

# REVIEW OF CONSULTATION PROCESS

A summary of the process used to consult with experts in the energy field

*Centre for  
Facilitation*

July 2013



# REPORT CONTENTS

Summary of Consultation Process .....	2
Principles of the Consultation Process .....	3
Overall Feedback on the Facilitation Process .....	4
The Facilitation Process .....	5
Fossil Fuels and CCS Edinburgh January 8-9 2013 .....	5
<b>The Process and Reflections</b> .....	5
Energy in the Home and Workplace. Warwick. 5-6 <sup>th</sup> Feb.....	11
The Process and Reflections .....	11
<b>Energy Infrastructure. Birmingham. 17-18 April 2013</b> .....	18
The Process and Reflections .....	18
<b>Bioenergy. Harpenden 14- 15th May 2013</b> .....	18
The Process and Reflections .....	19
<b>Transport Energy: Coventry 11-12<sup>th</sup> June 2013</b> .....	22
The Process and Reflections .....	22
<b>Energy Infrastructure &amp; Energy Storage: Oxford 25<sup>th</sup>-26<sup>th</sup> June 2013</b> .....	23
The Process and Reflections .....	23
APPENDIX ONE: Evaluation Summary from Workshops .....	25
Summary of Final Comments: Fossil Fuels and CCS January 2013.....	26
Summary of Final Comments: Energy at Home and Workplace Warwick 5-6 <sup>th</sup> Feb .....	31
Summary of Final Comments: Energy Infrastructure Birmingham 17-18 <sup>th</sup> April .....	36
Summary of Final Comments: Bioenergy Harpenden 14-15 <sup>th</sup> May.....	39
Summary of Final Comments: Transport Energy: Coventry 14-15 <sup>th</sup> June.....	42
Summary of Final Comments: Electrochemical Energy & Energy Storage: Oxford 25 <sup>th</sup> -26 <sup>th</sup> June.....	46

# Summary of Consultation Process

---

The consultation process for the energy experts' workshops was designed to meet the criteria drawn up by the Energy Fellowship to develop a prospectus for UK research needs to 2050. The key objectives were to gain a deeper understanding of:

- The major research challenges facing these sectors if UK energy policy goals are to be met, while building on and contributing to national scientific and industrial capabilities.
- The skills, infrastructure, support and training needs associated with meeting these research challenges.
- The indicative financial and other commitments needed from the public and private sector.
- An outlook on the sector from the near term to 2050 from the perspective of experts actively engaged in this area of study.

The Centre for Facilitation was asked to design and facilitate a series of sessions so that members of the scientific community would be able to share their thinking and identify potential research needs for the future. This process was designed over a series of six events:

- Fossil Fuels and CCS : Edinburgh 8-9 January 2013
- Energy in the Home and Workplace : Warwick 5-6 February 2013
- Energy Infrastructure: Birmingham 17-18 April 2013
- Bioenergy: Harpenden 14-15 May 2013
- Transport: June: Coventry 11-12 June 2013
- Electro Chemical: Oxford: 26-27 June 2013

This report will provide an overview of the process we adopted for each event, the principles that we used to guide the way that we choose to facilitate these events and will give an indication of the feedback from the various stakeholders about the engagement process.

In the Appendix to the report there is a summary of the participant feedback from each workshop.

Christine Bell  
Centre for Facilitation  
15<sup>th</sup> July 2013

## Principles of the Consultation Process

At our initial briefing we were given some very clear guidance by the project leadership team about the project which had a direct impact on the way that we designed and facilitated each of the events.

We felt that the project leadership team took great care in ensuring that we were fully aware of the context of the work and the potential dynamics which we would need to handle in the room. The team were aware of the value of involving professional facilitators who would have neutrality about the topic area and they also recognised the risk of this in the design of the event because it needed to meet the needs of a highly sophisticated target audience.

### Cross Sector Conversations

An important principle was to ensure that from the beginning of each workshop the participants were moved away from their conventional silos and into groups which were cross disciplinary. This would mean a certain amount of time would be needed for participants to understand the different worlds represented in the room so that a common starting point could be achieved. It was also recognised in the process that there was a value in deep domain expertise being explored and so there were groups formed based around participant's communities.

### Focus on Future Research Needs

The primary focus was to focus on research needs for the future so that the Energy Fellowship could report their findings back to the respective research councils. It was important in the process to keep this as our focus and to avoid dwelling on policy decisions made by current or future governments.

### Consultation and Not Consensus

This was clearly a high level consultation process and has more similarities with our work facilitating focus groups than with other workshops we have run recently in the sector. The focus on consultation meant that it was important that we allowed opportunities for individuals to make contributions and to share their own thoughts. We were mindful that these "outlier" comments are too easily subsumed if there is too much focus in "clustering" of ideas. We sought to ensure that individual comments were not "lost" in the process.

### Record Keeping

In common with focus group methodology it was important that as much of the participants output was recorded throughout the two days. In our first workshop we ensure that a totally comprehensive approach was used involving Post It notes, note takers, photographs and videos.

We were subsequently able to review these methods and identify the most effective ways to record the outputs.

## Overall Feedback on the Facilitation Process

Each of the workshops was very distinctive and reflected the specific needs of the sector represented. Overall the feedback was positive about the facilitation process that was used. We have identified aspects of the workshops that were positively commented on by participants and the aspects that were seen as more challenging.

### What Went Well

---

1. The mixing of participants from a range of backgrounds and bringing together often very disparate groups was clearly welcomed by participants. We observed throughout the six workshops that networks were formed and contacts were created which will have a life outside of the workshop. The workshop design encouraged multi-disciplinary working and the methods of moving people into different groups gave plenty of opportunities for networking across the event.
2. The process was designed to give participants a lot of choice and opportunity to contribute their ideas and to know that their thoughts were being captured whether by a post it notes or a note taker. The ability to participate and contribute ideas in such a respective manner was appreciated – we made sure that each contribution was respected and no comments were “thrown away” but will be recorded at some level.
3. The facilitation style was work focused and friendly and the style of the facilitators and organising team members was well received by the majority of participants at all the workshops. The facilitators and organising team encouraged participants to voice any concerns at the workshop and were flexible in the way that each workshop ran. There was no conflict during the six workshops which given the diversity of issues and groups is a sign of a process that worked well.

### The Challenges

---

1. Each topic for the workshops represented a different group of experts and each group had a range of distinctive features that represented what was happening in their particular sector. This was particularly felt in the bioenergy sector where we needed to change the design to meet specific needs of this sector. The challenge was to keep a consistency in the output and to offer some flexibility to accommodate the different needs of each group.
2. The nature of groups means that sometimes individual ideas become subsumed within the need to reach some type of consensus. By individually recording ideas and then clustering them together there is a danger of group thinking being imposed and the loss of valuable outliers. Yet without this process the data would be too unwieldy to give a picture of the future needs of a sector. A process was designed to ensure that individual comments were captured to add to the report and the circulation of the draft report also provided another opportunity for people to give feedback.
3. Post It fatigue was often commented on and this remains as a challenge because without the post it notes some of the valuable commentary would be lost but it was clear that some people found this process off putting. We continue to reflect and develop different techniques to ensure more variety can be found in ways of recording comments and observations from individuals and small groups so that it can be usefully reported on.

# The Facilitation Process

---

Each workshop was distinctive and we have recorded the initial design of the process used for the first workshop in Edinburgh and then captured how this process changed and evolved to meet the different needs of the groups over the course of the six workshops.

## Fossil Fuels and CCS Edinburgh January 8-9 2013

### The Process and Reflections

#### Arrivals: Making Connections

On arrival in the conference venue participants were asked to give some information about themselves onto a hexagon and then to find a shared connection between their hexagon and another on the wall. This provided an on-going visual summary of the different connections and links between participants and worked well as a relevant icebreaker.



#### Context Setting: Reactions

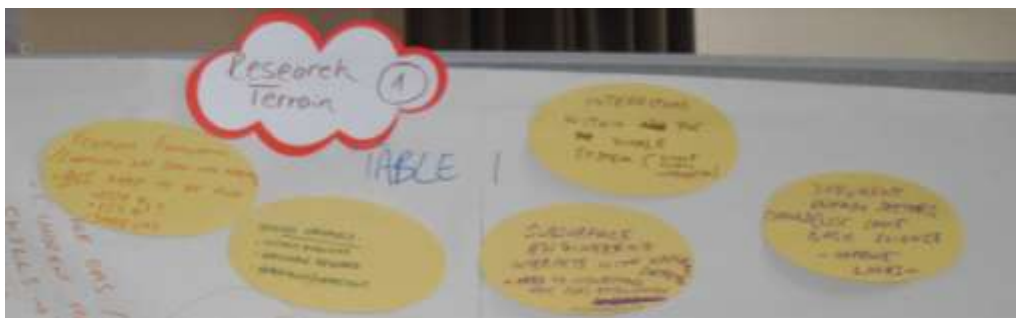
The consultation process started with a short presentation by Professor Jim Skea about the Strategic workshops which was supported by a two page summary. Participants were moved into randomly allocated groups to discuss reactions to this presentation. Feedback was then collated by asking for “delighted, disappointed and surprised” reactions. These were recorded individually on Post It notes and displayed:



The feedback and presentation for this session was closely timed with our facilitation sand timers which set an expectation amongst the group about needing to be very mindful of the time that was allocated to this process.

