

Subsidy Advice Unit Report on the Heat Pump Investment Accelerator Competition

Referred by the Department for Energy Security
and Net Zero

15 June 2023

Subsidy Advice Unit

Part of the Competition and Markets Authority

© Crown copyright 2023

You may reuse this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence.

To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/ or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

Contents

1. Introduction	3
The referred scheme	3
SAU referral process	4
2. Summary of the SAU's evaluation	5
3. The SAU's evaluation	7
Step 1: Identifying the policy objective, ensuring it addresses a market failure or equity concern, and determining whether a subsidy is the right tool to use	7
Policy objectives	7
Market failure	8
Equity rationale	10
Consideration of alternative policy options and why the HPIAC scheme is the most appropriate and least distortive instrument	12
Step 2: Ensuring that the subsidy is designed to create the right incentives for the beneficiary and bring about a change	13
Counterfactual assessment	13
Changes in economic behaviour of the beneficiary	14
Additionality assessment	16
Step 3: Considering the distortive impacts that the subsidy may have and keeping them as low as possible	17
Proportionality	17
Design of subsidy to minimise negative effects on competition and investment	18
Assessment of effects on competition, international trade, or investment	19
Step 4: Carrying out the balancing exercise	22
Energy and Environment Principles	23
Principle A: Aim of subsidies in relation to energy and environment	24
Principle B: Subsidies not to relieve beneficiaries from liabilities as a polluter	24
Other Requirements of the Act	25

1. Introduction

- 1.1 This report is an evaluation prepared by the Subsidy Advice Unit (SAU), part of the Competition and Markets Authority, under section 59 of the Subsidy Control Act 2022 (the Act). The SAU has evaluated the Department for Energy Security and Net Zero (DESNZ) assessment of compliance of the Heat Pump Investment Accelerator Competition (HPIAC) scheme, with the requirements of Chapters 1 and 2 of Part 2 of the Act (the Assessment).¹ The evaluation takes into account any effects of the proposed HPIAC scheme on competition or investment within the United Kingdom.
- 1.2 This report is based on the information provided to the SAU by DESNZ in its Assessment and evidence submitted relevant to that Assessment.
- 1.3 This report is provided as non-binding advice to DESNZ. The purpose of the SAU's report is not to make a recommendation on whether the scheme should be implemented, or directly assess whether it complies with the subsidy control requirements. DESNZ is ultimately responsible for making the scheme, based on its own assessment, having the benefit of the SAU's evaluation.
- 1.4 The SAU's approach to the evaluation report is commensurate with the circumstances of the subsidy referred.
- 1.5 A summary of our observations is set out at section 2 of this report.

The referred scheme

- 1.6 The HPIAC scheme has been created to support proposals for new factories or for proposals to extend, repurpose or retool existing factories for heat pump units and their components. DESNZ expects the scheme to help with supply chain diversification and increase domestic manufacturing capacity to facilitate achieving the target of deploying 600,000 heat pumps a year by 2028 and to improve energy security in the United Kingdom.
- 1.7 The scheme has a £30 million budget in the form of grant funding. Applicants will be able to apply for a maximum of £15 million per project. Subsidies granted under the scheme will be limited to a maximum of 45% of the total investment value of the project, or up to 55% and 65% of the total investment value for medium and small enterprises respectively. Eligible costs will include plant and machinery costs, building costs that facilitate the project, and general design, development, and

¹ Chapter 1 of Part 2 of the Act requires a public authority to consider the subsidy control principles and energy and environment principles before deciding to give a subsidy. The public authority must not award the subsidy unless it is of the view that it is consistent with those principles. Chapter 2 of Part 2 of the Act requires a public authority to ensure that a prohibited subsidy is not awarded, and that the requirements in relation to the giving of certain other subsidies are satisfied.

management costs. The scheme will not cover costs relating to installer training or research and development.

- 1.8 The HPIAC scheme will be open to applicants seeking to locate a factory in any part of the UK and is open to applicants with a presence in the UK as well as those that currently do not have a presence (although they will be required to establish a UK company to receive grant funding). The scheme will operate as two separate schemes: a Great Britain (GB) scheme, covering applicants from England, Scotland and Wales, and a Northern Ireland scheme. The referral to the SAU relates to the GB scheme only.

SAU referral process

- 1.9 On 26 April 2023, DESNZ requested a report from the SAU in relation to its proposed scheme.
- 1.10 DESNZ explained in its submission why, because of its value, the scheme is considered to be a ‘scheme of particular interest’,² and, accordingly, is subject to mandatory referral under the Act.³ In particular, under the HPIAC scheme, a single beneficiary may receive a maximum grant of £15 million within the applicable period.
- 1.11 The SAU notified DESNZ on 3 May 2023 that the SAU would prepare and publish a report within 30 working days, on or before 15 June 2023.⁴ The SAU published details of the referral on 3 May 2023.⁵

² Regulation 3 of [The Subsidy Control \(Subsidies and Schemes of Interest or Particular Interest\) Regulations 2022](#) sets out the conditions under which a subsidy is considered to be of particular interest.

³ Section 52(2) of the Act.

⁴ Sections 53(1) and 53(2) of the Act.

