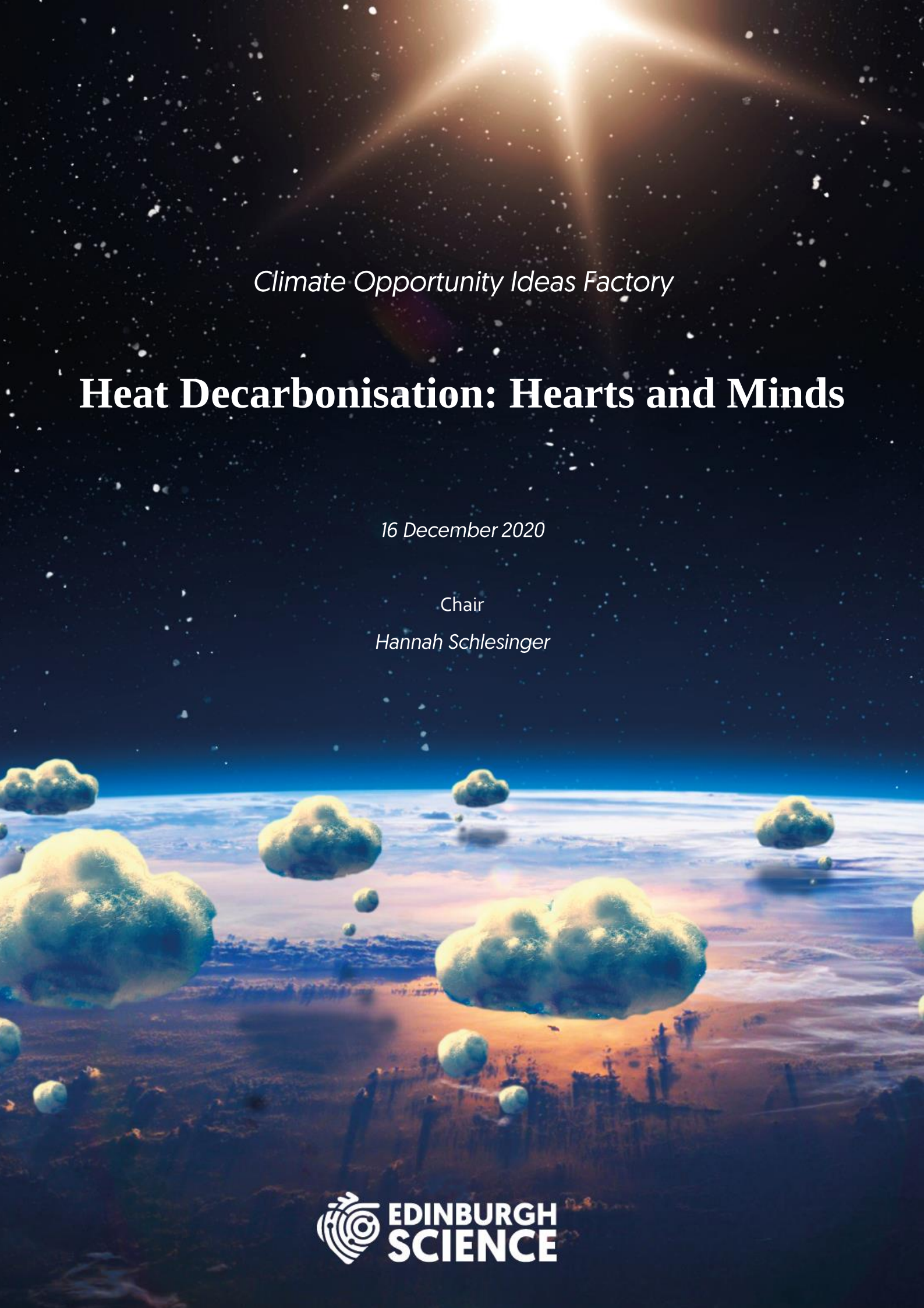

Climate Opportunity Ideas Factory

Heat Decarbonisation: Hearts and Minds

16 December 2020

Chair

Hannah Schlesinger

EDINBURGH SCIENCE

Contents

Edinburgh Science

Edinburgh Science Foundation is an educational charity, founded in 1989, which operates Edinburgh Science's Learning and Festival programmes. We are best known for organising Edinburgh's annual Science Festival – the world's first public celebration of science and technology and still one of Europe's largest – our science education outreach programmes, Generation Science and Careers Hive and our community engagement work.