### Exploring the Research Terrain: As Is

This session was designed to “level up” everyone’s knowledge by sharing the current research questions which were being worked on currently by or of interest to members of the group. The process began with an individual note taking activity which then moved into pre-determined cross sector groups. Each participant was encouraged to share the issues that they were currently grappling with and these themes were then distilled down onto a series of oval Post It notes. Each group was given 3 minutes to share the key themes from their group. Video recordings were made of this part of the process:



### 2020 and Beyond: Provocative Themes

Before lunch we had four short presentations from Stuart Hazeldine, Aidan Rhodes, Jon Gibbons and Mike Stephenson. These presentations were used to generate discussions in the style of a Viennese cafe. Participants were encouraged to join in a conversation with one of the experts and to move to another table when they wanted to. The aim was to provide an opportunity to give some consideration to issues that may get overlooked in subsequent sessions and to encourage participants to get involved in the themes of the consultation event.

### Current Research Readiness

Participants were asked to assess our current readiness to address the research concerns that were currently being addressed by participants. This was done using an arrow from “0= not at all to 10= “totally prepared”

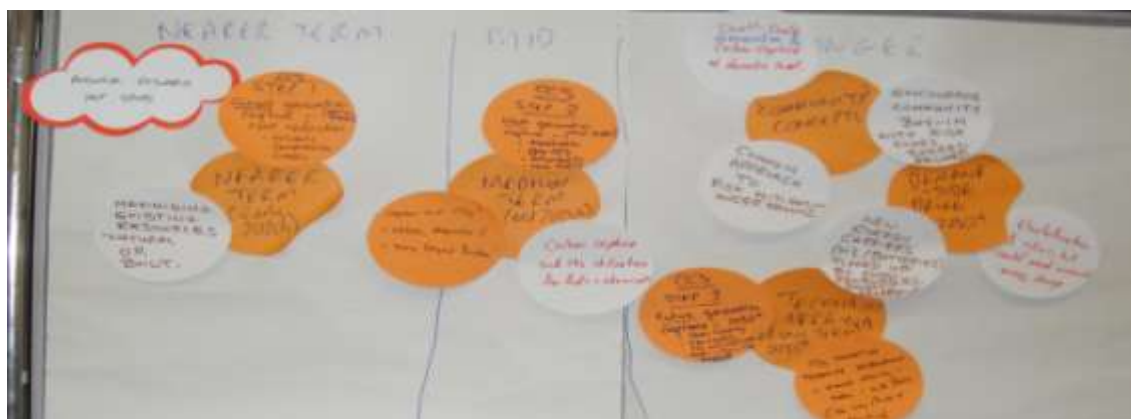


### Exploring the Research Terrain: Underlying Context

The participants were allocated to new groups and generated a PESTLE analysis to create a shared understanding of the underlying trends relevant to the themes of Fossil Fuels and CCS.

### Research Hot Spot: Initial Ideation

The participants were provided with some individual working time to identify ideas about potential research hot spots. These were shared with a partner and then in groups of six. Presentations were made by the four groups about the emerging research themes. Video recordings were made of these presentations



### Expanding Ideas: Left Field Ideation

Participants worked in pairs and used a series of image/metaphor cards as a stimulus for different thinking about the issues. These cards were then used to generate further links and ideas to add to the growing number of research hot spots.





### Reflective Review

The final activity of the day was designed to provide an opportunity for less extroverted participants to reflect on the day and to identify emerging research insights individually and then to read and add to contributions made by others.

## Day Two

### Process Review

In-between day one and day two the organising group reviewed the output and made a number of changes to the process designed for day two to ensure that the output would be at the right level. The changes to the process were explained to the participants openly with a number of key principles:

The wall of ideas needed to stay in place – although it was messy the team realised that amongst this output were some valuable ideas which could go missing if attempts were made to move everything into “neat” groupings.

The ideas needed to be explored through different perspectives to ensure that they had been covered in sufficient depth. A matrix was proposed which would firstly explore the ideas through communities of practice and then by application.

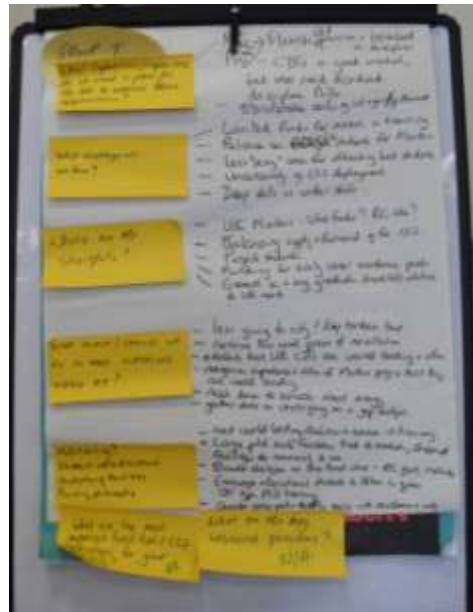
### Communities of Practice: Deep Dive

The participants were asked to identify their communities of practice and each community was allocated a code which they could use to mark any research hot spots that they were going to explore more deeply.

The communities were:

- Impacts (regulations, ecology and other types of impact and also public involvement)
- Engineers (people who want to make things happen, including systems, integration, economics, surface and sub-surface)
- Training (capacity building and advanced skills)
- Industry (OEM, Users, Service Providers, Product Developers)
- Sub Surface (understanding how earth works, extraction methods, reservoirs, top of the beaker – this refers to Jim Skea’s diagram)

The communities were then asked to select areas of research and to explore these in more detail using a series of prepared questions. Outputs from each group were displayed on the poster boards and each group gave a short presentation about their key insights.



### Second Deep Dive: Applications

This part of the process proved to be the most difficult. The intention was to encourage the formation of application groups which would be cross sector cutting. This proved very difficult and complicated to achieve and more definition was clearly needed at this point. Eventually groups were formed which in some cases did achieve the desired cross sector mix.

The groups were asked to explore the research spots again with a slightly different set of questions and output was recorded onto the flipcharts and again with a series of short presentations.

### Final Summary/Review

The final part of the workshop captured feedback from participants in a number of areas:

- A “round table” discussion
- The capacity of the UK to meet the research challenges of the future (using the arrow)
- Ideas about what the Research Councils needed to stop/start/continue doing
- Participant feedback about the event

## Feedback and Reflection

### Achievements

1. The feedback from participants in general was very positive. The details of this feedback can be seen in **Appendix One**.
2. A significant achievement was that the workshop brought together a diverse group of people working in a very wide subject range and created an atmosphere where constructive dialogue could take place.
3. The workshop methods enabled participation from all participants in a variety of ways including group sessions, pairs discussions and individual reflective opportunities. For more reflective participants the provision of “breathing space” was much appreciated and ensured that their ideas were captured during these periods even if they did not contribute as much in the larger group sessions.

4. The generation of divergent ideas was successful. The data was generated from the experts in the room was recorded and captured and will form the basis of some current findings about current thinking about the research needs in this area.

### Learning Points

1. As this was the first workshop there was a considerable amount of learning for the organising team about how best to facilitate a consultation workshop with technical experts. One of the main learning points was the need to ensure complete clarity over terminology in the workshop. An example was the attempt to do the second deep dive in “application” groups. This was the trickiest element of the facilitation process because each group made its own interpretation of what this concept meant and this resulted in less diverse groupings than intended.
2. From a process perspective the success was in the capturing of divergent ideas from all the participants. What needed more work were the convergent methods so that by the end of the first day there was a clearer view of the future research agenda. The facilitators are reviewing methods used in the afternoon of day two to improve the clustering of ideas. This proved very difficult to achieve in a diverse group of 26 participants. A clearer clustering/prioritisation of ideas will help to support the activities of day two; however we still need to avoid the danger of subsuming all the “outlier” comments into groups of convenience. The facilitators will explore ways of improving clarity without losing the breath and richness of the research ideas.
3. The main negative comment from participants was about the number of activities involving Post Its. For the first workshop the team were conscious about the need to keep a record of all output. This resulted in more Post It use than would normally happen in a facilitation process. The facilitators will review the output from workshop one with the organising team so that decisions can be made about the most useful output and from this ensure that methods of avoiding “post it fatigue” can be implemented.
4. The event was organised by team involving subject experts, the energy fellowship team and the facilitators. Improved clarity about respective roles and expectations would be useful for subsequent workshops.