⁵ <https://www.gov.uk/government/publications/referral-of-heat-pump-investment-accelerator-competition-by-the-department-for-energy-security-and-net-zero/sau-referral-details>

2. Summary of the SAU's evaluation

- 2.1 The Assessment is drafted in line with the four-step process described in the Statutory Guidance for the United Kingdom Subsidy Control Regime (the [Statutory Guidance](#)) and as reflected in the SAU's Guidance on the operation of the subsidy control functions of the Subsidy Advice Unit (the [SAU Guidance](#)).
- 2.2 Overall, the material provided by DESNZ shows that DESNZ has carefully considered the subsidy control principles outlined in the Act (the Principles) as part of the scheme design process. To be improved, the Assessment could have aligned DESNZ's justifications and evidence more closely with each of the principles under consideration. There are several instances where aspects relevant to a principle are not mentioned under that principle but are presented elsewhere in the Assessment, or where analysis presented in the Outline Business Case (OBC) or elsewhere in the evidence is not expressly referenced in the Assessment.
- 2.3 Our main findings are:
- (a) In relation to Step 1, the Assessment clearly articulates the specific policy objective of the scheme with higher level objectives relating to the UK's energy security and Net Zero. The Assessment could be improved by explaining more clearly whether the systemic benefits (in terms of reduced risks of supply disruption) of supply chain diversification and resilience constitute an underlying market failure rationale for the scheme. In relation to equity objectives, the Assessment would be stronger if it had provided evidence to demonstrate the relative disadvantage in the regions mentioned in the Assessment and how the scheme specifically targets disadvantaged areas in its design.
 - (b) In relation to Step 2, the Assessment provides a counterfactual which sets out the baseline level of investment against which the subsidy should be assessed, but which could have been strengthened by including a more detailed assessment of the underlying evidence. In relation to the change in the economic behaviour that the scheme is designed to bring, the Assessment could be strengthened by explaining what type or scale of manufacturing projects the scheme would need to attract in order to achieve its policy objectives and how, for larger projects, a subsidy representing only a small proportion of a project's overall cost would influence a manufacturer's decision to invest in the UK.
 - (c) In relation to Step 3, the Assessment reflects a number of relevant factors that explain why the scheme may have limited effects on competition and on international trade, including the subsidy being given in the context of significant market growth, the nature of funding (contribution to fixed capital costs), and other countries offering subsidies in this industry. The Assessment could have further discussed the size of the scheme relative to market values in the UK

and/or internationally and more clearly recognised impacts on domestic and international competitors, even if limited.

- (d) In relation to Step 4, the Assessment lists the positive and negative effects of the scheme and provides some qualitative or quantitative analysis of certain of these benefits against policy objectives such as job creation and manufacturing targets. Whilst providing some useful analysis, the Assessment could have adopted a more systematic approach to the balancing exercise.
- (e) In relation to the energy and environment principles, the Assessment could have explained why the environmental limb of Principle A (increasing the level of environmental protection compared to the level that would be achieved in the absence of the subsidy) is not engaged.

2.4 Our report is advisory only and does not directly assess whether the scheme complies with the subsidy control requirements, nor is its purpose to make a recommendation on whether the scheme should be implemented. We have not considered it necessary to provide advice about how the proposed scheme may be modified to ensure compliance with the subsidy control requirements.⁶

⁶ Section 59(3)(b) of the Act.

3. The SAU's evaluation

- 3.1 This section sets out our evaluation of the public authority's assessment of compliance with the subsidy control principles and the energy and environment principles.
- 3.2 DESNZ structured its Assessment according to the four-step framework set out in the [Statutory Guidance](#) and reflected in the [SAU Guidance](#). Our evaluation follows that structure.

Step 1: Identifying the policy objective, ensuring it addresses a market failure or equity concern, and determining whether a subsidy is the right tool to use

- 3.3 The first step involves an evaluation of the Assessment against:
- (a) Principle A: Subsidies should pursue a specific policy objective in order to (a) remedy an identified market failure or (b) address an equity rationale (such as local or regional disadvantage, social difficulties or distributional concerns); and
 - (b) Principle E: Subsidies should be an appropriate policy instrument for achieving their specific policy objective and that objective cannot be achieved through other, less distortive, means.⁷

Policy objectives

- 3.4 The Assessment states that the policy objective of the HPIAC scheme is to increase the scale and scope of the manufacturing of heat pumps and their components in GB. This will 'address the UK's energy security in relation to the heating of domestic buildings' and 'help the Government achieve its Net Zero objectives.' DESNZ states that, in support of its Net Zero objectives, the scheme will help meet the target of installing 600,000 heat pumps in the UK per year by 2028 'of which half will be manufactured in the UK.' The Assessment also states that the HPIAC scheme will support 3,000 low-carbon jobs and create up to £400 million in gross value added (GVA).
- 3.5 In our view, the Assessment sets out a clear, specific, and relevant objective for the scheme. It clearly articulates the specific policy objective of the scheme with higher level objectives relating to the UK's energy security and Net Zero, considering the risk of missing targets if demand-side policies are not complemented by supply-side policies.

⁷ Further information about the Principles A and E can be found in the [Statutory Guidance](#) (paragraphs 3.18 to 3.42) and the [SAU Guidance](#) (paragraphs 4.7 to 4.11).

Market failure

- 3.6 The Statutory Guidance sets out that market failure occurs where market forces alone do not produce an efficient outcome. The most common cases of market failure which are relevant to subsidy control occur when at least one of the following features is present: the existence of externalities; the involvement of public goods; or imperfect or asymmetric information.⁸
- 3.7 The Assessment identifies the market failures that the scheme is designed to address as the underprovision of the following public goods:
- (a) **The delivery of the UK's Net Zero goals (and the associated benefits of these goals, such as fewer CO2 emissions and cleaner air).** The Assessment indicates that integration with European and global markets is limited by UK specification requirements, making most heat pumps produced internationally not suitable for UK customers.⁹ The Assessment further states that manufacturers outside the UK may prioritise the production of air-to-air products to meet demand in larger markets. The Assessment explains that, as a consequence, in order to support the roll out of heat pumps required in the UK, the UK needs to decrease its reliance on imports and develop the supply of heat pumps that are best suited to the UK market.
 - (b) **The UK's energy security (specifically relating to the heating of the UK's domestic building stock).** The Assessment notes that, by supporting the replacement of fossil fuel heating with heat pumps, the scheme helps reduce reliance on natural gas. This will therefore address challenges around security of supply of natural gas. The Assessment also notes that the scheme helps to address energy security by allowing the development of parts and components that are currently subject to significant global supply constraints.
 - (c) Whilst the scheme will not allow for grant funding to be used on investment in research and development (R&D) or training, DESNZ will consider what R&D or installer training is planned as part of its scoring process. Increased R&D may lead to more efficient or cheaper heat pumps.
- 3.8 The externalities relating to the carbon emissions associated with fossil fuel usage are a well-established market failure. The security of supply rationale is less straightforward. Although it can reasonably be considered to exhibit public good characteristics, the Assessment could have set this out more clearly.¹⁰ Both

⁸ [Statutory Guidance](#), paragraphs 3.21-3.32.

