

Minutes of meeting to:

Distribution Code Review Panel (DCRP) P2 WG P2
Review Monthly Meeting 8

Copied to:

David Spilliet DCRP P2 WG
NERA attendees
Imperial College attendees
DNV GL attendees

MoM. No.:

16011094/8

From:

DNV GL

Date:

19/08/2015

Prep. By:

Colin MacKenzie

DCRP P2 WG P2 Review Project

Time/Place: 10:00 – 15:00, ENA conference room 4.

Participants:	Steve Cox (Electricity North West) (Chair)	MK
	David Spillett (Energy Networks Association)	DS
	Allan Boardman (UK Power Networks)	ABo
	Alan Collinson (Scottish Power Energy Networks)	AC
	Kieran Coughlan (ENA)	KC
	Joe Duddy (RES)	JD
	Peter Twomey (ENWL)	PT
	Peter Aston (Western Power Distribution)	PA
	Colin MacKenzie (DNV GL)	CMacK
	Richard Druce (NERA)	RD
	Alan Birch (DNV GL)	ABi
	Gareth Evans (Ofgem)	GE
	Goran Strbac (Imperial College London)	GS
	Ben Marshall (National Grid)	BM
Appologies:	Mark Kilcullen (DECC)	MKK
	Chris Marsland (AMPS)	CM
	Will Monnaie (Scottish Southern Energy Power Distribution)	WM
	Alan Creighton (Northern Powergrid)	AC
	Andy Beddoes (Scottish Power Energy Networks)	ABe
	Suzanne Huntley (Northern Ireland Electricity)	SH

P2 Review Working Group Monthly Meeting 8

1. Meeting objectives

The main objectives of the meeting were to:

- Presentation and discussion of draft results and conclusions from Imperial Colleges work on work streams 2.1 to 2.6,
- Review and discuss the draft report circulated by NERA regarding alignment of a future security of supply standard in distribution networks with other codes and regulatory schemes.
- Brief statement on any progress issues, and
- Confirm/update status of outstanding actions.

Agenda

1	Introductions welcome to ENA and housekeeping (<i>Fire Procedure etc.</i>)	SC	10:00
2	Statement on aim of meeting and key agenda items	C MacK	10:10
3	Presentation and discussion of draft results and conclusions from Imperial Colleges work on work streams 2.1 to 2.6.	GS	10:15
	Break		12:15
4	NERA led presentation of Work Stream 2.7 ¹ report finding.	RD	12:45
5	Quick review of actions from last meeting.	C MacK	14:15
6	Brief statement on any progress issues.	C MacK	14:30
7	AOB	SC	14:35
8	Summary review of new actions	C MacK	14:50
9	Next Meeting – 23 September 2015		15:00

2. Statement on aim of meeting and key agenda items

C Mack outlined the items on the agenda and introduced the presentations that were designed to demonstrate progress of the work streams and stimulate debate on the early findings and outcomes.

3. Presentation and discussion of draft results and conclusions from Imperial Colleges work on work streams 2.1 to 2.6.

GS introduced the significant set of slides that provided the background and summary to the analysis that has been performed or is on-going associated with WS 2.1 to 2.6 and has been recently updated with the revised input data based on guidance from the DCRP P2 WG following Goran’s webinar on 20 July 2015. This fundamental economic analysis relates to identification of potential benefits of changes to network design principles and leads to an evidence based approach for cost benefit analysis of future options.

The main analysis topics presented are:

- Economically efficient network design and operation;
- Handling of exceptional events (HILP) and robust network design;
- Security contribution from non network technologies;

¹ Work Stream 2.7 covers the alignment of the security of supply standard in distribution networks with other codes and schemes. Richard Druce presented a MEMO outlining the proposed content of the report at our DCRP P2 WG meeting on 27 May 2015 and requested and gathered feedback from the WG members prior to developing the report presented here.

- Towards a “Smart Grid”, and
- Generator driven network design.