## Energy in the Home and Workplace. Warwick. 5-6<sup>th</sup> Feb

### The Process and Reflections

#### Changes to the Process

Following the Edinburgh event the organising group reviewed the facilitation process. The main concern was that more time was needed to ensure that the research ideas (hot spots) had been adequately grouped before the close of the first day. It was also felt that more time was needed to establish the context for the event.

The main changes were agreed to:

- Increase the time spent by the organising team on establishing the context for the event.
- Remove the “provocative theme” session to allow for more time on the introduction and an earlier lunch break
- Remove the PESTLE activity to allow more time for the hot spots generation and grouping.
- Introduce a clearer “clustering” process and make sure that the steps for this were facilitated by members of the organising group.

#### Arrivals: Making Connections

The hexagon introduction was repeated again as this worked well as a relevant icebreaker. The room layout meant that less use was made of this chart during the workshop and we will consider the position of the chart at subsequent workshops so it can be used as a reference point



#### Context Setting: Reactions

This time slightly longer was provided to set the scene. It was clear from the previous workshop that some participants had not fully understood the role of the Energy Fellowship and the brief for the Expert Workshops .

The event co-ordinator Dr Matthew Hannon also provided an overview of the framework for this consultation and the consideration of issues including scale, timescale, communities of practice and the home/workplace context. One of the subject experts from the organising team – Liz Owen from DECC also provided a short introduction to the theme.

For this workshop some different elements of the strategic workshops were presented by Professor Jim Skea about the Strategic workshops and we repeated the activity to share reactions to this feedback with post it notes and a short verbal input.



### Exploring the Research Terrain: As Is

This session was run along the same lines as the Edinburgh workshop. Colour coding was introduced to highlight the different elements of home and work. Green ovals were used to represent home, Yellow to represent work and Blue to represent both areas.

### Current Research Readiness

Participants were asked to assess our current readiness to address the research concerns that were currently being addressed by participants. This was done using an arrow from “0= not at all to 10= “totally prepared”



### Research Hot Spot: Initial Ideation

Before lunch a challenge was made to the scale used for the facilitation process – individual, city, national... and a proposal was made that a better scale definition would be Macro, Micro and Meso. The team adjusted the process to accommodate this suggestion.

This session was refined from the session in Edinburgh by adding a clearer introduction to define what a hot spot was. The organising team felt that some of the hot spots generated in Edinburgh

were poorly defined or too general. The team wanted the research hot spots to be specific, clear and concise. Positive examples were provided of hot spots from the previous workshop.

As before the activity began with individual reflection and then a discussion in pairs. This time the hot spots were recorded onto hexagons which were felt to make the clustering process more effective. The colour coding of Green – home, Yellow- work and Blue- both was maintained.

The sharing of the hot spots in group discussion and large group feedback was not included this time and instead time was provided for the group to view the hot spot wall.



### Expanding Ideas: Left Field Ideation

The activity with the image cards was repeated. This time an instruction sheet was provided to each pair to explain the process because we had noted some confusion about the activity in Edinburgh. There was a noticeable increase in hot spots generated at the close of this activity.

### Clustering Ideas

A more structured process was introduced to the workshop to ensure that the hot spots were discussed and grouped into themes (cluster groups) The workshop was divided randomly into three groups. Each group was allocated a facilitator from Christine Bell, Nigel Chapman or Matthew Hannon and a theme: Micro, Macro or Meso. The groups spent an hour creating clusters of ideas and capturing an overview of each theme using an orange hexagon



## Super Clustering

The three groups were facilitated together to bring together the clusters and consider the naming of broader themes (Super Clusters) The engagement of 30 people in this process was a challenge and the facilitators introduced a consensus measuring tool to support the process. Each participant was provided with a set of three cards: red, yellow and green. Before agreement was made about a super cluster theme the facilitator would check levels of agreement. If a participant used a red card this would indicate a “veto” on the clustering and further discussion was needed. Yellow indicated some dissent but a willingness to move on and green was a sign to move on. These cards helped the facilitators to gauge how much time to further debate issues. Participants seemed to engage with the cards and used them throughout the process.



## Reflective Review

Time was very short at the end of the day so it was proposed that reflective comments could be recorded overnight and either recorded in a written format and posted into a feedback box or shared verbally in the group.

## Day Two

### Insights Review

At the beginning of the day the participants were provided with the opportunity to reflect in small groups about the work from the previous day and then asked to share any significant insights. This also provided an opportunity to check on any questions from the participants to the organising group that had emerged overnight.

### Communities of Practice: Deep Dive

The process of Deep Diving had worked well in Edinburgh and so participants were asked again to identify and name their communities of practice and allocated an appropriate code.

The communities were self-defined as:

- A. Home and Community Systems

- B. Smart Technology
- C. What's Energy?
- D. Social Technical Systems
- E. Retrofit Implementation
- F. Outcome Controlled Building Design
- G. Understanding drivers of demand – non domestic

To support the process this time the organising team limited membership of each community to 6 participants (if the community was larger the group would need to split into two groups)

An activity sheet was provided to each team with the questions and some suggestions about how each question could be approached to help provide more structure and consistency to the output this time. Photographs were taken of each cluster grouping so if the groups were working away from the main room they were able to see the key research hot spots relating to this theme.



As before the outputs were recorded onto flipcharts and a 5 minute report back process was provided.

### **Second Deep Dive: Applications**

The intention was to ask people to work in cross sector groups for this activity, however prior to lunch there was a challenge to the outputs from the first session with some participants feeling that technical solutions had not been addressed in sufficient depth. The organising group responded to this challenge by reorganising the groups so that there was one group of technical experts and the remaining four groups were organised on cross sector lines.

There was no time in the process for a verbal feedback from each group so instead a note taker was provided for each group, with one of the facilitators taking on this role for one group.

### **Reflective Review Session**

One of the concerns raised in this workshop was that some individual hot spot ideas had become subsumed into the wider themes and may have been discounted as a consequence. The organising team felt it was important to ensure that these ideas were flagged up in the process and recorded. However it was also recognised that other people felt ready to move on and were comfortable with the overall process. The reflective review session was introduced with a clear element of choice:

#### **Option One: Independent Reflection.**

A room was set aside for individuals to work on their own to record their thoughts and ideas to add to the research prospectus.

#### **Option Two: Chat Room**



A room was provided with a note taker for participants who wanted to talk through their reactions to the themes and research ideas.

### **Option Three: Reflect and Chat**

In the main room a period of individual reflection was provided using a timer and then the participants were grouped into trios to discuss and share their individual reflections.

Participants were encouraged to post any written output from this session into the reflections post box and in addition a follow up email address was provided for those participants who had written their reflections electronically.

### **Final Summary/Review**

The final part of the workshop captured feedback from participants in a number of areas:

- The capacity of the UK to meet the research challenges of the future (using the arrow)
- A short summary from the organising group about the main themes and then some question/answers and insights from participants
- Ideas about what the Research Councils needed to stop/start/continue doing – which was worked on in trios
- Participant feedback about the event – using cards which were posted into a box

## **Feedback and Reflection**

### **Achievements**

1. As with the Edinburgh workshop the feedback from participants in general was very positive. The details of this feedback can be seen in **Appendix One**.
2. One key message in the feedback was that the organising group had handled the range of people very well so that the workshop process kept moving forward and did not end up in an activity of “academic hair splitting”. It seemed that many participants anticipated a more “stormy” process and were pleasantly surprised that the process was so effective.
3. The workshop methods generally worked very well and gave participants a balance between discussions in groups to working in pairs to working individually. The addition of the final reflective options session seemed to work well because it provided people with a choice about how to participate in the opinion gathering.
4. The concerns from the Edinburgh workshop that the ideas were not sufficiently converged before the Deep Dive activity were addressed with a new robust methodology which provided a much clearer pathway for the groups in Day Two.

### **Learning Points**

1. The organising team provided much more clarity about meanings at this workshop and were supported by a glossary of terms. More use of this glossary would further help clarity, particularly when forming the communities of practice.
2. The convergence of the ideas into Super Clusters was an improvement, however there were concerns that some ideas went missing and we need to ensure that we do provide a process to “collect in” divergent thoughts at the end of the workshop, the reflective options session seemed to allow this to happen but should be reviewed.
3. There were some concerns about the number of post-it notes and flipcharts used to record the output. The facilitators will continue to explore how expertise can be captured without causing too much recording fatigue and will explore if any other methods of recording could be utilised. It would seem that the role of the note takers is more critical in day two than day one so a suggestion could be to increase the number of note takers on the second day. Some of the group felt some of the recording needed more discussion – eg the outputs from the arrow activity. These activities are designed to capture expert opinion for the prospectus overview and

it may mean we need to do a better job at positioning these activities so that it is clear why we are not spending time discussing the outputs.

