra vires* (outside the powers of the Climate Change Act 2021) to include appliances/systems designed to burn these fuels in the definition of a 'fossil fuel heating system'. Wood and biomass can both be produced sustainably and be carbon neutral and therefore, in terms of climate change and if carefully sourced, represent a viable alternative to fossil fuels. Biomass boilers in particular may play an important role in heating large or commercial buildings and there are significant local economic opportunities in this area. A study on 'Sustainable Biomass Feasibility on the Isle of Man' has been prepared by bioeconomy consultants, NNFCC.

Coal is a fossil fuel with high GHG emissions. The systems/appliances that are able to burn coal are typically also able to burn wood/biomass. This makes defining such systems independently very difficult. Therefore, instead of including coal fired systems/appliances in the definition of a 'fossil fuel heating system' it is proposed that steps be taken to restrict the use of coal as a fuel, via application of the UK's Clean Air Act 1993 to the Island. This is not 'climate change' legislation and such a course of action would need to be taken forward by/in collaboration with Public Health (Cabinet Office) and Environmental Health (DEFA). Such legislation would also address concerns around the burning of wood, in particular wet wood, and other materials that contribute to air pollution.

Act now on new builds to avoid expensive retrofitting

Three (1%) comments were received that pointed out that ongoing installations in new buildings would inevitably lead to retrofitting costs in the future.

"Any design needs to comply with the current Building Regulations. If the property requires a second application for a new heating system this can easily be done under a no fee charge and at next to no cost from a design point as it only takes minutes to add a ASHP to a drawing. This will be no different to when the property will have to change from gas/oil to an alternative source in the future but it will mean that the house won't need expensive retrofit to make it suitable."

"*Presumably retrofitting with a huge number of heat pumps in a housing estate/apartment block down the line will impact on the electricity infrastructure required to serve the estate/block (and all units therein). Surely standard electricity supply to a housing estate/block with gas boilers is not what is required for hundreds of heat pumps and car chargers? This will presumably necessitate expensive and disruptive future upgrading which will impact on the local grid, possibly the roads, and all our electricity bills in the future. Surely this is better avoided at the outset with a heating and electricity supply to and within the estate/block which is fit for today and the future. In my mind any delays in decarbonising and retrofitting problems are entirely avoidable, so should be avoided. A small planning delay now may mean a small delay in houses/apartments being built, but avoids a huge amount of unnecessary emissions, disruption, cost and wasted embedded carbon in infrastructure etc.*"

"It is absurd that new builds are currently being built with gas boilers. […] Housing developers are just embedding large costs for the new homeowner when they do have to eventually change over to a heat pump."

Free standing appliances and cooking equipment

Five (2%) comments called for free standing appliances and gas powered cooking equipment to be included within the definition of a fossil fuel heating system (ie. not permitted under the 2025 ban).

"I believe that free standing gas heaters should also be banned. These are still producing emissions and I suspect are considerably less efficient than a gas central heating boiler and they also produce huge quantities of moisture which contributes to damp and mould in property which should not be what we are aiming for."

"I do not understand why free standing heating appliances should be allowed."

"I generally agree with the statement and meaning, but would take it further. There should be zero carbon emissions at the source of use. Essentially, new heating systems should be solar, wind or water powered. Alternatives to those

should be evaluated on the same basis. Zero emissions. It should further mean no new installations of oil or gas fired cooking appliances, they are still going to be emitters."

"I think it [the definition] should be much wider (I even think it should include gas cooking hobs for instance)"

"Gas heaters including patio heaters should be no no."

It is not recommended to make this change at present for the following reasons:

- the number of comments calling for this change was low
- insufficient research into the effects of such a ban has been conducted
- the existing wording of the ban makes these appliances difficult to incorporate because –
    - the ban prohibits the 'installation' of fossil fuel heating systems and freestanding appliances are not 'installed';
    - the ban prohibits the installation of fossil fuel heating 'systems' and freestanding appliances are general not categorised as 'systems' so it may be out of scope/*extra vires* (outside the powers of the Climate Change Act 2021) to include these in the definition;
    - the ban prohibits the installation of fossil fuel 'heating' systems and cooking appliances are not usually categorised as 'heating' appliances so it may be out of scope/extra vires to include these in the definition.

Such devices and appliances should be considered in future as part of the overall decarbonisation of our buildings.

Heat networks

The following comment was made in relation to heat networks: *"Need to be careful with the use of the term "heat networks". This could be deemed as district heating schemes which could run on gas or oil. The term "heat networks" needs to state connected to renewables heating technology only."*

This is an important point and wording will be added to the definition to reflect this.

The types of fuel cells that are permitted may also need to be considered in future, as technology progresses.

Noise

Two comments (<1%) were received relating to noise from ASHPs, although this did come up as a concern during in-person industry engagement and was raised by Planning officers.

Isle of Man Building Regulations generally align with those in place in the UK (ie. Approved Document E: Resistance to the passage of sound) and aim to ensure that buildings are designed to minimise noise disturbance. There are also existing controls around noise in the Planning process, which apply to ASHPs as well as other sources of noise. ASHPs fitted as 'permitted development' (ie. on existing buildings), are subject to a specific noise limit of 42 dB LAeq 5 mins. Should an ASHP begin to make disruptive noise after installation the usual nuisance noise provisions[4] would apply.