Issues/comments raised and discussed during the presentation that are relevant to the analysis included:

- Are we confident that we have covered all the relevant issues relating to P2/6 in the analysis and have we been able to identify the key influencing factors of network design? (BM) GS indicated that P2/6 metrics had been assessed through the cost efficiency analysis carried out by IC.
- Is it possible to attribute network performance to P2/6 or has it been delivered through other incentives? (JD)
- Current standard is focused on fault restoration, not on maintenance outages (ABO) GS confirmed their work is focussed on fault restoration (post meeting note, the P2 sub group has been asked to review Imperial’s MTTR times which are based on the RRP data provide to Imperial. This is to ensure that the MTTR figures used in their analysis are not impacted by events that were operational decisions to delay repairs causing the MTTR estimates to appear too long). However, in terms of operation there is competition between network design for supply security and the use of mobile generators to restore supplies as an alternative. GS indicated that he does not have any operational costs i.e. costs for provision of mobile generation at differing ratings. Agreed that C MacK should raise this as an action on the P2 sub group to provide GS with suitable mobile generation costs – action 8.1. Agreed that at higher demand substations mobile generation is not feasible (opinion in the room indicated a maximum mobile generator of 15MW (SC) to 20MW (AC)) however at lower demands, say 500kW mobile generator may be an option that could be considered on a CBA basis against a conventional network redundancy design.
- There is a question of reliability where automation where HV networks reach 60% automation. (BM). Agreed that the levels of HV automation are not clear and that this may be more of an issue for Ofgem to allow costs to ensure the reliability of HV automation.
- Dynamic rating – should ensure the system design is not based on breaching asset ratings, but additional reliability could be provided in operational time frame through monitoring such breeches –should this be included in the analysis? (SC/BM). (Post meeting note, if this is an operational issue is it outside the scope of a new P2 standard).
- HILP events – we need to differentiate between events that may be foreseen (but occur rarely e.g. severe weather and those that are very difficult to predict (or we are not confident in predicting) (BM) and understand the level of confidence of the probability of the event occurring to determine if it should be included as a design parameter- see HILP request for reporting of further incidents – action 8.3. Also noted that one DNO indicated that the present P2/6 standard has a lack of clarity regarding busbar faults that should be clarified in the new standard.
- Noted that WG members indicated that the Ofgem Web site has HILP papers going back to 2010 and that Ofgem published a report on HILP events. Action on GS to review these sources for further HILP information – action 8.4.
- Charging principles and network pricing – GS provided an overview of pricing methodologies used in advanced US markets in the context of supporting long term network investment.
- Demand Side Response – it was noted by GS that it was not possible to present the results in an effective manner e.g. tables, as there were too many impacting factors involved to create a viable summary table report.
- Distributed generation – agreed that security analysis may be performed for network demand but this was very difficult for generation, little data is available to model diversity of generation (PA). GS indicated that curtailing generation is a much lower cost than curtailing demand, hence there are unlikely to be plans to improve connection security for distributed generation.
- In terms of operational costs required by Imperial GS is to put forward a condensed specific list of operational costs required to the WG action 8.2.

4. NERA led presentation of Work Stream 2.7 report finding.

RD introduced the draft report issued to the WG (Work stream 2.7: Interactions with Other Regulatory Mechanisms) for feedback and comments (see action 8.6) and confirmed that it was to be treated as

work in progress. A summary of the current version of the draft was presented and highlighted some of the options and key issues identified, including the definition of Economic efficiency, regulatory methods and its context within the other regulatory instruments. The presentation included discussion over the nature of the level of network reliability afforded by P2/6 (standard, bare minimum, defines de minimus etc.) and how it interacts with other regulatory instruments. RD also presented the economic framework that will allow the Consortium to compare reform options using the Imperial modelling results and identify the interactions with other regulatory mechanisms, which affect the choice between reform options for P2/6.

Options identified and considered in the draft report and discussed during the presentation were:

- Retain P2/6 without change;
- Retain the nature of P2/6, but update the deterministic requirements to better achieve efficiency and to account for new technologies;
- Apply only de minimis deterministic requirements, and oblige DNOs to perform CBAs to justify further anything above this level;
- Oblige DNOs to plan in accordance with CBAs, with no deterministic requirement, and
- Abolish any formal planning standard.

It was noted that the other existing regulatory instruments may need to be amended/strengthened depending on the option(s) selected in order to maintain the required level of network reliability and ensure economic efficiency for the level of reliability.

SC noted that if there was no deterministic level of security it was likely that the cost of capital would increase to the DNOs and also that they may become open to many and significant legal challenges – see action 8.5.

5. Review progress on actions from the last meeting.

CMacK went through the summary list of actions outstanding from the previous meetings. Any amendments or updates to the outstanding actions are noted below in the red text.