4. A concern was raised about the early finish (15.40) and whether the additional 20 minutes could have been used to allow the discussions to continue. The timings will be reviewed however there will always need to be some “slack” between the announced end of the workshop and the actual time in case a controversial issue is raised in the final feedback which needs discussion.

## Energy Infrastructure. Birmingham. 17-18 April 2013

### The Process and Reflections

The Warwick event confirmed that the process was effective. No significant changes were introduced for the Birmingham event which followed the pattern from Warwick.

The event ran smoothly and there were no significant concerns raised. There seemed to be a willingness from all participants to engage in the discussions and the smaller numbers made it easier to ensure that all output had been adequately recorded by the four note takers.

#### Changes to the Process

The learning from the previous event informed our practice and we gave particular attention to the clustering process so that ideas were not lost.

1. After the generation of the hot spots we proposed three groups with themes for the clustering activity. Participants were asked to choose the group and were allocated a facilitator. Each cluster that was generated was “owned” by one participant, this meant that there was more engagement in the super clustering process. As a result there were fewer super clusters created probably because there was more clarity in the clustering process.
2. We introduced a more robust review process at the beginning of day two to identify items that were missing from the agenda. These were recorded onto flipcharts and posted up for initial consideration in the first deep dive round. During the second round a group were specifically asked to explore one of the issues raised about more technical aspects.
3. Concerns were noted about the validity of the second “arrow” assessment about how well set up we are to tackle these future research challenges. This part of the process will be reviewed for the next event.



# Bioenergy. Harpenden 14- 15th May 2013

## The Process and Reflections

Following the success of the Infrastructure event in Birmingham we anticipated maintaining the structure for all subsequent workshops. However early consultation with our panel of bioenergy experts indicated that there were some concerns about the workshop which meant we needed to adjust our design.

The concerns were not about our process as such but about very similar processes that had taken place in recent months within the sector. We picked up a theme that the experts in this sector were suffering from consultation fatigue in one area of the sector and in another area of the sector there were significant concerns about current funding processes in the sector.

As facilitators we were concerned that unless we provided opportunity for these concerns to be raised we would risk participants disengaging in the consultation process. We spent time exploring the issues further and made some changes to the design to accommodate the specific needs of this sector.

### Changes to the Process

The main changes to the process were to the morning session of the first day and then we made some minor adjustments to other sections

1. Instead of the usual feedback on the research strategy and the discussion about current research we introduced a more informal dialogue session using the World Cafe methodology. We agreed four questions in advance with the panel of experts and each table was allocated a question. The participants were able to change tables three times so that they could address each question and were encouraged to mix up the groups so that by the end everyone had met most other participants.

#### The Questions

These questions were designed to provide opportunities for any concerns about current research in the sector to be raised. We ensured that a notetaker was present on each table throughout and they were able to record the key themes. The participants were also encouraged to write on the paper tables cloths to provide a summary of the discussions on each rotation of the session

1. What are the main strengths of our current research in the bioenergy sector?
2. How could we improve the experience of undertaking research in this sector?
3. How could we improve funding strategies for bioenergy research?
4. If you had a magic wand what focus would you wish to see emerge for the research strategy?





The summary of the Cafe session was a one minute presentation from each table to address the question “What needs our attention as a group as we shape the research strategy for the future?”

This question was deliberately designed to focus the group on starting to look forward into the future research agenda.

We then asked the group to assess the current state of the research in the UK in this sector using the arrow method.

The changes to the morning session were successful. It is difficult of course, to know if the same result would have been achieved with the original design but our sense was that just acknowledging that this was a sector where dialogue was needed was sufficient to enable the group to fully engage in the workshop process.

2. The afternoon session – hexagons, pictures, clustering and super clustering was run as in previous workshops. We did note however that there were concerns from previous events in this sector about facilitators taking over the clustering process. We made sure that each cluster of hexagons was owned and named by the participants and as facilitators we did not attempt to try to make cluster headings or suggest how clusters could be merged.

3. After Day One our team reviewed the outputs and there were concerns about the questions being asked in the Deep Dive and also about the method for dividing people into groups. We agreed an amendment to the Deep Dive questions:
  1. What are the main research challenges we need to address for our research to be first class in terms of both excellence and impact?
  2. To address these – what would you like to see change E.g. consider:-
    - a. What capabilities / capacities do we need in place?
    - b. How do our ways of working need to change?
  3. What needs to happen in terms of coordination and alignment to maximise success in your research area?
  4. What do we need to have in place to ensure we are ready to address these research challenges (e.g. PhD training, data collection/curation, research Infrastructure, funding philosophy etc)
4. We also agreed that the process of allowing people to work in existing communities for the Deep Dive would break up the beginnings of cross sector working. We proposed to the group that they choose to work with a cross section of people for the first deep dive and that they make this choice based on their chosen cluster group. This worked effectively and the group seemed happy with the choice.
5. We noted in the process that our timings meant we should give 45 mins per cluster and expect groups to work on 2 clusters in a 1.5 hour period to cover more ground and ensure the groups did not stagnate on the task.
6. We removed the final assessment of the research agenda using the arrow method as indicated in our notes in the Energy Infrastructure workshop – there were significant concerns about this method



## Transport Energy: Coventry 11-12<sup>th</sup> June 2013

### The Process and Reflections

For this workshop we reverted to the process design for the Energy Infrastructure workshop, as there were no particular concerns about this sector that would impact on the design.

The biggest challenge was the scope of the workshop as there was a danger that “Transport Energy” became too wide and crossed over into other sectors. This was discussed amongst the team and the issue was raised with the participants as one of the challenges that they might need to address during the discussions.

1. As in previous workshops we encouraged participants to select groups for the clustering activity and this ensured each cluster was owned by the groups.
2. We used the method of group allocation we had developed for Bioenergy for this group because there was a very divergent selection of sub communities and a demand for closer cross sector working.
3. By using our timers at 45 mins we were able to get the groups to work on a total of 4 clusters over the two deep dive session which meant that all issues were covered, even if lightly
4. There was a concern that technological issues had become lost so a special group was set up with this focus for the second deep dive and another group had a focus on freight, as this had not emerged as an issue during the clustering process.



# Energy Infrastructure & Energy Storage: Oxford 25<sup>th</sup>-26<sup>th</sup> June 2013

## The Process and Reflections

For this workshop we continued with the process design as used in the Energy Infrastructure / Transport Energy workshops, as there were no particular concerns about this sector that would impact on the design.



Day 1 followed the 'standard' approach as per the Energy Infrastructure and Transport Energy workshops. However during the second half of day 1 afternoon the participants were able very readily produce the 'clusters' in the 3 parallel breakout groups. Thereafter in the final session, it was found that these clusters were discrete topics and therefore did not easily 'super-cluster'. At the end of the exercise the group had identified one cluster (#1) which was deemed to be a 'scene-setter' (economic + political will). The other clusters could conveniently be categorised into 10x 'applications' and 5x 'cross-cutting' (one cluster was addressed in both rounds of 'deep-dive' on day 2). Thus the organising group agreed a slightly modified sequence for day 2 'deep-dives' with tweaked questions as follows:-

**Deep Dive 1:** (Addressed by 4 groups rather than 5 (unfortunately one note-taker was off-sick), 2 hours allowed, 2 groups addressed 2 clusters each, two others 3 each, i.e. 10 total), using the questions:-



1. What are the main research challenges we need to address for our research to be first class in terms of both excellence and impact?
  - consider immediate / medium term (2030) / long term (2050)
2. To address these what do we need in place, consider for example:-
  - i. Economics and political will (see super cluster 1)
  - ii. What capabilities / capacities do we need in place?
  - iii. Do our ways of working need to change? If so, how?
  - iv. Whose job should it be / who is best placed to do this research?
  - v. What needs to happen in terms of coordination and alignment to maximise success?
  - vi. What do we need to have in place to ensure we are ready to address these research challenges ? (e.g. PhD training, data collection/ curation, research Infrastructure, funding philosophy etc)

**Deep Dive 2:** (Addressed in 5 groups, 75mins allowed, each cross-community group addressed one 'cross-cutting' cluster for 45 mins; then a second round of 30 mins – on the same 5 clusters was addressed by self-selected groups), using the questions:-

1. What are the main research challenges we need to address for our research to be first class in terms of both excellence and impact?
  - consider immediate / medium term (2030) / long term (2050)
2. To address these what do we need in place, consider for example:-
  - i. What capabilities / capacities do we need in place?
  - ii. What needs to happen in terms of coordination and alignment to maximise success? (e.g. PhD training, data collection/curation, facilities, research infrastructure, finding philosophy etc.)
  - iii. Whose job should it be / who is best placed to do/fund this research?
  - iv. Economics and political will (see supercluster 1)

**Note:** Whilst this process did fulfil requirements in terms of gathering comprehensive data by consulting the experts, the time spent on the repeat session in deep dive 2 may have been better utilised in an extended reflective session – which was an attractive format for this particular group of participants, (many academic technical specialists).