⁹ The Assessment states that in comparison to other markets the UK has a number of significant differences which are important for the sector: (i) The UK market is dominated by monobloc systems (all components in one case outside the property) compared with Europe where split systems (some components outside the property, some inside) are the dominant system; (ii) The great majority of heat pump installations in the UK are air-to-water systems, whereas globally, air-to-air systems are much more common.

¹⁰ See [Statutory Guidance](#), paragraphs 3.27-3.29.

externalities and public goods correspond to the descriptions of categories of market failure set out in the [Statutory Guidance](#).

- 3.9 We recognise that these market failures might justify intervention to support the replacement of gas boilers with heat pumps in the UK. However, these market failures are only relevant to the scheme to the extent that its policy objective aims to support the overarching Government objective to support the installation of heat pumps in the UK. It is therefore important for us to evaluate whether the Assessment explains how the scheme, whose main objective is to increase the scale and scope of manufacturing of heat pumps and their components in the UK, addresses a market failure relating to the Government's heat pump installation targets, in circumstances where there is significant international trade in heat pumps and the majority of heat pumps currently sold in the UK are imported.
- 3.10 DESNZ's explanation of why the scheme is necessary to achieve installation targets revolves around the challenges related to relying largely on imports to meet these targets, due to global expansion in demand for heat pumps and the risk of supply disruption.
- 3.11 In our view, the Assessment could be more explicit and engage more fully with the evidence to demonstrate the market failure. In particular, it could explain why the market may not respond efficiently to supply chain challenges, which is directly relevant to DESNZ's explanation of why supporting GB heat pump manufacturing is necessary to achieve installation targets.
- 3.12 First, the Assessment could be more explicit in explaining whether DESNZ considers the systemic benefits (in terms of reduced risks of supply disruption) of supply chain diversification and resilience to be an underlying market failure rationale for the scheme. Whilst DESNZ provided some relevant reasoning pointing to positive externalities or public good aspects of investing in supply chain diversification and resilience via on-shoring of manufacturing, the Assessment does not explicitly articulate this as being a specific market failure.¹¹
- 3.13 Second, DESNZ could have engaged more fully with the breadth of available evidence:
- (a) DESNZ states that foreign manufacturers, in circumstances where demand for heat pumps is increasing globally, may prioritise the production of heat pumps that are suitable for other, larger, markets. In DESNZ's view, this prioritisation will be detrimental to the UK's ability to import heat pumps compatible with UK

¹¹ The need to invest in the supply chain to avoid future disruptions is better described in the OBC as 'The unprecedented growth in the global heat pump market is already putting significant strain on supply chains, with demand outstripping supply, leading to escalating prices and long lead times for products. ... There is an urgent need to build resilience in the supply chain – highlighted by recent supply chain bottlenecks which are putting our decarbonisation ambitions at risk.'

needs. While an industry report referred to by DESNZ supports the statement that there may be a need for bespoke UK heat pump designs due to different housing stocks, DESNZ has not referred to specific evidence showing that foreign manufacturers might deprioritise supplying the UK market in the case of global increased demand.

- (b) The market failure section of the Assessment states that heat pump parts are currently subject to significant supply chain constraints. Elsewhere in the Assessment, DESNZ points to an industry report highlighting long lead times on heat pumps and increases in the cost of some components due to shortage and supply issues. On the one hand, we agree with DESNZ that this report indicates scope for significant demand/supply imbalances and long lead times, although we note that these issues appear largely to have been related to COVID-19 and recent energy crisis events. On the other hand, the Assessment has not engaged with other evidence pointing to the supply chain in the heat pump sector being unconstrained.¹² To improve the Assessment, DESNZ could have engaged with the evidence in the round, and used it to better explain the need to insure against the risk of crisis events that may affect the supply chain.

- 3.14 We recognise that there could be indirect positive externalities from R&D and training activities. The Assessment acknowledges that the grant funding cannot be used for these.

Equity rationale

- 3.15 The Statutory Guidance explains that, in the absence of market failure, market forces tend to bring about efficient outcomes, but they can also lead to unequal or unfair outcomes. Equity objectives seek to reduce these disparities between different groups in society or geographic areas.¹³
- 3.16 The Assessment identifies the equity rationales that the scheme is designed to address as being:
- (a) **To support employment and stimulate economic growth in disadvantaged areas of the UK.** The Assessment states that ‘all of the companies [expected] to apply to the scheme... are looking to open or scale-up manufacturing operations in locations such as the East Midlands, the North-East and Scotland, which are economically disadvantaged compared to other areas of the UK.’ DESNZ explains that investment in these areas would stimulate economic growth and support job creation. The Assessment further notes that the average salaries of heat pump manufacturing jobs ‘tends to be above the

¹² In particular the [Heat Pump Manufacturing Supply Chain Research Project](#) final report published by BEIS in November 2020.

¹³ [Statutory Guidance](#), paragraph 3.35.

national average' and therefore further expansion of UK heat pump production should provide higher paid jobs in currently disadvantaged areas.

