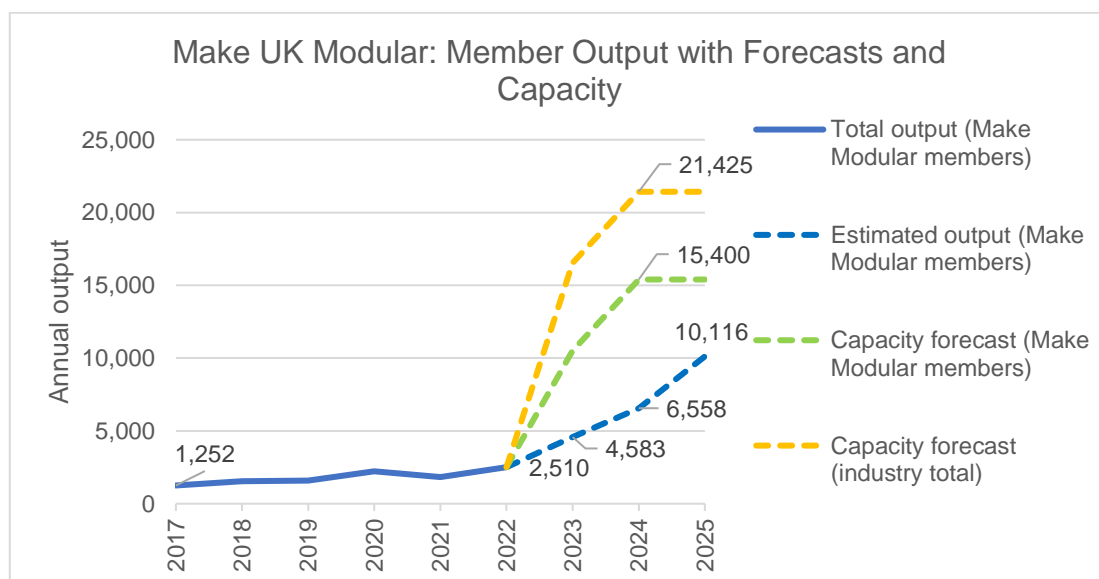


MAKE UK MODULAR: 2023 HMT SPRING STATEMENT SUBMISSION

Introduction

1. Make UK Modular is the **trade body for modular housing manufacturers** operating in the UK. We represent a **new sector of advanced manufacturing** which is pioneering the assembly of homes in factories using innovative designs, materials, and methods.
2. Established in 2021, we represent about 80% of modular housing delivery in the country – nearly **3,000 homes in 2022 with a Compound Annual Growth Rate over the next 4 years of 41.69%**. Supported by our parent organisation, Make UK, we act as the voice of our sector and aim to unlock modular’s ability to transform housebuilding.
3. Modular represents a radical departure from traditional building where homes are still built in muddy fields in much the same way they were 100 years ago. Modular homes are precision engineered in state-of-the-art facilities using continuous improvement processes.
4. Nearly **£1bn of private investment** and **£200m of R&D** has allowed modular to grow from almost nothing in the early 2010s to become a sector that is poised to transform UK housebuilding. The investment in design, innovation and assembly line efficiency means that homes are built in half the time it takes to build a traditional home. **Modular is faster.**
5. The assembly line process and innovative materials make modular homes more energy efficient, **saving occupiers £800 on their annual energy bills** compared to the average new-build. For the same reasons, modular homes are also built with less embodied carbon – up to 45% less in high-rise buildings and up to 80% less in low-rise houses. **Modular is greener.**
6. Finally, the precision of the factory setting means reduced snagging rates, a 40% uplift in productivity and 90% less wasted materials. **Modular is better.**
7. Greener, better, faster – modular producers are now delivering the most advanced housing in the UK. **Modular is a government success story.** With 3,000 homes built in 2022 and over 8,000 under contract, our members **expect to be building 10,000 homes a year by 2025** – that is 1 in 20 homes in the UK. They will have the capacity to build double that, delivering energy efficient, greener, better homes that can be built faster with lower labour demands.



Source: Make UK Modular, [Greener, Better, Faster: Modular's Role in Solving the Housing Crisis](#) (London, 2022).

8. Modular now needs Government to support the sector to scale up by supporting its pipeline, R&D activities and decarbonisation efforts; reassessing the CITB's scope to exclude the automatic inclusion of modular; ensuring the next iteration of the affordable homes programme 'finishes the job' this round has started, and recognising the sector through a new SIC code. These changes will not cost any extra public money.

