

ENGINEERING RECOMMENDATION P2 REVIEW

Monthly Progress Report to 13 September 2015

DCRP P2 WG

Report No.: 16011094/PROG 8, Rev. 001

Document No.: 16011094/PROG 8

Date: 18/9/2015



Project name:	Engineering Recommendation P2 Review	DNV GL Energy Advisory
Report title:	Monthly Progress Report to 13 September 2015	PSP UK
Customer:	DCRP P2 WG	Palace House
	6th Floor, Dean Bradley House	3 Cathedral Street
	52 Horseferry Road	London
	London	SE1 9DE
	SW1P 2AF	Tel: +44 (0) 203 170 8165
Contact person:	D Spillet	04478894
Date of issue:	18/9/2015	
Project No.:	16011094	
Organisation unit:	EA UK	
Report No.:	16011094/PROG 8, Rev. 001	
Document No.:	16011094/PROG 8	

Objective:

This document reports on the monthly progress made by the Consortium for the P2 review project. Progress is reported on each of the work streams that are presently active including:

- estimated progress so far
- forecast time to complete and deliver
- issues encountered
- forecast of potential issues or risks
- forecast of any changes in scope
- Target progress for next month.

The report also includes the latest revision of overall P2 Review project programme (phase 1), the up dated outstanding actions register and the latest version of the general risk register.

The programmed dates for future progress reports are summarised below:

No.	DCRP P2 WG Meeting Date	Issue Monthly Progress Report
9	Tuesday 27 Oct	Friday 23 Oct
10	Wednesday 25 Nov	Friday 20 Nov
11	Friday 18 Dec	Friday 18 Dec

Rev. No.	Date	Reason for Issue	Prepared by
001	18/9/2015	Consortium monthly progress reporting	C MacKenzie



Table of contents

1	ACTIVE WORK STREAMS	3
2	ACTIVE WORK STREAM SUMMARIES	4
2.1	Estimated progress	4
2.2	Forecast time to complete and deliver	7
2.3	Issues encountered	9
2.4	Forecast of potential issues or risks	9
2.5	Forecast of any changes in scope	10
2.6	Target progress for next month	10
3	P2 REVIEW PROJECT PROGRAMME	12
4	OUTSTANDING ACTIONS REGISTER	13
5	RISK REGISTER	14

Appendices

Appendix A	Project Program
Appendix B	Outstanding actions Register
Appendix C	General Risk Register

1 ACTIVE WORK STREAMS

The active work streams and sub work streams are highlighted in Table 1 along with those work streams that are complete or have still to commence.

Work stream/sub-work stream	Deliverable	Activity Status
Work Stream 1 -Project Initiation	Issue of initiation paper	Completed.
Work Stream 2 - Assessment of P2/6 and Identifying Options for Reform		Ongoing
WS2.0 Stakeholder interviews (intimate)	A summary report covering key highlights from the stakeholder engagement/interview activities.	Ongoing
WS2.1 Framework for assessing security performance and measures and characteristic network designs	Framework for the development of future network design standards	Ongoing
WS2.2 Service quality and cost effectiveness of the delivered to consumers by the present network design practises	Summary report that will feed into the 'options' milestone report	Ongoing
WS2.3 Risk associated with asset replacement, common mode failures and high impact events	Summary report that will feed into the 'options' milestone report	Ongoing
WS2.4 Impact of Smart Grid technologies on service quality risk profile	Summary report that will feed into the 'options' milestone report	Ongoing
WS2.5 Assessment of impacts of alternative control and operation strategies on security of supply	Summary report that will feed into the 'options' milestone report	Ongoing
WS2.6. Loss inclusive design of distribution networks and impact on security of supply	Summary report that will feed into the 'options' milestone report	Ongoing
WS2.7: Alignment of security of supply standard in distribution networks with other codes and schemes	Summary report that will feed into the 'options' milestone report	Ongoing.
WS2.9: Options for future development of distribution network standard including 1st Iteration of the Techno economic Model	Summary report that will feed into the 'options' milestone report	Ongoing.
Work Stream 3 - P2/6 Options Report	P2/6 Options Report	Still to start
Work Stream 5 Stakeholder Engagement Report: Workshop	Stakeholder Workshop Report.	Still to start
Work Stream 6 - Formal Strategy Consultation for P2/6	Formal Strategy Consultation Paper for P2/6	Still to start
Work Stream 7 – Detailed review and analysis	Tabulated view of all question responses and actions to be taken with regards to final Phase 1 Report.	Still to start
Work Stream 8 - Phase 1 report	Phase 1 final report	Still to start
Work Stream 9 - Programme work for Phase 2	Work programme for Phase 2 – project plan and supporting documentation	Still to start