ASHPs typically produce around 35-70bd[5] (from 1m away), depending on manufacture, installation and state of repair of the unit. For context, most in-home appliances, such as fridges, washing machines etc., produce between 40 and 70db and 30-50db is 'average room noise'[6]. It should be noted that ASHPs are fitted on the outside of buildings, so the noise audible from inside should be considerably lower.

Additionally, ASHPs are not the only low carbon heating system available. For dense residential developments, ground source heat, biomass or a heat network may be more appropriate. The best system will depend on the details of the planned building/s.

[4] https://www.gov.im/categories/home-and-neighbourhood/noise-problems/
[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48206/3309-acoustic-noise-air-source-heat-pumps-3.pdf
[6] https://hearinghealthfoundation.org/decibel-levels

Consideration of noise will also form part of future work on the Low Carbon Heating Strategy which will set out the next steps of building decarbonisation in the Isle of Man, including retrofitting in existing buildings.

The UK have recently committed to undertaking a review of ASHP noise, including a £6 million 'noise mapping' exercise. The results of this study will be taken into consideration once it has been published.

Extensions

Due to the definition of a 'building', taken from the Building Control Act 1991, a 'new building' includes an extension. This means that, from 1 January 2025, it will be illegal to install a fossil fuel heating system in a new extension.

However, you may connect pipework to a new extension to an existing fossil fuel heating system which is located in the existing property.

15 (5%) comments were received relating to effect of the ban and proposals on extensions.

"*It is unfair to allow an extension to be connected to an existing fossil fuel heating system but not to allow a small extension to have a fossil fuel system installed. It needs clarifying how this would affect upgrades such as rebuilding single brick extensions etc. Clearly supporting those improving the thermal performance of a property and moving to make adaptations to make moving to heat pumps and similar possible is important.*"

Industry engagement also showed concern on behalf of customers about the cost increases the ban will cause in relation to extensions because pre-existing part of the building may need additional insulation.

A longer lead-in time, before Building Control begin to refuse applications for new buildings with fossil fuel heating systems, would enable those planning extensions to save for the additional cost of an ASHP or adjust their designs.

It is recommended that, in considering support schemes, those undertaking extensions should be able to access funding as it would be preferable for more ASHPs to be installed, rather than people choosing to retain their existing fossil fuel heating systems to heat their extensions.

National reputation

Some respondents (~1%) raised concerns about the effect any delay to decarbonisation could have on our national reputation, immigration and eco-tourism:

"Surely all the people government hopes to attract to the Island would be more impressed if all the new and newish housing stock was already fossil-free, which will save them a costly and disruptive future retrofit."

"*It could be affected in a good way as eco tourist will be attracted to the no carbon heating ban; it will be a plus for our biodiversity qualification in gutter reapplications. It will give our trades a chance to up skill and be ready for future developments; the technology will get cheaper; we could encourage more engineers and technically skilled staff to the island and train students in the basics; apprenticeships could be encouraged to sustain a solid core of skills and keep staff on island; the building trade will stop building leaky, un ecologically sound buildings.*"

Internal consultation

Planning and Building Control

The Planning and Building Control teams are currently experiencing low staff numbers and high workload. The implementation of the 2025 ban will likely increase this workload and work is needed to prepare.

Implementing the proposals set out in the consultation would require a change to Building Control processes with very little notice. This could result in increased customer complaints and/or enquiries which it would be difficult for Building Control to accommodate at this time.

In addition, although an exception was proposed to allow developments which had already received planning permission by 1 August 2023 to go on to obtain Building Control approval after the proposed 1 August 2023 cut off date, this would not capture applications submitted but pending Planning permission. This would likely cause an influx of amendments and additional pressure on the team to process pending applications ahead of the deadline. Retaining the 1 January 2024 deadline would alleviate these issues to some extent.

The amendments to the Building Control Act 1991, contained in paragraph 4 of the schedule to the Climate Change Act 2021 already enable building control officers to refuse plans for new buildings containing fossil fuel heating systems from 1 January 2024. The Planning and Building Control teams raised concerns in relation to the discretionary nature of those provisions, citing that they would be burdensome for their officers and risked being implemented inconsistently.

A later cut-off date (eg. 1 January 2024 rather than 1 August 2023) would be more manageable for Planning and Building Control and reduce the risk of delays to their applicants.

The discretionary element of the power to refuse new Building Control applications for new buildings containing fossil fuel heating systems will be removed.

In relation to implementation of the 2025 ban, Planning and Building Control officers highlighted potential issues around applications that need amending because installation of the fossil fuel heating system has not been completed before the ban comes into effect. These amendments will cause inconvenience to both applicants and the teams processing the amendments. Ceasing to approve new applications from 1 January 2024, that could potentially be affected, and providing on-going engagement and raising awareness of the ban will mitigate this to some extent. However, we expect that some applications will be affected, although it is not clear how many this might be. We therefore propose to explore legislative measures to make the amendments of Planning and Building Control applications affected by the ban as easy as possible for applicants and the teams involved in processing them. For example, by seeking to make provision for an additional 'minor change' to Planning applications, specifically for the purpose of amending plans to accommodate low carbon heating.

