Feedback from Stakeholder Roundtable Sessions

11 and 15 November 2011

A Brunswick Research report for RenewableUK

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1 Introduction

Zoltan Zavody of RenewableUK presented at two meetings of electricity transmission stakeholders; one in London and the other in Glasgow. Each presentation was followed by a roundtable discussion facilitated by Brunswick Research.

Each session was a part of a longer meeting hosted by National Grid, as a part of their Talking Networks stakeholder consultation on the RIIO price control for the electricity transmission network. National Grid set aside time in the wider schedule for RenewableUK to present their proposals and capture feedback but did not contribute to the presentation or participate in the roundtable discussions that followed.

Mr Zavody presented RenewableUK's perspectives on 'The Transmission Companies and the Renewables/Decarbonisation Agenda'. He explained the context, including the government's low carbon milestones and how these fit with the RIIO price control period. He wanted to understand how renewables developers would ideally like to connect to the transmission network, and how the process works currently. He proposed an incentive to encourage transmission companies to facilitate the achievement of the UK's climate change and renewables targets.

After the presentations, discussions with the transmission stakeholders were facilitated by Brunswick Research. The objectives of the discussions were to understand renewables developers' experience of connection to the electricity transmission network, to understand whether renewables developers and other stakeholders perceive there to be a problem to address, and to gain views on potential solutions, including on the proposed incentive. Specifically, stakeholders were asked 'How should the electricity transmission companies be incentivised to facilitate achievement of the UK's 2020 renewables target and 2030 decarbonisation goal?'

This report summarises the main findings from the sessions, illustrated with verbatim comments. It focuses on the broad themes that emerged, rather than acting as a transcript of the discussion. It should be noted that events of this kind do not provide the opportunity to collect attributable comments from specific individuals or organisations. The qualitative approach also means the findings cannot be considered statistically robust or representative.

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2 London - 11 November

The two-day London meeting was attended by a diverse mix of stakeholders with an interest in electricity transmission. Participants included suppliers, generators, generation developers, transmission companies, distribution companies, technology providers, building contractors, consultants, and regulatory and government officials. The stakeholders were spread over four tables, and discussion at each was facilitated by Brunswick Research.

Only one participant was exclusively focused on developing renewables, but each table included stakeholders involved in renewables development. There were four individuals from integrated energy companies who generate using renewable energy in combination with thermal and nuclear energy, one participant having renewables generation developed at his location, a consultant who advises on developing renewables, a supplier of equipment for the renewables industry and two representatives from RenewableUK.

2.1 Initial reaction

The proposed incentive for the transmission companies to facilitate achievement of the renewables targets generated little initial support from the stakeholders, whether involved in renewables or not. One table responded negatively to the session.

- Three tables were not immediately positive; they were keen to clarify the problem and to understand to what extent the incentive might encourage an efficient network.
- The fourth table initially reacted negatively to the session, stating that they felt it was 'biased', and that it confused the government's goal to lower carbon with renewables.

"Why haven't we got someone else standing up and giving other points of view? This should be a debate." (Involved in renewables)

"The objective is low carbon and it should be dealt with differently. It is ridiculous to conflate low carbon and renewables." (Involved in renewables)

2.2 Defining the problem

A number of electricity stakeholders expressed concern that although there is a renewable energy target, renewables are not the only way of delivering the government's decarbonisation goal. Consequently, they felt that the issue required better framing.

Stakeholders at two of the four tables thought that the RenewableUK presentation
was proposing a solution (an incentive for facilitating renewables), before the problem
had been properly defined. One stakeholder commented that "we need something
direct and targeted to the issue."

 Many stakeholders from across the tables, including those active in renewables, felt that the renewables connections and capacity problem is not clearly understood or defined. Some thought it related to connection delays, others to transmission infrastructure reinforcements or wider works needing anticipatory investment.