## APPENDIX ONE: Evaluation Summary from Workshops

In Appendix One there is a record from the participant feedback that was collected at each workshop. This feedback was collected by asking participants to comment on the event using a free form structure. The feedback was analysed in three ways which are recorded in the appendix:

1. Narrative – each individual comment is recorded as it was written
2. Collation – the themes were collected and individual comments grouped together into feedback themes
3. Word Cloud – all the narrative cards from the individual workshop were submitted to the “Wordle” site to create a word cloud. This was useful because it highlighted the overall key words used to describe the event.

## Summary of Final Comments: Fossil Fuels and CCS January 2013

---

### What would you say to others about the two days?



### Comments- Individual Post It Notes

- Great! Do it all again! Right People. So much better than going to London and a good complex of rooms and accommodation. Good pace of facilitation.
- Very good – very interactive and very lively. Met people I wouldn't have normally have met. Never got bored but had some "post it" fatigue. Nice friendly and supportive facilitators. Would certainly do it again.
- Good mix of people who all inputted really well. Maybe too CCS dominated. Shame no social sciences as many challenges in their area. Good pace of workshop but maybe too many post it notes. Nice venue. Not sure we projected 40 years ahead.
- Some useful conversations and linkages. Opportunities for future research.
- Facilitation sometimes over-elaborate and complex.
- Silos not sufficiently challenged, need to do more to foster cross speciality conversations.
- Thought provoking, well executed, challenging, avoided entrenched views, kept thinking and opinions open. Captured high level challenges faced.
- Useful and interesting to understand and make contact with UK researchers/institutions, contacts for future works and contacts for present works. The difficult area of facilitation/exercises was well managed with few conflicts. Well done.
- Worth my time and that of my organisation. Good to meet the "experts" – good mix. Excellent facilitation – really well done. Food and accommodation was excellent. Looking forward to seeing the output.
- Quality/value increased from start to end.
- Good to have people from different disciplines all together and looking at the same topics from different angles. Good sized group to meet and interact with most people and a friendly atmosphere for contributions. Activities in general well timed and most were clearly relevant.
- The facilitation was excellent.
- Very interesting workshop with good discussion.
- Very successful at bringing us out of our silos. Definitely helped us to focus on a coherent idea of what is needed. Thanks for all the post it notes!
- What was good – timekeeping, rotated and met everyone, mature group made it work, networking, fossil fuels and CCS and geothermal, venue. What was not good: too many post it notes (sigh), we are not primary school kids, uncertain future outcome, could have been more directional – unconstrained.

- Excellent conference/workshop. Very professional, efficient use of time, no sacrifice of rigour, friendly and relaxed setting, conducive to thinking and reflection which are key to productive results: will recommend to anyone needing facilitation.
- Thought provoking, good cross linkage opportunities, well organised, successful, correct balance of work and relax.
- The workshop identified the current landscape and areas themes where future activity needs to focus. Have we made enough progress on defining the detail both blue skies and applied?
- A good mix of people. A good balance between thinking time and talking time. The pace was well judged.
- Good organisation, good people, nice venue.
- Running of meeting was very competent, time passed quickly and interestingly. The facilities and staff were excellent. Attendees were a reasonable mix, far too few users. Very little new emerged, perhaps not surprising, as the area has not been developed much at all yet – due to very limited funding. There is a lot of overlap with UKCCSRC RAPID (Research and Pathways to Impact Development) process, which has gone and is going into a lot of detail on some of these areas.
- Making the links across workshops will be very important especially for missing disciplines, such as ecologists for unconventional fossil fuels, and to ensure that the topics, such as management of the sub surface for geothermal are presented and taken forward. A great start.
- The facilitation succeeded in stimulating a lot of interesting ideas by looking from different perspectives. This also helped identify synergies/links. I worry that this will be hard to take to the wider community who will view the outputs from the viewpoint of where they are sat...a challenge.

## Summary of comments – variation of positive and negative feedback

General Comments	
What went well	What could be better
Great!	
Would certainly do it again.	
Do it all again!	
Worth my time and that of my organisation.	
Quality/value increased from start to end.	
Excellent conference/workshop.	
A great start.	
Very interesting workshop with good discussion.	
Participants	
Met people I wouldn't have normally have met.	Maybe too CCS dominated. Shame no social sciences as many challenges in their area.
Good mix of people who all inputted really well.	Far too few users.
Some useful conversations and linkages.	
Useful and interesting to understand and make contact with UK researchers/institutions, contacts for future works and contacts for present works.	
Good to meet the "experts" – good mix	
Right People	
Good to have people from different disciplines all together and looking at the same topics from different angles. Good sized group to meet and interact with most people and a friendly atmosphere for contributions.	
mature group made it work,	
Networking- fossil fuels and CCS and geothermal	
A good mix of people.	
good people,	
Attendees were a reasonable mix,	
Venue	
So much better than going to London and a good complex of rooms and accommodation	
Nice venue x2	
Food and accommodation was excellent.	
Venue was positive	
The facilities and staff were excellent.	
Facilitation	
Good pace of facilitation.	Had some "post it" fatigue
Good organisation,	Maybe too many post it notes.
Very good – very interactive and very lively	Facilitation sometimes over-elaborate and complex.

Never got bored	Too many post it notes (sigh), we are not primary school kids,
Nice friendly and supportive facilitators.	
Good pace of workshop	
Very successful at bringing us out of our silos.	Silos not sufficiently challenged, need to do more to foster cross speciality conversations.
Thought provoking, well executed, challenging, avoided entrenched views, kept thinking and opinions open.	
Excellent facilitation – really well done.	
The difficult area of facilitation/exercises was well managed with few conflicts. Well done.	
Activities in general well timed and most were clearly relevant.	
The facilitation was excellent.	
Thanks for all the post it notes!	
timekeeping,	
Rotated and met everyone,	
Very professional, efficient use of time, no sacrifice of rigour, friendly and relaxed setting, conducive to thinking and reflection which are key to productive results: will recommend to anyone needing facilitation	
A good balance between thinking time and talking time. The pace was well judged.	
Thought provoking, good cross linkage opportunities, well organised, successful, correct balance of work and relax.	
Running of meeting was very competent, time passed quickly and interestingly	
The facilitation succeeded in stimulating a lot of interesting ideas by looking from different perspectives. This also helped identify synergies/links.	
<b>Outputs</b>	
Opportunities for future research.	Not sure we projected 40 years ahead
Captured high level challenges faced.	Uncertain future outcome could have been more directional – unconstrained.
Looking forward to seeing the output.	Have we made enough progress on defining the detail both blue skies and applied?
Definitely helped us focus on a coherent idea of what is needed	Very little new emerged, perhaps not surprising, as the area has not been developed much at all yet – due to very limited funding. There is a lot of overlap with UKCCSRC RAPID (Research and Pathways to Impact Development) process, which has gone and is going into a lot of detail on some of these areas.
The workshop identified the current landscape and areas themes where future activity needs to focus.	I worry that this will be hard to take to the wider community who will view the outputs from the viewpoint of where they are sat...a challenge.
	Making the links across workshops will be very important especially for missing disciplines, such as

	ecologists for unconventional fossil fuels, and to ensure that the topics, such as management of the sub surface for geothermal are presented and taken forward.
--	--

