Energy Research Partnership

Notes of July 4th 2008 meeting

MEETING DATE: 4th July 2008

LOCATION: IMechE, 1 Birdcage Walk, London

CHAIR: Paul Golby, E.ON

ATTENDEES:

Members:	Willy Rickett	BERR & Co Chair
	Peter Bance	Ceres Power
	Alistair Buchanan	Ofgem
	David Clarke	ETI
	Prof Brian Collins	DfT
	Tom Delay	Carbon Trust
	David Eyton	BP
	Mike Farley	Doosan Babcock
	Iain Gray	TSB
	Joe Greenwell	Premier Automotive Group
	Alice Hume	CBI
	Sue Ion	Royal Academy of Engineering
	Prof Michael Kelly	DCLG
	Paul Lewis	Scottish Enterprise
	John Loughhead	UKERC
	Ron Loveland	WAG
	Ian Marchant	SSE
	Martin Nesbitt	Defra
	Turlogh O'Brien	Arup
	Siobhan Peters	HMT
	Graeme Sweeney	Shell
	Simon Virley	BERR
	Alison Wall	EPSRC
	Nick Winser	National Grid
Secretariat / Analysis Team:	Mike Colechin,	E.ON UK
	Jonathan Dinmore	GO-Science
	Nick Grout	GO-Science
	Kathryn Newell,	BERR
	Jonathan Radcliffe	ERP Analysis Team
	Eleanor Jubb	ERP Analysis Team
Non - Members:	Jeanie Cruickshank	BERR
	Stephen Muers	OCC
	Margaret Porteous	UKTI
	Graham Tubb	SEEDA

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Apologies/ Not present:	Pam Alexander	SEEDA
	Prof John Beddington	GCSA
	Jonathan Brearley	OCC
	Rebecca Lawrence	HMT
	Geoff Norris	No.10 Policy Unit
	Nick Otter	Alstom

Chair's introduction

Paul Golby welcomed David Eyton (BP) to his first ERP Meeting, noted apologies and welcomed those standing in as alternates.

Minutes of 4th April meeting were agreed.

Carbon Trust / Technology Strategy Board / Energy Technologies Institute

Paul Golby introduced Tom Delay who provided a short update presentation on the work that he, Iain Gray and David Clarke have been doing on joint strategy development and co-ordination of their respective organisations' activities.

Regular contact and meetings have been established between the three Chief Executives and this has led to the development of three workstreams supporting their co-ordination activity:

- ***Information Sharing:*** including 3-way knowledge sharing events on topics of mutual interest, shared attendance at working groups, joint review of strategy/activity pipelines, and extension of information sharing to other key players.

- ***Activity Mapping by Technology Area:*** including case studies mapping combined activities in key sectors (e.g. transport, buildings)

- ***Collaborative Communications:*** agreeing common approaches to external communications and cross-signposting of activities

Examples were provided of how each of these workstreams were already having a positive impact on the relationships between the three organisations, with emphasis on the developing strategy for joint external communications.

They are planning to issue a joint press release before the next ERP Meeting, which would seek to articulate the distinctive and complementary features of the three organisations. Together with other relevant organisations (eg Research Councils and Environmental Transformation Fund), they feel that they cover the energy innovation "space" well. Any communication activity would seek to establish the key focus for each within the space, i.e.:

- ***Carbon Trust*** - carbon saving potential
- ***Technology Strategy Board*** - economic benefit for UK
- ***Energy Technologies Institute*** - route to market

The meeting recognised the work that has already been undertaken in ensuring a joined up strategic approach by the three organisations in their dealings with one another and with other relevant organisations in the energy innovation chain. The importance of providing clarity for all those participating in this landscape was also emphasised.

Questions focussed around the level of detail in the "position statement" they are developing, and the parallel activity within BERR to develop a high level strategic view of energy innovation processes within the UK. The latter is currently aimed at providing an effective context for the role of the Environmental Transformation Fund.

The development of a joint strategy is currently focussed on establishing a "common view" of the issues to be addressed. Alongside this, each organisation is currently building up its own internal strategy in response to this new landscape. In particular the ETI, as the newest organisation in the group, is working hard to clarify its technology strategy with the aim of launching this in the public domain early in 2009.

These independent strategies will inform the on-going discussions between the three organisations, and a series of case studies will be used to establish how they can best interrelate over specific activities.

In the short-term there will be a need for close co-ordination of the various programme calls that the three organisations are planning for the autumn.

Based on other current developments in the sector, the meeting emphasised the level of urgency associated with establishing a joint strategy which prioritises the funding that will be provided to different technologies and provides clarity for those engaged with applying for such funding. The need to ensure the long-term sustainability of any solutions developed from this process was also emphasised.

It was also felt that this strategy document should address the question "is it appropriate to have three bodies working on these issues, or is there a better way of providing the series of complementary activities that are required?" History, and the position of each organisation in a wider economic landscape were also seen as important considerations here. For example, the Technology Strategy Board has a much wider remit than just energy technologies, they also have different criteria for support.