Table 1 Summary of Active Work Streams

2 ACTIVE WORK STREAM SUMMARIES

2.1 Estimated progress

For all active work streams the following table shows the estimated progress this month and the overall progress to date including the estimated percentage completion and key milestones achieved or tasks completed or a brief account of progress.

Work Stream	% completion last month	% completion this month	Key milestones achieved or tasks completed or brief account of progress
WS1	50	100	<ul style="list-style-type: none"> Completed 1 May 2015.
WS2.0	50	90	<ul style="list-style-type: none"> Split into two areas; 1. questions covering Imperial's data request for the WS2 quantitative analysis and 2. questions for qualitative analysis required later in WS 2. The P2 sub working group continues to work with Imperial to review the data inputs and key analysis outputs as a peer review of Imperial's work. Area 2 the consortium has completed all interviews and gathered all completed questionnaires and is in the process of carrying out the qualitative analysis and developing the draft report.
WS 2.1	80	90	<ul style="list-style-type: none"> Imperial College is making good progress setting up the various models required for the various WS2 analysis. Data for the WS2 quantitative analysis as discussed above is collected. Initial analysis of data has been completed and this was presented at the 20 July webinar. On 8th April the consortium discussed, agreed and documented the high level options for P2/6 replacement to be analysed using the assessment framework. Good progress has been made on establishing a set of characteristic network designs. Finalised model for generation driven network investment. Prepared technical questions for the webinar. Good progress has been made on reviewing recent studies on quantifying costs of interruptions and risk measures. Good progress has been made on the modelling of change in load diversity with the

			<p>duration of outages.</p> <ul style="list-style-type: none"> Completed statistical analysis of failure rate, restore and repair durations. Participation in P2 sub working group. Progress has been made on writing up summary section.
WS2.2	80	90	<ul style="list-style-type: none"> The relevant case studies for estimating the risk profile in present networks are specified. Statistical analysis of HV feeder characteristics in UK networks has been carried out. Initial CBA test case studies incorporating efficient network designs for both incremental network reinforcement and long-term network planning for HV and LV networks are completed and presented on the 20 July Workshop. Proportion of HV networks in GB that may be affected has been estimated. Sensitivity analysis has been carried out to understand the impact of the key drivers on least-cost network design and findings presented at the August monthly meeting. Statistical analysis of EHV and 132kV networks characteristics. CBA case studies for incremental network reinforcement for EHV and 132kV networks are completed. Additional work has been carried out to consider impact of reactive power. Progress has been made on summary section writing.
WS2.3	70	80	<ul style="list-style-type: none"> Good progress has been made on specifying the relevant case studies for the estimation of the risk associated with asset replacement, common mode failures and high impact events. Results of case studies, using concept of Conditional Value at Risk and showing risk driven network design considering exposure to common-mode failures and HILP events – high level findings presented at the review meeting. Conducted case studies showing robust design of distribution substation, assessment of impact of and ways of dealing with HILP and common mode DSR failures. Further sensitivity studies have been carried out to assess the impact of driving parameters. Good progress has been made on summary section writing.

