

Energy Research Partnership Notes of 14 January 2009 meeting



MEETING DATE: 14 January 2009

LOCATION: BERR Conference Centre, London

CHAIR: Willy Rickett - DECC

ATTENDEES:

Members:

David Clarke	ETI
Tom Delay	Carbon Trust
Mike Farley	Doosan Babcock
Iain Gray	TSB
Joe Greenwell	Premier Automotive Group
John Loughhead	UKERC
Ron Loveland	Welsh Assembly Government
Ian Marchant	SSE
Mike Kelly	DCLG
Graeme Sweeney	Shell
Nick Winser	National Grid
Paul Golby	E.ON UK
Peter Bance	Ceres Power
Alistair Buchanan	Ofgem
Turlogh O'Brien	Arup
Sue Ion	Royal Academy of Engineering

Secretariat	Ian Welch	National Grid
/ Analysis	Paul Durrant	DECC
Team:	Jonathan Dinmore	GO-Science
	Farida Isroliwala	DECC
	Jonathan Radcliffe	ERP Analysis Team
	Charlotte Ramsay	ERP Analysis Team
	Richard Heap	ERP Analysis Team
	Deborah Wade	ERP Analysis Team

Non -	Jeanie Cruickshank	DECC
Members:	Chris Barton	DECC
	Philip Sharman	Alstom
	Graham Tubb	SEEDA
	Murray Birt	CBI
	Bob Sorrell	BP
	Carolyn Reeve	DIUS
	Rachel Bishop	EPSRC

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Bronwen Northmore DECC
Kathryn Newell DECC
Richard Ploszek RAE

**Apologies/
Not present:**

Pam Alexander SEEDA
John Beddington GCSA
Alison Wall EPSRC
Brian Collins DfT
David Eyton BP
Siobhan Peters HMT
Rebecca Lawrence HMT
Nick Otter ALSTOM
Paul Lewis Scottish Enterprise
Jonathan Brearley Office of Climate Change

Chair's introduction

Willy Rickett thanked Paul Golby as the outgoing industry co-chair and Mike Colechin for his strong contribution to the Secretariat. He welcomed Nick Winsor as new industry co-chair and confirmed the new additions to the Secretariat; Paul Durrant for DECC and Ian Welch for National Grid. Willy also thanked Nick Otter *in absentia* for his contribution to ERP (Nick has taken up a new post in Australia).

The co-chairs set out the following criteria against which ERP membership would be reviewed later in the year.

- obtaining a balance between public and private sector members
- ensuring a fully representative range of organisations across the energy spectrum landscape, taking account of likely influence and leadership role
- setting a level of seniority (ie CEO, Group Director, Director, etc)
- setting a target on number of members

Willy informed members that the Carbon Trust/Technology Strategy Board/ETI joint strategy will be presented at the March 2009 plenary.

Members were reminded of the ETI/ERP/RAEng Heat Workshop taking place on 22 January 2009.

Willy passed on Jeanie Cruickshank's thanks to members for their time in talking to her about ERP and energy innovation landscape issues. This was a follow up from the October meeting. Members who had not had a chance to discuss this but would like to do so were asked to contact Jeanie.

Willy also presented a short update on the formation of the new Department for Energy and Climate Change (DECC). DECC is expected to take up residence in

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Whitehall Place at a date tbc in the summer and an organogram of the new structure will be informed to members.

The Minutes of the ERP 3October meeting were agreed.

ACTION:

Secretariat Circulate DECC organogram

ERP Members to contact Jeanie Cruickshank if they would like to discuss ERP and energy innovation landscape issues.

Carbon Capture and Storage

Willy Rickett called on Graeme Sweeney (who is also Chair of European Technology Platform for Zero Emission Fossil Fuel Power Plants (ZEP)) to present the opening discussion on the challenges that CCS technologies will face in the drive to achieve commercial deployment by 2020.