Our mission is to inspire, encourage and challenge people of all ages and backgrounds to explore and understand the world around them. As leaders in our field of Science Communication, we work year-round to create and deliver dynamic hands-on workshops and exhibitions and inspirational shows, discussions, debates and performances that continually push the boundaries of public engagement with science. Communication and engagement is at the core of all our work and we strive to ensure that this is embedded in all aspects of our organisation.

Edinburgh Science also operates a large-scale international programme of work under our Worldwide arm. It regularly presents events overseas and has been the Major Programming Partner of the annual Abu Dhabi Science Festival since 2011, helping to curate, produce and deliver the event. For international partners, the team at Edinburgh Science provide engaging content, curatorial advice on programming and business planning support, along with expert staff and training for local science communicators.

Our UK and international projects reach a combined audience of over half a million people each year.

The Climate Opportunity Ideas Factory

Edinburgh Science coordinates and runs the Climate Opportunity Ideas Factory - a series of round table meetings for senior Scottish leaders to discuss ideas for action that will enable Scottish enterprises to respond to the climate emergency. The first meeting was in April 2019 when Edinburgh Science Festival awarded the Edinburgh Medal to Christiana Figueres, the Costa Rican Diplomat who was instrumental in bringing about the Paris Climate Agreement. We organised a round table on that day, with leaders of business, public sector, third sector and higher education present. We were challenged by Christiana to collaborate, to act, to not wait for anyone to give us permission, and to use the Climate Opportunity that presented itself for positive change.

Christiana was coming back to Edinburgh in two months and asked to meet again for an update on what this group had decided to do. Two months later, Baillie Gifford hosted a larger group of senior leaders who presented a number of ideas for discussion in this forum, with Christina Figueres and Roseanna Cunningham, Cabinet Secretary for Environment, Climate Change and Land Reform. Many of the ideas have been picked up by attending businesses and organisations to make an impact, and the attendees have told us that this group is of immense value to them, due to the diverse invite list and the facilitated discussions.

The Climate Opportunity Ideas Factory now meets regularly. The purpose of the meetings is to generate new ideas that are then acted upon by those present to achieve steps towards reduced carbon emissions and greater environmental sustainability.

Edinburgh Science is in an exceptional position to bring together cross-sectoral leaders from diverse groups to gather views to identify new ways to work collaboratively to unlock ideas and create opportunities. The Climate Opportunity Ideas Factory has already provided a unique safe space for collaboration, resulting in major ideas for example; a national carbon reserve for offsetting which we know excited many organisations. With connections across industries and many sectors, and no agenda other than to share the science and to see a solution to the climate emergency, Edinburgh Science strongly believes that the time is right to harness the collective power of organisations and minds in Scotland to put Scotland at the forefront of this Climate Opportunity.

Through the Climate Opportunity Ideas Factory we are encouraging, supporting and facilitating these leaders as they address the challenges and opportunities that the climate revolution will bring. The Climate Opportunity Ideas Factory will continue meet regularly and we are excited to work towards bringing innovative ideas into reality as we approach COP26 Glasgow in November 2021.

We would like to thank the many organisations involved in supporting this exciting and unique project, particularly our 2020 Programme Supporters and Founder Members.

Programme Supporters

Baillie Gifford – Investment managers

Scottish Government – Riaghaltas na h-Alba – gov.scot

Founding Members

Deloitte.

EDF

HIE – Highlands and Islands Enterprise – Iomairt na Gàidhealtachd 's nan Eilean

Jacobs

NatureScot – Scotland's Nature Agency – Buidheann Nàdair na h-Alba

PARABOLA

Royal Bank of Scotland

SEPA – Scottish Environment Protection Agency – Buidheann Dìon Àrainneachd na h-Alba

Stewart Investors – Sustainable Funds Group

Sectoral Sub-Group for Heat Decarbonisation

During the most recent Climate Opportunity Ideas Factory roundtable meeting on 5 November 2020, the need for sector specific focus groups was raised with the following industries/topics suggested:

- *Agriculture, Land Use Change and Forestry*
- *Aviation and Shipping*
- *Construction and the Built Environment*
- *Finance*
- *Greenhouse Gas Removal*
- *Heat Decarbonisation*
- *Local Transport and Tourism*
- *Manufacturing*
- *Marine Environment*
- *Power and Hydrogen*
- *Resources and Circular Economy*

The first of these sub-groups to be initiated was for Heat Decarbonisation which met on 17 November 2020, This meeting subsequently highlighted an interest in public engagement and how to bring about a move towards heat decarbonisation in Scotland through human behavioural change, hence initiating the 'Heat Decarbonisation – Hearts and Minds' meeting.

