RaaS
Resilience as a Service

Project Deliverable 4

Stakeholder Engagement & Stage Gate Decision

Scottish & Southern Electricity Networks

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Document Control

Document Ownership

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Contents

Project Overview

The Resilience as a Service - RaaS - innovation project seeks to improve the operational resilience of electricity distribution networks in remote areas.

The aim is to develop and trial a new market-based solution which can swiftly and automatically restore supply to customers in the event of a fault, using services provided by a local Battery Energy Storage System, and incorporating local Distributed Energy Resources. Figure 1 provides a high level illustration of the RaaS scheme.

The RaaS concept represents a flexible solution for areas where traditional reinforcement or use of DNO owned standby generation to provide network resilience would be prohibitively costly. Through temporary operation of the network in islanded[1] mode, RaaS will maintain supply to customers during the time required for a DNO to respond to a fault. At other times, a RaaS Service Provider would be able to use the battery to provide other services to the electricity system, supporting the economics of the solution.

The key benefits of this approach in providing cost effective, local network resilience will include an improved service to customers, together with a lower carbon solution than the conventional option of transporting a temporary diesel generator to site, supporting the UK's transition to Net Zero.

The project is a partnership between Scottish and Southern Electricity Networks (SSEN), E.ON and Costain, with funding of £10.9m through Ofgem's Network Innovation Competition (NIC).

In addition to demonstrating the technical concept, the work will develop the commercial framework for RaaS - evaluating the financial case from a DNO perspective and assessing the investment case for RaaS Service Providers with options for revenue stacking in other flexibility services markets.

The first phase of the project has focused on site selection, system design for the chosen demonstration site, and refinement of the business case for RaaS. This stage has been used to assess the technical feasibility and financial viability of the concept, thereby informing the Stage Gate decision on whether to proceed to the second phase with deployment and operation of a RaaS system at the chosen site for a trial period of up to two years.

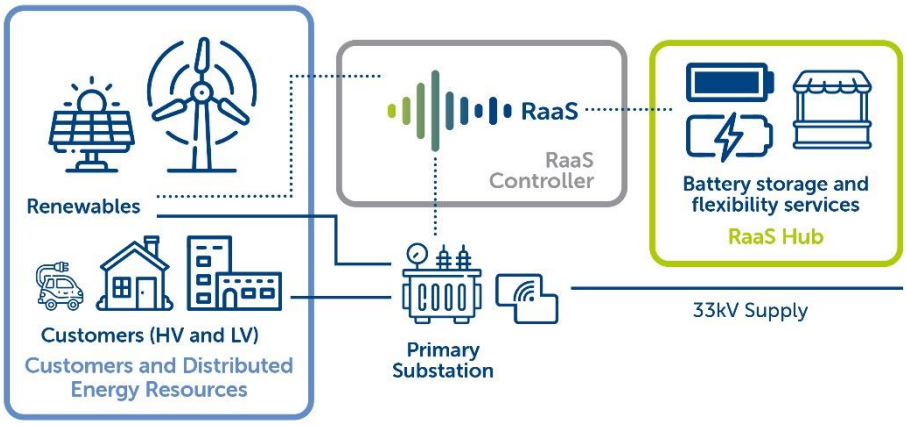

Figure 1 - Schematic of the RaaS solution supporting a 33kV to 11kV primary substation

[1] in islanded mode, an area of the network is disconnected from the main electricity grid and operates independently

Introduction to PD4

This PD4 overview document sets out the work undertaken within the RaaS - Resilience as a Service - project to meet the requirements of Project Deliverable 4 - Stakeholder Engagement & Stage Gate Decision, defined in the Project Direction as:

> RaaS Project Deliverable 4
>
> > PD4.1 Stakeholder feedback event to disseminate and gather feedback on outputs
> >
> > PD4.2 Evidence provided to Project Steering Board to inform Stage Gate decision including technical design, stakeholder feedback, alignment with Open Networks project, updated budget and business case

The paper sets out the stakeholder engagement activities used to disseminate information and gather feedback on outputs from the first phase of the RaaS project. It then describes the approach taken to allow the Project Steering Board to decide whether or not to proceed to the second phase of the project, with demonstration of RaaS at the proposed trial site of Drynoch primary substation on Skye[2].

