

ERP Plenary meeting – Minutes

MEETING DATE: Thursday 21 April 2016, 9:45 – 12:15

LOCATION: The Royal Society, London

ATTENDEES:

Chair:	Keith MacLean	ERP Co-chair
Members:	John Loughhead	DECC & ERP Co-chair
	John Miles	ARUP
	Bob Sorrell	BP
	Carl Arntzen	Bosch
	Tom Delay	Carbon Trust
	Philip Blythe	DfT
	David Ball	Drax
	Kathryn Magnay	EPSRC
	Philip Sellwood	EST
	David Clarke	ETI
	Rob Saunders	Innovate UK
	Peter Bance	Origami Energy Ltd
	Maggie McGinlay	Scottish Enterprise
	Angus Gillespie	Shell
	Jim Watson	UKERC
Alternate		
Member attendees:	Colin Green	ABB
	Craig Edgar	Atkins
	Andrew Benfield	Energy Saving Trust
	Philip New	Energy Systems Catapult
	Andy Bullock	GE
	Makiko Hisatomi	Hitachi Europe
	Jon Fenn	National Grid
	Ian Thomas	Turquoise
Observers:	Adrian Gault	CCC
	Andrew Wright	Ofgem
Secretariat:	Farida Isroliwala	DECC
ERP Analysis Team:	Andy Boston	ERP
	Mark Workman	ERP
	Simon Cran-McGreehin	ERP
	Richard Heap	ERP
	Mathilde Bourgeois	ERP

1. Chair's introduction

Written apologies were acknowledged: Ian Funnell – ABB (with Colin Green in attendance), Martin Grant – Atkins (with Craig Edgar in attendance), Duncan McLaren – Friends of the Earth Scotland,

Derek Grieve – GE (with Andy Bullock in attendance), Masao Chaki – Hitachi (with Makiko Hisatomi in attendance), David Wright – National Grid (with Jon Fenn in attendance), Neville Jackson – Ricardo, Nick Winser – Royal Academy of Engineering, Marta Smart – SSE, Ali Naini (with Ian Thomas in attendance), Prof Julian Allwood – University of Cambridge, Ron Loveland – Welsh Government.

Changes to membership were noted as: Ian Funnell, who is now the representative for ABB - replacing Stephen Trotter. Apologies were noted from Ian Funnell for the April 2016 plenary meeting. David Ball who is now the representative for Drax - taking over for Peter Emery, was welcomed for the first time.

The Chair noted that ERP wished to pay tribute to Sir David MacKay who recently passed away following a battle with cancer, and that it had been a real honour and privilege to work with him.

As notified prior to the meeting, Martin Grant (ERP Member for Atkins) had expressed an interest in taking over the Industry Co-Chair role, and in the absence of any objections from members, his appointment was formally ratified by show of hands.

The minutes of the January 2016 meeting were approved with no amendments from members.

The key objectives of the plenary meeting were outlined as follows:

- I. Presentation from Philip New, CEO of Energy Systems Catapult (ESC) on ESC Business Plan.
- II. Consider and discuss ERP's future structure.
- III. Agree the new project initiation document for "Future of Electricity Utilities"
- IV. Consider and discuss ERP Project Themes for 2016.

2. Energy Systems Catapult (ESC) Draft Business Plan

The Chair welcomed and introduced guest speaker Philip New (CEO, ESC). First, Rob Saunders (Innovate UK) spoke briefly about the innovation landscape: Catapults were put in place by Innovate UK to help businesses bring products to market, by linking them to finance, partners, etc. ESC is part of a second wave of Catapults, announced two years ago. It is underway with a business plan awaiting approval.

Philip New highlighted how ESC planned to support innovation over next 10 to 20 years. He noted the UK's energy system works well, but a stronger understanding of the totality of the system is needed. Many opinions and options are offered for the future system, but little consensus or evidence to support any decisions. Pressures include: top-down change due to climate change; bottom-up change due to customers' mistrust of big companies; and, use of data, new technologies and investment approaches. He recognised that the UK is well-advanced in making markets work, but struggles with market breakthrough and commercialisation.

ESC emphasis is on:

- Building a stronger consensus on UK transition pathways;
- Helping SMEs get innovation to markets by accelerating commercialisation;
- Enabling developers to understand how their innovations could fit the whole system: the ESC could develop a virtual whole system, and could provide an endorsement for products.
- Enabling capability to deliver large-scale testing in the real world, for feedback from users.

It will achieve this by:

- Supporting innovators, especially the high-potential players.

