

**MEETING DATE:** 7<sup>th</sup> July 2010

**LOCATION:** Westminster Conference Centre, 1 Victoria St, London

**ATTENDEES:**

**Chair:**

David MacKay                      DECC

**Members:**

Peter Bance	Ceres Power
David Clarke	ETI
Brian Collins	DfT
Tom Delay	Carbon Trust
Mike Farley	Doosan Power Systems
Sue Ion	Royal Academy of Engineering
Paul Lewis	Scottish Enterprise
John Loughhead	UKERC
Ron Loveland	Welsh Assembly Government
Ian Marchant	Scottish and Southern Energy
John Miles	Arup
Philip Sharman	Alstom Power
Graeme Sweeney	Shell
Alison Wall	EPSRC
Jeremy Watson	Communities & Local Government
Nick Winser	National Grid

**Non-Members:**

Rosie Albinson	BP
Sue Armfield	BIS
Jonathan Brearley	DECC
Mike Colechin	E-ON
Mark Cox	Ofgem
Rhian Kelly	CBI
Neil Morgan	TSB
Graham Tubb	SEEDA

**Secretariat /Analysis Team:**

Ian Welch	National Grid
Farida Isroliwala	DECC
Sarah Scrase-Field	DECC
Richard Heap	ERP Analysis Team
Jonathan Radcliffe	ERP Analysis Team
Mark Workman	ERP Analysis Team

**Apologies/Not present:**

Pam Alexander	SEEDA
Neil Bentley	CBI
Alistair Buchanan	Ofgem
David Eyton	BP
Paul Golby	E-ON
Iain Gray	TSB
Adrian Smith	BIS

## **1 Chair's introduction**

David MacKay welcomed the members to the meeting, noted the apologies and welcomed the alternates deputising for the delegates who were unable to attend.

[Post-meeting note: Members are asked to approve draft April minutes by correspondence.]

David congratulated Sue Ion for being awarded the Duncan Davies Medal by the Royal Society.

He encouraged members to give any comments on the project updates paper to the ERP team after the meeting.

## **2 Revised Report on nuclear fission – Sue Ion / Richard Heap**

Sue Ion thanked members who commented back to her and Richard Heap following the presentation of the report at the plenary meeting in April. She also thanked Richard Heap who worked with her on the report, acknowledging the great job he had done on it reflecting the situation as it is, and putting together the inputs and comments that everybody made back.

Sue made the following points on the revised report:

- ERP had agreed at the last meeting that the idea of a roadmap had to be developed and the vision needed to go beyond the current new build programme. The time lines in this paper are optimistic, delays on planning or licensing would cause these dates to slip.
- Industrial policy as well as roadmaps will be important. Power stations are big assets that require a lot of thought in terms of capital investments and to sustain their operations during their conceivable lifetime, which is likely to be longer than the organisations which invested in them. Such investment needs certainty, but since the plenary meeting in April, the Government loan to Sheffield Forgemasters has been withdrawn.
- Sue noted the importance of social and environmental implications, even though it was not the ERP task to do the analysis; the report highlights the fact that a comprehensive analysis associated to the roadmap is required.
- The cost for the R&D has not been decided because the roadmap is needed in order to do that, but the key issues have been captured.
- The National Nuclear Centre of Excellence (NCEE) should play a co-ordinating role as far as road maps are concerned; although there is uncertainty as to whether the NNCE will continue. Therefore, the roadmap should be owned by DECC and in the absence of other bodies it should be DECC's task to coordinate it. The uncertainties still exist and it is important to understand who is going to take on this role.
- ERP's role should be that of oversight, making sure that nuclear issues are considered in the context of the general energy system.