- (b) **Help to minimise the negative externalities caused by the transition away from manufacturing fossil fuel boilers.** The Assessment explains that some of the manufacturers considering investments are fossil fuel boiler manufacturers based in disadvantaged areas, which DESNZ note 'employ around 5,000 people.' The Assessment explains that boiler manufacturers are at significant risk of closing operations due to policies which will phase out fossil fuel domestic heating, causing significant unemployment across a range of skilled and non-skilled roles. The OBC notes that 'the UK's heat pump supply chain supported an estimated 2,000 full-time jobs needed to build, install and maintain heat pumps in 2019,'¹⁴ and the scheme will help to support up to 3,000 direct low carbon jobs. These new jobs will be particularly valuable for those firms and areas affected by the transition.

3.17 In our view, the Assessment provides plausible equity rationales of supporting employment and stimulating economic growth in disadvantaged areas of the UK and minimising social difficulties caused by the transition away from manufacturing fossil fuel boilers. However, we consider that the Assessment does not provide explicit explanation or sufficient evidence to demonstrate how the scheme is specifically designed to address these equity rationales.

3.18 We consider that the Assessment would be strengthened by providing :

- (a) Evidence to justify the need for targeted interventions in the East Midlands, the North-East and Scotland. The Assessment would benefit from the provision of statistical indicators that specify the geographical and economic context of the disadvantaged areas that require targeted intervention, compared to regional or national averages.¹⁵
- (b) Evidence to support how the HPIAC scheme specifically targets areas of disadvantage to improve employment. The Assessment states that the selection criteria will require applicants to provide financial modelling to demonstrate employment and upskilling plans but does not mandate specific locations for investment. DESNZ also notes that it will ask applicants for job-creation information as part of their application but will not consider it a primary metric. The Assessment would benefit from evidence demonstrating that job creation is addressed by the design of the HPIAC scheme, rather than being a by-product of investment in heat pump manufacturers already positioned in these regions.

¹⁴ HPIAC Outline Business Case refers to BEIS Heat Pump Manufacturing Supply Chain Research Project. www.gov.uk/government/publications/heat-pump-manufacturing-supply-chain-research-project

¹⁵ [Statutory Guidance](#), paragraph 3.36.

Consideration of alternative policy options and why the HPIAC scheme is the most appropriate and least distortive instrument

- 3.19 The Statutory Guidance sets out that, once the policy objective has been identified, public authorities must determine whether a subsidy is the best means for achieving the policy objectives. As part of this, there should be consideration of other ways of addressing the market failure or equity issue.¹⁶
- 3.20 The Assessment takes a structured approach to the consideration of alternatives and including a summary of the six options considered and an explanation of how the six shortlisted options were considered against certain criteria in the OBC (including a set of critical success factors in line with the Green Book appraisal guidance).
- 3.21 The following alternatives were considered and rejected:
- (a) Doing nothing, which was rejected because DESNZ believes it would result in a lack of investment in the UK, with manufacturers incrementally increasing their investment in facilities abroad to serve the UK market;
 - (b) Free ports were rejected because they would do little to encourage manufacturing for the domestic market as products targeting the UK market are not tariff free. The Assessment further explains that there are already a number of free-ports in existence which are not stimulating the required investment in heat pump manufacturing;
 - (c) Extending the super deduction tax scheme (providing tax benefits for investment in capital such as heat pump manufacturing), which was rejected because the scheme does not cover investment in bricks and mortar and so provides limited incentive for manufacturers to invest in new facilities;
 - (d) Subsidised government loans, which were rejected because they would not attract them to invest in GB specifically. Engagement with manufacturers showed that they have strong balance sheets and would thus be able to invest without a loan or could achieve an interest rate similar to that offered by the Government; and
 - (e) Rewarding manufacturers in arrears for each heat pump manufactured in the UK, which was rejected because it could potentially reward inefficient production as manufacturers would have no incentive to compete on process or quality as payment would be guaranteed.
- 3.22 DESNZ states in its Assessment that it did not consider legislation as an option because it would not lead to investment in the supply chain and could potentially

¹⁶ [Statutory Guidance](#), paragraphs 3.40-3.41.

encourage investment elsewhere, making it inefficient. The Assessment explains that although ‘exist[ing]’ legislation (citing the Clean Heat Market Mechanism) will mandate the sale of heat pumps, it will not support manufacturing in GB as manufacturers will have the ability to buy credit from importers to meet obligations.

- 3.23 The overall approach to the consideration of the alternatives in the Assessment is well structured. Many conclusions and assumptions that DESNZ arrives at in the Assessment appear reasonable. However, certain aspects of this part of the Assessment that could have been improved by:
- (a) Providing a more detailed explanation, with adequate supporting evidence, of how it came to some its conclusions. For example, the Assessment does not include any supporting evidence on why subsidised government loans were not the most appropriate means of achieving the policy objective.
 - (b) Providing more detailed consideration of non-subsidy options as a way of achieving the policy objectives of the scheme. Legislation is the only non-subsidy option mentioned in the Assessment and, although the Assessment explains why it did not consider legislation, its explanation only mentions that it would not lead to investment in the UK supply chain.

Step 2: Ensuring that the subsidy is designed to create the right incentives for the beneficiary and bring about a change

- 3.24 The second step involves an evaluation of the assessment against:
- (a) Principle C: First, subsidies should be designed to bring about a change of economic behaviour of the beneficiary. Second, that change, in relation to a subsidy, should be conducive to achieving its specific policy objective, and something that would not happen without the subsidy; and
 - (b) Principle D: Subsidies should not normally compensate for the costs the beneficiary would have funded in the absence of any subsidy.¹⁷

Counterfactual assessment

- 3.25 In assessing the counterfactual, the Statutory Guidance explains that public authorities should assess any change against a baseline of what would happen in the absence of the subsidy (the ‘do nothing’ scenario).¹⁸ This baseline would not necessarily be the current ‘as is’ situation (the ‘status quo’) but what would likely happen in the future – over both the long and short term – if no subsidy were awarded.