Building supply chain resilience

9. Modular housing is changing the way homes are made, driving up productivity, predictability and speed of delivery with its assembly-line-based manufacturing production process. But it depends on a construction products supply chain that has previously existed to serve on-site development, characterised by a delivery model focused on small orders (whatever can be shipped in the back of a van or a truck). This model works for traditional building, where the capacity to scale up deliveries is constrained by site sizes, manpower limitations and the efficiency ceiling inherent in on-site building and traditional methodologies. **The small-scale nature of construction's supply chain is unsuited to large-scale manufacturing of homes.**
10. The ability of the existing construction supply chain to scale with the rapidly expanding modular and 'modern methods of construction' (MMC) industry is proving a major hindrance. Established construction suppliers are typically set up to deliver relatively small numbers of materials, often via transit vans, to multiple sites in a timeframe of weeks. **Modular manufacturers are looking for single point supply to factories in high volumes with just in time delivery sequencing.**
11. In 2021, **Government announced £10m of funding for an MMC Taskforce** to sit within DLUHC and help to 'fast-track' the adoption of MMC in the UK. The taskforce has yet to be appointed two years on and much of the work the taskforce would have done in identifying barriers to sector growth has already been completed by industry. **What industry needs more urgently is to resolve the issues it has identified. In particular the supply chain.**
12. Since 2010 **Government has delivered multiple successful supply chain development programmes** in the aerospace, civil nuclear and offshore wind industries. In aerospace, it formed part of the UK's Aerospace Growth Partnership, which **doubled participant company turnover and reduced costs by 20%**.
13. **Make UK Modular are proposing to create a similar scheme for modular housing and MMC**, though with a smaller government contribution – the £10m MMC Taskforce funding would be sufficient to drive change in 10 strategic suppliers. This would fund a tailored 4-year programme of supply chain interventions that would identify issues and seek to change leadership, business culture, operational alignment with client needs, cost management and supply chain management.
14. Government has for some time endorsed the expansion of MMC, including modular. This intervention would **cost no extra public money**, but would help to build a more agile, resilient supply chain and therefore **unlock efficiency gains and capacity** for expansion in the sector.

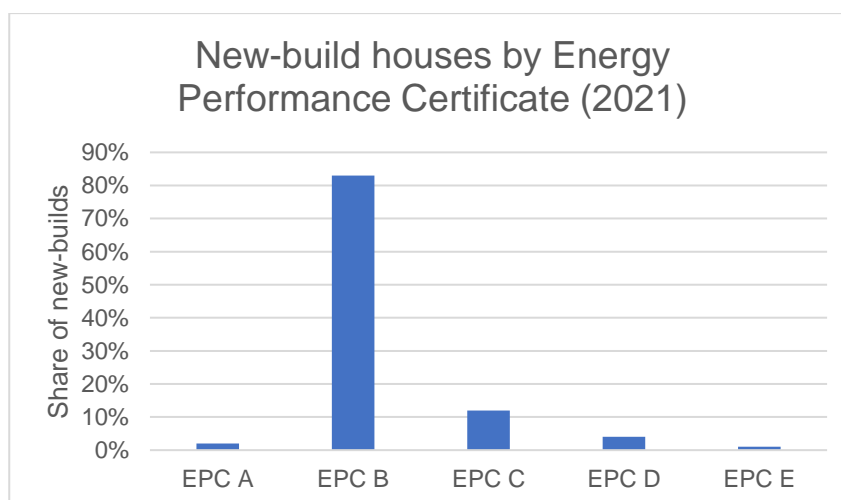
Recommendations

Repurpose the £10m allocated for the MMC Taskforce and use it to support a match funded a supply chain transformation programme based on those Government has successfully delivered in aerospace, offshore wind, and nuclear.

This is based on a tried and tested model in which a public grant is combined with sector match funding over a three- or four-year intervention to drive change in 10 strategic suppliers.