WS2.4	85	90	<ul style="list-style-type: none"> • Good progress has been made on conducting illustrative case studies using non-network solutions i.e. responsive demand and energy storage. • Good progress identifying alternative approaches to assessment of security contribution of non-network solutions has been made. • Completed set of case studies for security contribution of demand side response, distributed generation and energy storage. The findings are available and have been presented at the 20 July Workshop. • Completed case studies showing value of automation in three DNOs' HV networks. • Completed case studies showing the impact of consumer choice driven network design. The findings were presented at the 20 July Workshop. • Analysis was carried out on potential benefit of application of dynamic line rating, occasional overloading of transformers during an outage, temporary overloading of underground cables, and emergency voltage control were presented at the August monthly meeting. • Good progress has been made on summary section writing.
WS2.5	70	80	<ul style="list-style-type: none"> • Good progress made on identification of exposure to common mode failures associated with ICT infrastructure. • Other aspects of this WS are covered in the questionnaire and interviews presently being developed in WS2.0 Area 2. • Completed case studies showing impact and degree of a common-mode ICT related event on the value of demand side response contribution to security of supply. The findings were presented at the 20 July workshop. • Good progress has been made on summary section writing.
WS2.6	80	90	<ul style="list-style-type: none"> • Good progress has been made on establishing relevant cases for assessing the impact of loss inclusive design on reliability. • Initial case studies showing implications on the future network security standards and opportunities for enhancing network reconfiguration flexibility were carried out – high level findings presented at the 20 July

			<p>Workshop.</p> <ul style="list-style-type: none"> • Additional work carried out to include impact of reactive power. • Good progress has been made on summary section writing.
WS2.7	95	95	<ul style="list-style-type: none"> • We drafted a memo describing the structure, scope and likely content of the Workstream 2.7 report, and took feedback on this from the working group. We then produced a full draft report setting out an economic framework for the review of potential reform options, and how they interact with the broader regulatory framework, and Richard Druce presented a summary of this report at the August working group meeting. We requested feedback on this draft by Wednesday 9th September (3 weeks from the last meeting), with a view to incorporating comments and feedback before producing a final report. So far, as several key stakeholders have yet to comment, we are holding off the final work to develop a final report. Key missing stakeholder have been contacted and provided with further time to provide their comments.
WS2.9	5	10	<ul style="list-style-type: none"> • Framework and introduction for the WS 2 options report which pulls together the outputs from the other WS2 sub-work streams written. • Section outlining the process of reviewing the high level options for a new standard using the results from WS 2.0 to 2.6 and WS2.7 drafted and circulated to consortium members for comment. • Awaiting the near final outputs from WS2.1 to 2.7 and the qualitative analysis from WS2.0 before progressing.

Table 2 Summary of active works tream progress

2.2 Forecast time to complete and deliver

The following table shows the forecast time to complete and deliver the active work streams.

Work Stream	Forecast calander weeks to complete	Comments
WS1	Completed on 1 May 2015.	
WS2	6	Working to revised programme presented in the July progress report.

WS2.0	3	Working to revised programme presented in the July progress report. Qualitative analysis and report presently being worked on. Sept 2015 a further 3 weeks added to programme for this task.
WS2.1	6	Following July Workshop revised reliability and cost data issued for working group agreement. Summary section writing. The process of data input peer review and revised studies accounts for a part of the additional programme extension. Sept 2015 a further week added to programme for this task.
WS2.2	6	Following test cases presented at the July Workshop the case studies for EHV and 132 kV networks have been performed. Business case for more than two transformers per substation. The process of data input peer review and revised studies accounts for a part of the additional programme extension. Summary section writing. Sept 2015 a further week added to programme for this task.
WS2.3	6	Additional case studies and summary report writing. The process of data input peer review and revised studies accounts for a part of the additional programme extension. Sept 2015 a further week added to programme for this task.
WS2.4	6	Repeat initial value of automation case studies using agreed reliability data on more DNOs, and summary section writing. Impact of DSR cost on their optimal contribution. The process of data input peer review and revised studies accounts for a part of the additional programme extension. Sept 2015 a further week added to programme for this task.
WS2.5	6	Additional case studies and summary section writing. The process of data input peer review and revised studies accounts for a large part of the additional programme extension. Sept 2015 a further week added to programme for this task.
WS2.6	6	Continue working on the task, and summary section writing. The process of data input peer review and revised studies accounts for a part of the additional programme extension. Sept 2015 a further week added to programme for this task.
WS2.7	4	As noted above, we requested feedback on our draft report for this workstream by Wednesday 9 th September, with a view to incorporating all feedback received before the working group meeting on 23 September. However, several key stakeholders have yet to comment on the report. Hence, we are delaying work to finalise the report. The forecast

		time to completion assumes that all feedback can be delivered in the next 2 weeks, leaving us 2 weeks to finalise the report. However, please note that if the feedback we receive from working group members is extensive and/or complex to incorporate, it may take a few more days.
WS2.9	6	This has been delayed by delays to other WS2 sub work streams as reported last month. Further work on the report is expected to commence this month.