Manx Utilities

Manx Utilities raised concerns about network connection applications and approvals. When a developer is planning a new development, they must make an application to Manx Utilities for connection to the network. That application must set out the expected electricity demand for the development. The demand will depend on the number of properties, but also the types of heating systems and other features, such as electric vehicle charging infrastructure.

Once granted, a network connection approval is valid for 3 months. Manx Utilities were concerned that the proposals would not provide sufficient time for them to alert their customers of the change and that some valid network connection approvals would be rendered useless, as Building Control approval would not be able to be granted, from 1 August 2023.

Two possible solutions were identified:

(1) A statutory exception enabling developments with valid network connection approvals to be granted Building Control approval after the 1 August 2023 cut-off date; or
(2) A later cut-off date enabling Manx Utilities to factor the up-coming changes into the network connection application process.

Manx Utilities also raised concerns about network capacity and the time it will take to undertake the necessary preparatory work which will enable them to facilitate full decarbonisation of the Island's building heating sector. Manx Utilities, like the developers, are working toward the 2025 ban and felt that a change to that timetable, with very little notice, would be problematic. Our recommendations take account of these concerns and we have agreed with Manx Utilities to provide information, about the 2025 ban and associated implications, for their customers.

Ramsey Commissioners

The concern was raised that the timing of proposals did not give those planning extensions or the construction industry time to adjust to what is a major change and give them certainty of costs to continue their projects. The Commissioners thought that heating engineers and construction industries still needed more time to adopt and adapt to new technologies such as air source heat pumps. Our recommendations take account of these concerns.

Department of Infrastructure

The response from the Department of Infrastructure highlighted two key issues: the construction industry's skill shortage and the cost of installing low carbon heating system. The Department also stated a preference for a longer

lead-in time, citing potential delays to project delivery and asking "*whether the 2025 proposals adopted by the UK would be more appropriate*". These issues were also raised by the construction industry and private individuals. There was a concern that low carbon heating systems for commercial buildings are not yet fully available. Our recommendations take account of these concerns.

Isle of Man Energy

Isle of Man Energy had several concerns around the proposals. Firstly they were concerned about the cost comparison to Islanders with the switch to low carbon heating. Other issues raised have already been covered above.

Heat pumps are expected to play a major role in heat decarbonisation. This is the position reached globally by the International Energy Agency[7], in the EU[8] and the UK[9]. Our own renewable heat scenarios arrived at the same conclusion[10]. Heat pumps have been demonstrated to be suited to a wide range of properties[11] and users report high levels of satisfaction with their performance[12]. They are therefore an entirely feasible option in our context.

Our analysis shows a current emissions saving of heat pumps relative to fossil fuel heat, both gas and oil. This emissions benefit will grow in the near term with our installation of 30MW of renewables by 2026. Peak electricity demand on the Island is around 80MW and average demand around 40MW. Therefore, this will represent a very significant contribution to emission reduction. In the longer term, our target is for net zero electricity by 2030, which will then embed these savings.

We recognise that the shift to alternative sources of heat will entail a level of disruption and cost and our aim is to minimise these as much as possible, to facilitate a just transition and ensure that Island homes maintain or enhance their existing levels of comfort. Our analysis demonstrates that heat pumps offer major cost savings when compared to gas, albeit less so compared to oil. The challenge is to address the initial cost burden of the switch and we will have more to say on this in the coming months.

We are now developing our heat decarbonisation strategy, based on the most up to date evidence and considering a wide range of policy considerations. We expect that heat pumps will be at the heart of this. Nevertheless, we welcome continued stakeholder input and engagement and are open to consideration of the role that a number of low carbon technologies can play.

[7] https://www.iea.org/reports/net-zero-by-2050
[8] https://energy.ec.europa.eu/topics/energy-efficiency/heat-pumps_en
[9] https://www.theccc.org.uk/publication/sixth-carbon-budget/
[10] https://www.netzero.im/media/d4xb3dpl/isle-of-man-report-dec-2021-final-combined-v2-compressed.pdf
[11] https://es.catapult.org.uk/news/electrification-of-heat-trial-finds-heat-pumps-suitable-for-all-housing-types/
[12] https://www.nesta.org.uk/report/heat-pumps-a-user-survey/

Conclusions and recommendations

Summary

The 1 January 2025 ban on the installation of fossil fuel heating systems in new buildings exists in live, primary legislation. **There is no intention or recommendation to delay or revoke the 1 January 2025 ban.**

To do so would only be possible with additional primary legislation, which there is likely insufficient time to process, and, more importantly, the ban represents a decisive, already agreed step in the decarbonisation of our buildings sector. The 2025 ban has been in the public domain since 2020 when the Climate Change Bill was consulted upon.