Summary of Amended Actions

Action Description	Action/Responsible/Due Date
3 Consortium to consider impact of WS7 information provided by DCRP P2 WG on P2 review. WS 2 activity for NERA and Imperial. DCRP P2 WG to check with Ofgem how interactions with WS7 may be handled.	GS, RD /Consortium PM/during workstream 2. Ongoing Ongoing (meeting 6) SC to check with Ofgem (GE) how the interactions with WG7 may be handled with the P2/6 review. (Meeting 7) SC has spoken with GE and GE is happy to act as link to WS7 works. SC indicated that it is likely he will replace Mike Kay on WS7 group.
11 DCRP P2 WG is to advise any other party that they would wish to peer review the modelling inputs and out puts in anticipation of a public consultation on proposals that may be justified (in part) by evidence produced using Imperial's techno-	DCRP P2 WG/DS/ by 23 Feb 2015. Outstanding (agreed on 27/3/2015 to leave this open for further discussion with Ofgem who raised this item) (Meeting 6) SC to discuss this

Action Description	Action/Responsible/Due Date
economic model.	with Gareth Evens of Ofgem. (Meeting 7) SC has spoken with GE, action is on GE to advise if they wish a peer review. SC noted that GE may be happy with plans for DCRP P2 WG to review IC's analysis inputs and outputs which has started based on a review of GS's presentation material from webinar on 20 July 2015.
5.3 DNOs to complete the P2 questionnaire and return to ABi prior their interviews. All DNOs to arrange interview dates with ABi ASAP.	(Meeting 8), noted that the P2 sub group formed and agreed at meeting 7 is now carrying out the peer review function of data inputs, assumptions and modelling output conclusions. Steve Cox of ENWL has taken a lead role in this review process supported by WPD and NPG. Abe,TB /DS/29 May 2015.
5.9 DS to establish if the November 25 meeting can be moved to accommodate Steve Cox's request.	DS/DS/12 June 2015 Ongoing: (meeting 6) discussed but no agreed outcome. (Meeting 7) DS will send out Doodle Pole today to get a revised date agreed close to 25 November and advise. (Meeting 8) Complete. DS confirmed new date for meeting is 24 November.
6.4b Consortium to investigate if HILP event details are publically available from Ofgem.	GS/CMacK/17 July (Meeting 7) Outstanding action on GS. (Meeting 8) Outstanding action on GS. See new action 8.4.
6.4c GE to confirm if Ofgem holds any details from DPCR5 reports.	GE/DS/ 3 July (Meeting 8) Outstanding action, DS to chase GE for a response.
6.4d DS to investigate if ENA hold any records/reports	DS/DS/ 3 July (Meeting 8) DS has completed and circulated material.
6.6 CMacK to advise dates from the revised programme for the WS5 stakeholder event workshop to present the Option Report, to be held in November	CMacK/DS/ 29 July (Meeting 8) Complete. The consortium has revised the programme and the WS 5 stakeholder event is now week starting 18 January 2016. However, until the Sub group peer review is completed and WG members are happy with the Imperial analysis and conclusions, and the DCRP P2 WG reviews and

Action Description	Action/Responsible/Due Date
<p>6.7 C MacK to advise DS and SC of the cost impact of the delays to the programme resulting from the issues of gathering data for WS2.</p> <p>7.1 Request for HILP examples emailed to all DCRP P2 WG members by DS on 30 June 2015. DS to chase members for a response.</p> <p>7.2 WPD to provide questionnaire response by 5 Aug. CMacK to confirm interview date of 7 Aug with WPD and advise who will attend from Consortium.</p> <p>7.3 Regarding the webinar on 20 July and GS's slide packs provided to the WG, CMacK is to circulate SC's high level comments such that others can agree these cover their own views on feedback or add to these by 10 August.</p> <p>7.4 CMacK is to setup a sub WG kick-off call with GS, WPD, NPg and ENWL as soon as possible.</p> <p>7.5 GS and RD to provide any material the WG should read prior to the 19 Aug meeting to DS via CMacK by COB 14 August.</p>	<p>agrees to the Options report developed in WS2.9 and through to completion in WS 3 there is still scope for programme slippage. The DCRP P2 WG requires to adhere to the new programme to ensure WS 3 produces an Options report members are happy with to go out to wider industry circulation. DS to consider when the drop dead date is to set the date for the WS 5 stakeholder event for week starting 18 January 2016 and check with C MacK closer to this date the likelihood of the programme meeting this date.</p> <p>Action on DS – see action 8.9</p> <p>CMacK/29 July (Meeting 8) Action completed, ENA advised.</p> <p>DS and all WG members/10 Aug. (Meeting 8) Completed - GS confirmed that some examples have been provided but more examples were requested –see action 8.3</p> <p>TB/5 Aug 2015 CMacK/ 31/July 2015 (Meeting 8) Completed – Questionnaire provided and interview have been completed</p> <p>CMacK/ 31 July 2015 All WG members/10 Aug 2015 (Meeting 8) Completed – see action 8.7</p> <p>CMacK/5 Aug 2015 (Meeting 8) Completed – first meeting has been held and 2 additional meetings scheduled for 1 and 8 of September.</p> <p>DS/RD/ 14 Aug 2015. (Meeting 8) Completed – RD provided draft report to WG members, GS to provide reduced slide pack to WG of the slides actually presented on 19 Aug see action 8.8.</p>