Table 3 Summary of active work stream forecast time to complete

2.3 Issues encountered

The following table shows the issues encountered and estimated delay caused for each active work stream along with potential options to mitigate delays where possible.

Work Stream	Issue encountered	Delay caused	Proposed mitigation	Forecast reduction in delay due to mitigation
WS2	WS2.0 DNO data collection and interviews.	Estimated to be 3.5 months.	Data collection and interviews now complete.	Cannot be estimated.

Table 4 Summary of active work stream issues encountered

2.4 Forecast of potential issues or risks

A forecast of potential issues or risks impacting on delivery timescales, outputs agreed or quality of outputs for each active work stream are recorded in the following table. The table also contains potential options to mitigate any such impacts where possible.

Work Stream	Forecast Issue/Risk	Impact of Risk/Issue	Proposed mitigation	Forecast reduction in impact due to mitigation
WS2	Lack of agreement with WS2 analysis and modelling.	Impact on stakeholder buy in to analysis conclusions that will direct the option selected for the new P2 ER.	A P2 sub group has been formed to review the Imperial data inputs and key outputs of the analysis associated with WS2.1 to 2.6. This group has already reviewed the data inputs used by Imperial for the results presented on 20 July and further reviewed Imperial's data inputs following the 20 July presentation and prior to the results presented on 19	Cannot be determined yet.

			August.	
--	--	--	---------	--

Table 5 Summary of active work stream forecast potential issues or risks

2.5 Forecast of any changes in scope

The following table includes a forecast of any potential changes in scope for each active work stream that would require discussions with the DCRP P2 WG regarding an agreed change in scope or a budget variation.

Work Stream	Forecast scope change	Reason for change	Cost of potential scope change
WS1	None to report		
WS2	Additional PM due to programme delays from late receipt of data and DNO questionnaire responses and interview dates.	Overall P2 programme delay of 4.5 – 5 months estimated due to delays in receiving RRP data and also revising forward programme based on experience to date. This will result in additional management and reporting costs due to the programme extension from end of January 2016 until the programme is complete.	The forecast programme has slipped by nearly five months outside of the Consortium's control. An estimated cost for additional project management to continue the programme has been provided to the ENA.

Table 6 Summary of active work stream forecast scope changes

2.6 Target progress for next month

The following table includes a forecast of the intended progress to be made in the next month based on the progress so far.

Work Stream	Planned work targets
WS1	Completed.
WS2.0	Qualitative analysis report should be in near final form ready to feed into the WS2.9 options development process.
WS2.1	Complete set of relevant data. Populate key network types with corresponding range of reliability parameters of network assets needed to assess the network reliability performance. Carry out selected case studies. Writing summary of the analysis carried out.
WS2.2	High-level analysis to establish appropriateness of demand group definitions and

	<p>treatment of interconnection/transfer capability.</p> <p>Long term planning of EHV and 132kV networks analysis including analysis of potential impact of load payback on redundancy level of EHV and 132kV networks.</p> <p>Writing summary of the analysis carried out.</p>
WS2.3	<p>Agree characteristic scenarios for asset replacement, common-mode failures and high impact events.</p> <p>Carry out additional case studies and sensitivity analysis</p> <p>Writing summary of the analysis carried out.</p>
WS2.4	<p>Demonstration of possible evolution of compliance requirement.</p> <p>Writing summary of the analysis carried out.</p>
WS2.5	<p>Continue working on identification of exposure to common mode failures associated with ICT infrastructure.</p> <p>The consortium questionnaire and interviews will cover other relevant areas of this WS (see WS 2.0 Area 2).</p> <p>Writing summary of the analysis carried out.</p>
WS2.6	<p>Further network modelling will be carried out. Writing summary of the analysis will be carried out.</p>
WS2.7	<p>As noted above, we will incorporate feedback received by missing key stakeholders in the next 2 weeks and provide a final report around 2 weeks later.</p>
WS2.9	<p>The fully developed framework should be complete and the majority of all sections drafted.</p>

Table 7 Summary of target progress for next month.