### ***Discussion***

David MacKay thanked Sue and asked the members to discuss and agree the report. The following points were made:

- Modular reactors were not explicitly covered in the report. High and very-high temperature reactors, which are similar in size but still in development, were. The problem with small to medium-sized reactors is that they are much more expensive to operate compared to the bigger ones, though the US is looking at them from an

industrial policy stand point. The smaller 600MW plants are easier to connect to the grid with consent for high capacity power lines proving difficult. Looking at the trade-offs between size and cost would be interesting. However, nobody has designed or built such a reactor, and it is difficult to see where they would sit. There has been no investment for these kind of projects in the UK.

- It looks like tough choices are not being made with nuclear in the UK. Third generation reactors are probably going to be built by foreign companies using foreign technologies, and it's unlikely that the UK will be able to change this situation. Research and development in the UK should focus on specific areas such as fuel cycle and reprocessing, recognizing the reality that exists at the moment and build up on that.
- Though the current UK policy is not to reprocess fuel, ERP should feel free to propose changes to policy.
- The report should acknowledge the scale of nuclear deployment set out in the latest IEA Energy Technology Perspectives report.
- UK should ensure it is on the appropriate international bodies, such as the Generation IV Forum (GIF). There is a substantial commercial opportunity for the UK in development of Generation IV.
- An industrial strategy for nuclear would help capitalise on these opportunities and would also inform the R&D strategy. It was proposed that a governance structure should be put in place for nuclear, similar to the automotive council, which would incorporate a wide range of issues including R&D, decommissioning and reprocessing.
- The level of detail in the third scenario for alternative technologies (section 5.2.3) should be increased.

The chair summed up by proposing the final report include a strong opening statement, focusing on some key recommendations. The publication of the report is considered to be timely considering the issues that need to be addressed by the sector.

### **Action**

Final draft of the report to incorporate points made in the discussion, even if they run contrary to government policy, and circulated to members for agreement to publish.

### **3 International engagement**

John Loughhead gave an update on the workshop organised by the KTN Energy Generation and Supply last March to look at international engagement, to seek the views within the community and identify some of the priorities. The draft report had just been received, which will be circulated to members after the meeting. Some thoughts and some starting points emerged from it, but a need to get a grip on this area was felt as a necessity.

Jonathan Radcliffe said that they are working closely with the KTN EGS and they should get some thoughts on where the UK can play a role internationally and they will report back on it at the next meeting in October.

John reported on specifics relating to engagement in Europe; Jeanie Cruickshank has been playing an important role in the discussions on the opportunities for the UK at European level. John reported on the SET-Plan conference that took place a month before in Madrid. The first four European Energy Research Alliance (EERA) Joint Programmes were launched in the areas of Carbon Capture Storage, Geothermal, Solar PV and Wind.

EERA is a new initiative where international labs come together to execute joint programmes of research. These are usually of the order of 100 researchers, and the UK participation in these programmes is typically in the region of 10. One of the main challenges that has emerged is the different system of undertaking energy research between UK and the rest of Europe, which was addressed at a meeting last week between the Research Councils and leading researchers in UK. What came out was that the Research Council would support a better participation of the UK in some of these projects, so there is hope that the UK will have the capability to take part in it, but the absence of strategy has become apparent.

### ***Discussion***

How the components of the SET-Plan fit together and the separation of the bodies was not well understood by some ERP members.

Industry representatives felt that there had been a lack of Members States' engagement in the European Industrial Initiatives (EII) so far, in terms of seniority of representation at the preparatory meetings and authority to commit resources. This was leading to unwillingness from industry to take part in further meetings because the participation by the rest of the necessary players was not commensurate with the decision making that was required.

It was noted that the new Management Board at DECC are not up to speed on this and need to be informed of the risks. There was a concern from some ERP members that the UK is currently not engaging adequately and could miss out on the money and opportunities that are likely to emerge, particularly in the EIIs.

John highlighted that there are two main points that need actions: what they want to get out of the international engagement and how. Part of the problem in going forward is who articulates what the strategic objectives of UK are, so it is crucial to identify this issue. He will report back on the matter during the plenary meeting in October to inform the representation.