Affordable Homes Programme

15. As an emerging industry, modular manufacturers face the burden of having a product which can deliver many benefits, but requires significant capital expenditure to produce. Early innovators have faced huge barriers to bringing their product to market. High upfront costs can often translate into high prices in the market, prohibiting the growth needed to cause prices to fall.
16. One way to break out of this cycle is for government to recognise the enormous benefits modular brings – the speed, scale, energy efficiency, low carbon, high quality and increased productivity – and **support manufacturers to grow their pipelines**. Government has recognised its integral role in growing the industry by stipulating that 25% of all homes funded through the Affordable Homes Programme (AHP) running from 2021 to 2026 must include some degree of MMC.
17. This has helped to **unlock substantial private investment** into the sector by providing certainty. Modular manufacturers have received nearly £1bn of private investment since 2017, including from major institutional backers such as Goldman Sachs, TDR Capital and Legal & General. In turn, this has supported £200m of R&D efforts, established nearly a dozen factories, created over 3,000 jobs, and delivered a process which is 40% more productive than traditional building.
18. The **AHP has been a substantial driver** for growth in the modular sector **and is a significant government success story**. However, the industry continues to be held back from maximising its delivery of high quality, affordable green homes and delivering the productivity and labour force transformation UK housing so badly needs. Currently the AHP ‘expects’ partners to use higher pre-manufactured value products such as modular housing but there are little teeth to this nudge. Too many providers are acting to the letter rather than spirit of the programme by utilising less advanced building methods and delivering low additionality and low growth.
19. Government support for MMC through the **AHP is also helping to build more energy efficient and low-carbon homes in the UK**. Currently, only around 2% of new-build houses in the UK are in the highest energy performance band (EPC A); about 12% are still being built at EPC C and 5% are being built at EPC D or lower. Given the Government’s ambitious Net Zero targets and the current energy price rises, this is an unsustainable situation. It costs £800 more to heat a three-bedroom EPC B home than a more efficient EPC A one, yet 98% of new homes are built to EPC B or lower. Builders are simply not making new homes to the right standard to protect customers and reduce emissions to optimal levels.

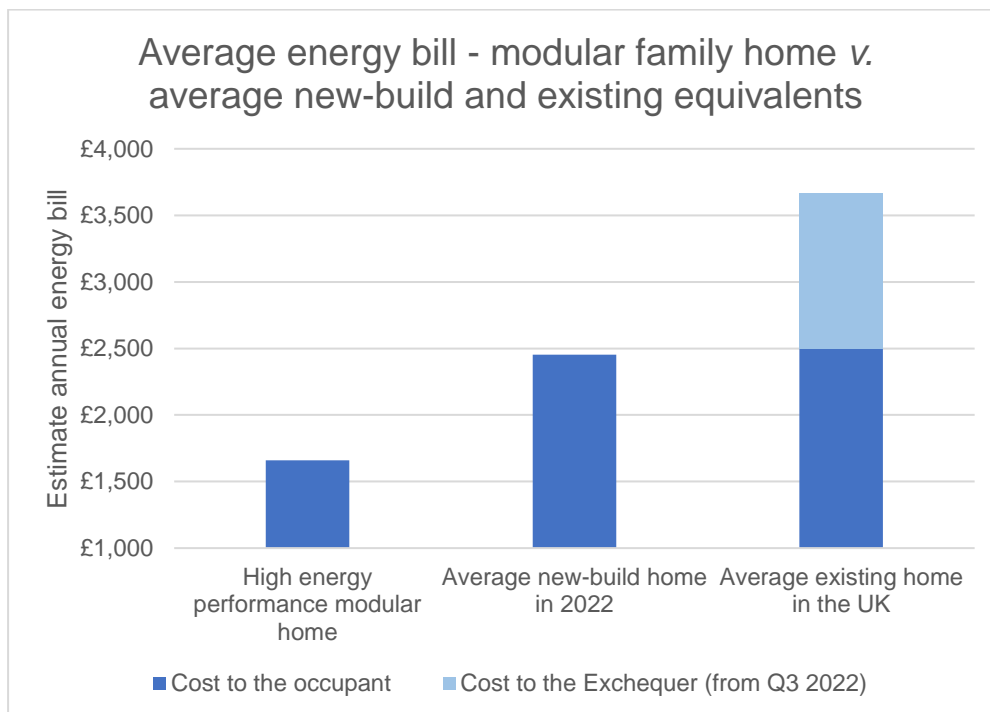


Source: Lucie Heath, [‘Only 2% of New Homes Meet Top Energy Efficiency Standard’](#), *Inside Housing*, 29 July 2021 (accessed 18 July 2022)

20. The Government is changing this by raising efficiency requirements for new homes, but it is also supporting the production of low-carbon and high energy efficiency homes indirectly through the

AHP. This is because social and affordable housing providers (unlike the private sector) must ensure that all of their stock scores an EPC of C or higher by 2030 in line with the Government's Clean Growth Strategy. Most recognise the need to accelerate this process to anticipate uplifts in energy performance under the Heat and Buildings Strategy for the Net Zero programme. Registered Social Landlords (RSLs) also recognise the long-term security of income that comes when low-income tenants are paying much smaller energy bills. Many RSLs are therefore using the AHP to support the development of high efficiency housing schemes.