"Is there something broken that needs to be fixed in terms of connections?" (Involved in renewables)

"Are there genuine issues to be addressed to ensure connections in a timely way? If everyone wants to connect, what are the criteria? If there are only a few developers, you can't justify connections. What are the economics?" (Other stakeholders)

At one table, stakeholders were keen to see the problem scoped and quantified. This
group felt that once the scale of the issues facing the renewables sector was
determined, research and innovation may start to generate solutions.

2.3 Incentives in principle

Stakeholders accept that renewables will be an important and increasing part of the energy mix going forward.

However, overall, there was little support for a renewables incentive for the transmission companies as presented, including from those active in renewables development. Despite this the stakeholders were keen to resolve the issue of how to achieve the carbon targets, the role of renewables within this, and the implications for the electricity transmission network.

- There was more support for decarbonisation being incentivised i.e. low carbon generation, efficient transmission and reducing demand – rather than renewables.
 Several tables highlighted that nuclear generation and more efficient thermal generation would also help to de-carbonise; stating that all generation sources should be treated equally, judged on their ability to reduce carbon emissions.
 - "National Grid needs to be able to provide access for any asset... favouring certain sources doesn't offer benefits for UK plc. One source won't give all the benefits needed... so we need fairness." (Involved in renewables)
- Stakeholders at two of the tables felt that electricity transmission companies should not be incentivised to meet the decarbonisation targets, as these new incentives would duplicate existing mechanisms.

"There are enough mechanisms outside transmission to encourage companies to meet the target. There should not be more incentives."

"We already have incentives to do this, CFD facilitates this target...Grid doesn't need this extra incentive and the cost exceeds the benefit." (Involved in renewables)

- Some stakeholders cautioned against diluting the benefits the UK derives from its free market in electricity, stating that transmission must continue to support this market.
- Several stakeholders stated that any incentive should encourage the efficient design and use of the transmission network. This should include minimising the need to move power around, to minimise costs for the customer, and ultimately the consumer.

"There should be incentives for thermal power stations to be built close to urban conurbations in order to minimise the flow path required." (Involved in renewables)

"Networks are there to facilitate movement of energy from generators to demand. Bearing in mind we have a spread of demand, we need to be careful about how much network we'd like to fund. Moving power is the key thing. Renewable energy will be generated in more remote areas, so the balance will depend on the location of new and conventional generation. As consumers we have to pay for costs... it must be minimum network costs." (Involved in renewables)

 The additional cost attached to any incentive is a major concern for stakeholders, in terms of the impact on consumers and for fairness across generation sources.

2.4 Sharing responsibilities for facilitating renewables across the industry

2.4.1 National Grid's responsibilities as a Transmission Owner

There was widespread agreement that as Transmission Owner, National Grid's responsibility to renewables is not to discriminate, but instead to manage cost, and to plan in a timely and fair way. Some judge that this must preclude National Grid from any incentive for facilitating renewables.

 Non-discrimination – Most stakeholders believe that National Grid should not encourage one form of generation over another. A TO monopolises transmission in its geography and has a licence condition to treat all sources the same.

"Government policy is no discrimination." (Other stakeholders)

"Favouring certain sources doesn't offer benefits for UK plc. One source won't give all the benefits needed... so we need fairness." (Involved in renewables)

• Cost management for customers and consumers – Stakeholders are very aware that any incentives are paid for by National Grid's customers, and hence consumers.

"I get a sense that National Grid – i.e. consumers – should be taking on support for renewables... but you would be asking customers to pay twice and I'm not sure what behaviour you are trying to incentivise." (Involved in renewables)

 Planning – National Grid and the TOs are also seen to have a role in facilitating planning, in a fair way, ensuring timely connections.

"Grid needs to sort out timely connection with the developers... Currently there's uncertainty about whether its type should be point-to-point, radial or integrated... who is responsible? It's not Grid's sole responsibility, it's government's too, but Grid is important on the timely connection." (Involved in renewables)

"Grid needs to follow government policy, but National Grid shouldn't discriminate between particular sources of energy. Grid has a major role in the planning process... so it needs to be a level playing field." (Other stakeholders)

2.4.2 National Grid's potential role in facilitating renewables

Although there was widespread concern raised about an extra incentive for National Grid, most stakeholders believe National Grid (and the other TOs) should have a role facilitating renewables on the network.