¹⁷ Further information about the Principles C and D can be found in the [Statutory Guidance](#) (paragraphs 3.43 to 3.57) and the [SAU Guidance](#) (paragraphs 4.12 to 4.14).

¹⁸ [Statutory Guidance](#), paragraphs 3.46-3.47.

- 3.26 The Assessment sets out a ‘do nothing’ scenario in which the scheme is not implemented, resulting in lower investment in GB heat pump and heat pump component manufacture than if it had proceeded. The counterfactual anticipates that, while there may be some incremental increases in domestic manufacture of heat pumps from investments already made, manufacturers would incrementally increase their investments in larger overseas manufacturing facilities, rather than invest in GB at the scale needed to strengthen UK supply chains.
- 3.27 DESNZ further expects that, while remaining demand would be met through importing heat pumps from other countries under the ‘do nothing’ scenario, total overall domestic demand would be negatively impacted by the weaker domestic supply chain for heat pump parts and a lack of qualified installers, resulting in lower overall installations under the counterfactual.
- 3.28 The assumption that there would be lower investment under the ‘do-nothing’ scenario is supported by:
- (a) evidence of manufacturers having recently taken decisions to invest in overseas locations rather than the UK; and
 - (b) feedback from discussions with relevant manufacturers.
- 3.29 Elsewhere in the Assessment, DESNZ sets out a list of potential projects that it considers likely to apply for the subsidy based on its own stakeholder engagement, ranging in size from less than £10 million to over £100 million. The extent to which this list of potential projects is factored into the counterfactual is unclear, as this evidence is not directly referred to in the Step 2 Assessment. We consider that the Assessment would be strengthened by including a more detailed assessment of the underlying evidence and assumptions, including for example the impact of a ‘do nothing’ scenario on this list of potential projects.

Changes in economic behaviour of the beneficiary

- 3.30 The Statutory Guidance sets out that subsidies must bring about something that would not have occurred without the subsidy.¹⁹ In demonstrating this, public authorities should consider the likely change or additional net benefit. An example of this could be an increase in the scale or scope of a project or activity.
- 3.31 The scheme is designed to induce heat pump manufacturers to invest in GB when otherwise they would not have invested, or to accelerate existing investments. The Assessment explains that this change will be achieved by subsidising the manufacturing of heat pumps in GB through the award of grants to individual manufacturers.

¹⁹ [Statutory Guidance](#), paragraph 3.50.

- 3.32 Evidence provided by DESNZ, which we consider relevant to Principle C²⁰ includes:
- (a) specific examples of heat pump manufacturers deciding to manufacture overseas at lower cost than in GB;
 - (b) engagement with a number of heat pump and component manufacturers;
 - (c) examples of similar subsidies being offered in other jurisdictions, directed at investment of the type that the scheme is seeking to attract; and
 - (d) a list of potential projects that DESNZ considers likely to apply for the subsidy based on its own stakeholder engagement, ranging in size from less than £10 million to over £100 million.
- 3.33 The Assessment also provides evidence of specific design features which are intended to bring about this economic change.²¹ For example, each eligible project will be assessed based on how well the project fulfils the scheme's strategic objectives, using qualitative and quantitative evidence, including applicants being required to explain:
- (a) the number of heat pump units and/or components that will be produced and what proportion of the manufacturing (as opposed to just assembly) will take place in GB;
 - (b) how they will accelerate investment in the heat pump supply chain in GB, bringing forward investments at the earliest opportunity to address short-term supply chain constraints; and
 - (c) evidence that the output will meet the requirements and demands of the UK market specifically.
- 3.34 In our view, the Assessment could be improved by better explaining the extent to which the scheme is expected to attract new projects that may otherwise not happen in GB, and the extent to which this change of behavior will contribute to the policy objective. In line with the Statutory Guidance,²² should the scheme mainly aim at bringing forward planned investment, the Assessment should clearly indicate that there are justifiable public policy benefits to using a subsidy for doing so.
- 3.35 Furthermore, we consider that the Assessment could be strengthened by explaining what type or scale of manufacturing projects the scheme would need to attract in order to achieve its policy objectives. While the individual projects that

²⁰ Some of this evidence has been provided in other sections of the Assessment.

²¹ These are set out in the HPIAC Scheme Guidance which is referenced in the Step 2 Assessment.

²² [Statutory Guidance](#), paragraph 3.50.

DESNZ considers likely to apply for the scheme vary significantly in size and form, it is unclear from the Assessment the extent to which subsidies awarded to smaller, localised investment projects would sufficiently increase the scale and scope of the manufacturing of heat pumps and their components in the UK to meet DESNZ's policy objectives. For larger projects, where subsidy intensity would be significantly lower than the maximum intensity thresholds,²³ we consider the Assessment could have benefitted from engaging more broadly with factors influencing manufacturers' investment decisions (eg confidence in future UK demand for heat pumps), to explain why DESNZ expects a subsidy representing only a small proportion of a project's overall cost to influence a manufacturer's decision to invest in GB.

Additionality assessment

- 3.36 According to the Statutory Guidance, 'additionality' means that subsidies should not be used to finance a project or activity that the beneficiary would have undertaken in a similar form, manner, and timeframe without the subsidy.²⁴ For schemes, public authorities should also, where possible and reasonable, ensure the scheme's design can identify in advance and exclude those beneficiaries for which it can be reasonably determined would likely proceed without subsidy.²⁵
- 3.37 The Assessment sets out design features intended to limit the use of the scheme to those projects that would not be likely to go ahead in the same form, manner or timescale without the subsidy, and to ensure grants are limited to the minimum amount necessary for a particular project to proceed.
- 3.38 These are evidenced in the HPIAC Scheme Guidance, which sets out the methodology by which applications for subsidies will be reviewed on a case-by-case basis in accordance with pre-defined criteria. In particular, the Assessment refers to 'Case for Assistance' criteria, which requires applicants to provide:
- (a) evidence that the requested subsidy would bring about investment that may not otherwise happen, or would bring forward investment earlier than it otherwise may have taken place;
 - (b) the minimum amount of grant funding necessary to enable their project to proceed, and why this is the case, to evidence that the subsidy would not compensate for costs that may have been borne anyway;
 - (c) within their submissions, applicants are also required to explain how their project will accelerate investment in heat pump supply chains in GB, bringing

²³ Maximum individual subsidy amount is limited to £15 million under the HPIAC scheme.

