Locally-led Innovation Accelerators delivered in partnership with DSIT, Innovate UK and City Regions

Department for Science, Innovation & Technology

UKRI Innovate UK

GMCA Greater Manchester Combined Authority

University of Salford Manchester

Air Source Heat Pump Noise Policy Workshop PROGRAMME

17th July 2025, University of Salford, Greater Manchester

WELCOME

Welcome to the Air Source Heat Pump (ASHP) Noise Policy workshop hosted by the Acoustics Research Centre at the University of Salford. This workshop is part of our longer-term strategy of addressing noise issues associated with the Net Zero transition. Specifically, we aim to maximise the real-world impact of our research on ASHP noise by engaging directly with policymakers and key stakeholders to address current regulatory limitations and facilitate evidence-based policy change. Central to this research are our unique research expertise, track record and testing facilities.

Much of our ASHP-related research activity is made possible by the Future Homes project. With nearly £5m of support from Innovate UK, this project aims to create a globally competitive centre for research and innovation in Net Zero housing in Greater Manchester. It enables innovators to access academic expertise and the unique facilities at the Acoustics and Energy House Laboratories to test and verify their technologies. Within the project, we investigate sound and vibration issues associated with low carbon technologies including heat pumps. Our world-class acoustic facilities meet the highest technical specifications and the requirements of measurement standards. Each space is supported by one of the largest acoustics research groups in the world and specialist technical staff.

Thanks to our colleagues, collaborators and project partners, funders and the university for supporting this workshop and allowing us to present our research.

Dr. Simone Graetzer and Prof. Antonio J. Torija Martinez
Chairs

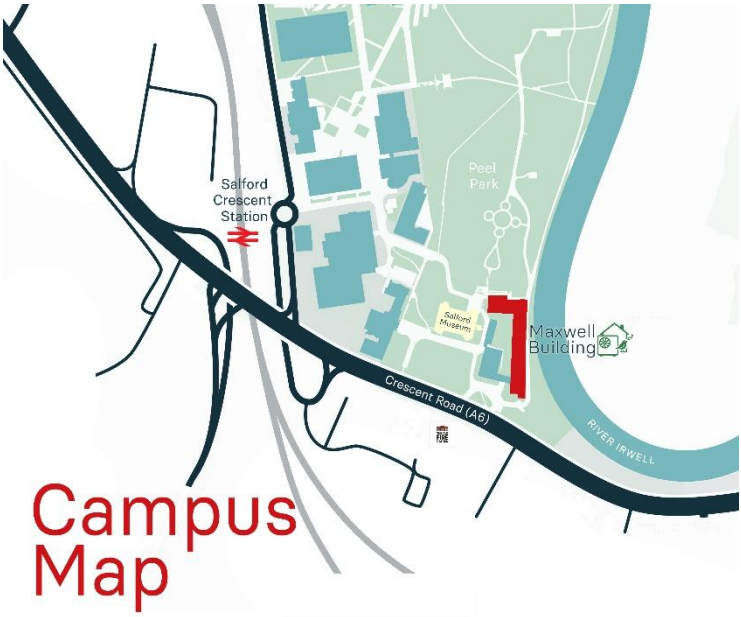
ACKNOWLEDGEMENTS

Many thanks to Jonathan Hargreaves, David Waddington, Lucy Barton, Volkan Acun, Daniel Wong-Mcsweeney, Max Radivan, Will Swan, Trevor Cox and everyone involved in the Future Homes project, including our collaborators and project partners. We are grateful to our colleagues in the International Energy Agency (IEA) Heat Pumping Technologies Annex 63 on "Placement Impact on Heat Pump Acoustics". Finally, thanks to our funders, Innovate UK and UKRI Research England and their Policy Support fund, and the University of Salford.

VENUE

Location: Room 412, Maxwell Building, University of Salford, 43 Crescent, Salford M5 4WT. Note that the room is on the 4th floor. The closest lift is located to the right as you enter via the main entrance.

Travel directions: Maxwell Building, University of Salford.
Travel Information: Salford Crescent Railway Station is located close to our Peel Park Campus, a short walk from the Maxwell Building Travel | University of Salford.
Car parking: Car parking, University of Salford.
Accessibility information is here.