The Climate Change Act 2021 already contains amendment to the Building Control Act 1991, to enable new building control applications for new buildings containing fossil fuel heating systems to be refused from 1 January 2024. The consultation proposed that this date be brought forward to 1 August 2023, to deliver the aims of Climate Change Plan 2022-2027 action 2.2 *Bring forward the ban on fossil fuel heating systems in new builds to 2024.*

The headline recommendation resulting from public consultation and engagement with industry is:

1. **Proceed as set out in the Climate Change Act 2021 to stop the approval of new Building Control application for new buildings containing fossil fuel heating systems on 1 January 2024, as set out in the Climate Change Act 2021 (ie. do not take forward the earlier date of 1 August 2023 proposed in the consultation).**

To action recommendation 1 we intend to:

2. **Activate the amendments to the Building Control Act 1991, contained in paragraph 4 of the Schedule to the Climate Change Act 2021, to stop the approval of new Building Control application for new buildings containing fossil fuel heating systems on 1 January 2024, via an Appointed Day Order.**

The above mentioned amendments will be subject to the following change:

3. **Remove the discretionary provisions, as requested by Planning and Building Control. Please note that the discretion applied only to Building Control officers' ability to refuse applications where it appears there would be insufficient time to complete the development before the commencement of the ban: there are no discretionary provisions relating to the 2025 ban itself.**

In line with the outcomes of the consultation, regulations will be made to:

4. **Define the meaning of a 'fossil fuel heating system', as per the proposed definitions but with the following changes arising from the consultation results:**
    - **so that it is 'future-proofed' to enable to installation of hydrogen and liquid biofuel ready heating systems to replace fossil fuel heating systems in existing buildings, if, at such time as we progress to that stage in the decarbonisation of our buildings sector.**
    - **to clarify that 'heat networks' are only permitted if they do not use fossil fuels.**

Other comments arising from the consultation in relation to the definition are intended to be taken forward as follows:

5. **Consider the application of 'clean air' legislation to the Island as a way to address air quality/particulate matter arising from the use of coal and non-fossil fuel burnable materials for heating.**

The consultation also highlighted the work that is needed to prepare for the implementation of the 1 January 2025 ban and the next stages of building decarbonisation in the Isle of Man, as follows:

6. **When the 1 January 2025 ban comes into effect, it is likely that some applicants will be unable to proceed with their approved plans, as a result of not completing installation of their planned fossil fuel heating system in time. We therefore propose to explore legislative measures to make the amendments of Planning and Building Control applications affected by the ban as easy as possible for applicants and the teams involved in processing them. For example, by seeking to make provision for an additional 'minor change' to Planning applications, specifically for the purpose of amending plans to accommodate low carbon heating. Please note that such provisions would be intended to make the re-**

application/amendment process easier and not to change the existing technical requirements of Planning and Building Control relating to the installation of low carbon heating.

7. **That the Low Carbon Heating Strategy (Action 2.1 Climate Change Plan 2022-2027) should include:**
    - **Information, including expected dates, for the future stages of building decarbonisation in the Isle of Man – with particular regard to when replacement heating systems in existing are likely to be affected and how this will be managed.**
    - **Measures for ensuring that low carbon heating installation and maintenance training is accessible and affordable be implemented as a matter of urgency, in line with actions set out in section 5. Business, of the Climate Change Plan 2022-2027.**
    - **Support schemes for:**
        - **those carrying out extensions and upgrading their heating system; and**
        - **to incentivise voluntary replacements of existing fossil fuel heating systems.**
    - **Options for new and existing commercial buildings.**
8. **The Climate Change Transformation Team to raise awareness and address misinformation in relation to:**
    - **Low carbon heating technologies, in particular ASHPs and their efficiency and suitability for Manx buildings.**
    - **The emissions benefits of ASHPs compared to oil or gas boilers, even while our electricity is generated from fossil fuels.**
    - **The 2025 ban and its implications.**

The Climate Change Transformation Team will continue to work closely with internal and external stakeholders, primarily Planning, Building Control, the Built Environment Reform Programme, Public Health and relevant industries, to ensure that government, the public and industry are well prepared for the 1 January 2025.

Timing

Overall, there is support for, or acceptance of, the direction of travel. However, there is less support for the proposals to stop granting new Building Control approvals for new buildings containing fossil fuel heating systems from 1 August 2023. Many people and businesses do not feel prepared to accommodate this change, with such little lead-in time.

In particular, the skills shortage in relation to the installation of ASHPs was a concern shared by private individuals and key industry stakeholders, such as numerous developers, installers, Isle of Man Energy and the Department of Infrastructure. A longer lead-in time would enable more work to be done in this area, ensuring that appropriate support for training is in place.

A longer lead-in period removes the need for statutory exceptions in relation to Manx Utilities network connection approvals, enabling Manx Utilities to include the upcoming changes in conversations with their customers and, as the ban approaches, ensure that applications take the ban into account and specify suitable network requirements for low carbon heating. The Climate Change Transformation Team will work with Manx Utilities on this and provide information for Manx Utilities' customers on the ban and associated changes.

However, it would be irresponsible to continue granting new approvals to which the 2025 ban will apply, beyond the time when it becomes impossible or unlikely that the project can be completed in time. To do so would result in many avoidable reapplications/amendments which would increase workload burden for the Planning and Building Control teams and inconvenience for applicants.

Taking into account the need for a balance between these issues it is recommended that new applications for Building Control approval be refused from 1 January 2024, rather than 1 August 2023 as proposed and **as stated in the Climate Change Act 2021.**

To support the transition, and minimise the number of incomplete developments affected by the 2025 ban, letters are being sent to current applicants/approval holders to alert them of the 2025 ban and new applications will receive similar information.

The Climate Change Act 2023 contains amendment to the Building Control Act 1991, that have not yet been commenced. These amendments enable Building Control officers to refuse plans for new buildings containing fossil fuel heating systems from 1 January 2024. To implement the recommendation an Appointed Day Order will be needed to activate these provisions.