21. **Modular is leading the way in delivering the greenest and most energy efficient homes being delivered at scale in the UK.** Most of our members produce EPC A homes just as efficiently as lower EPC homes and can switch to producing all EPC A homes easily. The majority are producing 100% EPC A now. Others are going even further. For instance, Ilke Homes produced the UK's first Zero Bill homes in summer 2022 – where they are so energy efficient, occupiers are guaranteed to pay nothing for heating and powering their homes. This is not a costly experiment, the Zero Bill homes were designed for normal families and have been sold on the open market. It's possible because these homes are modular.



Source: [Fuel Bill Cost Prediction Tool](#) (2017) by the Lenders consortium (Nationwide Building Society, BRE, Energy Saving Trust, UCL Energy Institute, Principality Building Society, UK Green Building Council, Constructing Excellence in Wales, ARUP and Innovate UK); adjusted for Q3 2022. Figures are for a 3-bedroom house occupied by 4 people; left bar is an EPC A home.

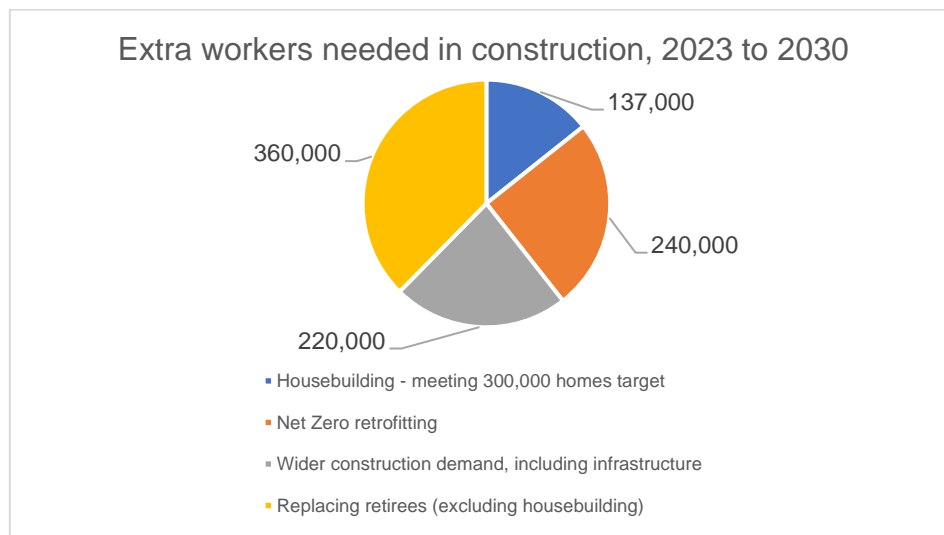
22. By funding the development of green social and affordable housing, the AHP is helping to deliver the most energy efficient homes in the country – enabled by a growing modular industry.
23. **Government backing through the AHP has been the catalyst for the emergence of the modular sector in the UK** – and the benefits far outweigh the funding received, from huge productivity increases to the production of highly energy efficient homes.
24. Government can go further. **Explicitly backing modular** – which is the most advanced type of MMC – **in the AHP would help to grow manufacturers' pipelines further.** It would unlock additional productivity gains and investment R&D, factories and job creation, while delivering much-needed affordable homes faster.

Recommendations

- **Stipulate that 40% of the AHP is given to homes built with MMC.** This would further support this growing and innovative sector.
- **Of this, half (20% of to the total) should be given to modular housing** also known as Category 1 MMC. This would give extra support to modular producers, who have faced the highest barriers to entry but deliver the best and most transformational results.
- **Incentivise the provision of EPC A homes or homes with low embodied carbon in the AHP.** This would help the UK to deliver more efficient, less expensive-to-run, greener homes today – so that they don't need to be retrofitted in the future.

Supporting modular's productivity gains through R&D investment

25. Make UK Modular estimates that **the housebuilding sector will need to recruit around 137,000 workers** between 2023 and 2030 in order to scale up housing delivery to meet the government's target of building 300,000 new homes annually. Accounting for this and the Net Zero retrofitting programme and committed-to infrastructure projects (including Levelling Up Fund programmes), **the whole of construction will likely need to recruit 900,000 extra workers between 2023 and 2030.** At present, **only 11,000 apprenticeships are being completed annually** in construction; assuming similar rates to 2030, apprenticeships will **only meet about 6% of the shortfall**, suggesting that labour shortages in the industry will present a major challenge to delivering key policy objectives across the 2020s.