3 P2 REVIEW PROJECT PROGRAMME

Based on progress to date and forecast completion times, the latest forecast delivery programme is included in Appendix A. Appendix A includes the original programme at the commencement of the project in January 2015 along with the revised programme agreed between the consortium members on 19 June followed by the latest programme forecast made at the beginning of August 2015. The revised programme reflects the data gathering issues encountered to date and the estimated time required completing the WS2 peer reviews at key stages.



4 OUTSTANDING ACTIONS REGISTER

The outstanding actions register is provided in Appendix B.



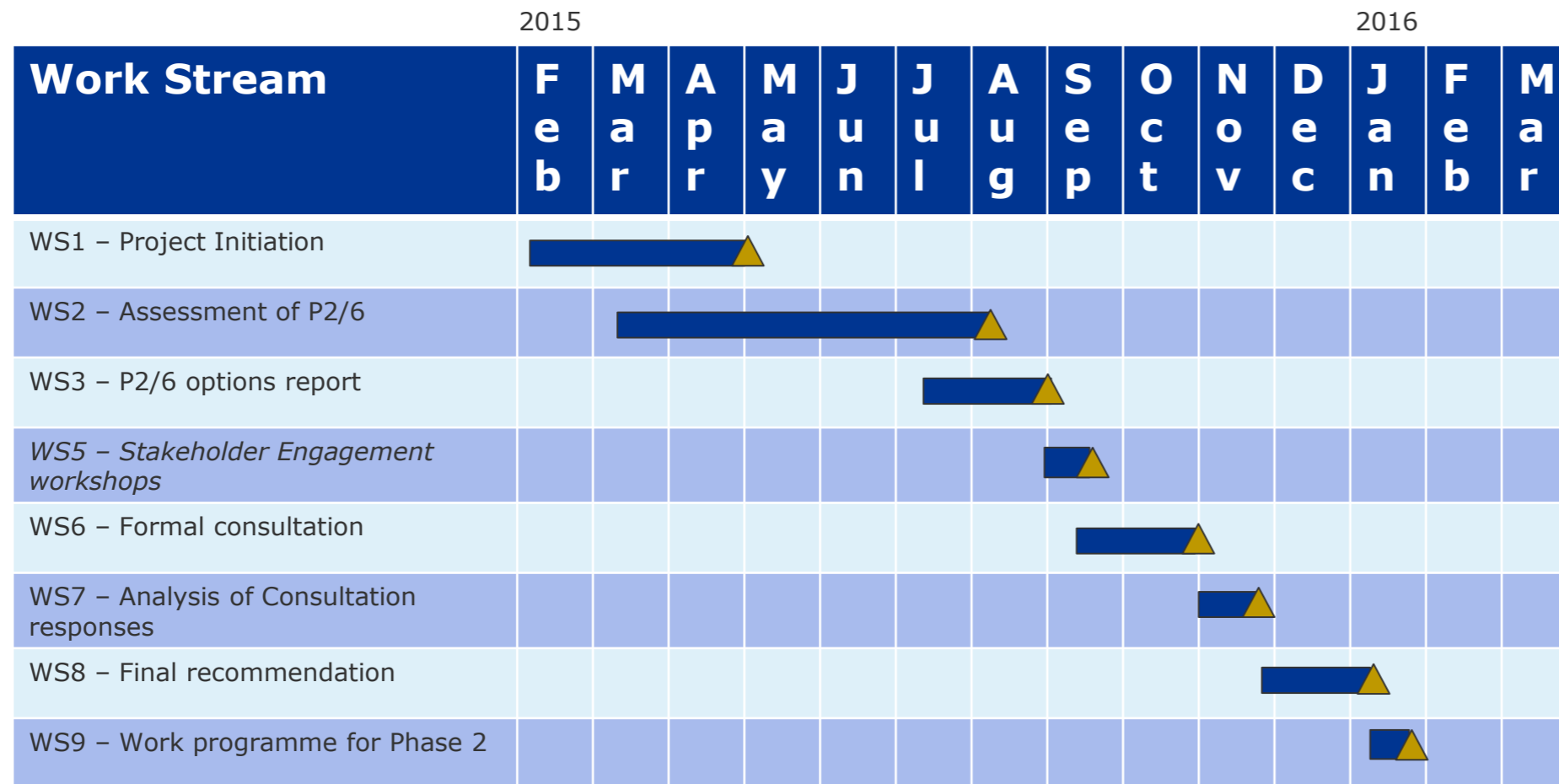
5 RISK REGISTER

The latest generic register of risks to programme delivery and mitigating controls is provided in Appendix C. The detailed risks and mitigation measures are provided in Table 5 in section 2.4.