6. Brief update on progress to date and issues encountered.

CMacK presented a short verbal summary of progress to 19 August. The formal progress report has been delayed due to the July progress report being delayed while the consortium considered further delays to programme experienced during June/July and the potential for further delays based on experience to date. C MacK outlined the following:

- WS2.0, the final interviews with the remaining DNOs are now complete and the process of analysing the questionnaires for the qualitative analysis and reporting has started.
- Progress has been evidenced by the initial presentation of the WS2.1 to WS2.6 results at the webinar on 20 July and the further work and refinements presented at today's meeting by GS.
- The draft WS2.7 report was circulated prior to this meeting and the key finding presented today by RD.

In terms of potential issues and risks CMacK indicated the following:

- There is still a risk to programme during the Sub group peer review process until this is completed and the DCRP P2 WG is happy that the WS2.1 to 2.6 Imperial data inputs are robust and the output key conclusions are accepted as correct and complete.
- There is also a risk to programme in agreeing the options report conclusions and content during WS3 ready for release to the wider industry.

7. AOB

DS confirmed that the November meeting was now re-scheduled for the 24th November, rather than the original date of 25th November, meeting schedule table in the minutes has been updated accordingly.

CMacK confirmed that the Consortium was planning for the next Stakeholder event to take place in January where they would present the key findings of the Options Paper.

AB confirmed that the Consortium was keen to include additional parties on the circulation list for attendance at the next Stakeholder event and that any names/contact details could be provided directly to him (alan.birch@dnvgl.com) for inclusion in the database.

Meeting was closed by DS

8. Summary Review of new actions.

	New Action	Action/Responsible/Due Date
8.1	Agreed that C MacK should raise an action on the P2 sub group to provide GS with suitable mobile generation costs.	C MacK by 28 Aug.
8.2	GS is to provide a condensed list of operational costs required for his modelling to the WG.	GS by 1 Sept 2015.
8.3	Further Information relating to HILP events has been requested by GS, some already provided (via action 7.1) but more examples have been requested by GS.	All WG members to provide additional examples to Consortium members/4 Sept 2015
8.4	GS to review Ofgem web site for sources for further HILP information, papers and reports.	GS 4 Sept 2015
8.5	Discussion relating to the use of P2/6 in the defence of potential legal challenges, SC to investigate with ENWL legal team how many claims are there per year where ENWL has used P2/6 to fight the claim and win.	SC to discuss with ENWL legal department and report back by 4 Sept.
8.6	Feedback was sought by RD regarding the draft WS2.7 report circulated prior to the meeting and the summary presentation.	Feedback is requested from all WG members directly to RD by 9 September 2015.

New Action	Action/Responsible/Due Date
8.7 SC provided high level feedback to the materials presented to the review meeting on 20 July (SC's email was circulated to WG members on 31 July 2015 by CMack, see Appendix A for SC's email) – other WG members were asked to review and agree that SC's comments cover their own organisations' view or provide their own feedback to Goran's presentation. To date most DCRP P2 WG members have not responded.	All DCRP P2 WG members to indicate their agreement that SC's feedback covers their own organisation's views or to provide their own feedback by 4 Sept 2015 .
8.8 Slide pack presented by Imperial College was not circulated before the meeting – not all slides were presented during the meeting. GS to provide slide pack of the actual slides discussed during the meeting	GS to provide slide pack to all WG members/21 Aug
8.9 DS to consider when the drop dead date is to set the date for the WS 5 stakeholder event for week starting 18 January 2016 and check with C Mack closer to this date the likelihood of the programme meeting this date.	DS.