The following introductory points were made:

- There had been a good outcome for CCS from the European Climate Change and Energy Package agreed in December 2008, with support being secured for CCS demonstration projects. The UK had played a key role in influencing this outcome. However there was a concern that the process for allocating this support might be stifled by bureaucracy, i.e. the task was not yet complete.
- The ETP Zero Emissions Production conference had provided valuable input.
- The European process would need to define the criteria for selection of demonstrators and avoid focussing on highest cost efficiency projects (to minimise the risk of identical projects). Overall the programme should support a portfolio of projects covering a range of technologies, transport and storage options.
- We need demonstrators to enable us to validate key learning points and consequently to move down the overall cost curve. Furthermore, whilst everyone in the EU will have access to the results of all demonstration activity stemming from the new EU funding mechanism, there would be no substitute for the experience and insight that would be gained through direct participation. The UK should look to increase its readiness and qualification for an allocation of more than just a geo-politically even split of projects.

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- While a geographically clustered approach would not sit comfortably with the EU ideology of a politically and technologically dispersed portfolio, modelling has shown that clustering of projects will decrease the time to commercial deployment by approximately 5 years, as against a even spread approach to project allocation, and costs were also shown to be reduced by up to 50%.
- It was emphasised that while storage and transportation were not technically challenging, permitting/licensing and gaining public acceptance of the safety of storage and pipelines might cause delays. These areas need to be addressed urgently.

WR explained that the new EU funding mechanism and the need to respond to the CCC report, which had set a public expectation that new coal plant would be fitted with CCS by mid 2020, had led to a re-examination of CCS policy. It is now recognised that reliance on cost of carbon may not be sufficient, nor may reliance on a single demonstrator, requiring us to position ourselves in a European context. It was expected that during 2009 Q1 a developed strategy consultation would be issued.

In discussion the following points were made:

It was accepted that in earlier years with a nationalised energy industry a centralised planning approach would have been adopted to maximise UK benefit.

There was a view that we had to choose one or possibly two CCS 'clusters' with 3 or 4 capture projects, one transport network and a couple of storage options – staggering the capture projects by ~2 years would maximise learning and economic gain. ERP could play a role by identifying and understanding the engineering gaps to prompt the appropriate actions so that we can start to build something meaningful quickly. ERP could also provide analysis of potential geographic locations of clusters.

Funding continued to be a challenge but it was not just a commercial decision on individual projects – more overall direction and clarity would be needed – eg if it were for companies to decide what to do individually then we would not obtain a coherent programme in the UK.

From a research perspective funding decisions are imminent and these need to be guided by policy decisions. From a technology perspective the future challenges lie in deriving economies of scale rather than fundamental science of CCS. It was also questioned whether there is a more economic use for CO₂ rather than simply long term storage.

In conclusion some members of the ERP expressed the view that there was a case for central direction with a need to select one central UK option or "cluster",

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which had to be looked at in conjunction with the economics as well as meeting the EU ambition of more than one demonstrator. ERP should review the component CCS technologies from the opening presentation with focus on those areas “not validated” or “partially validated” and assess what needed to be done to bridge the gaps.

Post Meeting Note the Advisory Committee on Carbon Abatement Technologies (ACCAT) is shortly to issue guidance on CCS demonstrators & incentives based on IEA scenarios to meet emissions 2020 targets.

ACTIONS:

- **Analysis Team** to review the component CCS technologies with focus on those areas “not validated” or “partially validated” and assess what needed to be done to bridge the gaps.
- **Post Meeting Action - Secretariat** to circulate the revised presentation by Mike Farley to members for review

ERP Analysis Team

The members of the newly expanded Analysis Team introduced themselves and presented the framework for ERP’s activities and the proposed 2009 workplan. They highlighted that the work programme is a development of the 2008 plan, with additions from members through subsequent plenary meetings and discussions. Seven project areas were identified for activity (see the meeting papers for a full description of the proposed projects).