Doing so will provide an **additional 5 months lead-in time**, allowing more time for pending Planning and Building Control applications to be processed, for Manx Utilities to take the changes into consideration as part of their network connection processes and, importantly, for businesses and individuals to prepare for the change.

Definition

Alternative fuels will play an important role in our transition to net zero, not only in the building heating sector but also in, for example, in transport.

The Isle of Man Renewable Heating Scenarios highlights the role that hybrid systems, which combine gas or oil boilers with ASHPs, digitally optimised by systems that automatically switch between the two for maximum efficiency and minimum cost to the user. These systems will be particularly useful in heating existing, difficult to treat buildings.

However, the principle that all **new** buildings should be designed to accommodate fully low carbon heating systems (such as air or ground source heat pumps) should be upheld. The design features needed to enable this are beneficial to the property owner. Better insulation minimises bills no matter what type of heating system is installed.

As the 2025 ban and the proposals relate to new buildings, and not the replacement of heating systems in existing building, it is recommended that gas and oil boilers (whether hydrogen or liquid biofuel ready or not) be included within the definition of a fossil fuel heating system in relation to a new building. Provision can be included in the definition to ensure the ability to install hybrid, hydrogen and liquid biofuel systems in existing properties is retained.

As explained in the 'Coal, wood and biomass' section, restricting the burning of wood and other materials that contribute to air pollution would be more appropriately achieved via Clean Air legislation. This approach could simultaneously restrict the burning of coal, particularly bituminous coal, which is particularly harmful.

Training

A shortage of trained installers of ASHP and other low carbon heating systems is a pressing issue. However, it was highlighted by industry that there is an overall shortage of workers in the construction industry – as opposed to a specific shortage of ASHP installers. Some people are trained but are not installing them regularly.

Attracting new workers to the Island to become part of this industry is an opportunity to grow our working age population, as set out in the Island Plan. To take advantage of this, attractive conditions will need to be created, making training affordable and easy to access.

It is therefore recommended that accessible and affordable training in low carbon heating installation and maintenance be a priority deliverable for the Isle of Man Climate Change Plan 2022-2027 (Action 2.7) Climate Change Plan 2022-2027).

Support Schemes

It is recommended that, as part of the Low Carbon Heating Strategy, a system of grant or zero/low interest loans to subsidise the installation of low carbon heating systems be implemented as soon as possible and work is already underway internally on this

Such schemes are already in place in the UK and many European countries and comments from private individuals and businesses highlighted that the Island's support schemes are not comparable.

Incentivising voluntary, low emission choices is an important step in the decarbonisation process. It is preferable to encourage people to replace their existing fossil fuel boilers with low carbon alternatives, before legislating against installing fossil fuel replacements.

Awareness

The consultation showed a lack of confidence in low carbon heating alternatives, particularly ASHPs when installed in existing builds. This mirrors previous consultations we have undertaken. However, many of the concerns are inaccurate and the technology is continuously improving and will continue to do so as market demand increases and drives innovation. For example, the UK have a target for the cost of ASHPs to reach cost parity with gas boilers by 2030. However in recent weeks, the UK Government impact assessment for the Clean Heat Market Mechanism is now modelling £10,800 for a retrofit heat pump. Octopus Energy and British Gas are in a price war offering ASHPs starting at £8,000 (£3,000 paid by the consumer plus £5,000 of Boiler Upgrade Scheme grant)[13].

It is recommended that, particularly during the period ahead of 1 January 2024, the Climate Change Transformation Team continue to raise public awareness and understanding of the alternative options and their benefits through our various engagement channels.

Appendix 1

Engagement Events

In addition to the responses received via the online consultation survey, the IoM Government hosted a number of meetings and events in the form of presentations, workshops to gather views from key stakeholder groups predominantly the construction industry, architects, developers and heating engineers/installers.

Summary of themes across all events responses

Training and skilled workers

- Perceived shortage of skill base, however it is possibly the case that there is shortage of workers in general as seen across the construction industry.
- Variable level of training in renewables across the sector but some are only installing the likes of ASHPs every so often.
- Due to shortage of available trained workers one developer could only install one per week and this is a concern as demand grows.
- Conflicting opinions about training from those inconvenienced by off-Island training and find costs prohibitive however some in the industry value the quality of the UK training and it was suggested that on-Island may not be viable.

Costs

- Consumers will be hit with increased house prices - low carbon systems are costly but then additional costs associated with amending plans and alterations needed to accommodate such systems.
- Affordability could be problematic for those doing an extension and the extra refit requirements to the rest of the property.
- Perceived to be no cost or emissions benefit since our electricity supply is generated by gas.
- Oil is the preference as cheaper than gas and electric prices are at a high.

Grants

- The UKs level of grant funding for ASHPs was generally seen as generous and the Island's schemes don't currently match up to this.
- Finance is essential to address replacements and retrofit but was also mooted for smaller construction firms, charities and community buildings.

[13] https://www.theecoexperts.co.uk/heat-pumps/air-source-heat-pump-costs

Technology

- If fitted and specified correctly ASHPs are a good solution for new builds. Government need to ensure that specification is vetted and certification (MCS) is mandatory for building control approval.
- Some thought ASHPs were underwhelming in terms of the heat they could provide, noisy, unsuitable for apartment developments and durability affected by the sea air. Therefore there was a need to wait for the technology to improve.