Emphasis was placed on the need to identify gaps in the existing arrangements, through consultation with all relevant stakeholders, and to establish whether the current arrangements are fit for purpose. Some responsibility for this consultation would be taken by BERR as part of their on-going co-ordination activities, and members were requested to provide views on these issues to Jeanie Cruickshank.

It was recognised that the answers to some of these questions will not be delivered quickly. However, the meeting was keen to understand the process by which they would be delivered, and the three Chief Executives agreed to provide a detailed plan for joint strategy development to the next ERP meeting.

ACTIONS:

- **BERR** to develop high level view of the independent roles for each of the players in the energy innovation space.

- **Carbon Trust / Technology Strategy Board / ETI** to road map current industry energy innovation activities and identify their individual roles within this landscape.

- **Carbon Trust / Technology Strategy Board / ETI** to show roadmap and plan for common strategy development to the next ERP meeting.

- **Jeanie Cruickshank (BERR)** to act as "conduit" for the views of **ERP Members** on these issues.

UK Engagement in International Energy Research and Innovation

Paul Golby introduced **Margaret Porteous (Head of Energy Team, UKTI),** who provided a key-note address on 'An International Marketing Strategy for the UK's Energy Business'.

She identified "energy" as one of five key strategic focus areas for UKTI, noting that compared to other international players the UK is not seen as technically advanced or innovative. Consequently, UKTI is adopting a

marketing led approach to address this image which is seeking to provide clear differentiation for energy activities in the UK. This strategy is looking for a quick win, in which context Brazil is seen as a key target.

To support the work they have established an Energy Board which includes representatives from ERP member organisations.

The performance metrics they are using to assess the effectiveness of the initiative currently focus on revenue increase, although, given the concerns that have driven the development of the strategy, they are seeking to add reputational metrics.

Following Margaret's introduction Jeanie Cruickshank (BERR), was invited to open the discussion, referring to the paper submitted to the meeting.

She did so by noting that the launch of initiatives such as the IEA perspectives document and the EU SET Plan make this a good time for ERP to consider international energy innovation issues. With the range of initiatives that have been established, the key issue for HMG is identifying how to prioritise the opportunities for international engagement alongside domestic initiatives.

Given the need for a marked increase in the scale of energy innovation, there is significant potential for international collaboration to provide gearing for UK investments. However, there are also concerns that these benefits can be reduced by the complexity and levels of bureaucracy involved. Consequently, HMG is supportive of the EU initiatives that are seeking to make funding more accessible.

CCS and marine technologies are seen as potential key "quick wins" for UK in terms of international collaboration. However, effective processes need to be established to fully realise this potential.

Commenting on behalf of the OCC's Global Technology Project, Stephen Muers (OCC) noted that there is a need to establish effective international policy instruments to drive such collaboration, but that the activity itself will have to be driven by the private sector. To this end, there is a need to establish a clear understanding of the current extent of private sector initiatives in this area.

He added that the role for the public sector will be in overcoming barriers, ensuring opportunities and enabling R&D activities with appropriate linkages to other relevant international activity. The public sector will also have a key role in overcoming the challenges in developing countries. He thought that work by ERP in this area, as described in the paper, would be valuable.

Comments on the presentation included:

- There is a clear need to describe and understand the current international landscape and agenda with regard to energy innovation, including fiscal policy, and levels of public sector funding and private sector investment. Brian Collins explained that such an exercise is taking place nationally on transport, and he would be happy to help with the project.

- It was noted that the focus for UKTI was presented as inward investment and export, suggesting note should be taken of the needs and expectations of private sector participants in these activities.

- Recognition that this landscape is dynamic (eg MoU with China on Sustainable Cities, the European Institute of Innovation and Technology, etc). There is a need for an assessment of the latest opportunities to allow the UK to "play to its strengths".
- Concerns were raised over the role for the ERP, emphasising the risks of expanding the ERP's remit too far and reducing its effectiveness, and noting that the UK shouldn't be seeking to run the whole system.

- A key "signposting" role was identified for the ERP.

In conclusion, Paul Golby noted the challenges that had been identified, the need to understand the levels of current UK participation in international collaboration and any currently developing initiatives, specifically to establish what the role for ERP could be in ensuring effective UK engagement. To facilitate this Nick Otter would be asked to continue with the proposed work with the specific remit of identifying where ERP could add value.

ACTIONS:

- **Nick Otter** should continue to work with the Analysis Team and report back to the October meeting on current UK engagement with the international energy innovation landscape. This report should specifically identify where further activity by the ERP could add value.

<u>Energy Networks Infrastructure Challenge</u>

Paul Golby introduced Nick Winser (National Grid), who gave a short presentation on the implications for the UK's energy transmission infrastructure of a significant increase in renewable generation and changes in demand-side profile etc.