- Facilitation Some stakeholders made suggestions about the role that National Grid and the other TOs could play in facilitating renewables developments:
 - To help develop a more coordinated, timely planning approach with developers, with National Grid possibly taking a more proactive role
 - To help to facilitate the decision about the type of offshore connection, working alongside the government and other interested parties (but not circumvent the planning process)
 - To continue to be available to talk to developers at an early stage about their plans and their implications
 - To continue to be flexible, e.g. offering Connect & Manage, and offering lower security, such as single circuits offshore
 - "Developers do need to know how to approach Grid and what are the wider enabling works needed, timing etc. It's on your top 10 list of questions." (Involved in renewables)
- Anticipatory investment There was a wide range of views on whether the TOs should get involved in anticipatory investment for renewables.

"One of the challenges with renewables is the long lead time... to get the approvals etc. One of the challenges is how can there be an incentive that allows pre-emptive work... that allows the scheme to get going." (Other stakeholders)

"We look at pre-construction cost on large infrastructure projects... I don't think any of the TOs... have made any proposal for pre-construction works... I guess the question is should there be more incentives behind the infrastructure and connections process... and you have to be careful that you're not passing lots of cost onto the consumer." (Other stakeholders)

"If people want to connect, they should put money where their mouth is. National Grid needs a commitment." (Other stakeholders)

"We want an economic and efficient outcome ... so if it is costly to do the anticipatory investment, then [they] need to show the investment." (Other stakeholders)

- Education and information There was also no consensus on whether National Grid should "educate" renewables developers, beyond what already happens in informal discussions. Some commented that this should not happen but that information should continue to be exchanged.
- Physical issues A number of physical issues were identified as likely to result from increasing renewables, that will need to be resolved by National Grid: voltage control, locational elements (possibly a new South East system) and balancing plant.

2.4.3 Role and responsibilities of the government and regulator

As well as their role in shaping offshore connections, a number of stakeholders, particularly those at one table, felt very strongly that DECC and Ofgem are responsible for encouraging renewables and reducing carbon emissions, not the TOs. They stated that it is not the job of transmission companies to decide what is built and connected; government must develop a policy and a mechanism to influence the market to reduce the use and impact of the least efficient generation in carbon terms.

"There is no option for wind to not run. We have thermal (from 50 year old plant to brand new), nuclear and wind. We need to focus on the least efficient. Grid can't decide what we should focus on. If there's an issue, Grid needs to manage a constraint that is economic and ensure people can turn on the lights and it is secure. Markets manage reliability and cost, and government directs as to what is needed." (Involved in renewables)

"[A renewables incentive] would incentivise them to prioritise a higher input of wind... That will pick up CCGT and coal... i.e. back to the old inefficiencies. We now have newer CCGT that is more flexible over a short pick up period... but it emits more CO2 as it's covering the

drops. This is more of a government discussion... that they need to facilitate a balance." (Involved in renewables)

2.4.4 Responsibilities of renewables developers and generators

Stakeholders widely believe that renewables developers should be treated equally to other forms of generation, but for some this means that renewables should pay more.

 Stakeholders on two tables believe that National Grid already accommodates renewables, because they suffer no discrimination for wind quickly coming on. One table was comfortable with this, the other was concerned about costs to consumers.

"In some ways renewables are being advantaged, for example, stability issues are being addressed. The classic issue of wind coming on means a high cost of response... there's no requirement for any generator to cover for self-response." (Involved in renewables)

"Currently there is no mechanism to say to a wind developer that you must take some responsibility for intermittent supplies. It is the customer that pays." (Other stakeholders)

"They (renewables developers) should be accountable for the cost impact of their project."

2.5 Concept – The ideal connection process

A small number of stakeholders involved in renewables made proposals as to how they thought the renewables connection process should ideally work.