- Building an Energy Knowledge Exchange: collective working to make data more accessible.
- Providing co-ordination between UK's energy test facilities: enabling developers to undertake tests, especially multi-vector; providing financial products to aid access for small companies.
- Building tools to understand what future architectures might work, and how each technology/system could fit into the wider system -e.g. ETI's Smart Systems and Heat (SSH).

Building capability to deliver large-scale real-world test environments (delivered not by the ESC but by others), to test how users respond to demonstration projects. ESC would have a robust social sciences capability. Demonstration at three levels: component testing, systems integration, and real-world demonstration.

Comments and questions from members included:

- Whether the ESC could add value in strategic modelling given the similar work of other organisations with expert modelling teams and the ERP's analysis function. The speaker confirmed that the ETI's ESME modelling capability would be very helpful for ESC's aims, and that the complementarity with ERP would continue to exist. It was clarified that decisions have not been finalised yet as to the future of ETI programmes such as ESME. It was noted that there would not be overlap with ERP analysis because ERP is not a modelling organisation but undertakes secondary research using expertise of others (including its members).
- How much investment ESC would provide to industry via the SSH programme: The speaker stated that the ESC's business model differed slightly from those of other Catapults because the ESC does not offer unique infrastructure services, does not give grants to innovators, and has to attract funding. ESC discretionary money would be used for building context-specific core capabilities (noted earlier re. modelling, etc.). The demonstration platforms would cost tens of £million; ESC would provide pump-prime funds, but would need funds from the government, etc.
- Whether it would be possible (or appropriate) to seek consensus about transition pathways, given that differences arise from lack of evidence, different interpretations, and politics: The speaker acknowledged that a single vision was perhaps not the perfect answer to the situation, but that the ESC wanted to facilitate the conversation. It was noted that markets and regulations are artificial constructs based on the time they were created, and could be changed if that would allow innovation to flourish. So ESC could have a role in drawing together current views on the future of energy policy and technologies, while DECC, National Grid and Ofgem needed to work with the outputs; this fitted with work by DECC and Ofgem about whole-system costs of making changes to the sector.
- The importance of consumer insight: The speaker noted that it was a work in progress, and that data would come from large demonstration projects: SSH already has four social scientists who worked on feedback from home retrofits and home energy control systems.
- The need for a future system to be reliable and robust (like the system that we have inherited): The speaker emphasized the need for resilience is a key requirement, and that innovation had to work within constraints. It was noted that resilience was discussed at the recent ERP Energy Storage workshop, and it was asked how the existing Transport Systems Catapult would work with the ESC. The speaker noted that there were other energy-related Catapults (Offshore Catapult, Transport Catapult, etc.) and that the ESC was not going to be a deep expert on any one area but rather would seek to facilitate change. As an example with transport there was a need to be aware of changes in technologies, modality, etc. and how these affected the system.

The Chair thanked Philip New for presenting, and the members for their questions and comments, and ended the session.

3. ERP Structure and Future

The Chair called on John Loughhead (DECC, ERP Co-Chair) to introduce the session.

John Loughhead provided some background: after more than 10 years of existence, ERP had evolved from just a regular meeting of key actors to having a modest analysis capability informing its work. It now operated within a very different world and objectives, a government with changed motivations and a challenging financial situation. After last year's Spending Review gave innovation a good settlement and DECC innovation budget was doubled, there is now a requirement to ensure public sector innovation is cohesive, aligned with policy objectives, and has a simpler understandable structure reducing overlaps. To achieve this it is proposed (subject to ministerial approval), to set up a new innovation Strategic Board which will report to the inter-departmental ministerial group for clean growth (a body organised by the Cabinet Office). This will need support from two external advisory functions:

- A strategic analytical and modelling capability. This could be provided by key staff from ETI who are currently in discussions about performing this role from within the Energy Systems Catapult (ESC)
- A challenge and advice function informed by industry and other key players. This could be the space ERP occupies going forward.

The above simplifies the structure, and in a supportive role to the innovation strategy board, ERP could advise, undertake specific studies, as well as continuing its member-led programme of projects. Members were asked to consider whether they would like ERP to provide these services, drawing on its broad-based community of stakeholders and hence set of evidence? John made it clear that it is up to members to consider this and decide whether they want that role, government wasn't saying ERP had to take this on, if members wanted something different or to discontinue ERP that was perfectly valid.

