Approved

Energy Research Partnership
Notes of 26 June 2009 meeting

MEETING DATE: 26 June 2009

LOCATION: 1 Victoria Street, BIS Conference Centre, London

CHAIR: Willy Rickett, DECC

ATTENDEES:

Members:	Peter Bance	Ceres Power
	David Clarke	ETI
	Brian Collins	DfT, BIS, DECC
	David Eyton	BP
	Mike Farley	Doosan Babcock
	Paul Golby	E.ON UK
	Iain Gray	TSB
	Sue Ion	Royal Academy of Engineering
	Mike Kelly	DCLG
	Paul Lewis	Scottish Enterprise
	John Loughhead	UKERC
	Ron Loveland	Welsh Assembly Government
	Martin Nesbit	DECC
	Siobhan Peters	HMT
	Willy Rickett	DECC
	Alison Wall	EPSRC
Secretariat / Analysis Team:	Ian Welch	National Grid
	Farida Isroliwala	DECC
	Richard Heap	ERP Analysis Team
	Jonathan Radcliffe	ERP Analysis Team
	Charlotte Ramsay	ERP Analysis Team
Non - Members:	Rhian Kelly	CBI
	Jeanie Cruickshank	DECC
	Graeme Childe	DECC (2050 Vision team)
	Jo Thorpe	GO-Science
	Graham Tubb	SEEDA
	Carolyn Reeve	BIS
	Michael Rea	Carbon Trust
Apologies/ Not present:	Pam Alexander	SEEDA
	Tom Delay	Carbon Trust
	Turlogh O'Brien	Arup
	Ian Marchant	Scottish and Southern
	Philip Sharman	Alstom
	Graeme Sweeney	Shell
	Joe Greenwell	Premier Automotive Group
	John Beddington	GCSA
	Jonathan Brearley	OCC
	Alistair Buchanan	Ofgem
	Adrian Smith	BIS
	Paul Durrant	DECC, ERP Secretariat

Chair's introduction

Willy noted apologies and also informed members that the co-chairs had received a letter from Prof John Beddington who informed them of his intention to amend his involvement in ERP, but will stay close to developments through departmental CSA's and officials at GO-Science.

Willy thanked Mike Kelly for his contribution to ERP as he standing down as a member, when he finishes as Chief Scientist of DCLG on 31 June.

Willy noted, in response to an action from the meeting in March, that ERP does not fall under the ambit of the Freedom of Information and therefore does not have to respond to requests. This is after taking advice from Imperial College and DECC Legal.

The minutes of 27 March meeting were agreed.

ERP Priorities and Future Work Plan

Richard Heap presented a summary of the discussions the Analysis Team had had with individual Members to cover ERP's work and identifying priorities Comments on ERP's role, membership, and plenary sessions also arose from the meetings.

The main points were:

- Agreement that energy RD&D in the UK would benefit from being given strategic direction, with ERP well placed to fulfil this role, providing an important forum to exchange information, and to provide advice.

- High level attendance was necessary, along with greater member engagement in setting and driving forward the ERP agenda. A review of membership was called for by a majority of members, but there was a divergence of opinion on the ideal composition of the group.

- High level engagement with ministers at meetings was desirable on specific topics. Most felt that the meeting agenda was too full to allow detailed discussion and meetings were too large for open discussion and interaction.

- On the workplan and future work priorities, members felt that the plan proposed was ambitious in relation to the resource available and that there was a need to focus on a few key technologies. There was some indication of priorities, but no clear consensus (Bioenergy, CCS, offshore wind and nuclear topped the list of priorities). A systematic approach to identification of priority technologies was proposed, and discussed as item two on the agenda.

A set of actions to address these points were proposed.

In discussion the following points were made:

ERPs high level remit has provided support and guidance to members on their own strategies in RD&D, members were keen to see the group continuing to have an impact in this way. However, ERP requires focus and balance in its activities so that it can achieve this strategic impact effectively without duplicating the work of others.

With its high level remit, ERP should do work to prioritise *between* key technologies, and identify areas of uncertainty and gaps in the development of the system and innovation needs. It should provide oversight of developments needed on the pathway up to 2050, across the demand and supply side, recognising innovation milestones, as well as technologies that can be deployed now to put us on the path to larger emissions reductions.

ERP can provide a research base for what the key technology options or decision points are, highlighting actions that would close off or pre-empt options. It should stop short of making decisions on which route to take or providing granular detail on technology development. This would support the ERP role as an information sharing and advisory body – supporting government and industry to make choices.

There is a role for ERP in analysis of the supporting "ecosystem" around RD&D, how this landscape is structured across the board and whether it is fit-for-purpose.

Understanding the "value context" for various stakeholders undertaking RD&D support activity is another key contribution ERP could make in this area.