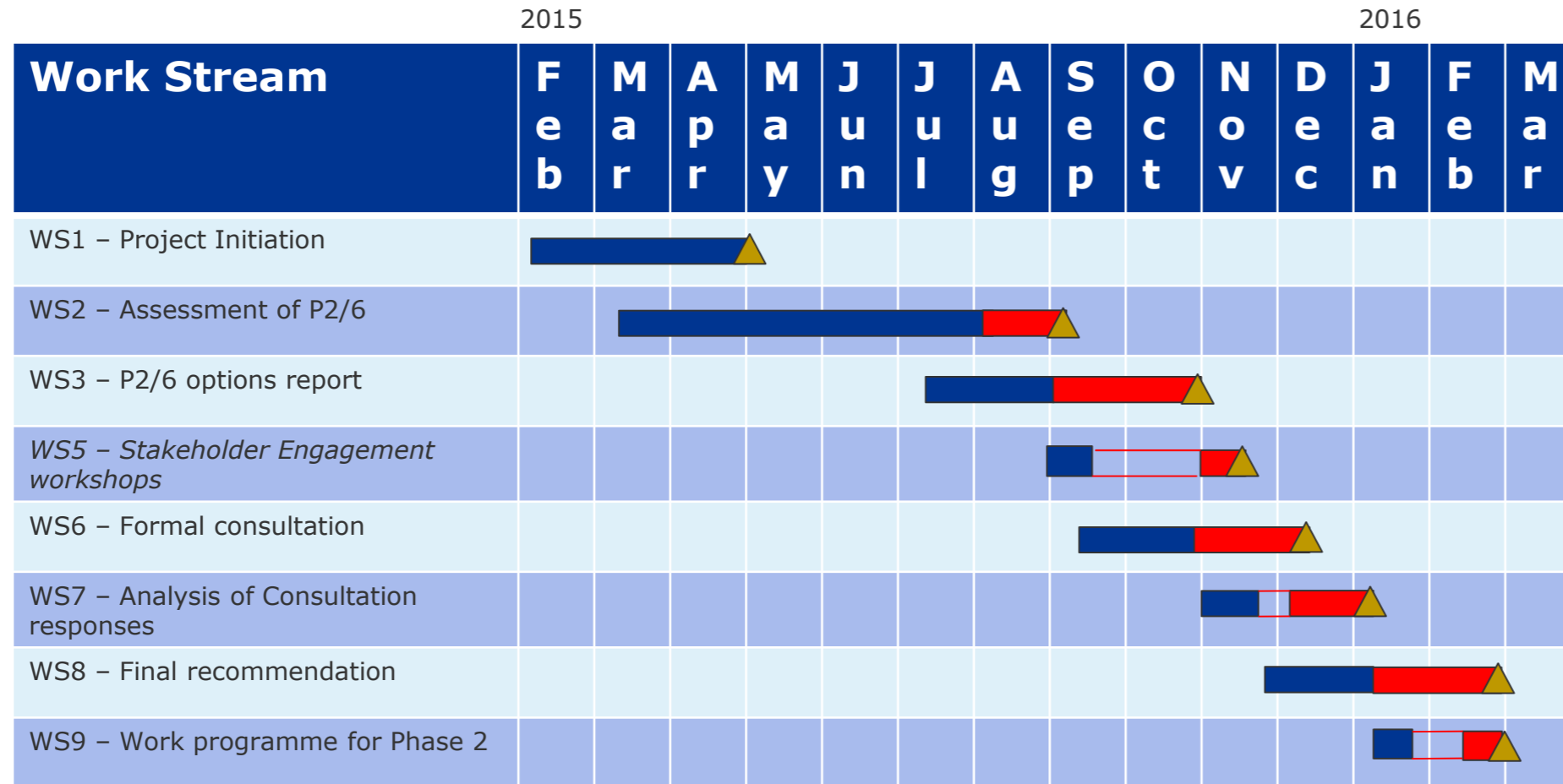
Appendix A Project Programme

The original (January 2015) high level summary programme is shown below.