Heat Decarbonisation: Hearts and Minds

'Hearts and Minds': *A number of challenges face the task of decarbonising heat in residential buildings, one of the biggest is householder attitudes to changing the heating service, there's a lot of inertia here and low awareness. So, one or more combinations of public education campaigns / incentives / new business models / low cost financing is needed.*

The intention of the workshop is to discuss between the delegates of this group [and with any others as necessary] whether a developed idea could be ready for implementation over the next few weeks and months. Edinburgh Science was of course mentioned as a partner on this project as we can be a vehicle to assist with public behaviour change through our annual Festival and other interactions with the general public, but there are a number of steps to undertake before then.

Agenda

1.	*Introduction:*	*What are we trying to achieve?*
2.	*Challenges:*	*Understand the barriers and limitations of the existing political / commercial environment.*
3.	*Opportunities:*	*Consider how said barriers within that political / commercial environment could be removed and the existing foundations that could be built upon.*
4.	*Ideas:*	*Map out some ideas and directions this could take.*
5.	*Who Else Can Help?*	*Consider who is missing from the discussion – the obvious one is consumer representation.*
6.	*Summary / AOB*	*Next Steps and actions.*

Delegates included senior representatives from EDF Energy; Keep Scotland Beautiful and independent advisors as well as from Edinburgh Science.

Meeting Summary

1. Introduction

Our aim:

- *To persuade people in Scotland to change their heating system to a non-carbon emitting alternatives before 2045.*

Why is this important now?

- *Scotland's drive to achieve net-zero for all greenhouse gas emissions by 2045.*
- *Replacement boilers are often a 'stress purchase' made due to necessity rather than any foresight. This means that every day the problem is amplified as each new fuel powered boiler installed can come with a 10-12 year guarantee meaning they won't need replaced again until perhaps 15-20 years from now.*

2. Challenges

What barriers does heat decarbonisation face in 2021?

- *Switching over to renewable electricity involves engaging only a small number of energy suppliers, whereas upgrading heating systems involves millions of individual households and businesses.*
- *People are initially afraid of new technology they don't understand - they like what they know.*
- *Cost implications to home and business owners.*
- *In their latest annual progress report, the Committee on Climate Change (CCC) said there was a need to support the heat pump sector on a steep growth curve, from 27,000 units in 2019 to one million a year by 2030. If we double the installation rate year on year, it will take us until 2025 to reach the current rate of traditional boiler replacements. This means from 2025 onwards, people will have to be persuaded to replace their heating systems before the end of the product life. This is a big ask!*
- *Another issue stopping the government from taking decisive action now is that the Climate Change Committee are hedging their bets on developing technology to put hydrogen down pre-existing gas pipes to urban / suburban properties. If there are two big existing heat technologies, and we do not yet know which will win out in what areas of UK, how can we expect customers to buy into new systems if there is no guarantee it will be the "right" one?*
- *Big issue with skills and training gap - only one or two colleges in Scotland that teach renewable heating systems option*

What barriers do we (COIF) face?

- *Lack of available time, resources and funding for all of us in this meeting to deliver any ideas.*

3. Opportunities

Positives to consider:

- *Scottish Government have recently had their 'lightbulb moment' on heat and will be working towards updating plans and policies.*
- *The Climate Change (Scotland) Act 2009 requires Scottish Ministers to report annually on progress towards meeting the target for useful renewable heat generated in Scotland to reach by 2020 the equivalent of 11% of fuels (other than electricity) consumed for heat. Scotland has not achieved this target – instead is on a par with rest of UK at around 6-7% – therefore Scottish Government will be looking to accelerate action to get back on track.*

- *Heat pump systems are more expensive but they are a one-off purchase - possibly twice in a lifetime maximum - so although they may seem expensive in the short-term, in the long term they are better value.*
- *The good news is that people tend to follow advice from friends, family and local plumbing and heating suppliers. Therefore, if government can map out future laws and home requirements now, heating industry will have to get on board fast and customers will ultimately follow.*
- *Government aware of the skills and training gap in the industry and will be working to address it*