**A Word Cloud from all the collated comments**

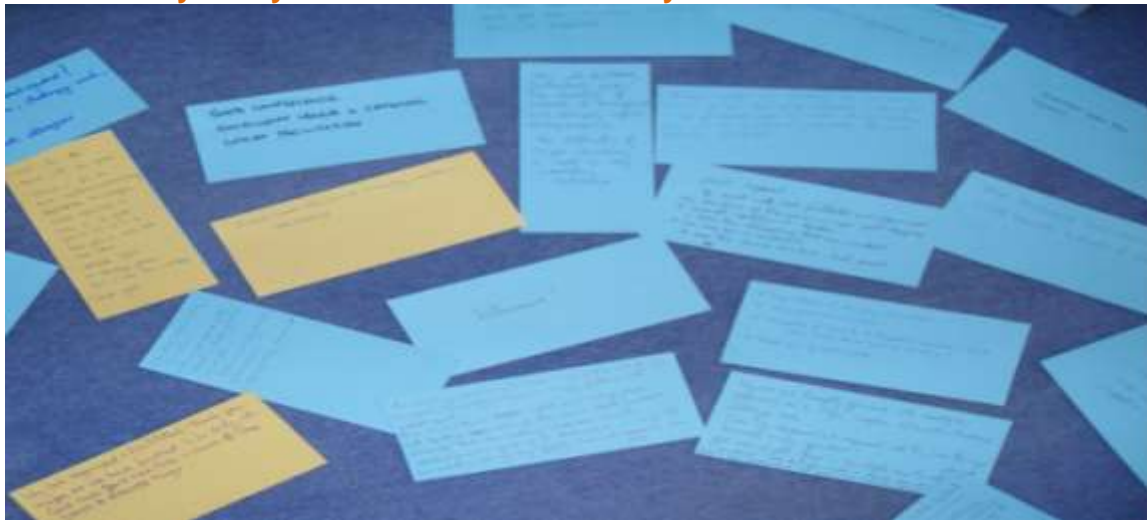
The Word Cloud is generated by inserting in all the text from the responses to the “What will you say about the workshop” Post It notes into an on line software tool called Wordle. The more often a word is repeated then the larger it will appear in the Word Cloud. We can see that Good is the most popular word, followed by Well, facilitation, excellent and people.



## Summary of Final Comments: Energy at Home and Workplace Warwick 5-6<sup>th</sup> Feb

---

### What would you say to others about the two days?



### Comments- Individual Cards

- Good experience, well organised. To improve would be good to revise some of the exercises so objectives are clearer. Some exercises were redundant or under specified.
- Much better than I anticipated! Relevant, realistic, challenging audience. Good fun. With appropriate colleagues
- Loved the exercise with the photos. Perhaps a bit too much synthesis/summarising on hexagons without reflecting on ovals or group post it (0-10) so some post its were used more than others. Larger font on name tags please, hard to read from a distance. Thank you!
- The event was well run and captured and organised lots of information and ideas. Danger of not prioritising is that process is not part of prioritisation and the wrong reason is assumed.
- Thought provoking to review landscape with wide range of perspectives. Fantastic facilitation to get through huge agenda. But really there should have been more economists?
- Very interesting. Good opportunity to meet experts outside of my own community.
- Very good role of the facilitators, thank you for the enthusiasm and the “brainstorming” techniques. Good food and nice venue. Disappointment about the lack of people from private sector, too much social sciences orientated and not enough debate about technology. I feel unsure about the outcome of this workshop. Things seem more confused than before the workshop and I have the feeling we probably have missed some ideas.
- Well-structured and inclusive. Good breadth and depth of analysis.
- Overall very good. The event was well facilitated and organised and the structure of the session was well designed to avoid repetition or boredom. I liked the atmosphere that was created it was very open and constructive. As ever the venue was fine and the food good.
- It was useful and interesting for networking. In terms of new ideas being developed I thought it was of limited scope as most likely because there were lots of different expertise from different disciplines.
- Somewhat better than expected.
- A well organised and excellently facilitated event. Achieved what it set out to. Great networking. Food and accommodation very good, but the air too dry.



- Good conference. Excellent venue and catering. Great facilitation.
- Very effective and engaging facilitators. Very good accommodation. Moments of Post it and Flipchart overload! What other tools do we have for recording? Good mix of participants.
- Very well and thoroughly organised with multiple perspectives on a large, complex and multi-faceted challenge area. I was very surprised and impressed with the “view the image” exercise, very effective. Just one slight “gripe” – the style runs the risk of participants being burnt out with the large number of sessions, post its. But a very professional and well run exercise – well done to the organisers!
- An interesting opportunity to have a big picture view of the research community’s views on energy problems and research needs. As a non-academic I felt a bit out of place and lacking some of the basic data needed. Concerned that the balance between sound science/economic questions of technologies is wrong. We do need a list of key purely technical research areas. Also need to consider the impact of other technology areas or energy eg advanced materials and advanced manufacturing.
- Intensive
- Very well facilitated, particularly given the diversity of interests and background (and perhaps implicit antagonisms) The difficulty of “super clustering” is itself an interesting outcome.
- Venue and food very good. Facilitation worked very well with far less academic hair splitting than I expected.
- Intense. Well facilitated. Friendly workshop and interesting.
- Very interesting and useful at widening my own horizons. Some very useful confirmation by closely related peers of the difficulty of some of my current problems: but also very useful and interesting new extensions of current research areas. Useful networking with new contacts.
- Very well organised and facilitated. Thank you. Maybe as we finished ½ hour early, we could have spent more time in some of the groups to discuss things.

### Summary of comments – variation of positive and negative feedback

#### General Comments

##### What went well

##### What could be better

Good experience, well organised. Much better than I anticipated! Good fun.

Larger font on name tags please, hard to read from a distance.

The event was well run and captured and organised lots of information and ideas. Thought provoking to review landscape with wide range of perspectives.

Very interesting. Good breadth and depth of analysis.

Overall very good.. Somewhat better than expected.

Good conference. Very well and thoroughly organised with multiple perspectives on a large, complex and multi-faceted challenge area.

Intense.

Very interesting and useful at widening my own horizons.	
<b>Participants</b>	
Useful networking with new contacts.	Disappointment about the lack of people from private sector, too much social sciences orientated and not enough debate about technology.
Good event: With appropriate colleagues	There should have been more economists
Good mix of participants.	As a non-academic I felt a bit out of place and lacking some of the basic data needed. Intensive
Good opportunity to meet experts outside of my own community.	
It was useful and interesting for networking	
Great networking.	
Relevant, realistic, challenging audience.	
Some very useful confirmation by closely related peers of the difficulty of some of my current problems: but also very useful and interesting new extensions of current research areas.	
<b>Venue</b>	
As ever the venue was fine and the food good.	The air too dry.
Venue and food very good	
Very good accommodation.	
Good food and nice venue.	
Food and accommodation very good	
Excellent venue and catering	
<b>Facilitation</b>	
Loved the exercise with the photos.	To improve would be good to revise some of the exercises so objectives are clearer. Some exercises were redundant or under specified.
Facilitation worked very well with far less academic hair splitting than I expected.	Perhaps a bit too much synthesis/summarising on hexagons without reflecting on ovals or group post it (0-10) so some post its were used more than others.
I was very surprised and impressed with the “view the image” exercise, very effective.	Moments of Post it and Flipchart overload! What other tools do we have for recording?
Very effective and engaging facilitators.	Just one slight “gripe” – the style runs the risk of participants being burnt out with the large number of sessions, post its.
Very good role of the facilitators, thank you for the enthusiasm and the “brainstorming” techniques.	Maybe as we finished ½ hour early, we could have spent more time in some of the groups to discuss things.
Fantastic facilitation to get through huge agenda.	

A well organised and excellently facilitated event. Achieved what it set out to.	
Great facilitation.	
The event was well facilitated and organised and the structure of the session was well designed to avoid repetition or boredom. I liked the atmosphere that was created it was very open and constructive.	
Very well facilitated, particularly given the diversity of interests and background (and perhaps implicit antagonisms)	
A very professional and well run exercise – well done to the organisers!	
Very well organised and facilitated. Thank you.	
Well facilitated. Friendly workshop and interesting.	
Well-structured and inclusive	
<b>Outputs</b>	
The difficulty of “super clustering” is itself an interesting outcome.	Danger of not prioritising is that process is not part of prioritisation and the wrong reason is assumed.
An interesting opportunity to have a big picture view of the research community’s views on energy problems and research needs.	I feel unsure about the outcome of this workshop. Things seem more confused than before the workshop and I have the feeling we probably have missed some ideas.
	In terms of new ideas being developed I thought it was of limited scope as most likely because there were lots of different expertise from different disciplines.
	Concerned that the balance between sound science/economic questions of technologies is wrong. We do need a list of key purely technical research areas. Also need to consider the impact of other technology areas or energy eg advanced materials and advanced manufacturing.