²⁴ [Statutory Guidance](#), paragraphs 3.49-3.53.

²⁵ [Statutory Guidance](#), paragraph 3.55

forward investments at the earliest opportunity to address short-term supply chain constraints; and

- (d) a detailed breakdown of what the grant funding will be spent on (the HPIAC scheme guidance also sets out the types of eligible costs towards which funding can be used) as well as explaining the funding approach for the project.

3.39 In our view, the Assessment methodology is clearly set out, including through the provision of templates for supporting evidence, and guidance for assessors on how each assessment should be carried out. We note, however, that, under the HPIAC Scheme Guidance, providing 'limited evidence to suggest that, in absence of support, the project is unlikely to proceed, or would be scaled back, delayed or reconfigured in a way which delivers lower benefits, or proceed outside of GB' would be sufficient to obtain a Moderate Score in the Case for Assistance Assessment. The Assessment could be strengthened by considering in more detail the extent to which the minimum acceptable evidential threshold for meeting the Case for Assistance criteria is high enough to ensure an adequate level of additionality.

Step 3: Considering the distortive impacts that the subsidy may have and keeping them as low as possible

3.40 The third step involves an evaluation of the Assessment against:

- (a) Principle B: Subsidies should be proportionate to their specific policy objective and limited to what is necessary to achieve it; and
- (b) Principle F: Subsidies should be designed to achieve their specific policy objective while minimising any negative effects on competition or investment within the United Kingdom.²⁶

Proportionality

3.41 The Assessment sets out that the scheme is a competed award with clear assessment criteria, lowering the amount of subsidy that applicants will request. Applicants will be required to justify, with evidence, how they have determined their grant request and why it is the minimum amount required to facilitate the project.

²⁶ Further information about the Principles B and F can be found in the [Statutory Guidance](#) (paragraphs 3.58 to 3.93) and the [SAU Guidance](#) (paragraphs 4.15 to 4.19).

- 3.42 Individual awards are restricted to the lower of £15 million or a maximum subsidy intensity of 45% (65% and 55% for small and medium sized businesses respectively).²⁷
- 3.43 In our view, the Assessment’s approach to proportionality is broadly in line with suggested approaches in the Statutory Guidance.
- 3.44 A competitive allocation process for a subsidy can help public authorities to meet Principle B.²⁸ We note, however that where the degree of competition for funding may be difficult to predict in advance, it is important also to use other means to ensure the proportionality principle is met. Therefore, effective operation of the scheme’s funding application assessment criteria (see paragraph 3.38 above) will also be important to ensure that funding granted is the minimum amount required to facilitate the relevant project.²⁹

Design of subsidy to minimise negative effects on competition and investment

- 3.45 In the Assessment, DESNZ submits that the scheme will only provide a small proportion of the upfront capital costs of manufacturing facilities, and supported manufacturers will still have to compete in the market to sell heat pumps, so they will still have to compete on price and quality.
- 3.46 The competition is open to any eligible applicants. DESNZ reasons that this encourages competition between potential beneficiaries compared with alternative possible approaches (first-come first-served challenge funds, or un-competed direct awards).
- 3.47 The Assessment explains that funding can only be used towards eligible costs of a project (capital expenditure). No amounts are offered for ‘any operating or other costs that might allow a company to compete unfairly on an ongoing basis.’
- 3.48 For smaller projects, the scheme sets a limit of subsidy of up to 65% of relevant costs (within the upper limit of £15 million per project). The Assessment indicates that ‘higher intensity rates for small and medium businesses have been included as these types of businesses often find it more difficult to secure capital for investment but can be important elements of the supply chain.’

²⁷ The maximum subsidy intensities are aligned with the revised Article 41 of the EU GBER, concerning investment aid for the promotion of energy from renewable sources – recently expanded to cover investments in newly installed or refurbished capacities in heat pumps. See: [Approval of the content of a draft for a Commission Regulation amending Regulation \(EU\) No 651/2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty etc.](#), Page 76.

²⁸ [Statutory Guidance](#), paragraph 3.70.

²⁹ [Statutory Guidance](#), paragraph 3.76.

- 3.49 Finally, the Assessment indicates that there will be formal monitoring of projects before and after commissioning, to ensure project progress and delivery in line with the content of successful applications.
- 3.50 In our view, while a significant degree of consideration has been given to the appropriate design of the scheme, taking account of the policy objective, the Assessment could be improved by assessing all the potentially relevant subsidy characteristics set out in the Statutory Guidance. We note that:
- (a) Most points in the Statutory Guidance are covered and justified (even if elsewhere in the Assessment rather than the Step 3 section), including in relation to the openness of competition and selection process, timing (upfront), the nature of costs covered, the size of subsidies relative to cost of projects, performance monitoring, and ringfencing of how the funds are used. Allowing higher aid intensity levels for smaller projects is consistent with the approach taken under the UK's Streamlined Route schemes.³⁰
 - (b) However, the Assessment lacks coverage of the nature of subsidy instrument (eg grant versus loan),³¹ although some relevant points are covered in the Step 1 Assessment. The Assessment could also have usefully included more discussion of size of the scheme relative to market values in GB, the UK, and/or internationally.³²

Assessment of effects on competition, international trade, or investment

- 3.51 In its Assessment, DESNZ makes a number of arguments about effects on competition, trade and investment:
- (a) DESNZ notes that the scheme aims to induce some heat pump manufacturers to invest in GB rather than incrementally increasing their investments in manufacturing facilities abroad.
 - (b) DESNZ submits that the support is not expected to enable manufacturers to reduce their costs compared to those that have not received support. DESNZ does not consider that the scheme will disadvantage UK manufacturers who do not receive support through this scheme, nor importers of heat pumps to the UK.
 - (c) As set out above in paragraph 3.7(a) above, the Assessment explains that most heat pumps produced internationally are not suitable for the UK market. It infers from the fact that the UK needs different types of heat pumps that the impact on

³⁰ For example see paragraph 13.6 of RD&I [Streamlined Route Guidance](#).