Andy Boston (Analysis Team) presented an initial overview of a proposal for the next consortium agreement based on what members said when meeting with him. Of the 27 members that Andy had met 19 were likely to continue, with only 2 being likely to leave (the remainder were undecided) which gave a good basis for making a proposal. The plenary received very positive feedback, most asking for it to remain unchanged. It was valued for its networking opportunities, range of topics, openness and well-managed structure of discussion. There were concerns over the size which was felt to be too large by some and at the upper limit by most. However in tension with that the broad membership of ERP was highly valued and suggestions were made about additional members or sectors that should be invited to join. There was also a concern expressed by a small number of members that the seniority of attendees had dropped from being mostly Board members to one or two levels below. Looking forward most members were open to change in the way ERP was structured or how it operated, but stressed the importance of maintaining its distinctiveness, independence of programme and ability to critique all actors in the innovation chain.

Andy presented a timeline should members want to continue on a similar basis with the services of the current Analysis Team. The key requirement was for contracts to be signed by end of September to avoid Imperial (their employer) making them redundant or finding new roles for them. Given that it would take a few months to draft a new agreement and iterate with all parties it was recognised that this was a very tight programme and driving to this may stifle a proper discussion about ERP's role. Therefore consideration would have to be given to a temporary arrangement to retain the services of the Analysis Team until the final agreement could be put in place.

The ensuing discussion included the following comments, questions and responses:

- The importance of ERP was rooted in its independent debate and challenging role; would coming closer to DECC impact negatively the credibility based on that very independence?
- The paper circulated before the plenary meeting was seen as the status quo and a number of members were disappointed with a “steady as she goes” proposal. However the paper was not able to reference any of the information just given by John (which has not been agreed by ministers yet) so looked less exciting than the future could potentially be.
- ERP could have significantly more impact leveraging members’ resources more fully. Complex analysis is not something we are resourced for and geared up to do - ERP’s main role being a challenge function. A number of members expressed support for ERP embracing this broader challenge function, one or two thought this could be extended not just for government but for other organisations as well, to achieve more significant impact.
- In terms of simplification the reorganisation being proposed by DECC could range from better co-ordination through to complete amalgamation. It was acknowledged that the public sector was inherently complex and included many participants with many valid interests in the sector of energy, contrary to what the industry organisations were used to. The aim was to create a clear line of sight for all these participants, consolidating the approach not the actual organisations.
- Taking on external work as mentioned earlier would be a major departure from current practice.
- The relationship of ERP with ESC is critical for members to understand going forward, in terms of contractual terms and capabilities so this should be clarified as soon as possible. Members need to understand the potential to access (i) the ETI’s Strategic Analysis Function (ii) consumer insights, both of which were seen as important for some members. However there is a need to maintain a level of independence, ESC is publically funded and seen as such. ERP could take on the challenge role because of its independence.
- Is there a model for an advisory board that could help us clarify the composition of ERP going forward? It was thought that a clear parallel doesn’t really exist now.
- What has not been said was perhaps what exactly ERP was going to do? Do overlaps with ESC still exist?
- If the landscape is boiled down to ESC and ERP it is important they draw on common data with some of the same people too.
- Key ERP piece is the industry membership – helping bringing in the external challenge – however what is in it for the industry members: why would they sit here without clear levers or formal influence?
- ERP’s role was clearly seen as an advising and challenging organisation, and must be careful to avoid becoming a lobbying organisation.
- For Scottish organisations the differentiators for ERP are its UK wide remit, the engagement of industry and its independence, making it pretty unique and valuable.
- The scope of ERP going forward should be considered, especially the need to include oil and gas.
- ERP should not feel that we should always have a single view on a single topic; rather advice if you believe in A, this is what you would normally say, however if you believe in B, this would be the outcome... There was nothing wrong with recognising uncertainties in solutions going forward. The necessity for ERP to find consensus (which waters down conclusions) could be replaced instead with presenting several stronger views consistent with a value set.

In terms of timescale, there will need to be an offline process going forward with this discussion as there is only one plenary before the September Analysis Team employment deadline. Martin

(as co-chair elect), John, and Keith together with Andy, will take this forward with a suggestion that a smaller working group of members could be constituted to help. It was agreed that a timescale connected to Analysis Team employment shouldn't take precedence over finding the correct solution so temporary measures will be considered.

The Chair thanked everyone for their contribution and brought the session to a close.

Action:

Ask Members, including those who were not at the plenary meeting, by noon on 11th May to:

- **Provide any further feedback on the questions presented by John Loughhead.**
- **Let the co-chairs know if they are interested in being involved in the offline working group.**

The new industry co-chair, Martin Grant would join this process together with Keith and John to develop the outcome in between plenary meetings.