• A few explained how they think the connections process should differ for a renewables developer.

"Renewable generators generate when and where renewable sources are available, so you should have greater locational signals." (Involved in renewables)

"Levels of security of connection may differ. They may take a single circuit connection." (Involved in renewables)

"The ideal world? You ask for connection from National Grid, they provide you with an offer in three months. The offer doesn't change. You connect on time. Transmission happens. It has no interaction with anyone else building anything else!" (Involved in renewables)

[In response to previous comment] "I think that the ideal world would be a bit different. For me it would be about having a method of operating which is flexible and adaptable, so you can operate for customers who are strapped for cash... at a minimum cost." (Involved in renewables)

 Others, including renewable voices, feel that renewables should not be treated any differently.

"It all depends on the usage and stress that you put on the network."

"Once it is generated and transported to the connection point, it should be treated in the same way... it's a megawatt flow."

2.6 Evidence – Connecting as a renewable generator

Five individuals involved in developing renewables discussed difficulties they have experienced connecting renewables generation to the transmission network; primarily relating to onshore connections and restrictions due to a lack of locational flexibility.

 Onshore connection – Three individuals involved in renewable developments reported that getting onshore connection is their major difficulty. National Grid's obligation to be economically efficient exacerbates this because points of connection can move to a different sub-station during the connection process. All three had experienced this.

They believe there is a need to re-consider the impact of this obligation. Moving substations has resulted in:

- Delays
- Financial impact
- Further public consultation
- And hence damage to the credibility of the developing organisation

Developers find it very difficult to manage the uncertainty, but are unsure how to resolve the problem. It is unclear to them who or what is causing these late changes.

"The big issue... is getting the onshore connection. A change to a point of connection can move as Grid optimises the system for economic efficiency. If it moves 20 miles, this can have a considerable impact." (Involved in renewables)

"I'm seeing this on a big project... multiple connections are moving. It makes terrific uncertainty, but I'm not clear about the answers." (Involved in renewables)

"Renewables get offers with multiple options and Grid have the option to change the choice, but at some point you need to be very decisive. I'm not sure if it's Grid's fault or it's Ofgem/DECC not understanding the issues. We're not talking about moving from one end of a substation to the other, but to a different substation. There are big financial implications and lots of public consultation...it's not [the developers'] faults, but they have to say [to the public about the connection]... 'It's moved', this impacts our credibility and we need to repeat stages with the public. The goalposts move... it's not under the developer's control, nor Grid's control." (Involved in renewables)

- Regulation of the offshore network One stakeholder suggested that there is a need for more over-arching planning and regulation of the offshore network. He said offshore connections are a "regulatory abyss… there's no regulation… we're half way to a North Sea grid and it's not clear what we're paying for."
- Location At another table, renewables developers suggested problems with connection and capacity result from a lack of flexibility on location.

"The difficulties we experience are that unlike conventional generators we don't have the same locational freedom of choice... From our point of view it would be good to be able to accelerate connections to the system... It is difficult to see how, without a draconian change to the planning regime, that National Grid can achieve this." (Involved in renewables)

"We have built wind farms in Cornwall, Wales and Scotland and we have had problems with network capacity... We move to where the resource is." (Involved in renewables)

2.7 Other potential actions to help facilitate renewables connections

The stakeholders were keen to help solve the particular difficulties they each perceive to exist in relation to renewables connections, with individuals suggesting a number of diverse solutions.

 External input into which fuels run – A stakeholder discussed how the government (pre-DECC) used to prioritise generation sources. Another stakeholder suggested that the System Operator could use a combination of the balancing mechanism and price to determine what should run.