Ban

- Assumption that those who already have approvals now can still fit a fossil fuel beyond the current ban.
- Some firms will be inconvenienced as their projects may not be completed.

Existing building stock

- Replacements in existing builds to the amount of remedial works that would be needed and the associated costs was a concern, some of this related to those doing extensions.
- Rip out of existing buildings could potentially be included or a loophole.
- Hybrids were suggested as the best solution for existing builds.

Government

- Our electricity supply is generated by fossil fuels therefore some people questioned benefit or the timing of the action.
- Local authorities not leading by example and retrofitting with low carbon heating systems due to expense so why should the private sector.

Information

- An insight into heat pumps and how they are working for locals in different types of homes
- Resources needed for those switching, lifetime costs
- Viability of hydrogen and when alternative fuels will be available

Construction Isle of Man Board

February 2023
Microsoft Teams

Meeting focus

- *To discuss the awareness in the sector of the current ban (2025)*
- *Understand how we can work with them to reach the sector and maximise engagement on the consultation*
- *Gather initial views of the ban and any proposals to accelerate it*

It was noted that the ban could be going further and could apply to those fully refurbishing/ refitting existing (e.g. a build taken back to its shell/ block of flats) even ripping out old.

There is however an assumption that those who already have approvals now can still fit a fossil fuel beyond the current ban - they warned these projects have been priced with the customer - all big firms developers however already looking at renewables so it's your contractors but may only affect a small number.

Many workers are backlogged with work and not committing to any new projects and ones they have lined up to start within next year and a half likely all have planning and control approval

In the past year many plumbers have been undertaking training in renewables as it's what the consumers want
Shortage of skills - there seemed to be an emphasis that they needed more people doing it rather than shortage of existing workers that are unskilled in renewables

Feedback that our grants are a 'token gesture' for consumers and lagging behind the UK/Scotland - interest free loans etc.

Planning User Group

Wednesday 15th March 2023
Murray's House and Teams
Invites sent to 80 group members, approx 25 in attendance in-person and online

Event focus

- *Details of the ban on installing fossil fuel heating systems in new buildings from 1 January 2025*
- *The action in the Climate Change Plan to "Bring forward the ban on fossil fuel heating systems in new builds to 2024" and outline of the proposals that will be open to consultation.*

Overview
A few questions around the proposals in regards to if changes to a system could be included as minor amendments if was discussed that fees for amendments would look to be waived and if new applications specific to climate change would need to be made.

A view was given that we were accelerating the ban ahead of other nations.

It was stated that building fabric and air tightness had much improved and is not being take into consideration. This means there is not the need for fossil fuel boilers to run at temperatures as did in the past.

It was felt the proposals could cause extra cost for clients particularly if firms are delayed. One member thought the construction industry is being penalised particularly as our electricity is generated by gas.

One member commented that flat developments cannot use ASHP it would have to be electric heat – but there is concern the network wouldn't cope.

It was asked what the timescale was for ban on existing boiler replacements and the response was that the consultation would be used to look ahead to this but currently there is no timeline.

Construction Isle of Man March Forum

Friday 30th March 2023
Eagle Labs
Fully subscribed 30 attendees plus reps from MUA, DfE and UCM

Event focus

- *An introduction to the Climate Change Plan 2022-27 and actions and targets to reduce emissions in the Buildings sector*
- *Details of the ban on installing fossil fuel heating systems in new buildings from 1 January 2025*
- *The action in the Climate Change Plan to "Bring forward the ban on fossil fuel heating systems in new builds to 2024" and outline of the proposals of the public consultation.*

Overview
The event was predominantly attended by installers and construction firms and estate agents. Following the presentation there was not much commentary in terms of the current proposals for new builds only. Many concerns were related to the cost and inconvenience of off-Island training, addressing the skills for replacements in existing building stock as well as some suggestions about efficiency of ASHPs which are being installed incorrectly versus efficiency of new gas boilers.

Training & facilities
There was reference to the current situation about training. Training facility for gas safe once provided in Tromode with the IoM government bringing in trainers. Now people have to go off-Island, which is costly and inconvenient.

Some comments suggested that there isn't sufficient demand to warrant an on-Island facility which is why the facility on-Island closed.

Following the session, a longstanding business was adapting his business model to fitting renewables and training his staff in low carbon technologies. They highly regard the off-Island training.

Mention of the training voucher scheme in UK (Heat Training Grant). UCM detailed that low carbon heating will be part of the reaccreditation that is required every 5 years

It was noted that no IoM insurance provider will provide the MCS insurance for ASHP.

Existing buildings/retrofit
Then presentation referred to future scenarios in terms of converting the Island's existing stock to low carbon, in response to this fact a concern was raised that there aren't enough people trained or heat pump engineers to accommodate the future demand.

It was suggested a hybrid option for heating systems is the way forward for replacement boilers.

It was noted heating engineer experts will be in demand still on the Island as the gas/oil boilers will be phasing out for a long while in the Island's existing builds.

Technology
An attendee highlighted gas boilers have improved efficiency and poor quality of the heat-pump installation can cause more CO2 emissions. They were aware some properties in IoM having issues with ASHP, not installed properly and wanting to return to a gas/oil boiler.

It was identified the cost of ASHP + retrofitting properties could be up to £30,000, again this was addressing existing rather than the current proposals of new builds.