ACTIONS:

- ERP membership review pending arrival of the DECC Chief Scientific Advisor
- Analysis team to trial regular "catch-up" discussions with members between ERP plenaries
- Analysis team to set up post-plenary meeting sessions for detailed discussion of specific topics with members and experts from member organisations (October meeting post-plenary workshop to discuss the current TSB strategy)
- ERP to scope proposal of work to undertake a wholesale review and evaluation of the UK RD&D support landscape

ERP vision for Energy Technologies towards 2050

The DECC Low Carbon Energy Innovation Landscape Review highlighted the need to develop a shared public – private sector vision of the potential technology requirements for a 2050 low carbon society and recommended ERP as a suitable body to conduct this work. A proposal was put to ERP members about developing this shared vision and identifying technology innovation milestones to meet the 2050 targets.

Martin Nesbitt provided a short presentation on the context for this work, identifying the need for an activity to help crystallise the views of ERP members for presentation to ministers. Highlighting the importance of identifying key decision points up to 2050 and identifying the innovation needed to deliver targets and drive down costs. The work would be an essential contribution to a proposed piece of work within DECC to look at the policy requirements for meeting the 2050 targets.

Nick Winser presented a proposal for ERP to carry out this work and how it will be delivered. The outcome would be a shared understanding of what current analysis tells us about the technology development milestones and critical decision points for the likely key components of the energy system to 2050. The timescales for the work will be to develop a preliminary view by mid October 2009, with a full report to members in Jan 2010. The work will draw on the findings from existing scenario and road-mapping work, and will aim to generate a collaborative view across industry and public sector activities.

In discussion the following points were made:

Although ensuring that we are on the right trajectory to meet 2050 targets is important, this should not be done at the exclusion of the short and medium term. The work should include consideration of key milestones and decision points in the short and medium term that will help put us on the right path to 2050.

Developing an informed view of a pipeline of technology developments is essential. There are technologies that can be deployed now that will put us on the right path to 80% reductions in 2050, others that need more effort in demonstration for implementation in the medium term, and those that need R&D effort for eventual deployment close to 2050. The project can help to understand how innovation can help to achieve the 2050 target, but prioritisation of these activities is also important to ensure that we do not lose impetus on technology innovation that will help to meet near term goals.

The work should highlight areas of commonality and areas of agreement on “no-regrets” pathways to 2050. We need to develop an understanding of the points at which we may begin cutting off options; ERP can help to identify where there is consensus or divergence on these points.

Consideration needs to be given to how technologies are developing internationally and how they might diffuse into the UK, or influence policy decisions.

The parallel work on surface transport undertaken by the Clean Transport Group, was noted along with the recent report from the Council for Science and Technology – highlighting links between infrastructures including energy and transport. As was the activity identifying the engineering challenges of the 2050 target undertaken by the Royal Academy of Engineering. The need to maintain a “whole system” approach to the ERP analysis was emphasised.

John Loughhead commented that the UKERC would be willing to offer man-power resource (e.g. short-term secondment into ERP) to support this project, other members also expressed an interest in providing resources to the work.

The approach presented by Nick Winser was endorsed. Many members expressed an interest in participating in a workshop to convey their views and perspectives on the key innovation milestones to 2050. Several felt that this would be an effective way to complete the work in a timely fashion and convey high level views quickly.

ACTIONS:

- Analysis Team to commence work on the project. A first step should be to develop detailed workplan in collaboration with secretariat and members.
- Members to consider contributing resource (e.g. secondment, expert advice etc.) to this project – those with an interest to contact the Analysis Team.

Electricity Infrastructure Technology Report

Ian Welch and Charlotte Ramsay presented the draft Electricity Infrastructure Technology report. The project was initiated at the ERP plenary session in July 2008 following a presentation from Nick Winser (National Grid) and discussion from ERP members on the challenges facing the UK electricity infrastructure out to 2050. The project work was undertaken with input from ERP members: National Grid, E.ON, TSB, ETI and Carbon Trust.

The report identified the high level issues, technical challenges and solutions facing electricity networks in reaching the 80% 2050 target, highlighted gaps in RD&D activity to and identified further effort needed support the development of solutions to the identified technical challenges. The report highlighted gaps in four areas of electricity infrastructure: Energy Storage, High Voltage DC Networks, Smart grids and evaluation of whole system operation. There were a number of points for action around each of these areas; these were discussed in turn:

Energy Storage: The report concluded that there is a technology gap between the network requirements for storage and technology capabilities. There is a need to identify UK specific network applications of storage and then scope the technology gap between present capabilities and required functionality. RD&D activity may then be required to develop appropriate solutions. The following recommendations were put forward for discussion:

1. ERP request that ETI report back to members with outcomes of Energy Storage Technology Scan report (due Q4 2009)
2. ERP then to commission technology workstream on Storage to assess how to bridge the innovation / technology gap (noting TSBs request for greater understanding of the UK supply chain for storage).