A Word Cloud from all the collated comments



## Summary of Final Comments: Energy Infrastructure Birmingham 17-18<sup>th</sup> April

---

### What would you say to others about the two days?



### Comments- Individual Cards

- Rewarding, valuable, interesting, well run, intense
- Very well organised and facilitated. Good to see that we will see the outputs and comment. Particularly liked the diverse ways of organising discussion and reflection.
- Very interesting wide ranging discussion, smoothly and adaptively run.
- The engineers posed lots of important economic and society questions. Does this suggest that engineers understand society better than social scientists? (“what is energy?”) With the benefit of hindsight, would have been good to have more technologists.
- Good organisation. Interesting discussions. Useful output.
- The workshop was really good and the venue very convenient. I learnt a lot of new things and the new challenges that researchers have for doing value pieces of work that be in line with the evolution of energy systems.
- Pleasant, harmonious, informative, productive. Could have done with even more mixing of groups. Quite a few people I was not in a group with (and some repeats :))
- More valuable and interesting than I expected (feared?) It is a pity that other industry players pulled out. Well organised.
- The workshop has been very well organised. One comment is that the group was not well balanced therefore there are some gaps in the outcomes. However I believe that the result is very good and it will be hard work to create the first draft. Good luck :)
- Excellent, well organised, smoothly run and very productive discussions.
- Ran fluently. Interesting people. Useful for understanding challenges in the area. Average food.
- Well organised, fun, hopefully people will value the outputs.
- Would have been good to spend time on career paths in academia and industry. I have some ideas on representing the? of energy infrastructure research.
- Very informative and engaging with a diverse set of views and experts. Well managed too.
- Well organised. Interesting. Good networking. Hope we helped forming a better review.
- A good process but I can't help feeling that the composition of the group was “all the usual suspects” with little diversity of ideas.
- Good timekeeping.
- Seemed to be general agreement that some topics hadn't received enough attention: storage, government vs market and non-electricity networks. Strange given these comments came from

people who had chance to shape the discussion? Perhaps reversion to the topics most worked on already? Also – only one woman!

<b>Summary of comments – variation of positive and negative feedback</b>	
<b>General Comments</b>	
<b>What went well</b>	<b>What could be better</b>
Rewarding, valuable, interesting, intense	Would have been good to spend time on career paths in academia and industry
Well organised (x 7 comments)	
Interesting discussions.	
The workshop was really good I learnt a lot of new things and the new challenges that researchers have for doing value pieces of work that be in line with the evolution of energy systems.	
More valuable and interesting than I expected (feared?)	
Excellent, smoothly run and very productive discussions.	
Very informative and engaging.	
Fun	
<b>Participants</b>	
The engineers posed lots of important economic and society questions. Does this suggest that engineers understand society better than social scientists? (“what is energy?”)	With the benefit of hindsight, would have been good to have more technologists.
Interesting people	It is a pity that other industry players pulled out.
A diverse set of views and experts	One comment is that the group was not well balanced therefore there are some gaps in the outcomes.
Good networking.	The composition of the group was “all the usual suspects” with little diversity of ideas.
	Only one woman
<b>Venue</b>	
Very convenient.	Average food
<b>Facilitation</b>	
Well run,	Could have done with even more mixing of groups. Quite a few people I was not in a group with (and some repeats: ) !)
Very well organised and facilitated. Particularly liked the diverse ways of organising discussion and reflection.	
Very interesting wide ranging discussion, smoothly and adeptly run.	
Pleasant, harmonious, informative, productive.	
Ran fluently..	

A good process	
<b>Outputs</b>	
Good to see that we will see the outputs and comment.	Seemed to be general agreement that some topics hadn't received enough attention: storage, government vs market and non-electricity networks. Strange given these comments came from people who had chance to shape the discussion?
Useful output.	
The result is very good and it will be hard work to create the first draft.	
Useful for understanding challenges in the area.	
Hopefully people will value the outputs.	
Hope we helped forming a better review	

**A Word Cloud from all the collated comments**



## Summary of Final Comments: Bioenergy Harpenden 14-15<sup>th</sup> May

### What would you say to others about the two days?



#### Comments- Individual Cards

- Event well organised, facilitation excellent, food very good, accommodation very good, enjoyed taking part and thought the outcomes and outputs will be excellent. Stimulating and thought provoking.
- Facilitating team were excellent, venue was good, content and context was also very good. Diversity of meeting different specialities was very valuable.
- Dynamic, pacy, well structured, positive, collaborative. Asked the right questions to get folks thinking. Good mix of people, most excellent that BBSRC and EPSRC came together; I would like to see more of this.
- Very well run and organised. Stimulating and thought provoking, although a lack of non-technical opinion. Venue was good, a nice space to operate in. Food very good and lots of refreshments.
- Very useful. How do you consider the views of those invited who did not come?
- Good facilitation at RR. Facilitators very effective, productive and enjoyable.
- Very well organised. Very interesting. Good for networking.
- Good conversations, one to one and in groups. Some real treasures identified.
- Conference was a welcome opportunity to engage with academia and help to shape the future direction of research encompassing the needs and values of industry and commerce.
- Good group of people/overview of the sector. Good having all funders and government represented as well as RCUK. Missed opportunity not to assess the timescales of needs and priorities. Hard to get current groups to say what the gaps are as may not know. Still disappointing lack of shared vision. Should ask what would you do and what stops you.
- Great event. Great venue apart from acoustics. Not enough real researchers.
- Very much enjoyed workshop. Looking forward to the outputs. Excellent facilities. 2 days may have been a little too long.



- Excellent facilities. Good hospitality. Well organised. Facilitators and meeting structure was the best “government” organised one that I have attended.
- If (the right!) half of the ideas that came forward are implemented it will have been well worthwhile. A surprisingly good event. Thank you.
- Informative, illumination, good discussion/analysis. Useful for networking.
- Very good. Learnt a lot – discussions were well structured. Good ideas emerged “community owned”
- Well organised and facilitated. Well done 😊
- Good. Well facilitated. Sufficient mix of people but lacking EPSRC and NERC reps.
- Good interesting event. Facilities very good. Some parts (the presentation of the clusters) felt a bit over facilitated.

<b>Summary of comments – variation of positive and negative feedback</b>	
<b>General Comments</b>	
<b>What went well</b>	<b>What could be better</b>
Good interesting event	2 days may be a little too long
Learnt a lot	Missed opportunity not to assess timescales of needs and priorities
Informative	
Illumination	
A surprising good event	
Stimulating and thought provoking	
Dynamic, pacey, well structured, positive collaborative	
Context and Content was very good	
<b>Participants</b>	
Sufficient mix of people	Lacking EPSRC and NERC reps
Useful for networking x2	Not enough real researchers
Good group of people/overview of sector	Hard to get current groups to say what the gaps are – as may not know
Good having all funders represented as well as RCUK	A lack of non-technical opinion
Opportunity to engage with academia	
Good conversations one to one and in groups	
Good mix of people. Most excellent that BBSRC and EPSRC came together, I would like to see more of this	
Diversity of meeting different specialities was very valuable	
<b>Venue</b>	
Facilities very good x8	Acoustics
<b>Facilitation</b>	
Well facilitated x4	Some parts (the presentation of the clusters) felt a bit over facilitated.
Discussions well structuredx2	
Good discussion/analysis	

Facilitators/meeting structure was the best “government” organised one I have attended	
Facilitators very effective, productive and enjoyable	
Asking the right questions to get folks thinking	
<b>Outputs</b>	
Good ideas emerged “community owned”	Still disappointing lack of shared vision
If half the ideas that came forward were implemented it will have been well worthwhile	How do you consider the views of those invited who did not come?
Looking forward to the output	
Opportunity to shape the future direction of research encompassing the needs and values of industry and commerce.	
Some real treasures identified	
Outcomes and output will be excellent.	
Stimulating and thought provoking	

**Word Cloud Summary**

This is a summary of all the comments; the more often a comment is made the larger it will appear in the Word Cloud. This gives us an overall sense of the feeling as people left the room



## Summary of Final Comments: Transport Energy: Coventry 14-15<sup>th</sup> June

### What would you say to others about the two days?



### Comments- Individual Cards

- Very good/interesting/different mix of people (not your usual 'suspects') really relieved at the lack of focus on electric cars!
- Above expectations!
- Appropriate choice of venue! Well organised (except coffee!)
- Great workshop. Couple of small points: I found the use of colour to be a bit over whelming (like my child's nursery) maybe only use colour when distinguishing things. I need to have a non-talking break, to recap
- Encouraging, stimulating and extremely well facilitated. Interesting participants. Lots of useful discussion and contacts
- I learned a lot!
- Excellent workshop – very well facilitated. Broad coverage of topic. Could benefit from greater industry involvement.
- Stimulating, interesting, entertaining, well organised and led. I don't envy the task of collating the comments and information.
- Enjoyable and stimulating and tiring! Truly a brain dump – albeit a creative one.
- Very well organised/facilitated. Maybe a bit long towards the end of the first day.
- Well facilitated with less of a technology focus than I would have preferred. I would attend again.
- Well facilitated. Fast moving and interesting
- Great facilitation! Stimulating and thought provoking. Venue good, coffee not so good. Overall excellent!