Buildings decarbonisation advisor to the Climate Change Transformation board confirmed the cost was differentiated by their running costs and ASHP savings over its lifetime. The same level of quality radiators was required to run any heating system effectively.

Energy supply
Comments in relation to the IoM government granting the drilling of gas indicated the Island's electricity supply is going to stay on gas and it will be the cheapest gas has ever been.

MU representatives clarified it was bought much cheaper currently, than the company plan to sell it for.

Discussion proceeded around reduced import of gas by 2030 and risk of Isle of Man Energy will not be able to afford to keep supplying certain areas of the Island, particularly rural ones. Question raised that overall imports could drive up the price per therm.

Drop In Sessions

Wednesday 5th April 2023
Cu Plas Callow
Monday 24th April 2023
Get Online Centre
Spoke with approximately 28 installers and issued leaflets to more

Event focus

- *Raise awareness of the ban and consultation – encouraging responses and ensuring the sector and public understand the proposals*

Overview

The people we spoke to were plumbers, heating engineers and installers along with few members of the public. Generally, the application to new builds was seen as reasonable and unproblematic, acknowledging there would be some people who would be inconvenienced by the change because their projects would not be finished in time.

However, there is a lot of concern about replacements in existing buildings due to the amount of remedial works that would be needed and the associated costs. Typically, this was concern for customers not being able to afford the changes, rather than concern for businesses. It was proposed the best solution to existing builds was hybrid heat pump systems.

Similarly, many comments were received about the application of the ban to extensions. People felt that this was more like replacements due to the remedial works required on the existing part of the building. Little awareness of similar changes in other countries, some belief that the Island is moving more quickly on this issue than elsewhere. This is incorrect, most other UK and EU countries are moving more quickly.

Financial Support
There were many comments about financial support being needed – especially in relation to future measures around replacements in existing buildings.

Request for support for small businesses and charities

Ban of replacements must come with significant financial support for retrofitting, insulation etc.

Some concern that house prices will rise as a result of the changes, adding to current difficulties faced particularly by young people trying to get onto the property ladder and the retention of young people on the Island.

Training
Comments on training were common but mixed:

- Some say that training off Island is not a problem: they are used to it because that is how they do their gas training.
- Some say training should be provided on-Island, others that more funding should be provided to support training off Island
- Training available from Mitsubishi is online and affordable (£60 x 3 short courses)
- Some installers have done training but not yet fitted any ASHPs.
- Very few people raised numbers of trained installers as an issue. When asked about it they seemed to assume that people currently doing gas and oil would just get the training and that it didn't pose much of an issue.

Technology
Feedback received by companies from households where ASHPs have been installed is mixed, but more positive than negative. The need to ensure that installers are correctly trained was highlighted, as poorly installed ASHPs will generate bad feedback and spread mistrust of the technology.

Electricity prices are a big issue, people are fearful of the ongoing costs of going electric. Currently many people are choosing oil over gas due to cost.

There is widespread belief that, because our national electricity supply is produced using gas, that there is no benefit to swapping gas boilers to ASHPs (this is not correct, as the efficiency of ASHPs means that emissions still fall by comparison).

View that government should step in and provide alternative fuels eg. hydrogen/biofuels.

Myths/negative beliefs about ASHPs were common eg. noisy, not suitable for coastal air, etc. Several comments about waiting until the technology improves.

One installer thought hybrid heat pump systems were the best option for existing properties and was already looking at offering these with detailed plans.

Future of Heat

12th April 2023
St John's Mill and Teams
Fully subscribed at 40 people with several attending online

Misconceptions that were discussed at the previous events looked to be addressed by key industry experts and live case studies of low carbon heating in different types of buildings ahead of discussions taking place to find a way forward and discuss the real core issues and possible solutions for the Island's new and existing building stock.

Event focus

- Overview of where we are and current policies
- Low carbon heating in buildings
- Skills and supply chain
- 3 workshops to explore themes around training and skills, customer demand and practical issues and solutions with future heating

Overview
The attendees were a range of architects, developers as well as representatives who have been working with renewables for some time. Similar themes were mooted in the workshops in regard to installer shortages, although this was also highlighted in respect of new developments. Quality of installation of ASHPs was raised as the main issue for customer complaints rather than the technology itself and if there are levers to request mandatory certifications at Building Control.

Increase to house prices was raised but most commentary on costs related to the affordability of those replacing or wanting to change their current system. There was suggestion that their needed to be clearer pathway to the Manx roll out in terms of replacements now, affordability and support schemes need to be in place as well as more information from residents who have converted to heat pumps already.

Many queries and questions were raised throughout the session and the CCTT team working with relevant Government departments will be looking to answer and clarify following the outcome of consultation and in the timeframe prior to the ban.

Training and skill base
All groups noted about the need for installers. Some groups noted a declining professional base as well as no contractor's available to give quotes. "*How can we deliver air sourced heat pumps without the expertise?"*

Heat pumps will come as standard for one developer however they can only be installed at a rate of one per week with current installer levels. This will become a problem when the demand grows on the Island.

The main complaints about ASHPs often relate to improper design therefore the right specifications need to be promoted/vetted by the Government along with industry standards (the discussions specified MCS certification, but GTech and LCL Award courses were also given mention. It was unclear to participants in this group what was available via the government Vocational Training Assistance Scheme VTAS

Is building control needed for ASHP? It was felt MCS registration/certification is needed here. Building control should ask for certification and this should be mandatory as electric certification is supplied currently and gas safe.