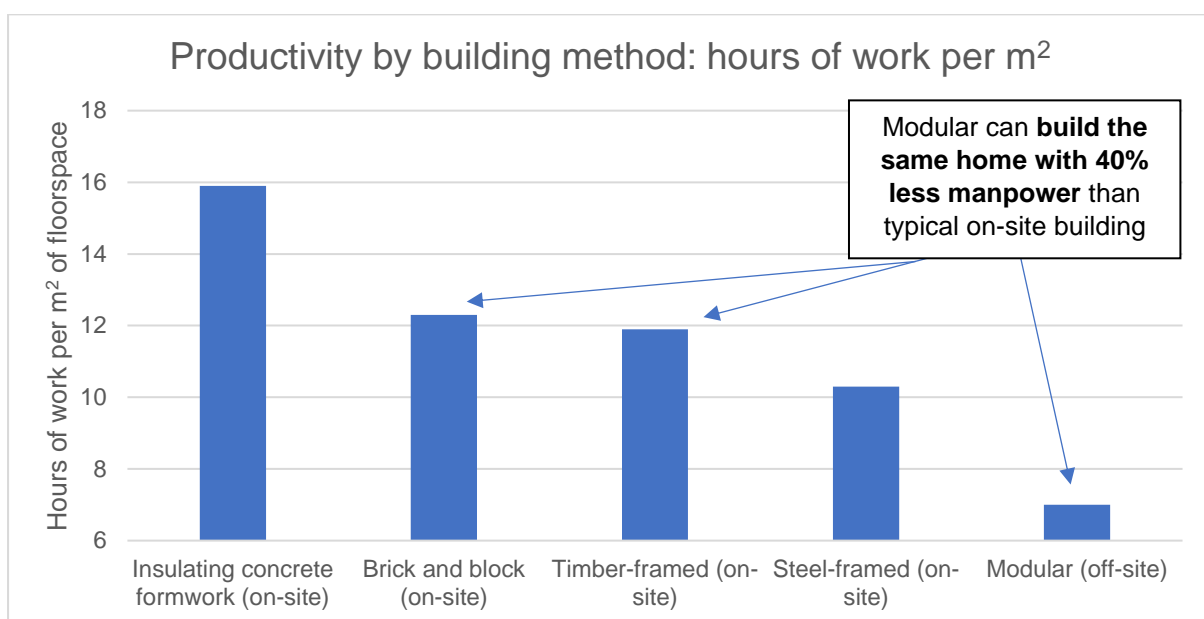


Source: Make UK Modular, *Construction's Labour and Skills Shortage – and Modular's Solution* (forthcoming, 2023); for retrofitting and wider demand, see also CITB, *Building Skills for Net Zero: Industry Insights and Analysis* (Bristol, 2021), pp. 51–52 (Figure 4.1); CITB and CSN, *The Skills Construction Needs: United Kingdom Five Year Outlook, 2022–26* (Peterborough, 2022), pp. 10–11.

26. These shortages are chronic; the Farmer Review (2016) identified many of the same issues. In 2022, vacancies have risen sharply, but even if the economic downturn forecast for 2023 dampens the historic labour shortages besetting construction at present, the underlying shortage

will not go away. This is primarily because construction work is often highly skilled and involves years of training, which is in short supply.

27. Modular can help find a way out of this. Its assembly line efficiency means that it requires fewer people to build a house. At its optimal, **modular can deliver two homes annually for every one person employed in the sector, which is half the labour demand in traditional building**. Modular can also produce homes twice as quickly as traditional building. And, crucially, its labour force is different: **only about 10% of the workforce in most modular manufacturers are in construction trades** – and about 60 to 65% are often in manufacturing roles which have fewer entry requirements. Like for like, **the labour requirement is far less** – about half that of traditional building, meaning the absolute number of skilled construction trades and professions needed to scale up housing supply is as little as 5 to 10% of the total needed in traditional building. This is a product of the precision engineering and automation available in the assembly line, which has so far **improved productivity by 40% over traditional building**.



Source: Make UK Modular, [Greener, Better, Faster: Modular's Role in Solving the Housing Crisis](#) (London, 2022), p. 21 (fig. 9).

28. This **does not mean that modular will reduce employment in housebuilding – it will actually do the opposite**. The demand for housing far outstrips supply, so **traditional building will continue**. Instead, **modular will provide much needed additionality** in the market, helping to bridge the gap between current delivery and the government's housebuilding target. In doing so it will **provide employment for thousands** of the 1.4m unemployed workers in the UK right now – people looking for jobs but often unable to enter highly skilled occupations due to lack of training. In **providing full-time, secure and well-paid work**, modular is helping to bring more people to the workforce while bypassing the labour constraints on traditional building.
29. Modular has been able to do this because it has **invested a third of all R&D spending in the construction of buildings** sector since 2017, despite only representing 1 to 2% of housing output. Supporting modular manufacturers to continue to innovate, improve productivity and deliver more homes will require additional government support.