Next Meetings

The programmed next meetings for the DCRP P2 WG are:

DCRP P2 WG Meeting No.	Date
9	Wednesday 23 Sept
10	Wednesday 28 Oct Provisionally moved to Tuesday 27 Oct, DS to confirm.
11	Wednesday 25 Nov. Tuesday 24 th November
12	Friday 18 December

1. All meetings will commence at 10:30 at the ENA unless advised otherwise.
2. Any material for circulation prior to the meeting should allow sufficient time for WG members to read prior to the meeting and as a minimum should allow 2 working days.

Appendix A

From: Cox, Steve [<mailto:Steve.Cox@enwl.co.uk>]
Sent: 20 July 2015 19:21
To: Strbac, Goran
Cc: David Spillett; Birch, Alan; MacKenzie, Colin
Subject: RE: P2/6 review project - internal workshop

Goran, Colin

First of all please accept my thanks for the pack you sent over. There is clearly a huge amount of analysis going on and I appreciate the difficulty you have in engaging the stakeholders in the key elements of the debate. Having read through most of it I'm left with a few higher level observations. These may or not help but I thought it at least worth sharing them.

1. We should probably consider how best to establish in the mind of stakeholders a valid launch point for the analysis. Without this milestone being achieved we risk circling around the analysis discussion and questioning the start point. I'm keen the project does this fairly soon. Perhaps one we can discuss at our next face to face?
2. The data set is large, complex and contains a considerable range for many elements. As discussed on the call I think the cost range on some of the assets is too large and whilst I appreciate the point about making robust conclusions around price points it may be helpful to bracket costs within a narrower range that would be seen as sensible by the regulatory stakeholders. This can be quite large say +/- 25% around the nominal price but at least provides a confidence range that isn't hugely subjective. It would also help people understand the tables you presented and the breakeven points. How could we do this?
3. As suggested by Alan it's probably worth splitting HV into 66/33 and 11/6.6 – this may help whittle the costs ranges down and make it more intuitive.
4. The other key values: DSR, Generation, losses, VOLL all needed a similar agreed sensitivity range. VOLL is a particularly sensitive issue and we need to ensure Ofgem's thinking on guaranteed standards and IIS caps are taken into account. The former provides an interruption duration accelerator and the latter a societal cap on the cumulative frequency and overall duration. Visibility of how these factors 2 & 3 are taken into account will be important in getting this base assumption verified.
5. Optionality ie the value of deferment of the decision not just the deferment of asset investment is I guess is represented by the WACC however it would be useful up front to state assumptions in these areas.
6. In thinking back from our eventual recommendations we probably need to consider two periods – ED1 and after ED1. The latter is more important to the future use of the standard but if we don't consider ED1 we risk the work being stranded until 2023. This could take the form of no regrets decisions within ED1 with the values being set at current rates.
7. I'm keen we start to position the language of the findings in customer terms eg 'economically efficient' is from the perspective of GB customers. There are some very material differences between what is efficient for customers and for shareholders. Ofgem's task is to align these but where the economics are not aligned that is a very significant barrier to ED1 implementation or

conversely a key focus for Ofgem in their preparation for ED2.

Equally this focus helps bring out the long term cost base implications and what should and shouldn't be allowed – this is very important in areas such as automation where capex investment is funded by short term incentive returns as opposed to long term recurring opex costs which are funded through allowances. At the heart of this is defining efficient but ensuring allowances follow this

8. On a presentational point it may be useful to follow you 'objectives and approach' slide with your 'findings and conclusions' then show the analysis and case studies. It just helps the audience (well me at least) hold onto the crumb trail of the analysis if they know the end point.
9. The challenge we will have in presenting all this work is getting buy in from stakeholders to the conclusions and recommendations.
We clearly need to dive in to the detail at this point but in parallel try and identify the key messages and conclusions we will need to sell.
It may be useful to discuss how to structure and collect our observations as we work through the programme.

Kind regards Steve