SESSIONS

Morning

Start time	Session	Presenter(s)	Mins.
10.00	Registration and refreshments		30
10.30	Welcome and introduction	Antonio J Torija Martinez and William Swan	10
10.40	Session one: UK Policy and Standards for Air Source Heat Pumps	Lucy McKenzie, MCS, "The Update to MCS 020 a) – The Air Source Heat Pump Sound Calculation"	10
10.50		Joseph Rogers, DESNZ, "The Department for Energy Security & Net Zero: Air Source Heat Pump Policy Overview"	10
11.00		Olivia Smalley, HPA, "From Growth to Certainty, Navigating the National Heat Pump Landscape"	10
11.10		Rebecca Hogg, BSRIA, "Building Performance Evaluation – Where Policy Meets Reality"	10
11.20		Katy King, Nesta, "Building the Evidence Base for Amendments to MCS020"	10
11.30	Short break		10

Session two and lunch

Start time	Session	Presenter(s)	Mins.
11.40	Session two: Barriers and Risks in Heat Pump Deployment	David Schiele, Energy Innovation Agency, "UK electricity market: cost barriers to the uptake and wider deployment of heat pumps in the UK"	10
11.50		Jack Harvie-Clark, Apex Acoustics, "Breaking Down Binary Barriers: A Proportionate, Risk-based Approach to ASHP Noise Assessment"	10
12.00		Somayya Yaqub, CIEH, "Environmental Health Practitioners and Air Source Heat Pumps"	10
12.10		Jordi Femenia, Mason UK, "Structure-borne transmission of ASHP"	10
12.20	Lunch		50

Afternoon

Start time	Session	Presenter(s)	Mins.
13.10	Presentation of Salford research	Antonio J Torija Martinez, Jon Hargreaves, Simone Graetzer	30
13.40	Panel discussion	Moderator: Bean Beanland, Heat Pump Federation	45
14.25	Refreshments		25
14.50	Road map development	Facilitators: Roger Hitchin, Simone Graetzer	60
15.50	Close		10

PRESENTER BIOGRAPHIES

Lucy McKenzie
Head of Technical
Microgeneration Certification Scheme (MCS)

Lucy McKenzie is the Head of Technical at MCS, a profit-for-purpose standards organisation that plays a central role in the UK's adoption of renewable energy sources for our homes and small businesses. One of her current focuses is encouraging alignment and collaboration with other standards organisations.

Her passion for the environment is reflected by her Masters degree in Environmental Engineering, which she studied alongside her work at MCS. Lucy's technical background working with hydraulic vessels has now been shifted to focus on microgeneration technologies to support the quality, performance and safety of these products and systems. Technical standards authoring and development is a key part of Lucy's role, and she does this with the aid of MCS's technical working groups.

Lucy enjoys presenting at events to help educate and support people in their journey within the renewables sector. She is currently leading several projects, including bringing new technologies into the scope of the scheme.

Joseph Rogers
Senior Policy Advisor
Department of Energy Security and Net Zero (DESNZ)

I am a senior policy advisor in the Clean Heat Directorate. I have led the Department's work on air source heat pump planning regulations, including the recent changes to air source heat pump permitted development rights in England. I have over two years' experience working on this policy.

Olivia Smalley
Head of Policy and Communications
Heat Pump Association

Olivia Smalley leads the Heat Pump Association's policy and strategic communications efforts with experience in public affairs and policy work. Prior to joining the HPA, she was Public Affairs Advisor to the National Association of Professional Inspectors and Testers (NAPIT) Group, focusing on policy related to electrical safety, competency, and standards. Her extensive background also includes leading policy initiatives for the Association for Consultancy and Engineering in the UK Devolved Nations, where she spearheaded workstreams on decarbonising the built environment and transport. Olivia holds a Master's degree in Politics and Contemporary History from the University of Nottingham, providing her with a strong foundation for her role in shaping and communicating HPA's policy directions.

Rebecca Hogg
Technical Manager - Acoustics
BSRIA

Rebecca Hogg MEng (Hons) MIOA has fourteen years of experience at BSRIA and is a UKAS accredited test engineer for heat pump testing and acoustic testing. She manages the UKAS accredited heat pump test facility and thermal acoustic test facility at BSRIA. Rebecca has carried out test work on a range of building services products and systems including air and ground source heat pumps, air conditioners, chillers, and AHUs for manufacturers and as part of the audit process for quality/incentive schemes. Rebecca also has extensive experience carrying out Building Performance Evaluation on a wide range of domestic and commercial buildings, including assessment of noise, vibration, IEQ (indoor environmental quality), and ventilation. Member of the Microgeneration Certification Scheme (MCS) Heat Pump Working Group. Member of the Institute of Acoustics.

Katy King
Deputy Director
Nesta

Katy is deputy director on Nesta's mission to create a sustainable future, which focuses on decarbonisation and economic recovery. Her team focuses on setting up innovation projects and partnerships that reduce carbon emissions from homes, which is a key part of the UK reaching net zero. Katy has a background in energy efficiency and behavioural science.

Katy joined Nesta from the Behavioural Insights Team (BIT), where she worked across a number of policy areas including household energy efficiency, consumer issues and COVID-19.

Prior to working at BIT, Katy worked as a strategist for a leading advertising agency. Katy holds a first class degree in Social and Political Sciences from the University of Cambridge.