Recommendations

- **Extend business rate reliefs which will start in April 2023 to three years:** Planned business rates reliefs for green machinery and plant equipment (including for RE generation and EV charging) should be extended from one year to three years. Simultaneously, the planned building improvements business rate relief

should be brought forward to 2023 and again be put in place for three years. In addition, Government should look to reduce business rates for green projects such as EV charging infrastructure to remove the current disincentive.

- **Introduce a 'Help to Grow Green' scheme:** Existing funds such as the Industrial Energy Transformation Fund (IETF) should be reshaped into a more accessible fund that is accessible to businesses of all sizes. The current IETF is not reaching manufacturers of all sizes, with the criteria pushing some companies out of being able to access the funds, as well as complexities of accessing the fund meaning small businesses are needing to access external advice if they want to attempt to use it. Reshaping the funds into a new Help to Grow Green scheme would provide smaller funding (e.g. £20k) to companies with advisory services (using existing expertise from legacy ERDF staff) such as energy audit, sub-metering, and help with accessing the right finance, allowing them to take their first implementation steps.
- **Accelerate on-site renewable energy generation by increasing access to Demand Flexibility Services:** The DFS pays flexible assets for providing energy to the grid by paying businesses fairly for the surplus energy they feed back into the Grid. To incentivise renewable energy generation a premium should be paid to businesses for feeding back electricity from their renewable source. In addition, Government must remove the dis-incentivise of RE generation by urgently improving local infrastructure to enable these surpluses to be fed back into the Grid effectively (which would increase the UK's energy security).

Construction Industry Training Board (CITB) levy exemption for modular manufacturers

30. The Construction Industry Training Board (CITB) raises a levy on all companies engaged primarily in 'construction activities'; it is paid by the employer contributing 0.35% of all PAYE payments and 1.25% of all sub-contractor payments. This is used to fund additional apprenticeships and other training in construction trades. The CITB levy sits alongside the separate Apprenticeship Levy, administered by HMRC which requires employers to pay 0.5% of their PAYE employee pay into the scheme. This arrangement, in which the CITB 'tops up' the existing levy, is designed to fund the particular skill and labour requirements in construction, where it has been assessed that additional support has been needed compared with many other industries.
31. Though well-intentioned, the current model dates to 1992. Its broad definition of 'construction activities' suggests that companies engaged in modular manufacturing are required to pay the CITB levy.
32. However, **modular production requires a very different labour model from construction.** Most modular manufacturers rely far less on traditional construction skills relative to their workforce; in some cases, **as few as 10% of employees are in construction trades**, with over 60% in manufacturing jobs that often require no or only limited prior experience, training or qualifications upon entering. **The CITB levy therefore offers very limited benefits for modular producers, but they are currently legally compelled to pay into it.**
33. **Modular manufacturers are effectively being double charged by having to pay into two government skills levies due to an administrative oversight.** This sort of bureaucratic error is predicted to become a major cost as the industry scales up. The cost of paying the CITB Levy will vary between companies, but, for illustrative purposes, one business is set to pay £250,000 this year. As a growing industry, the same member is looking to quadruple its output over the

next three years, suggesting it faces a much more substantial CITB Levy payment in the mid-2020s, possibly amounting to between £0.5m and £1m annually. There are currently 40 modular producers in the UK, of which approximately ten are operating at or near this scale, suggesting that **modular manufacturers will be paying over £2m this year into a levy which is not supporting them**. By the mid-2020s, this could have increased as high as £8m, if the sector grows as expected. This would create **significant drag on the investment, research and development activities** of innovative modular manufacturers, who are currently working to scale up their businesses.

Recommendations

- Make UK Modular is calling on the Government to **exempt from the scope of the CITB levy companies principally engaged in construction of building activities where they take place offsite**, with the possibility of an opt-in for any individual companies who wish to benefit from the scheme.
- This can be achieved by amending Section 2 of Schedule 1 to The Industrial Training (Construction Board) Order 1964 (Amendment) Order 1992 (SI 1992/3048) to include an explicit exemption for companies which are principally engaged in the construction of a building or part of a building where this work mainly takes place off-site (i.e., away from the location where the building or parts of the building will ultimately be installed); this should clearly extend to companies who produce the buildings off-site and install them onsite.