"There is an opportunity to add the cost of carbon in here, as long as you don't upset the cost applecart too much... The DTI used to have a fuel security code to enable it to step into the market to make certain fuels run, with triggers... But this is outside Grid and would be discrimination." (Other stakeholders)

- Low Carbon Fund One table discussed a Low Carbon Fund as part of the price control, like the one proposed for the DNOs.
- Surveys One person suggested using a customer survey to measure ease of connection and assess whether renewables connections are improving.
- Location One generator involved in renewables suggested the industry should be structured to ensure new generation is located efficiently for the network.
- Education Another stakeholder involved in renewables development thought his sector could ensure they are well informed to help move the debate forward.

"We can educate ourselves enough to ask intelligent questions – i.e. we can use trade associations intelligently so when they interact with National Grid, who have limited time and resources, then we make best use of those discussions. We need to be prepared to engage well." (Involved in renewables)

"There is a need for a debate and public education on living with a certain amount of uncertainty in the system... I would like to see National Grid take a role in coordinating this debate." (Involved in renewables)

 Technical solutions – Technical changes could improve the flexibility needed to cover the intermittency of renewables. "We can assist the system to operate more flexibly with the intermittency, e.g. with Phaser Measurement all over the network, which is about early warning of bad situations and improving their ability to respond to these." (Other stakeholders) Demand management – The SO could look at the system demand and manage demand down. One table suggested there may be scope for incentivising the SO to be increasingly sophisticated in anticipating and influencing situations occurring on the network.

3 Glasgow – 15 November

The Glasgow RenewableUK session was similar in format, but shorter, than at the London meeting. Zoltan presented 'The Transmission Companies and the Renewables/Decarbonisation Agenda'. After the presentation, brief discussions were facilitated by Brunswick Research, at four tables. The objectives of the discussion were to gain views on the proposed incentive, and to understand renewables developers' experience of connection to the electricity transmission network.

The session was a part of a one-day meeting hosted by National Grid, part of their Talking Networks stakeholder consultation on the RIIO price control for the electricity transmission network. As in London, National Grid allowed RenewableUK the opportunity to present, but did not participate in the presentation.

The Glasgow meeting was attended by a mix of stakeholders from the electricity transmission industry, including generators and suppliers, transmission owners, government and academics.

There were no participants who were developing renewables exclusively, but each table included stakeholders involved in renewables development. There were two integrated energy companies who generate from renewable energy in combination with thermal and nuclear energy, three participants developing renewables at their locations and two individuals from RenewableUK. The other Transmission Owners and Distribution Network Owners also have experience of connecting renewable energy to the network.

3.1 Should there be an incentive?

Overall, stakeholders' responses were generally negative both towards the proposed incentive to encourage transmission companies to facilitate renewables and towards additional incentives in general, although a few were supportive.

Two of the tables widely agreed that there should be no incentive. One table's response was more mixed, while the fourth was not supportive of the incentive as currently envisaged.

3.1.1 Support for an incentive

Three stakeholders developing renewable generation showed support for an incentive.

 A stakeholder working to encourage renewables development thought it might help his situation.

"I can't see us meeting our targets unless they are [incentivised]. What would it look like? That's not for me to say!" (Involved in renewables)

- An industry stakeholder said his consumers support an incentive.
 - "A common view among our consumers is that it should be incentivised." (Other stakeholders)
- One stakeholder involved in renewables development feels that the UK's target provides justification to treat renewables differently.

"You do need to treat renewable energy differently, because there is a target for renewables [and not other sources]. That gives authority to treat it differently." (Involved in renewables)

3.1.2 Undecided about an incentive

Stakeholders at one table were uncertain about the incentive as proposed and explained their concerns. They were more open to the broader concept of an incentive, but thought it would be very difficult to define appropriately.

• Tighter definition – Several industry stakeholders discussed the potential complexity of the incentive, with some feeling the proposed incentive is too broad and appears to include areas beyond the control of the TO.