Jack Harvie-Clark
Managing Director
Apex Acoustics Ltd

Jack graduated from Cambridge University in 1994 with a degree in mechanical engineering, specialising in thermodynamics and fluid mechanics. He worked initially in the power generating industry, designing steam turbine blades, before conducting research in the Building Science Department at Newcastle University into a novel thermal composite insulation. He started working in acoustics consultancy in 2000, and established Apex Acoustics in 2006; Apex became 100% employee-owned in 2022, and has grown to 28 people.

Apex collaborated with Sustainable Acoustics to undertake a review for the Welsh Government into potential acoustic constraints to the roll-out of ASHPs in Wales and Permitted Development Rights (PDR), in 2023. This entailed a significant review of the literature as well as discussions with industry stakeholders - trade associations, manufacturers, installers, and local authorities. Jack subsequently contributed to the

Department for Energy Security and Net Zero (DESNZ) review in 2024 that followed the Welsh Government project, and has continued to develop, publish and present the research in this area at conferences.

In 2025, Jack co-organised a conference session at Euronoise on Acoustic challenges of ASHPs with Christoph Reichl, Austrian Institute of Technology (AIT), the leader of the International Energy Agency (IEA) Heat Pumping Technologies (HPT) Annex 63 programme.

Somayya Yaqub
CIEH representative
Chartered Institute of Environmental Health

Somayya Yaqub is an Environmental Health Practitioner with over 20 years of experience in Enforcement, Environmental Protection, Health and Safety, Housing and Planning. She has extensive experience of big regeneration projects and risk prevention through design. She has provided evidence at planning inquiries and House of Commons Select Committees.

She is also co-author of the Professional Planning Guidance document to supplement the National Planning Policy framework, and the Heat Pumps Professional Advice Note. A member of the Institute of Acoustics Environmental Noise Committee and a Member of the CIEH Environmental Protection Group and Noise Satellite Panel.

Her interests are focused on the design and construction of homes that protect and support the health and wellbeing of occupants without dependence on air purifiers or mechanical ventilation. The approach includes consideration of soundscape, good acoustic design, and access to green spaces. These homes would be planned in accordance with anticipated climate changes, such as extreme heat and cold, and would utilise renewable energy sources.

Jordi Femenia
Sales Manager
Mason UK

Jordi Femenia is a graduate in Audio Technology from Salford University, with over 20 years of experience in the acoustics and vibration industry. He has successfully delivered solutions across Spain and the UK, working closely with acoustic consultants, architects, and contractors to tackle complex design challenges.
Passionate about engineering excellence and getting things right first time, Jordi promotes best practice in noise and vibration control, with a focus on practical, reliable, and effective solutions.

Roger Hitchin
Consultant

Roger Hitchin is a self-employed consultant who currently has a part-time contract with the Department for Energy Security and Net Zero (DESNZ) to support their participation in the International Energy Agency's collaborative programme on heat pumping technologies. He is also active in the Chartered Institution of Building Services Engineers (CIBSE), including chairing the CIBSE-hosted "Heat Pump Liaison Group" — an informal forum where providers of heat pump system design and installation guidance can discuss issues of common interest. He has also worked on European projects to support Ecodesign Regulations and on collaborative applied research topics. Previously a Technical Director at Building Research Establishment (BRE) dealing with building energy issues, he was involved in the development of the Simplified Building Energy Model (SBEM) and participated in pan-European discussions on the application of the Energy Performance of Buildings Directive (EPBD). He worked for British Gas for over 20 years, mostly in the Watson House Research Station, and later as the Business Research Manager of the "Global Gas" business unit. Before that he worked in a building services design and building physics consultancy and in academic research.

Bean Beanland
Director for Growth & External Affairs
Heat Pump Federation

Bean is an Associate of the Royal College of Science, and a founding member of the Heat Pump Federation (HPF). He has over 16 years' experience, including eight years with a heat pump installer, in energy and carbon mitigation strategy and in conceptual technology selection, procurement and the installation of mechanical services and renewable technologies.

Since 2016, Bean has concentrated on sector representation, the advancement of the industry, supporting the development of government electrification policy, Value Added Tax (VAT) and Permitted Development Rights (PDR) revision, future funding & affordability, consumer protection, industry standards, and preparation of the future workforce. He is responsible for Federation policy lobbying activities, for external engagement (including all media activity), and for the HPF's outreach programme providing Continuing Professional Development (CPD) style engagement with community groups and to other built environment industry professionals, which included co-hosting the highly successful Happy Heat Pump Podcast.

ABSTRACTS

Joseph Rogers, DESNZ
The Department for Energy Security & Net Zero: Air Source Heat Pump Policy Overview

This talk will cover an introduction to the technology, the wider policy landscape for air source heat pumps, and the Department's work on air source heat pump planning regulations and noise.