Negotiating barriers and limitations:

- *Explore synergy opportunities.*
- *Look for opportunities where we can bring together government policy, funding initiative, communities and heat contractors.*
- *See examples where this has been done successfully and try to emulate:*
    - *Transition Linlithgow / Linlith-Go-Solar – A great example of how this can be done extremely well. The community run project provided information; answered queries; involved well known faces from the community; gave high-quality and free technical advice; closely guided people through grant process; and ultimately was a clever, well-run joint venture between the community and solar panel supplier. This type of project is more cost effective for the contractor and these savings are passed down to the consumer.*
    - *The District Heating Network – A project utilising river water source heat pumps in industrial/urban area – a UK first!*
    - *Keep Scotland Beautiful – Forth Valley Project*
    - *Neilston Community Wind Farm – One of many community wind power projects in Scotland*
- *Funding*
    - *Awaiting government latest Climate Challenge Fund [CCF] update. Whatever replaces CCF needs to be more proactive in public engagement – e.g. 1997 Labour Government Warm Deal that installed gas central heating for free.*
    - *Can a community bodies access funding for research and development?*

Existing work to build upon:

- *Focus on rural communities*
    - *Many off-grid communities are already up to speed with renewables [as gas is rarely an option], as are suppliers and contractors operating in those areas.*
    - *Fuel poverty is higher in rural areas than urban so there could be more funding opportunities*
    - *Trialing new technology [e.g. green hydrogen] in rural areas could perhaps be considered lower risk, lower regrets territory. See Fife example under Links to Further Reading [page 10]*
    - *Note that rural areas are still very exciting business opportunities as they aren't necessarily small communities – e.g. approximately ¼ of Perthshire is off-grid.*
    - *Housing associations also worth talking to as they are under huge pressure to upgrade heating systems.*
- *Heating from rivers*
    - *Majority of Scotland's cities built around rivers*

4. Ideas

Discussion 1: Who wants this to happen?

- *Ultimately the Scottish Government wants this to happen*
    - *Therefore we need to seek backing for this from the Scottish Government and support and guide them*
    - *i.e. get something in place to be impactful in shifting peoples mindset early next year to something to report at COP26*
    - *Intensive advertising campaign*
    - *Social media drip feed that decarbonisation of heat is "normal"*

- *Government needs to put pressure on main players – energy companies, manufacturers of heating products*
- *Find out what stage these companies are at*
- *Match up skills – products – public engagement*

Discussion 2: Is this simply a 'soft issue'?

- *It's about behavioral change – i.e. persuading people, educating them, preparing them for the transition and steps they need to take in the future. How do we do this?*
  - *People want to feel confident in their decision (is it sensible, viable, cost effective, etc.?)*
  - *Incentives or funding from Government*
  - *Needs to be appealing to all – i.e. even individuals not interested or driven by climate change emergency*
  - *Information needs to be readily available and easy to understand with good sign-posting to financial support and access to reliable expert suppliers.*
  - *Edinburgh Science can help potentially from an education and social media promotion perspective. Edinburgh Science are neutral and therefore might be more trusted than energy suppliers to put out messaging*
  - *It is about raising public awareness. We need positive messaging, not alarmist (like the tabloids). Get big players on board. We poke and prod – they (hopefully) act/do.*

Discussion 3: Identify the concerns of the consumer and come up with answers and solutions

- *People afraid of Energy Performance Certificates (EPCs).*
  - *No fixed cost – they start at around £60 and go up from there.*
  - *These could be built into a heating system upgrade transition programme - becoming part of process, gives more incentive and makes system down the line more cost effective.*
- *Concerns around heat pumps and belief that system will require upgraded*
  - *EDF currently offer a hybrid system where heat pump talks to current heating system. Less impactful on overall carbon emissions but does provide a stepping stone in the right direction.*
- *Overall concern about cost and future laws and legislation*
  - *Get new home builders on board to install carbon-free heating systems into new builds*
  - *Government and financial institutions*
    - *Speak to mortgage lenders about building costs for new heating system installations into loans*
    - *Put onus on seller, not buyers to meeting carbon emission targets for homes*
    - *Bonds?*
    - *Could government take tax from electricity and move to gas to help with costs – why aren't the two more aligned?*
    - *What funding do the Government has in mind and what is their public engagement strategy?*

Discussion 4: What can we do to kick-start public awareness?