His presentation emphasised the urgency of the issues facing National Grid. Even with current proposed planning reforms, their analysis suggests that any major infrastructure project is likely to take 60 months to deliver. This means that decisions on system capacity improvements and the technologies to be used to address these need to be made very soon if the necessary infrastructure is to be in place to support the anticipated deployment of renewable generating technologies.

National Grid have looked at the implications of a "business as usual" scenario for 2020, which includes some positive assumptions about demand reductions but wouldn't achieve current CO_2 reduction targets for this period.

To bound the potential range of outcomes from an electricity transmission perspective, they have developed two further scenarios (low carbon electricity and low carbon energy) that would achieve the current targets.

The second of these scenarios seeks to address question "what might be the minimum we would need to do with the electricity transmission infrastructure if society was to become fully engaged in the low carbon energy issue" and they expect this to dominate in the longer term (post 2020). In the short (up to 2020) they expect the "low carbon electricity" scenario to dominate, not because of a lack of will but because the "low carbon energy" scenario would need wide scale mobilisation of the population to deliver the huge volume of participation required.

The "low carbon electricity" scenario will require the development of a larger transmission infrastructure but also the rationing of access to this infrastructure.

In raising these issues National Grid are seeking to "socialise" their analysis and to gather views on the range of solutions that are available and the R&D needed to support the development and deployment of these.

Comments on the presentation included:

- Recognition of the size of challenge highlighted by the presentation, and a call for ERP to focus on how technology can be used to address the issues that the analysis highlights rather than getting too exercised by the accuracy of the scenario predictions.

- The scarcest resource was identified as the "electricity pylon". How can we improve this fundamental element of the infrastructure and increased the capacity of the existing system? There is the potential for 2-5% increase in capacity through better management. However, National Grid

are already deploying the best conductor available and don't expect imminent "leaps" with conductor technology.

- National Grid's sister project on smart grids includes real-time, micro-second optimisation of grid dynamic stability. Takes into account some of the issues around intermittency of renewable energy sources. However, these solutions are a long way from the market, particularly because the criticality of the system means that any changes need to be proven to be extremely robust – is this a role for ETI?

- Questions were raised around the resilience of system architecture to extreme weather, since renewal of the system provides an opportunity to address these issues too. National Grid are looking at these issues but will revisit whether this should be done in an integrated way.

- Energy storage is a major issue requiring careful optimisation e.g. mid-Wales has a greater potential peak renewable supplies than can be afforded to connect, making local storage an effective solution. Domestic storage is also an option, although with significant implications for local distribution infrastructure.

- Need to ensure that the right supporting research is being done. It is reassuring to see similarities between the RES scenarios and those developed by National Grid, and BERR has set up an Electricity Networks Steering Group to assist in further directing these activities.

- An option for infrastructure development is the use of undersea cables. This doesn't present any major technical challenges, but in current scenarios it has only been considered for limited areas of coastline to overcome on-shore bottlenecks. The meeting suggested the potential for longer routes to open up other generating options (nuclear on the west coast, offshore wind on the east coast). The biggest challenge is seen as the mobilisation of the supply chain for these generating options to be realised. National Grid won't invest in infrastructure unless they have high levels of confidence in the proposed supply models.

Nick Winser to set up ERP working group to critique technical issues and priorities – requested that those who wish to be involved e-mail him.

ACTIONS:

- **Nick Winser** to set up a sub-group to critique technical issues and priorities for the transmissions and distribution infrastructure. He would welcome volunteers to work with him on this.

AOB/Closing Remarks

Paul Golby highlighted a number of the papers that had been circulated prior to the meeting, in particular:

- An addendum to the ERP Consortium Agreement listing textual corrections.

- A request for views on potential future agenda items.

- Analysis Team Update – emphasising on-going efforts to recruit a Team Director and reiterating the request for members to support this initiative.

- **ACTION: Industry Members** were requested to send their nominations for Paul Golby's replacement as industry Co-Chair to Willy Rickett and Paul Golby by Friday 1 August 2008, noting the ***expectation that the nominee would also provide resourcing for the Secretariat function.***

- Graeme Sweeney has agreed to reconvene the sub-group that delivered ERP's previous input to the Renewable Energy Strategy Consultation process. He will be seeking support from Members in developing an ERP response to the Consultation (formally published on 26 June) focussing on innovation issues. The intention would be to ensure that this is complementary to responses from Members' own organisations.
- The meeting agreed that ERP should also seek to provide similar responses on the recently published CCS Consultation and proposed future consultations on heat and energy efficiency.
- **ACTION:** Volunteers who wish to be involved in the delivery of these consultation responses should contact the Analysis Team.
- John Loughhead will be sitting on the European Energy Research Alliance (EERA) Working Group for the SET-Plan, Jonathan Radcliffe from the Analysis Team will act as his 'personal representative'.

ERP Secretariat
July 2008