Olivia Smalley, Heat Pump Association
From Growth to Certainty, Navigating the National Heat Pump Landscape

This presentation explores the remarkable 63% growth of the UK heat pump market in 2024, examining the key drivers behind this surge. It will also assess market performance in 2025 to date and offer a forward-looking perspective through to 2030 and beyond. The presentation will use data to highlight specific product segments experiencing the fastest growth, examine the government policies that have most significantly influenced the market, and explore what future developments may shape the path toward long-term certainty.

Rebecca Hogg, BSRIA
Building Performance Evaluation – Where policy meets reality

Drawing on BSRIA's vast expertise and experience testing all types of heat pumps including air source heat pumps (ASHPs) in their UKAS accredited laboratory, an overview of industry standards and policy will be outlined along with the implication of the control of non-acoustic parameters on acoustic performance. The acoustic impact of different design features on the overall sound power level of the ASHP will be examined through case studies and performance data from testing ASHPs

in the BSRIA thermal acoustic facility.

Before ASHPs are removed from controlled laboratory conditions and installed in someone's home, as-built performance data is crucial to effective design of ASHP installations, including analysing the interplay between non-acoustic parameters and acoustic performance is vital. A wholistic comprehension of as-built performance leads to better performing systems, both thermally and acoustically, and streamlines the ASHP installation process.

The final piece of the puzzle to effectively bridge the gap between design and reality is in-use monitoring and considering building occupants. Combining both physical and psychological measurements leads to long-term understanding of ASHP installations and people's perception towards them.

Consideration of all performance factors, both acoustic and non-acoustic, is essential to the long-term roll-out of ASHPs.

Katy King, Nesta
Building the Evidence Base for Amendments to MCS020

This session will explore the case for further evidence-based reform of MCS020 – the standard that governs how sound from air-source heat pumps (ASHPs) is assessed for planning purposes. Despite the recent removal of the 1m rule in England, up to one-third of households still require planning permission due to noise concerns, with many incurring significant costs and delays. The situation is exacerbated by inconsistent decision-making across local planning departments. With the Climate Change Committee setting a target for half of UK homes to adopt heat pumps within 15 years, the planning system risks being overwhelmed if reform does not occur. Recent modelling suggests that the current MCS020 methodology may be overly conservative, particularly in how it accounts for reflective

surfaces, leading to unnecessary planning applications. To address this, Nesta proposes a programme of evidence generation—possibly including acoustic modelling, lab tests, and field trials. The ultimate goal is to reduce planning applications to less than 5% of ASHP installations by 2027, while ensuring fair, consistent, and evidence-driven decisions. Attendees are invited to contribute insights on testing priorities and conditions, helping shape the path toward a more efficient, climate-aligned planning system.

Jack Harvie-Clark, Apex Acoustics Ltd

Breaking Down Binary Barriers: A Proportionate, Risk-based Approach to ASHP Noise Assessment

Air Source Heat Pumps (ASHPs) face binary acoustic approval pathways that both create unnecessary barriers to deployment. The current framework—either through MCS 020 for Permitted Development Rights or typically application of BS 4142 for full planning applications—lacks flexibility and efficiency, hindering heat pump rollout for decarbonisation targets. Previous research demonstrates that MCS-020's sound propagation methodology can consistently predict levels 5-7 dB higher than ISO 9613-2, suggesting excessive conservatism. We propose a hierarchical, risk-based assessment framework that streamlines evaluation while maintaining acoustic protection. This includes expanding MCS-020a to incorporate both the current simplified transmission model and more detailed ISO 9613-2 calculations with standardised guidelines. For full planning applications, we advocate accepting the fixed 37 dBA threshold as sufficient evidence for low-risk installations, eliminating costly background surveys. Further recommendations include standardised approaches for assessing source characteristics where manufacturer data is limited, simplified methods for character corrections at design stage, and consistent guidance for addressing cumulative impacts. This pragmatic framework would significantly reduce assessment burdens for low-risk

installations while ensuring appropriate protection as ASHP deployment scales up. The approach draws on successful models from Scotland and most of Europe, where fixed thresholds facilitate efficient assessment without compromising acoustic amenity.

Jordi Femenia, Mason UK
Structure-borne transmission of ASHP

Structure-borne transmission from rooftop or slab-mounted ASHPs is a growing but often ignored problem, causing low-frequency noise and vibration in nearby spaces. Failure to control this at design stage leads to costly retrofits, resident complaints, legal disputes, and long-term noise issues. Following CIBSE Guide B4 and ensuring correct anti-vibration product selection and installation is essential. Getting it right the first time avoids expensive mistakes, protects building reputation, and ensures occupant comfort.

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