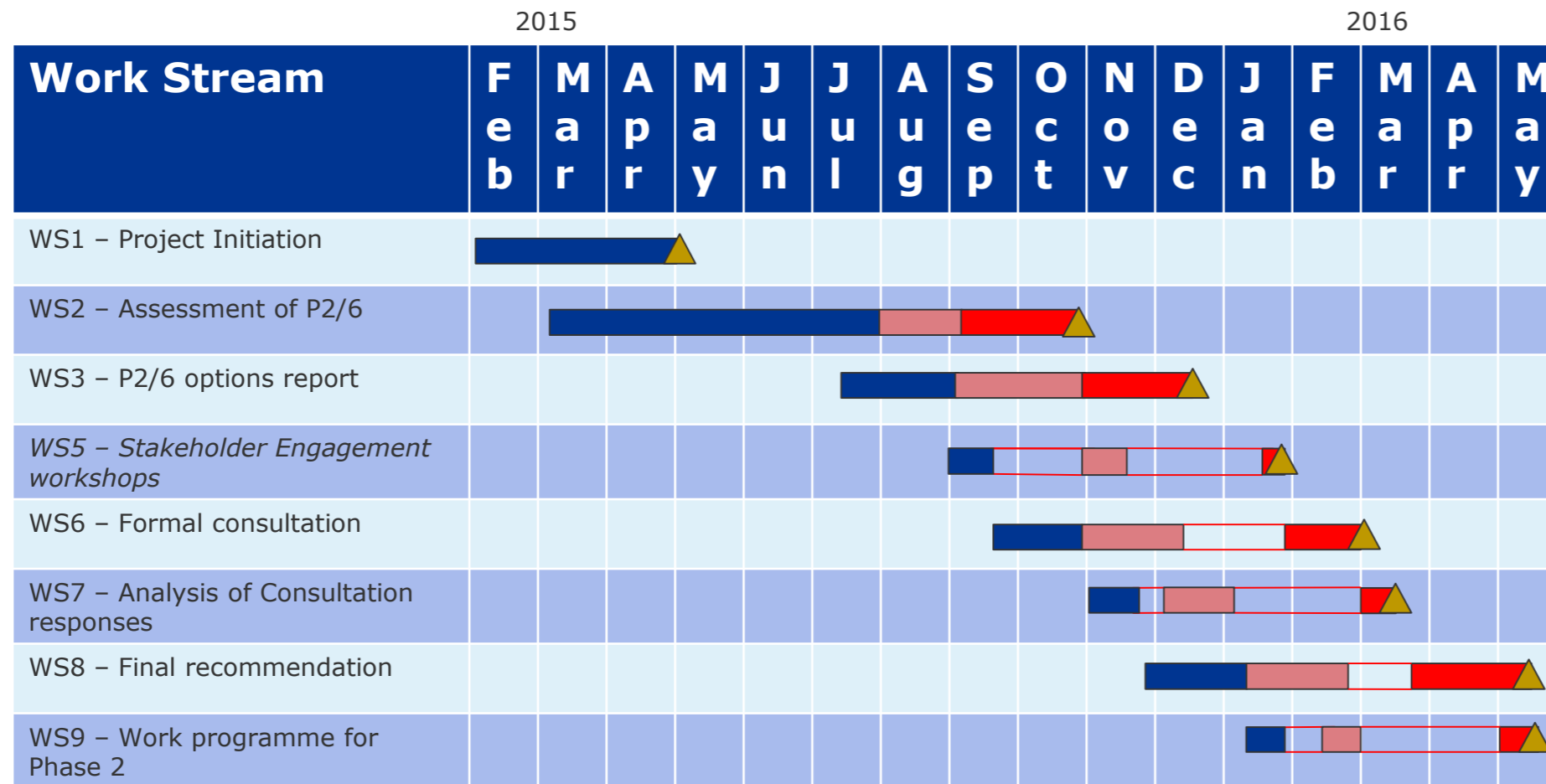
▲ = defined deliverable

The programme review carried out on June 19 2015 has resulted in the revised programme below. Revisions are coloured red.