"There should be an incentive, but it would be very hard to measure... So many things are changing, EMR, feed in tariffs, etc. With all these different levers being pulled, it would be hard to measure the value of each... Planning obstacles should be considered... the planning perspective, the community perspective." (Other stakeholders)

"Zoltan was talking about a broad incentive... if it's to be done, it needs to be narrower and more focused... it should target where there are blockages/problems that need to be dealt with." (Other stakeholders)

"To have an incentive that is out of the control of a TO is a bad idea." (Other stakeholders)

• Need for balance – A stakeholder developing renewables felt that the success of an incentive would depend on balancing the trading environment, security of supply and affordability. "It is not easy to say just 'yes' or 'no'... It is about the trading environment, the security of the supply and affordability. All of these have to be considered in deciding whether renewables should be incentivised... For TO organisations at the moment there is just one objective, so it is not the whole thing. There is a balance between those objectives... we need to think about the full scope. But we have a target, so we shouldn't be shy to say it should be treated in a special way." (Involved in renewables)

3.1.3 Against an incentive

Most stakeholders were against a renewables incentive, raising a diverse range of concerns.

 Mechanisms already exist – Stakeholders across different tables felt existing incentives and subsidies should be sufficient.

"To what extent does National Grid need an incentive? There is already EMR [Electricity Market Reform] with incentives for new nuclear, renewables, CCS, extra capacity... plus the mechanisms to reduce unmitigated coal... so the generation business has already been told to shift. National Grid and TOs and SOs come along and are told what is to be generated, based on locations, so National Grid can only join up the dots. The only gap for National Grid is the balancing mechanism." (Involved in renewables)

"Renewables shouldn't get favoured treatment... I don't think there should be any incentives for renewables, or anyone else. It only causes problems if you are putting one renewable developer in front of another." (Other stakeholders)

"I'd say that the only incentives that should be there are already there." (Other stakeholders)

• Carbon pricing – Several stakeholders think that the carbon price should do the job of the proposed incentive, although some question whether the level is appropriate.

"To the extent that carbon is probably already priced into the energy price – haven't we already got an incentive through BSUoS or through minimisation? If people think that the industry is not being driven in this direction already, then carbon should be more properly priced... If you price carbon right it should all come out in the wash." (Other stakeholders)

"The carbon price is too far removed to incentivise us, but it ought not to be... an overall carbon incentive wouldn't necessarily change our business practice... we would just get it if it happened... what it comes down to is... are there decisions about this that mean we need to do something ahead of a traditional process?... I'm trying to understand what the incentive would achieve." (Other stakeholders)

"You need to make sure you've got the cost of carbon in the cost of energy... if you start doing other things, people will look at where best to be on the system." (Involved in renewables)

 TOs cannot discriminate – A number of industry stakeholders are concerned that discrimination would breach TO licences. "I'm not sure how an incentive could work while National Grid has to show no discrimination." (Other stakeholders)

"How do you prioritise one connection over another in terms of network access? [TOs] don't have sufficient volume at any one time to have to prioritise certain connections over another." (Other stakeholders)

"The job of the TO... it's easy to sit behind clear planning strategies... a lot of investments that we have been talking about are to do with exports of power... you are sort of balancing off the cost of providing export capacity and the cost of not providing it... so the network planner's job is to try to cost the constraint costs... you are supposed to give priority to low carbon." (Other stakeholders)

 Scotland's connections are all renewables anyway – A couple of industry stakeholders commented that Scottish TOs are currently only making renewables connections, so prioritising renewables would not help unless licence terms match targets.

"There are a lot of different wind farm developers, so you're not allowed to favour one over the other... you have to treat them all the same, without preference. And you're not allowed to favour one form of energy over another... the only issue is whether you can transport their energy to the grid." (Other stakeholders)

 Cost implications for customers and consumers – Stakeholders, primarily at one table, were concerned about the cost of opening up connections and extending the transmission network, in addition to the direct cost of the incentive. They thought National Grid and Ofgem are already in a difficult position balancing access to the network and costs to consumers.

3.2 The ideal connection process

Only one stakeholder explicitly stated what his ideal connections process would be.

"That's easy. In an ideal world you plug in and go!" (Other stakeholders)

3.3 What are the challenges for renewables development?

Significant challenges for stakeholders involved in renewables development include transmission charges and user commitment and planning.