One participant requested that training needs to be done on Island given travel costs.

Financial

It was suggested by most groups cost to customers was the main issue but it was acknowledged by one group that any property could be upgraded to accommodate this technology.

It was noted a developer will always put the cost onto customers. 20K added to house price for a borehole and ground source heat pump (GSHP) for large house development in the centre of the Island. It was noted that ASHP are cheaper than GSHP. However, in another group it was highlighted if developers can prove bills will be cheaper they will sell the house for higher.

Life cycle of an ASHP is roughly 10 years – *what will the lifetime costs be?*

When gas boiler breaks down people are forced to replace them but the technology won't be accessible to the poorest and most vulnerable who will be negatively impacted by what they cannot afford.

"What support schemes will there be?"

Customer buy-in and demand
The pre-presentations highlighted the rising demand in Europe for ASHP and that customers needed to adequately be trained in understanding how to operate their heating system.

One participant in the sessions felt there was no demand for ASHPs on the Island and they are underwhelming as they don't provide what people need as it is not a boiler replacement.

There was a suggestion to undercover what is myth and disparity versus real issues by asking residents who have them installed to find out how they are getting on with them what are the issues and benefits.

One participant asked what resources are available for customers making the change.

It was suggested to do a government survey to understand the public's priorities and wish list for heating. Or, that an audit is required – broken down by house type look at cost analysis, cost of emissions and renewable heating scenarios.

Technology
It was felt that no other alternatives really explored and the agenda to push ASHP.

While questions during the presentation asked how apartment blocks could be heated, which district heating being suggested at the most cost-effective option. A following case study highlighted social housing flats with each dwelling fit with retrofit air source heat pump + 150l hot water cylinder at £6,000 per flat. In the workshops one group had discussion around district heating and ASHPs as the best option in tight urban environments. A participant noted several projects with apartment buildings that uses ASHP to heat water to 35/40 degrees and then a small unit in each apartment to raise the temperature.

Even though the prior presentations aided to provide understanding of noise and improving technology in this area one group still referenced concerns about noise from ASHPs and their limited durability to the high salt content of living by the sea.

Retrofits
For replacements it was suggested to make gas boilers subject to the same review that air source heat pump installation needs, ensuring people insulate their home in the same way would make them more efficient without.

Combination of technologies will be needed including Bio fuels, Liquid biofuels but the infrastructure needs to be in place to deliver that and there are opportunities for start-ups or businesses to deliver this.

Two groups covered the potential for hybrid systems – ASHP combined with a gas boiler for retrofits, allowing customers to get more heat when needed from this combined system. One participant suggested a hybrid electric combination boiler – could this be connected to solar panels?

Hydrogen
Burner control tech is the same. If hydrogen didn't require the need to be transported then would this be a viable option?

Could do this for 60% efficiency so there is a desire to see how this works.

Planning Permission
Hard to get planning permission especially in designated conservation areas.

Possible options to have refrigeration unit? Difficult for terraced houses as they won't have gardens and so there is an issue placing unit. Solar PV could be used instead and allows for problematic areas to be covered.

With regards to conservation, applicants/conservation officers need to be more specific about options available Several conservation areas on Island but overall, it shouldn't be a problem.

Building Control
Buying products from UK means IOM has to be in tandem with the UK. There is already a problem with glazing – several manufacturers won't supply to the Island due to differing building standards.

Following on from comments that MSC certificates should be a requirement of building control another participant suggested manufacturer as competency certificates should be provided

Another group queried if building regulations in the UK cover ratings of ASHP near coastal locations?

Government Housing - Leading by example
One participant observed that local authority buildings upgraded don't lead by example. The Government is the biggest landowner. With the refit to Williston houses they have not considered energy efficiency no underfloor heating no ASHP) so it was queried why privately owned properties should pay to improve emissions if the government is not.

There was a suggestion that Government don't have the money to invest in such technologies. Therefore, if they can't afford to do it on their own properties then why will private owners put the money in.

Climate change fund is already allocated. Proposals in relation to this need to be put forward on where the money needs to be spent.

Extensions/retrofit
As part of the practical issues discussion, it was highlighted there is more issues around retrofit as opposed to new builds which can be built to accommodate a heat pump.

Many homes on IOM haven't been fully insulated. If you internally insulate them you lose space by putting up internal walls when this is done you are then faced with condensation issues. Another group referenced similar when talking about issues and space needed to accommodate.

With extensions approved it was suggested that a certain percentage of fabric should be upgraded in the existing build to install low carbon heating? Could this be enforced by building standards?

Cost offset and incentive of 0% VAT with new builds so there is an incentive to build new dwellings with renewables. Should there be a tax rebate if a boiler is replaced with ASHP?

If there is an extension on building would the boiler then have to be graded?

New builds could also cover extensive renovations of existing builds? Otherwise this could be a potential loophole. Knock down older houses and build a new ones – Is there benefit to this is it worth doing?

Loophole with ban – if you have planning approval by December, developers essentially have 4 years to build it. Developers have projects with planned phases that won't start for another 10/15 years. There needs to be a hard cut off point

Majority of people cannot afford to make the change or the upgrade.