Standard Industry Classification (SIC) code for modular

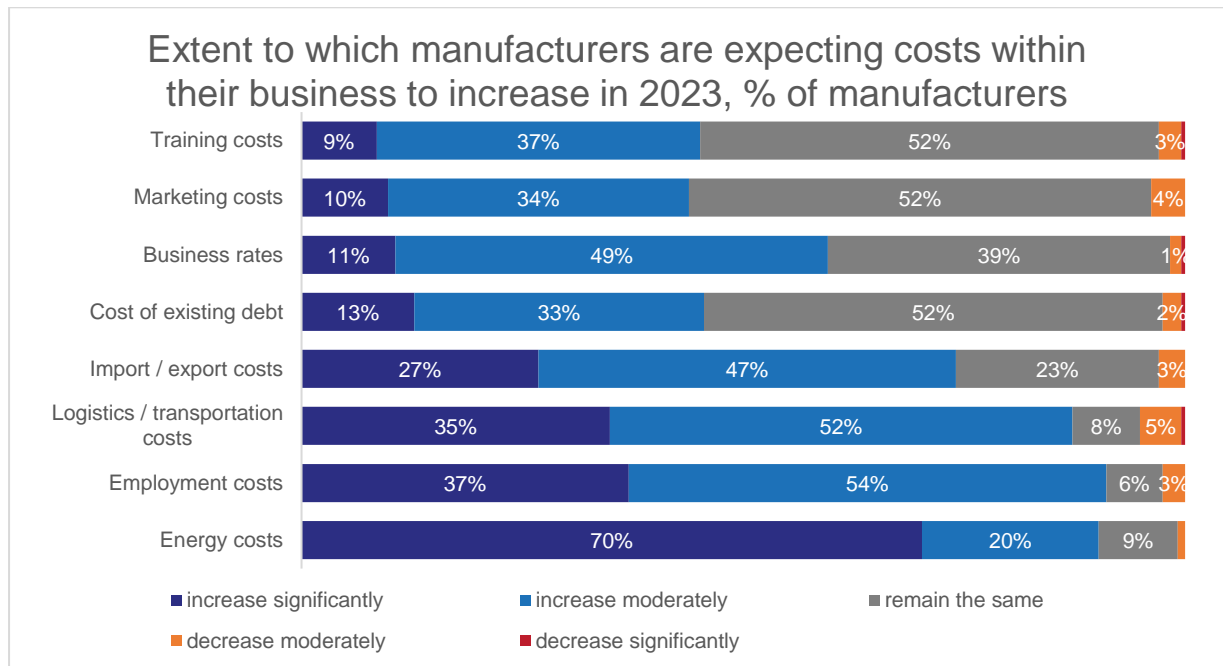
34. **Modular manufacturing has no Standard Industry Classification (SIC) code.** Our members either must be placed in 'manufacturing not elsewhere classified' or 'construction not elsewhere classified'. Since the current SIC code regime was established in 2007, modular has grown substantially. It is set to account for 1 in 20 homes built in the UK in 2025. It is a mature sector with substantial investment, employment and output, as well as its own industry standards, warranties and trade bodies. The lack of a SIC code therefore means that **government lacks data** about modular producers, which has **impacts for schemes where SIC codes are used to inform eligibility** for government funding (eg the ETII).
35. **Offsite housing manufacturing now has a distinct, coherent and mature set of processes, supply chains and products** which are distinctive enough to warrant the industry receiving its own SIC code.
36. The **size of the industry also highlights the need for it to receive separate classification.** The sector is set to deliver more than 15,000 homes a year by 2025. With turnover expected to increase to £500m to £600m by 2025. But the wider offsite housing sector, including panelised systems, will very likely be turning over in excess of £1bn by the middle of the decade.

Recommendations

- **Government should classify offsite housing production as distinct and give the sector its own SIC code.** Government should introduce of a designation Division for offsite building in into the SIC schema, within Section C (Manufacturing) (see Appendix).

Energy efficiency and decarbonisation support for manufacturers

37. The current energy crisis is the biggest issue faced by manufacturers today. The latest crisis threatens to shut down 13% of manufacturers in the UK.¹ Whilst investment, people and R&D are the lifeblood of manufacturing, energy is what ultimately fuels it all and for the first time the UK is at genuine risk of losing valuable economic activity through the extinction of viable manufacturers.



Source: Make UK / PwC, 'Executive Survey: Cost, Competitiveness and Confidence', 2023

38. The Government rightly recognised the need in the short-term and implemented a strong package of support for households and businesses to ensure certainty and continuity in the immediate term. The 6-month Energy Bills Relief Scheme (EBRS) package for business will cost the exchequer around £18bn and enabled manufacturers to continue their operations.