³¹ [Statutory Guidance](#), paragraphs 3.66-3.68.

³² [Statutory Guidance](#), paragraphs 16.8-16.12

trade will be minimal. For similar reasons, DESNZ does not expect that supported manufacturers will engage in significant exportation of heat pumps.

- (d) DESNZ states that imports into the UK from other countries (Türkiye, Poland, Slovakia) will likely increase in the short term as a result of new capacity supported by those host countries' subsidy schemes. Compared to a no subsidy scenario, DESNZ expects that there would be a negative impact on international trade from the GB scheme as UK manufacturing capacity could start to displace imported heat pumps. However, it contends that supported manufacturers will still need to produce a product that is competitive compared with imported and non-supported products. In the long term, as the UK market grows to at least 600,000 heat pump installations a year, the UK will still need to import a significant proportion of the heat pumps required to meet demand, reducing the impact on international trade.

3.52 DESNZ argues that depending on which companies receive the funding (and for what), the scheme might also increase competition in heat pump manufacturing. Although increasing competition in heat pump manufacturing is not an objective of the scheme, it will be considered when awarding funding (for example, 'ensuring that a monopoly is not created').

3.53 The Assessment notes that there could be a negative impact on boiler manufacturers as consumers transition from boilers to heat pumps. However, it also notes that the primary impact on the fossil fuel boiler market will come from demand side measures (themselves intended to shrink the boiler market) rather than the HPIAC scheme in and of itself.

3.54 In our view, the Assessment refers to a number of relevant factors that explain why the scheme may have limited effects on competition in the UK and on international trade and investment.

- (a) The Assessment provides useful material on global and UK heat pump market context in the introductory section of the Assessment. Anticipated significant market growth is a key element mitigating trade and competition impacts of subsidies. In a growing market there is likely to be a lower distortive effect, as firms are still able to expand and enter (or exit from) the market.³³ The Assessment indicates that, if the scheme meets its targets, UK manufacturing is only expected to provide around half of the total heat pump supply required for installation in the UK by 2028. According to DESNZ, this means that, due to market growth, there will still be considerable scope for foreign manufacturers to increase their imports into the UK.

³³ [Statutory Guidance](#), paragraph 16.61.

- (b) We agree that the nature of funding (a contribution to fixed capital costs) available under the HPIAC scheme makes it less likely to distort pricing behaviour, and more likely to affect entry and/or investment location decisions.
- (c) It seems likely that the primary impact on fossil fuel boiler manufacturers will come from demand-side measures. The impact from the HPIAC scheme is limited to whether it helps ensure the target rate of take-up of heat pumps. Long waiting times for heat pumps will tend to result in higher ongoing boiler sales while these are still allowed, as fewer marginal customers will choose heat pumps. To the extent that the scheme supports an earlier increase in take-up, this might bring forward the reduction in boiler production, and the transition of some boiler manufacturers to producing heat pumps. Boiler manufacturers are also able to apply directly for this grant (to manufacture heat pumps or components) to aid with this transition.
- (d) We agree that, since the policy objective is to influence the country of production of heat pumps, there will likely be some impact on international trade and investment. This should be seen in the wider international context, and the Assessment provides some details of what other countries are offering in this space. This includes support that EU countries provide (or could provide) under the revised GBER or the European Commission's Temporary Crisis and Transition Framework³⁴ - which the Assessment notes specifically references support for the production of heat pumps.

3.55 The Assessment could have benefited from considering additional aspects which are relevant to effect on trade and investment:

- (a) It could be improved by setting out data on the (current and forecast) value of the UK market and any wider relevant geographic market.³⁵ This would facilitate comparison with the size of the scheme and potential subsidies available, and enhance the competitive assessment. All other things being equal, if the subsidy is low relative to the size of the market, we would expect fewer distortive effects.³⁶
- (b) The Assessment might have more clearly recognised impacts on domestic and international competitors, even if limited. Even in a growing market, the scheme would be likely to reduce prospective UK sales (or rate of sales growth) of non-supported UK manufacturers and importers.
- (c) With respect to incentives to export, the Assessment could have been clearer in its underlying assumptions. Incentives for supported GB manufacturers to

³⁴ The [Temporary Crisis and Transition Framework](#) is intended to foster support measures in sectors which are key for the transition to a net-zero economy.

³⁵ [Statutory Guidance](#), paragraphs 16.41-16.44.

³⁶ [Statutory Guidance](#), paragraph 16.8.

manufacture heat pumps for export may depend on the success of UK demand-side measures aimed at increasing take-up, and hence the degree of spare capacity. In its discussion of differing heat pump demand requirements, the Assessment has not considered the extent of current imports and exports as proportions of current UK installations and production respectively.

3.56 Overall, the Assessment covers a range of issues relevant to effects on competition, international trade and investment. In our view, it underplays impacts on individual competitors which do not receive the subsidy, but makes reasonable arguments suggesting a likely limited distortion of competition at a market-wide level.