### ***Action***

Short paper to be prepared by John and Jonathan for DECC Management Board on points raised in discussion.

## **4 New Government Agenda**

Jonathan Brearley gave a presentation on Policy, Progress and UK Energy Strategy and made the following points:

- Ministers' commitment to climate change remains a very high priority. Charles Hendry has a strong focus on Security of Supply and wants to make sure that it won't be an issue in 5 years' time.
- With regards to renewables goals, the new Government is committed to having 15% of our energy from renewables by 2020 and they are asking the Committee on Climate Change for advice on whether the UK should go further.
- The points emerging from DECC's analysis of the pathway to 2050 are: a need to push hard in all sectors, maximise efficiency opportunities, making a big transition in 'supply' sectors – electricity/ heat and transport, the role of low carbon electricity is likely to grow – possibly double, smaller sectors (e.g. agriculture and aviation) and sequestration opportunities will become increasingly important in the long term and therefore need addressing.
- The Government's programme addresses demand/consumers and supply, and will continue supporting a number of existing measures, including: existing energy efficiency measures will need to be adopted in homes and small businesses, as well

as fuel poverty measures – including Warm Front/ social tariffs. As far as supply is concerned, both the European Union Emission Trading System and the liberal energy market will play a part, and the following actions will take place: renewables rollout with renewables obligation/ FITs and the support for supply chain; nuclear power will include helping tackle the supply chain and overcoming barriers to delivery; CCS/ fossil fuels through CCS demonstrations.

- The coalition agreement sets out how the Government will begin to tackle some of the major issues: The demand/consumers point will be addressed by the Green Deal that is helping homes improve energy efficiency, including innovative financing; and reduce government carbon emissions by 10% within 12 months. The supply issue revolves around the reform of electricity markets through floor price for carbon, feed-in tariffs and Emissions Performance Standards (EPS); a Smart grid / Offshore grid / 'Energy Internet' will be established, public support for four CCS demonstrations and the introduction of gas and electricity security of supply guarantees.
- As far as the electricity market reform is concerned, an investment which would have to be 4-5 times the current rate, is needed.

Brian Collins gave an update from DfT and BIS:

- On transport, a number of big infrastructure projects have been put on hold, with a view to making better use of existing assets. However, all low carbon programmes, including the Office for Low Emission Vehicles (OLEV), have been protected. Synergies between electric propulsion and storage will be developed over the summer.
- The Technology Strategy Board are setting up a Surface Network KTN, the focus of which will include, maritime, rail and road with the aim of getting the supply chain from across the sectors talking.
- Moving to BIS, there is a growing interest from UKTI, in low carbon manufacturing and export potential. A Low Carbon Industry Office is being created to decrease the energy intensity of industry, focussing on Energy Intensive Industries and working collaboratively on smart metering..
- The Green Investment Bank should provide a large amount of money for investment in green programmes, and it is being coupled with Infrastructure UK and are working on a 'roadmap for technological future'. The Strategic Investment Fund would move from giving loans to loan guarantees.
- The Science Minister, David Willets, is very keen to preserve the science base, although it may take a hit, he's working hard to keep this minimal / small.

Jeremy Watson gave an update from Communities and Local Government:

- Emphasis will shift to localising decision making, though ministers are likely to retain decisions on location of power stations. The IPC has been abolished and will be replaced by a body which will include ministers.

### ***Discussion.***

The following points were made in discussion:

- There is always mismatch about how the UK and European countries think about interconnection. Linking the North Sea grid to the European grid would make a massive contribution to system balancing by sharing diverse renewable resources in Europe.