39. The incoming Energy Bills Discount Scheme (EBDS), which will support energy costs for over 12 months and be split into two tiers is a significant reduction in support compared to the current package. Whilst the higher tier of support is viewed positively amongst manufacturers, the universal support imposes a great concern to manufacturer. As only 23% of manufacturing businesses are eligible for the Energy and Trade Intensive Industry support (ETII) a large proportion of the sector remains at risk. The remaining 77% of manufacturers account for over 1.5m jobs in the UK including within critical industries such as automotive and aerospace.²

40. Due to the diversity of supply-chains and how businesses in different subsectors are often interconnected, protecting a small subset of businesses may still expose them to significant disruption if key suppliers or customers are not covered by the ETII scheme. Make UK are exploring different options as to how to support those businesses that are left behind.

¹ Make UK/PwC, 'Executive Survey 2023: Cost, Competitiveness and Confidence', 2023

² Make UK analysis of ONS data

41. Make UK members have noted the new scheme is positive for businesses that qualify under ETII, but for those manufactures that only qualify for the universal scheme they will not be helped much even if the discount is triggered. 70% of manufacturing leaders say energy costs will increase in 2023, a source of concern for businesses not protected by the ETII scheme.³ The challenge is exasperated in the context of competition with neighbouring countries offering relatively better support for businesses, including Germany's 3-year plan to stabilise energy costs with approximately €25bn set aside for business support. France has set €12bn to support businesses. The UK risks falling behind.
42. Manufacturers recognise the long-term challenge and are increasing their focus on energy efficiency where possible, but many manufacturers that lack cashflow will be unable to make investments fast enough. The tax burden on manufacturers is expected to be one of the highest in the OECD, but with reasonable tax exemptions and the use of existing pots of funds diverted to target decarbonisation and energy efficiency, manufacturers can prepare for future energy crises today. Those investing in on-site generation may also be able to contribute to the grid themselves.

Recommendations

Introduce a super-green deduction programme: This would extend the current super-deduction scheme of 130% capital allowance, but for a narrower set of qualifying green plant and machinery (including data and cloud computing/digitalising) for energy efficiency and decarbonisation purposes. This would not only encourage and turbocharge manufacturers on their decarbonisation journey, but it would also support manufacturers in taking the first step to of a sizable investment during a cost of doing business crisis.

Extend business rate reliefs which will start in April 2023 to three years: Planned business rates reliefs for green machinery and plant equipment (including for RE generation and EV charging) should be extended from one year to three years. In addition, Government should look to reduce business rates for green projects such as EV charging infrastructure to remove the current disincentive.

Introduce a Help to Grow Green scheme: Existing funds such as the Industrial Energy Transformation Fund (IETF) should be reshaped into a more accessible fund. The current IETF does not reach manufacturers of all sizes, with the criteria pushing some companies out of being able to access the funds, as well as complexities of accessing the fund meaning small businesses are needing to access external advice if they want to attempt to use it. A revamp of the fund into a Help to Grow Green scheme would provide smaller funding (e.g., £20k) to companies with advisory services (using existing expertise from legacy ERDF staff) such as energy audit, sub-metering, and help with accessing the right finance, allowing them to take their first implementation steps.

Accelerate investment in on-site renewable energy generation by increasing access to Demand Flexibility Services: The DFS pays flexible assets for providing surplus energy back into the grid. This service can be utilised to incentive greater investment in self-generation originating directly from renewable sources only. For example, to incentivise renewable energy generation a premium should be paid to businesses for feeding back electricity from their renewable source. Accelerating this can also future proof the UK's energy security.

³ Ibid.

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APPENDIX

Proposed SIC code structure for offsite housing solutions (within Section C):

- x Offsite manufacture of housing modules, systems, structures and assemblies**
 - x.1 Offsite manufacture of housing modules or complete housing units
 - x.2 Manufacture of panelised systems for housing
 - x.3 Offsite manufacture of structural frames and components for housing
 - x.31 Manufacture of metal structural frames and components for housing
 - x.32 Manufacture of timber structural frames and components for housing
 - x.33 Manufacture of concrete structural frames and components for housing
 - x.34 Manufacture of structural frames and components for housing n.e.c.
 - x.4 Offsite manufacture of non-structural assemblies and sub-assemblies for housing
 - x.5 Other offsite manufacture of housing solutions and assemblies n.e.c.

Groups x.1, x.2 and x.3 would correspond to Categories 1, 2 and 3 in DLUHC's MMC categorisation system. Group x.4 would correspond to Category 5.