#	Project Name	Project Description
1	Strategic Direction for the UK Energy Innovation System	<i>An ongoing project developing and communicating the ERP strategic vision for the UKs energy innovation strategy</i>
2	International Engagement	<i>An ongoing project to position UK activities in the international arena and ensure that the UK can benefit from the added value of international activities</i>
3	Energy Innovation Landscape	<i>Developing the ERPs energy technologies matrix to provide detailed analysis of capabilities of key technologies and the funding and support mechanisms available to them.</i>
4	Energy Innovation Funding in the Private Sector	<i>Characterisation of the UK private sector contribution to energy innovation funding and activity</i>
5	Energy Technology Scenarios	<i>Review of energy technology scenarios for 2050 to provide context for analysis of the energy technology matrix</i>

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6	Demonstration and deployment platforms	<i>Scoping study to review the status of development and deployment platforms and assess the need for an in depth study</i>
7	Audit of Energy Innovation in Other Countries	<i>Review of approaches to innovation funding and support mechanisms outside the UK</i>

Members noted that care was needed on scenario work, as other organisations have done/are also working on this such as the Committee for Climate Change (CCC), ETI etc. ETI for example have been developing models (mainly economic) on low carbon technology deployment to 2050, which it will share with members.. In addition the RAEng is looking at scenarios to bridge the gap between the RCEP's 60% target (recommended in 2000) and the new 80% CO₂ reduction target for 2050, and has asked to work in collaboration with ERP commencing with a facilitated workshop on 4/5 March. ERP should also take care not to lose clarity on the international position (not just Europe) ie what countries are doing in each part of the landscape and our ability to learn from or trade with them.

Work on the energy innovation landscape (project 3) was identified as an important contribution, but members noted that the proposed coverage of technologies should be reviewed and that the team should focus in key areas only. Revisiting technologies if necessary.

Accessibility of the output from the ERP was highlighted as a key issue that the revised workplan should address. Much of the existing work seeks to map a complex picture that is difficult for an outside audience to digest. Additional effort is required to interpret this complexity and present accessible outputs.

A general comment was made about the tendency of industry to be more supply-side focussed and ERP should continue to provide balance by timetabling dedicated consideration to barriers and opportunities around reducing energy demand.

It was concluded that it is important to maintain context to Analysis Teams' work to ensure it is relevant to members and with this, prioritisation of the proposed projects is necessary. Ideally an ERP sponsor would be required for each workstream. Jeanie Cruickshank and Ian Welch would act on behalf of the co-chairs to provide coordination and direction.

Members were reminded of the intention to set up a Remuneration Committee to advise on annual Pay & Remuneration of the Analysis Team.

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ACTIONS:

- **ERP members** to submit any additional comments on the work plan to the Analysis Team by **10th February 2009**
- **Co-Chairs** via Jeanie Cruickshank/Paul Durrant and Ian Welch, **and any additional ERP members** to work with the Analysis Team to manage and prioritise the work plan
- **ERP members** to volunteer to act as workstream sponsors (on finalisation of the 2009 workplan).
- **ERP nominations** required to advise on Analysis Team Pay and Remuneration
 - Turlough O'Brien (confirmed)
 - Alison Wall (confirmed)

Supergen Research Councils Energy Programme

Willy invited Rachel Bishop to outline the proposed Supergen programme. Rachel advised that, as the initial programme had been established in two tranches and due to complete in 2011 & 2013 respectively, it was now time to consult and agree what would be required to follow on. In the 2008-2011 priorities some £319M planned investment was taking place mostly at UK universities across the full spectrum of energy research. Key achievements had included retaining a nuclear technology option, establishing UKERC, the ETI project on marine & wind energy and strategic partnerships with industry.

It was proposed to hold a Supergen III consultation during 2009 commencing on 4 February with a scoping workshop, followed by consultation with stakeholders and an international input.