Minutes of this item are recorded on a separate document.

4. Future of Electricity Utilities – New PID

The Chair called on Mark Workman (ERP) to present the Project Initiation Document (PID) and project scope for member approval. Key points included:

The [large scale] vertically integrated approach to electricity supply and generation, which was particularly effective as a means to manage risk under the NETA and BETTA market model is being increasingly questioned. The UK and other OECD nations have traditionally relied on large electricity companies to finance, construct and operate large scale generation – historic public sector investment, combined with this have ensured large capacity margins which have aided energy security. Most future energy scenarios appear to assume the continuation of this approach, but can the changing market still deliver the appropriate innovation and deployment of the requisite mix of low carbon, flexible and resilient generation capacity?

Members presented the following comments and questions for consideration in the project:

- Would the project explore different underlying “currencies” e.g. bulk flows in MWh, bundled products, etc., and would the report look backward on previous changes?
- The scope is large and would need significant financial modelling capabilities and access to external resources and non-publicly available reports.
- It is a large research challenge, and should leverage existing work, and should focus on the key output, i.e. the impact on innovation.
- The project is an excellent idea, and should be linked up with ESC.
- The project is interesting, but it could be challenging to develop diverse scenarios without the right tools.
- Similar work has been done by utilities and investors, as the question of whether big utilities will continue was more relevant in the previous decade. So it could be better to ask questions about institutional arrangements, such as: what the future models might be; and who would have what roles (e.g. whether suppliers would continue in the traditional sense).
- The question should be what will be the future business models for energy services delivery. And the project scope is electricity, but in future there will be interconnections between energy vectors and between energy demand sectors.

- This is too biased towards doing ERP's own analysis of possible futures for utilities. The project should base itself upon the extensive reviews of utilities futures done by Bloomberg and others, seek insights from utilities members into how realistic they feel them to be, develop from that a few scenarios of what could happen, and then spend most resource on assessing the impact of those on energy innovation practices within utilities or other R&D actors.

The Chair concluded the session by thanking all contributions made, advising that the paper would be amended accordingly before being sent back to members. Mark asked members to suggest contacts for “non-traditional business models” and “far-edge thinkers”.

Action: Questions raised to be addressed and a revised version of the PID to be circulated for a prompt follow-up from today.

5. Future Work Areas

The Chair introduced the session by calling on Andy Boston (ERP) to present the suggestions made by members when meeting with him.

Andy started by listing project titles that had some interest and could become projects with a few more expressions of interest. EV's System Integration and Regional Differences were three areas that had support from 4 or 5 members. Transition Pathways and Flexibility II had 5 or 6 members interested and there was some commonality of questions being asked. The hub of both was an exploration of how to get from here to a decarbonised world, taking account of practical constraints.

The most strongly supported project was on heat but no member had suggested where the focus should be. He was awaiting DECC to provide details of what their work about heat had looked into so far.

Comments and feedback were provided by members, and included the following:

- ERP could consider the role of innovation in addressing non-compliance of many buildings against thermal performance regulations;
- For domestic heat and regulations there is limited evidence around performance of existing technologies in buildings, so there could be value in reviewing the evidence base.
- ERP could work with ESC on transition pathways. ETI is already working on transition pathways about how policy is changing under different governments.
- For transport, key topics are: business models for EVs, requiring more information about sales scenarios; and air quality, which is also linked to some heat solutions (some high efficiency solutions reduce GHG but increase NO_x). There was a recent debate at LowCVP about GHG-NO_x and that ETI might start a project on this.

The Chair concluded the session by thanking for feedback provided by members.

Action: Any members interested in heat should contact Andy if they have not already expressed an interest. Furthermore any member interested in forming a small group to meet once to define ERP's work programme should also contact Andy. Any resultant PIDs will be issued for next plenary meeting.

7. AOB

Details of the next plenary meeting were provided as: Monday 11 July 2016, 15:00 – 21:00, for the Plenary and annual dinner. This will be at the Royal Society of Chemistry, Burlington House, Piccadilly. The dinner will feature a panel discussion with past and present ERP Co-Chairs.

Members were invited to remain for a buffet lunch whilst networking with additional guests, and for the post-plenary launch event for the ERP's transport report with speakers Philip Blythe from DfT, Andy Eastlake from Low CVP, Liam Lidstone from ETI, and Bob Moran from OLEV.

The meeting was brought to a close.