▲ = defined deliverable

The programme review carried out in August 2015 has resulted in the revised programme below. The June revisions are coloured pink and the August revisions are coloured red.



▲ = defined deliverable





Appendix B Outstanding Actions Register

Outstanding actions following meeting on 19 August 2015.



Action Description	Action/Responsible/Due Date
<p>3 Consortium to consider impact of WS7 information provided by DCRP P2 WG on P2 review. WS 2 activity for NERA and Imperial.</p>	<p>GS, RD /Consortium PM/during workstream 2. Ongoing</p>
<p>DCRP P2 WG to check with Ofgem how interactions with WS7 may be handled.</p>	<p>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.</p>
<p>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-economic model.</p>	<p>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 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.</p>
<p>6.4b Consortium to investigate if HILP event details are publically available from Ofgem.</p>	<p>(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. GS/CMack/17 July (Meeting 7) Outstanding action on GS. (Meeting 8) Outstanding action on GS. See new action 8.4.</p>
<p>6.4c GE to confirm if Ofgem holds any details from DPCR5 reports.</p>	<p>GE/DS/ 3 July (Meeting 8) Outstanding action, DS to chase GE for a response.</p>
<p>New Action</p>	<p>Action/Responsible/Due Date</p>
<p>8.1 Agreed that C MacK should raise an action on the P2 sub group to provide GS with suitable mobile generation costs.</p>	<p>C MacK by 28 Aug. Completed by email on 27/8/2015.</p>

Action Description	Action/Responsible/Due Date
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 was requested from all WG members directly to RD by 9 September 2015. Please note we did not receive feedback from some key stakeholders, so now ask that this feedback be provided within 2 weeks. If any working group members do not wish to comment, please advise RD that this is the case.
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.	Complete. DS distributed slide pack to WG via email on 3 Sept 2015. DS.



Appendix C Risk Register



Cells contain formulas and will be calculated. Do not update these cells.								
Text Blue text represents sample text and should be ignored. This row is not included in graph and sort algorithm.								
Acceptable risk score =								
Use this page to register all risk factors currently known. Use a scale of 1- 5 (highest) to indicate probability and consequence for each factor.				*Probability	*Consequence	Risk score = P x C	Risk score last period	
							Sort list to identify top 5 risks	
Id	RBS	Risk description	P	C	Score	Last period	Action	Responsible
3	Project Management	Timescales slip on work streams and project end date or work cannot be completed within timescales	3	4	12		PM will work with ENA and team to revise the programme where possible.	PM
4	Technical	Work stream outputs do not deliver the expected results	2	4	8		PM and team will work with ENA to address any such issues as they occur.	PM
5	Technical	Data is delayed or unavailable (for techno-economic model)	4	3	12		All consortium members to make PM aware of issues. PM to assist with data from stakeholders.	PM
6	Project Management	Working together is difficult as partners are physically remote	2	2	4		PM to hold regular meetings with consortium partners to review any issues.	PM
1	External	Access to Stakeholders	1	3	3		Liaise closely with ENA, make sure process is transparent (robust stakeholder engagement process)	PM
7	Organizational	Insufficient resource or expertise within consortium to undertake work	1	3	3		Team includes duplicate resources	PM
8	Technical	Peer review process by DCRP P2 WG takes excessive time to reach a point where all DCRP P2 WG members are have with the robustness of data inputs and outputs from the IC analysis.	4	3	12		A P2 sub group has been put in place to speed up the peer review process	DCRP P2 WG chair.

Risk register embedded file, used for amendments.





About DNV GL

Driven by our purpose of safeguarding life, property and the environment, DNV GL enables organizations to advance the safety and sustainability of their business. We provide classification and technical assurance along with software and independent expert advisory services to the maritime, oil and gas, and energy industries. We also provide certification services to customers across a wide range of industries. Operating in more than 100 countries, our 16,000 professionals are dedicated to helping our customers make the world safer, smarter and greener.