- Further modelling is needed of how this might work to show carbon abatement costs as some options are expensive. Storage solves the problem if it is real storage.
- Also need to watch what other EU countries are planning as they are likely to use a carbon tax to raise money which may have an effect on the EUETS. Unilaterally putting a floor price on carbon may not be the best way forward.
- More work is needed to be done on understanding consumer behaviour.
- Electricity price is important and will drive investment – rising prices will drive demand reduction, but the overall cost will stay the same.
- The City of London’s financial expertise is an area where the UK leads, it should be used to turn capex into opex, and how to develop guarantees for pay back.
- Engineering modelling is also needed to ensure the necessary infrastructure is developed.
- Gas with CCS should be a priority, preferably as a fifth demonstration plant.
- Links with industrial policy in BIS were questioned around providing the right conditions for investment, e.g supply chain issues.
- The critical future challenge will not be single point optimisation of the energy system, but how the convergence of issues is treated.
- Planning is the biggest threat to keeping infrastructure deployment on the path to 2020. The process, and current changes in process, have been extremely difficult to deal with.
- The roll-out of smart meters could be delayed by 6 months without significant impact, but a 5-year delay would be serious, and bad for the take-up of electric vehicles. Smart meters should be seen in the context of wider infrastructure measures, not just energy.

Brian Collins said that CSAs would welcome any pithy evidence on these issues.

## **5 ERP forward strategy**

Jonathan Radcliffe presented options for ERP’s future work based on the “Energy Innovation Milestones to 2050” report, and encouraged members to get in touch with the Analysis Team who would gather suggestions and priorities. He made the following points:

- Appropriate projects for ERP may include studying areas which cut across components of the energy system and/or examining specific technologies to bring a focus on key areas that will be important to the future UK energy system or for business opportunities. ERP may also have a role to play in discussions on the institutional landscape of low carbon technology funding.
- The most significant technology areas not yet covered are offshore wind, transport and demand side/energy efficiency, domestic; apparently less significant areas not covered are marine, solar and demand side/energy efficiency, industrial emissions. Important cross-cutting issues that were identified by the Milestones report are natural resources and hydrogen.

In discussion the following points were made:

- Industrial energy use is a priority and has been overlooked. It is a complex area, but need to work out how to deliver technologies such as CCS in the industrial sector that could have a high impact.



- Many scenarios back cast, but they need to move beyond that to actual roadmaps that be delivered over a period of time. That would lead to working out the UK business model.
- There will not be as many CCS demos as one would like so it is better to collaborate and focus on execution as the place that creates competitive advantage.

Other suggestions included: influences on behaviour, supply chain, whether UK has capability to deliver engineering and systems level solutions.

### ***Action***

Members to respond to Analysis Team with thoughts on future priorities for ERP, with a view to initiating a new project at the October meeting.

## **6 Consortium Agreement extension**

The chair noted the positive support received from Members to the paper presented at the April meeting. The proposals were therefore agreed and would be reflected in an addendum to the Consortium Agreement, extending ERP beyond its current term.

Ian Welch noted that the addendum will not materially impact any key legal and IP components of the current Agreement which has been through due process by Members' organisations. As such, speedy acceptance by all Members to the continuation of the Partnership will be sought around the Terms and Conditions of the existing Agreement.

Ian explained that the next stages would be to review the membership to see if some gaps can be filled, and in this regard he would welcome suggestions from Members, and the need to de-select inactive Members. As part of this process, the level of fees would be reviewed.

### ***Actions***

Secretariat to circulate addendum to Consortium Agreement for approval by members.

Members to contact the Secretariat with suggestions for new ERP members.

## **7 Chair's Closing Remarks**

The Chair closed the meeting and announced that the workshop on Energy Scenarios and Modelling would start at 13.30 and apologised for not being able to take part to it due to an urgent commitment.

He informed members that a meeting with Energy minister, Greg Barker, had been arranged for 7<sup>th</sup> September.

### **A.O.B.**

None

### **Date of next meeting**

The next meeting is on the 17th October, 10 a.m. – 12 noon, and will be held at ERP HQ, 58 Prince's Gate, London SW7 2PG.