The following comments were made:

- ETI board members will be consulted to determine how much analysis can be shared with the ERP group.
- It was suggested that ERP could discuss information sharing and dissemination from other linked organisations
- It was noted that the efficiency and efficacy of all storage solutions for networks should be benchmarked against pumped storage.
- The international dimension in storage solutions may help to fill some of the RD&D gaps and further exploration of international experience may help to identify if and where UK can take part in developing this technology.

High Voltage DC networks and Multi Terminal: The report concluded that demonstration of HVDC technology at scale and in live systems is needed. This may required revised investment and regulatory approaches. Support for large scale network deployment is needed to help mitigate associated risk of live demonstration. The following recommendations were put forward for discussion:

1. ERP request that ETI report back to members with outcomes of scoping studies for on-and off-shore network technologies (expected Q1 2010)
2. Review output from above and assess deployment options for new technology in operational networks
3. ERP to keep watching brief on Ofgem's RPI-X@20 review and the mechanism for supporting network innovation both onshore and offshore

The following comments were made:

- ETI board members will be consulted to determine how much analysis can be shared with the ERP group.
- International dimension on HVDC could be helpful here, although the UK RD&D challenges are fairly targeted on our specific application of HVDC technologies – namely on offshore and sub sea networks.
- The supply chain dimension to the deployment challenge was highlighted – as this niche market for UK HVDC technologies ties us in to a small number of niche manufacturers.

Smart grids: There is confusion around the definition and scope of smart grids (and smart grid technology) for the UK. A common practical vision of the UK smart grid is required to ensure a coordinate approach to roll out. Collaboration between infrastructure providers (e.g. energy, telecoms, transport) is needed to ensure an optimal solution is devised. Then RD&D priorities for smart grid solutions at transmission and distribution level can be assessed. The following recommendations were put forward for discussion:

1. ERP to support the DECC / ENSG activity generating a common vision and roadmap for the UK smart grid
2. ERP input sought on the need for additional industry leadership in this area to complement the DECC activity
3. Coordination between infrastructure providers will be required to enable sharing of solutions and optimal smart grid technologies, including the adoption of common standards.

The following comments were made:

- The need for standardization of approach was made (this was also highlighted for storage technologies). We need to ensure that we are taking a standard approach both internationally and across infrastructure providers where there is interaction.
- It was noted that smart grids are just one element of smart infrastructure, and highlighting the interdependencies between this sector and others is important. Work commissioned (by DfT) to review the interdependencies between Utilities and infrastructure providers (including energy) is due to report back soon.
- Research councils are scoping a new research area to look into the resilience of the system as a whole, recognizing these interdependencies.

Evaluation of whole system operation: There is a need for early stage R&D effort to develop new common tools for system modelling that are capable of representing the operation characteristics of the low carbon energy system in 2050 – for use across the sector. The following recommendation was made:

1. To develop a comprehensive modelling approach, capable of representing all the various aspects of the 2050 system would require considerable collaboration between network companies, industry and academia. Further discussion is required to establish if there is a case for funding this activity and (if yes) where this funding should come from (e.g. from Research Councils, Government / DECC input, industry sponsorship etc).

The following comments were made:

- There is a paucity of systems modelling, particularly to take in to account the interactions and interdependencies that exist between sectors (e.g. energy, telecoms, transport etc).

ACTION:

- Analysis team to make amendments to the report and recommendations in light of members comments. A final draft will be put to members for approval.
- Report to be published on ERP website for comment from external stakeholders
- Dissemination of report/actions/recommendations to external stakeholders through e.g:
    - UKERC National Energy Researchers Network
    - Industry working groups (ENSG etc.)
    - Other trade bodies (ENA etc.)

Any Other Business:

Mike Farley welcomed the Government's decision to support four CCS demonstrations, which Willy noted had been supported by the timely discussions at ERP in March. Mike proposed that the ERP should respond on the recent CCS consultation issued by DECC.

ACTION:

- Analysis Team, Mike Farley and other interested members to draft ERP response to recent CCS consultation (deadline for responses September '09)

Chair's Closing Remarks

Willy reminded members about the meeting between ERP members and the new Energy Innovation Minister David Kidney that has been scheduled for 15th July 3-4 pm at the DECC offices. Responses to Deborah Wade ASAP.

It was noted that the EPSRC and STFC, working as part of the Research Councils' Energy Programme, are developing a 20 year-plus vision for UK fusion research in the international context. This will include magnetic confinement fusion and inertial confinement fusion and lead to a revised strategy for fusion for each of the Research Councils. A small group to be chaired by Professor Keith Burnett, Vice Chancellor of the University of Sheffield, will help the research Councils in this work. The Research Councils are keen to engage with ERP members, both in developing the 20 year vision and in shaping our overall strategy. Any members with an interest in getting involved should contact Alison Wall

Willy thanked members for their participation and reminded them the date of the next meeting was 2nd October 2009, venue TBA. He also stressed that both he and Nick Winser (as co-chairs of ERP) that attendance at meetings should retain its character as a high-level discussion forum, so only in exceptional circumstances will alternates be appropriate.