• Transmission charges, user commitment and anticipatory investment – These concerns were mentioned by stakeholders in different parts of the industry.

"From [our] perspective, transmission charges and user commitment are the problems." (Other stakeholders)

"Charging and the user commitment are on-going problems. There should be some sort of linkage between transmission investment and generators' commitment. I think the issue is to do with the level of security requirement, not to do with whether there is a need or not." (Involved in renewables)

• Planning – Some stakeholders see planning as the biggest problem.

"If a local authority says what they can and can't approve, then that's different ... planning is still the biggest constraint we all face." (Other stakeholders)

"Maybe the planners should be incentivised." (Other stakeholders)

3.4 Actions to increase connection of renewables

A few stakeholders suggested ways to encourage more renewables connections.

Redefine TO role – Although stakeholders acknowledged the discrimination obligation
conflicts with a renewables incentive, some suggested that National Grid can make
use of the balancing mechanism, locational cost, bids and offers, constraints and
despatching to cost, plus Connect & Manage. Some thought that changes to public
policy, licensing or the associated planning strategies might allow the TOs to favour
low carbon generation.

"It all comes down to licensing issues." (Other stakeholders)

"Often you have wind farms asking for a connection, but they don't yet have planning permission for a wind farm, so there are other factors. So it's very complex... [it is] not a question of putting the emphasis on the TO." (Other stakeholders)

• *Increase dialogue* – More specifically, one stakeholder suggested increasing dialogue between the parties to agree a firm connection date.

"We hear from our renewables businesses that it's good to get an early date, but more important to get a certain date. The worst thing is if a date keeps getting pushed back. At the moment there is not enough dialogue in the process." (Other stakeholders)

Appendix: Event Participants

Electricity Transmission Event, London – 11th November 2011

| NAME | ORGANISATION |
|----------------------|----------------------------|
| Abby Greenall | Horizon Nuclear Power |
| Charles Ruffell | RWE npower |
| Frank Prashad | RWE npower |
| Goran Strbac | Imperial College London |
| Guy Nicholson | RenewableUK |
| Ioannis Konstantelos | Imperial College London |
| Justine Dade | Ofgem |
| Landel C Johnston | SSE |
| Marina Hod | KiWi Power Ltd |
| Nick Bradford | EdF Energy |
| Paul Hawker | DECC |
| Peter Waghorn | Cornwall Energy |
| Richard Clay | The Crown Estate |
| Robert Longden | Mainstream Renewable Power |
| Rodrigo Moreno | Imperial College London |
| Simon Holden | Stag Energy |
| Tim Sargent | Morrison Utility Services |
| Vanja Munerati | Ofgem |
| Zoltan Zavody | RenewableUK |
| Simon Vicary | EdF Energy |
| Andy Manning | Centrica/British Gas |

Electricity Transmission Event, Glasgow – 15th November 2011

| NAME | ORGANISATION |
|-------------------|---|
| Alan Kelly | SP Transmission Ltd |
| Chuan Zhang | The Crown Estate |
| David Cameron | EDF Energy |
| Gareth Williams | Scottish Council for Development & Industry |
| Grant McEachran | Ofgem |
| Guy Nicholson | Renewable UK |
| Ian A J Anderson | SSE |
| James Anderson | ScottishPower Energy Wholesale |
| John Cunningham | Comhairle nan Eilean Siar |
| John Cunningham | (Western Isles Council) |
| Keith Bell | University of Strathclyde |
| Kirsty Murray | University of Strathclyde |
| Lisa Hardie | Argyll and Bute Council |
| Manolis Belivanis | University of Strathclyde |
| Fiona Muir | S P Power Systems |
| Neil Sandison | SSE |
| Paul Jones | E.ON UK |
| Paul Swan | SSE |
| Rodrigo Moreno | Imperial College London |
| Simon Swiatek | SSE |
| Zoltan Zavody | Renewable UK |
| Alice Baylis | Energy Policy, Scottish Office |