- *What is the best way to communicate with general public?*
  - *Advertising campaigns (commercial and public service broadcast) – this need serious financial backing, is this from the big energy providers?*
  - *Social media – highlight successful case studies*
- *What can Edinburgh Science do to showcase and raise public awareness?*
  - *Social media – share statistics, climate targets and success stories*
  - *Festival Programme – incorporate case studies into exhibitions (photo exhibition and/or Consumed exhibition which is planned to coincide with COP26 and Edinburgh Science Festival 2022)*

- *Consider options to tour exhibitions like 'Consumed' incorporating wrap-around events educating public about Heat Decarbonisation issues and promoting 'homes of the future' – this requires funding.*

- *Work to normalise shift to carbon-free heating*
  - *Publicise new technology and success stories e.g. District Heating [Glasgow Tenements],*
  - *Bring plumbing contractors on board with public messaging*

Discussion 5: How can we make use of our connections and collective knowledge?

- *Gas off-grid plumbing community likely already ahead of the game. Worth looking into their shared experiences.*
- *Engage SNIPEF – Scotland and N. Ireland Plumbing Employers' Federation*
  - *Their staff are at the 'coal-face' and will have a wealth of knowledge to share*
  - *Ask them... How big a job is it to get their members ready? Are they aligned with specific manufacturers already? Are there sufficient heat pump suppliers in existence in Scotland?*
- *Hold a 1-day conference about how we can collaborate to encourage public behaviour chance around Heat Decarbonisation*
  - *Create opportunities to share knowledge and ideas*
  - *Call for team-effort in communicating future of heating systems to the public*

Discussion 6: How to get right level of skills into this new industry?

- *Government needs to lead on this*
- *Edinburgh Science*
  - *Can engage renewables experts/companies – real life people to provide talks and volunteer at Careers Hive*
  - *Could potentially create a workshop on the topic of heat decarbonisation [resource dependent]*

5. Who Else Can Help?

Between us, we have a lot of contacts – we need to agree the message and get it out there.

- *Information gathering*
  - *Centrica – Green hydrogen*
  - *SSC/EDF/Scottish Power – Where are they at? What are they planning for?*
  - *SNIPEF*
  - *RSGS*
- *Useful Contacts:*
  - *Colin Seditas, Climate Change: Head of Business Engagement and Just Transition Team, Scottish Government*
  - *Professor Nick Chater, Professor of Behavioral Science, Warwick Business School*
  - *Jenny Hill, Head of Buildings and International Action, CCC [leading work on heat decarbonisation]*
  - *Michael Brown, Delta Energy and Environment [did talk for Scotland Energy Forum]*
  - *Kate Lyon, Delta EE [benchmarking]*
  - *Sandy Baldwin, former Consumer Advice Scotland [customer input]*

6. Summary and Actions:

Summary:

- *All to read Government energy white paper out 12 Dec*

    - *Map out what planned initiatives are and see what is missing from public engagement.*
- *What is the best way to create a public engagement strategy for Scotland?*
    - *Community level – local contractors, local business, schools, etc.*
    - *National level - news, TV, radio, adverts, public information leaflets to all homes*
    - *There is and will be business growth in this sector so it's a win-win and therefore shouldn't be a stretch for utility marketing budgets*
    - *Normalise tech*
- *As per Linlithgow model – seek areas where need meets opportunity*

Next Steps:

- *Identify which of the ideas to take forward*
- *Find contact at SNIPEF*
- *Concerns*
    - *Lack of available resources and funding for everyone here*
    - *Do any ideas raised today have momentum – any we should shelve for a while?*
    - *How to contribute to create momentum?*
- *What can we achieve ourselves at this stage?*
    - *Is there support from EDF and similar businesses for this?*
    - *National level engagement may not be achievable but community level should be possible*

Links to Further Reading

UK / Scottish Government:

- *Scottish Government Fuel Poverty*
- *Scottish Government Decarbonising Heat*
- *Scottish Government Renewable heat and target and action: 2020 update*
- *Scottish Government Heat in Buildings Strategy*

Other Sources:

- *Climate Change Committee 2020 Progress Report*
- *Climate Change Committee Sixth Carbon Report*
- *Energy Saving Trust article on the funding gap*
- *Smart Energy 300 green hydrogen homes in Fife*
- *Changeworks case studies*