The questions to be answered are:

- How can SUPERGEN deliver real innovation in the key strategic areas
 - What research themes should SUPERGEN cover? How should these be focussed? How speculative should the research be?
 - What structure is best to deliver this?
 - How can it best interface with work at higher TRL levels
- What is the value associated with the SUPERGEN 'brand'?
- What elements should be retained from the current SUPERGEN model?
- Who else should we include in our consultation?
- Any ideas of international models we should investigate?

An essential part of the programme had been the establishment of Consortia and it was agreed that the learning points from these would be fed into the consultation.

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Michael Kelly proposed that the ERP could make a direct contribution into the Supergen consultation process to provide support and reinforce the benefits of Supergen activities to date. It was suggested that a sub-group of interested members could represent ERP at the forthcoming Supergen review. Members were asked to volunteer for such an activity. Ian Marchant, Michael Kelly, Sue Ion, John Loughhead & Turlough O'Brien were all interested in taking part.

ACTIONS:

- **ERP Members** to feedback views on the above questions
- **Other ERP Members** interested in representing the ERP in the Supergen consultation should contact the Secretariat
- **ERP Analysis Team** to provide a focus for ERP response to Supergen consultation.

After meeting note: EPSRC will liaise directly with the ERP analysis team and ERP secretariat to agree an appropriate mechanism for ERP to input to the review process

Lord Hunt

Willy introduced Lord Hunt and welcomed him to the meeting. Lord Hunt commented on his new role in as a government minister, his strong interest in energy innovation and research, and how he hoped that interaction with ERP could inform him in his role in policy making in the energy sector.

Nick Winser outlined the benefit obtained through the public private partnership and how visionary leadership was required to steer us through the difficult route ahead. A key role is to assess the technological challenges, to assess where the pressure points occur and thereby inform policy and action.

Sue Ion outlined the work ERP had undertaken on skills and how UK universities are managing attracting candidates, albeit many from overseas. The meeting agreed that a key challenge remained with schools and ensuring young people take up the relevant science subjects, the low carbon/green agenda was beginning to help in this respect. Also a consistent policy (eg on nuclear, CCS, renewables) would enable employees to sell a long term and secure future. It was also believed that there was enormous potential to be gained for a concerted single effort which companies / research bodies / professional bodies could engage with on STEM promotion in schools and colleges.

The outcome of the earlier CCS discussion was reviewed by Graeme Sweeney and the key challenges outlined – ie (i) the need to ensure UK takes a lead in demonstrations via a cluster approach and with an integrated position taken to

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drive down costs, (ii) the importance of gaining permits for new infrastructure with public acceptance being the likely single greatest delay factor and (iii) the importance of the UK Government taking the lead role in deciding which aspects of CCS the UK is best placed to develop, and with this decide where (geographically) the demonstration (or cluster projects) might be located.

The studies ERP had undertaken on demand side were outlined by Mike Kelly who described what had been achieved to date in insulating our housing fabric and how this sits alongside the enormous challenges ahead – eg 80% of existing buildings will be here in 2050 and existing loft/cavity insulation/double glazing had made only a comparatively small impact on CO₂ emission reductions, and in some cases poor installation meant that they were detrimental. Much work was needed to establish a retrofit market and the public sector could be targeting key sectors such as educational establishments where new techniques could be introduced. We also need to shape public acceptance and perceptions as many emissions reductions technologies provided no new cost incentive or functionality to the user.

Post Meeting Note. Lord Hunt plans to write to Lord Drayson, given the latter's role on the ED (SI) Committee, highlighting some of the issues raised and comments made by ERP members.

ACTIONS:

- **Co Chairs:** to consider further Ministerial involvement with ERP

AOB / Closing Remarks

Members were reminded of HMG's forthcoming Heat and Energy Efficiency Consultation due to be launched soon. .

ACTIONS:

ERP members: to provide the Analysis Team with contacts to use when developing the ERP response to HMG's heat and energy efficiency consultation.

Date of next meeting Thursday 27 March 2009