- Challenging to maintain the direct relevance to industry but clear need for very cross discipline approach.
- Interesting, could have done with more variation on the second afternoon session as we were flagging on the second deep dive.
- Interesting approaches to discussions. Good mix of perspectives. Could have benefited from a more output based discussion to research.
- A lot of children around (eg the state of the toilets) Food could be different on both days.
- Venue ok, hotel ok, facilitation good
- Made great contacts with like-minded academics from related (but not too related) areas.
- Interesting and reassuring that other researchers are not only about tech, but also about human-tech interaction!
- Very well facilitated, accommodation and facilities good. The subject area was very broad. This may be diluted discussions. Possible opportunity to focus people into specialist areas in the deep dive.
- Well facilitated, good mix of activities, kept energy up. Difficult to see across the breath of the outputs so interested in seeing the output. Overall positive.
- Well designed and timed to get the most out of us – though some of the clustering exercise was (perhaps inevitably) a bit rough and ready – like intellectual speed dating!
- Usefully highlighted importance of understanding uses of transport in understanding transport energy.
- Interesting, good mix of people and some good ideas. BUT so many ideas – hard to prioritise interesting connections.
- Inclusive/participatory/encouraging!
- Ask people to leave corporate policy views outside workshop. Someone from a trade body and an industry were guilty of being defensive.

## Summary of comments – variation of positive and negative feedback

### General Comments

What went well	What could be better
Inclusive/participatory/encouraging!	Could have benefited from a more output based discussion to research.
Overall positive.	
Interesting approaches to discussions.	
Above expectations!	
Great workshop.	
I would attend again.	
Challenging to maintain the direct relevance to industry but clear need for very cross discipline approach.	
Overall excellent!	
Enjoyable and stimulating and tiring! Truly a brain dump – albeit a creative one.	
Excellent workshop – very well facilitated. Broad coverage of topic.	
I learned a lot!	

Stimulating, interesting, entertaining, well organised and led.	
<b>Participants</b>	
<b>What went well</b>	<b>What could be better</b>
Interesting, good mix of people and some good ideas. Interesting connections.	Ask people to leave corporate policy views outside workshop. Someone from a trade body and an industry were guilty of being defensive.
Made great contacts with like-minded academics from related (but not too related) areas.	Could benefit from greater industry involvement.
Good mix of perspectives.	
Interesting	
Great facilitation! Stimulating and thought provoking.	
Very good/interesting/different mix of people (not your usual 'suspects')	
Interesting participants. Lots of useful discussion and contacts	
<b>Venue</b>	
<b>What went well</b>	<b>What could be better</b>
Accommodation and facilities good.	A lot of children around (eg the state of the toilets) Food could be different on both days.
Venue good,	Coffee not so good x 2
Venue ok, hotel ok	
Appropriate choice of venue! Well organised	
<b>Facilitation</b>	
<b>What went well</b>	<b>What could be better</b>
Well designed and timed to get the most out of us	Though some of the clustering exercise was (perhaps inevitably) a bit rough and ready – like intellectual speed dating!
Very well facilitated, Well facilitated, good mix of activities, kept energy up.	Possible opportunity to focus people into specialist areas in the deep dive.
Facilitation good	Could have done with more variation on the second afternoon session as we were flagging on the second deep dive.
Well facilitated. Fast moving and interesting	I found the use of colour to be a bit overwhelming (like my child's nursery) Maybe only use colour when distinguishing things.
Very well organised/facilitated.	I need to have a non-talking break, to recap
Well facilitated	Maybe a bit long towards the end of the first day
Encouraging, stimulating and extremely well facilitated.	

Outputs	
<b>What went well</b>	<b>What could be better</b>
Usefully highlighted importance of understanding uses of transport in understanding transport energy.	BUT so many ideas – hard to prioritise
Interesting and reassuring that other researchers are not only about tech, but also about human-tech interaction!	The subject area was very broad. This may be diluted discussions.
Really relieved at the lack of focus on electric cars!	Difficult to see across the breath of the outputs so interested in seeing the output.
	I don't envy the task of collating the comments and information.
	Less of a technology focus than I would have preferred

### Word Cloud Summary

This is a summary of all the comments; the more often a comment is made the larger it will appear in the Word Cloud. This gives us an overall sense of the feeling as people left the room. At this workshop the words interesting, good, well and facilitated are clearly prominent.



## Summary of Final Comments: Electrochemical Energy & Energy Storage: Oxford 25<sup>th</sup>-26<sup>th</sup> June

### What would you say to others about the two days?



### Comments- Individual Cards

- **Very** stimulating and enjoyable workshop in an ideal location, good participants, effective facilitation and ... nice weather!
  - please remove some of the duplication in the penultimate session where groups did similar work
- Intensive 2 days, but very useful and interesting. I have high hopes for a genuine strategic approach to future research funding in Electrochemical energy technologies in the UK
- “Delighted”:-
  - By the way the event was organised and facilitated in an efficient, friendly and skilful way (although see comments below about the process)
  - By the enthusiasm for cross cutting and interdisciplinary research
  - By the sense of collaboration between different research specialisms / communities
- “Disappointed”:-
  - By the absence of policy representatives and industry (only one)
  - Because I felt people were constrained by the clustering and deep dive format – the problem for me was this stopped the following discussion (whole second day) too much, and people didn’t really feel able to start fresh with what they thought were the key research challenges. Too often people felt bound to make generic statements when many challenges are very specific – but also critical
- Interesting, quite hard work, mildly unclear as to what was achieved but think it’s clearer to me.

- Very informative overview of current state and goals of the field; daunting at times in the reach / scope / width of topics / implications to be considered
- Interesting, engaging, efficient!
- Well organised meeting. Would have benefited from the presence of applications/systems engineers (from end users, for example)
- Well organised. Nice location. Timing about right. Beer with dinner please.
- A well organised, efficient event. More information & detail in advance would have helped set the scene.
- Bonkers
- Very interesting event for research community and networking
- Was well structured and facilitation worked well. Maybe could have done the whole thing in a single day/evening.
- Insufficiently focussed on electrochemical energy topics. Insufficiently diverse participants. Not clear (yet) what impact the process will have.
- Useful. Not too large. Disappointing lack of end user participation.
- Found deep dive the most productive session. Felt we lost focus on electrochemical issues on some occasions.
- Not enough time to gather thoughts on specific challenges. Very nice gardens and venue. Hope it will have a positive outcome for UK Energy research.
- Interesting and stimulating
- Lovely garden
- Good! Well organised – a bit too much repetition + endless post-its....!

<b>Summary of comments – variation of positive and negative feedback</b>	
<b>General Comments</b>	
<b>What went well</b>	<b>What could be better</b>
Very stimulating and enjoyable workshop	Too often people felt bound to make generic statements when many challenges are very specific – but also critical
Intensive 2 days, but very useful and interesting. I have high hopes for a genuine strategic approach to future research funding in Electrochemical energy technologies in the UK	Not enough time to gather thoughts on specific challenges.
Interesting, quite hard work, mildly unclear as to what was achieved but think it's clearer to me.	More information & detail in advance would have helped set the scene
Interesting, engaging, efficient!	Maybe could have done the whole thing in a single day/evening.
Well organised meeting.	
Well organised. Timing about right.	
A well organised, efficient event.	
Very interesting event for research community and networking	
Useful. Not too large.	
Interesting and stimulating	
Good! Well organised	



Bonkers	
<b>Participants</b>	
Good participants	Would have benefited from the presence of applications/systems engineers (from end users, for example)
Delighted by the enthusiasm for cross cutting and interdisciplinary research and by the sense of collaboration between different research specialisms / communities	Disappointed by the absence of policy representatives and industry (only one)
	Insufficiently diverse participants.
	Disappointing lack of end user participation.
<b>Venue</b>	
Ideal location	Beer with dinner please.
Nice location.	
Very nice gardens and venue.	
Lovely garden	
<b>Facilitation</b>	
Effective facilitation	Please remove some of the duplication in the penultimate session where groups did similar work
“Delighted”:-By the way the event was organised and facilitated in an efficient, friendly and skilful way (although see comments below about the process)	“Disappointed”:-_Because I felt people were constrained by the clustering and deep dive format – the problem for me was this stopped the following discussion (whole second day) too much, and people didn’t really feel able to start fresh with what they thought were the key research challenges.
Was well structured and facilitation worked well.	– A bit too much repetition + endless post-its...!
Found deep dive the most productive session.	
<b>Outputs</b>	
Very informative overview of current state and goals of the field; daunting at times in the reach / scope / width of topics / implications to be considered	Insufficiently focussed on electrochemical energy topics.
Hope it will have a positive outcome for UK Energy research.	Not clear (yet) what impact the process will have.
	Felt we lost focus on electrochemical issues on some occasions.

### Word Cloud Summary

This is a summary of all the comments; the more often a comment is made the larger it will appear in the Word Cloud. This gives us an overall sense of the feeling as people left the room. At this workshop the words research, organised, interesting, challenges are prominent.