Step 4: Carrying out the balancing exercise

3.57 The fourth step involves an evaluation of the assessment against subsidy control Principle G: subsidies' beneficial effects (in terms of achieving their specific policy objective) should outweigh any negative effects, including in particular negative effects on: (a) competition or investment within the United Kingdom; (b) international trade or investment.³⁷

3.58 The Assessment lists and provides quantification for a number of positive effects in terms of achieving the policy objective:

- (a) supporting additional annual heat pump manufacturing of up to 270,000 units by 2028;
- (b) capturing additional economic benefit from heat pump manufacturing of £200 million GVA (low range) to £400 million (high range) GVA; and
- (c) creating or retaining up to 3,000 higher paid direct jobs. In that respect, the Assessment also quantifies the economic benefits arising from a workforce moving to higher paid jobs.

3.59 In addition, the Assessment lists 'additional unquantifiable benefits' including improving energy security, reducing exchange rate risks, reducing supply chain bottlenecks, reducing risk of future increases in shipping and delivery costs, reducing transport emissions, boosting R&D and quality of heat pumps, and helping the Levelling Up agenda.

3.60 The Assessment recognises that the scheme could negatively impact international trade, as the UK manufacturing capacity could displace imported heat pumps. However, according to DESNZ, based on current projections of future heat pump demand, the UK will still need to import a significant proportion of heat pumps to meet demand, so the impact on trade will reduce over time. Other aspects

³⁷ See [Statutory Guidance](#) (paragraphs 3.96 to 3.98) and [SAU Guidance](#) (paragraphs 4.20 to 4.22) for further detail.

discussed in the Assessment on the impact of the scheme on competition are set out in Step 3.

- 3.61 In our view, the Assessment lists the benefits and negative effects of the scheme and provides some qualitative or quantitative analysis of certain of these benefits against policy objectives such as job creation and manufacturing targets. However, the Assessment could be strengthened by:
- (a) taking a more systematic approach in providing such analysis for the stated benefits, for instance in relation to the Net Zero target (the overarching objective of heat pump installations); and
 - (b) providing underlying evidence to support some of the calculations, such as the scheme target to allow the manufacture of up to 270,000 heat pumps (in the UK?) by 2028, which is central to the policy objective.
- 3.62 In relation to negative effects, the Assessment has identified some possible effects on trade and competition. Whilst it has not attempted to provide a quantitative evaluation of these effects, it has provided a reasonable explanation as to why it did not consider these effects to be materially negative.
- 3.63 In our view, whilst providing some useful analysis, the Assessment could have adopted a more systematic approach to the balancing exercise. The Assessment could also be improved by including clear consideration of negative effects on investment or geographical and distributional impacts.³⁸

Energy and Environment Principles

- 3.64 This step involves an evaluation of the Assessment with regard to compliance with the energy and environment principles, where these are applicable to the subsidy/scheme.³⁹
- 3.65 The Statutory Guidance summarises the scope of the different energy and environment principles that apply to different types of subsidies.⁴⁰ DESNZ has conducted an assessment of the scheme against Principles A and B. We are satisfied that the other energy and environment principles are not applicable to this scheme.

³⁸ [Statutory Guidance](#), paragraphs 3.100-3.103.

³⁹ See Schedule 2 to the Act.

⁴⁰ Principles A and B apply to all subsidies in relation to energy and environment. Principle C applies for subsidies for electricity generation adequacy, renewable energy or cogeneration. Principle D applies to subsidies for electricity generation only. Principle E applies to subsidies for renewable energy or cogeneration. Principle F applies to subsidies in the form of partial exemptions from energy related taxes and levies. Principle G applies to subsidies that compensate electricity intensive users for increases in electricity costs, Principle H relates to subsidies for decarbonisation of industrial emissions. Principle I relates to subsidies for improving energy efficiency of industrial activities.

Principle A: Aim of subsidies in relation to energy and environment

- 3.66 The assessment against Principle A should show how the subsidy is consistent with delivering a secure, affordable and sustainable energy system and a well-functioning and competitive energy market, or increasing the level of environmental protection compared to the level that would be achieved in the absence of the subsidy. If a subsidy is in relation to both energy and environment, it should meet both of these limbs.⁴¹
- 3.67 The Assessment states that the scheme is consistent with delivering a secure, affordable and sustainable energy system and well-functioning market. The Assessment relies on paragraph 4.27 of the Statutory Guidance, which states that schemes with a specific policy objective of promoting net zero will ‘tend to be consistent with Principle A,’ to explain that the scheme is consistent with the principle.
- 3.68 The primary policy objective of the scheme is to encourage manufacturing of heat pumps in GB. The Assessment would have benefitted by explaining how this policy objective is consistent with Principle A, possibly by referring to the policy objectives of the overarching policy to support heat pump installation in the UK.
- 3.69 The Assessment only considers consistency with the first limb of Principle A, relating to energy. However, in line with the Statutory Guidance, if a subsidy is in relation to both energy and environment, it should meet both limbs. Given the link between the specific policy objective of the scheme and Net Zero, the Assessment could be improved by considering whether the scheme should also comply with the second limb, ie being aimed and incentivising the beneficiaries in increasing the level of environmental protection compared to the level that would be achieved in the absence of the subsidy.

Principle B: Subsidies not to relieve beneficiaries from liabilities as a polluter

- 3.70 The assessment against Principle B should explain clearly how the proposed subsidy or scheme does not relieve a polluter from having to bear the full costs of the pollution caused.⁴²
- 3.71 The Assessment confirms that no such relief is available through the scheme, and that applicants must provide information that concerns any breaches of environmental regulations, including pollution regulations.
- 3.72 We consider that the Assessment sets out why DESNZ considers Principle B to be met.

⁴¹ [Statutory Guidance](#), paragraphs 4.19-4.28.

⁴² [Statutory Guidance](#), paragraphs 4.29-4.35.

Other Requirements of the Act

3.73 This step in the evaluation relates to the requirements and prohibitions set out in Chapter 2 of Part 2 of the Act, where these are applicable.⁴³ DESNZ confirmed that none of these prohibitions or other requirements applied to the scheme.

⁴³ [Statutory Guidance](#), chapter 5.