As illustrated in Figure 2, the project incorporates a Stage Gate decision point to ensure that it is appropriate to proceed to the trial phase of the project. The decision rests with the Project Steering Board, but to help ensure that what is developed through the project is beneficial for customers and widely applicable across different networks, this decision must be based on the outcomes of Phase 1, and consultation with external stakeholders.

Whilst this document is primarily focused on the stakeholder engagement used to inform the Stage Gate decision, broader engagement activities are also summarised as these contributed to the development of the RaaS concept throughout the first phase of the project.

This Project Deliverable, together with associated project material, will be published on the project website - www.project-raas.co.uk - and made available to all interested parties.

To provide the context for PD4, Appendix 1 presents the Project Deliverables defined in the RaaS Project Direction.

[2] the trial site selection process is documented in RaaS E2a.1 'Site Selection Report', E.ON, February 2021

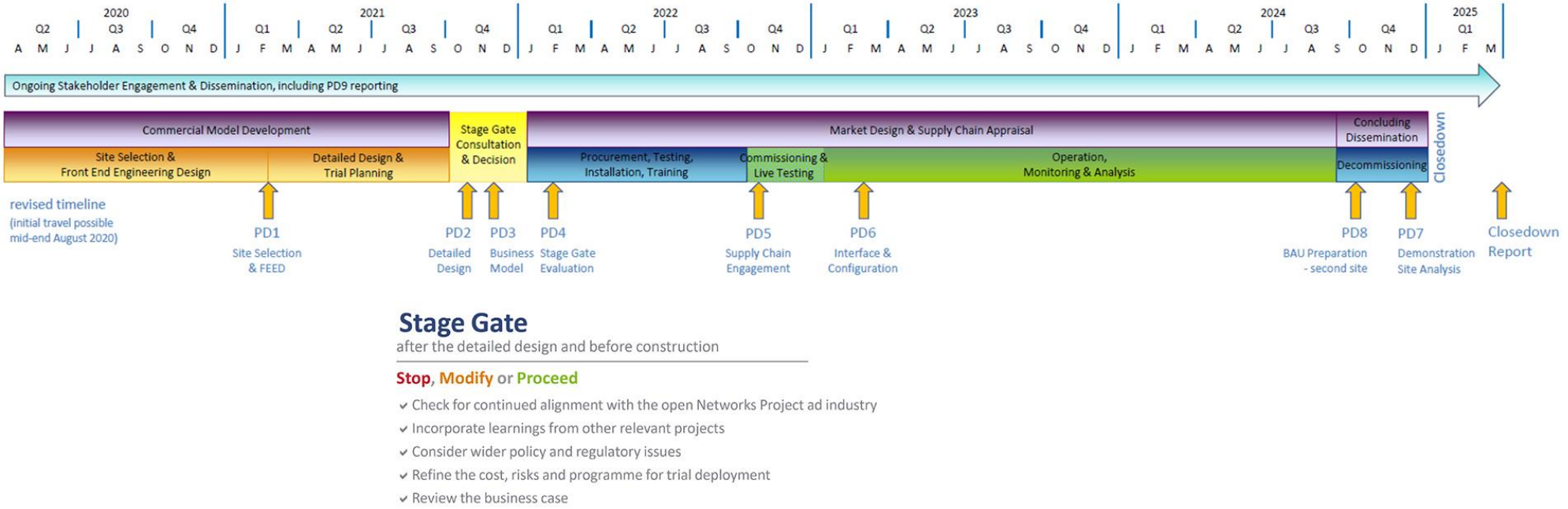

Figure 2 - Indicative project timeline

Stakeholder Engagement over the course of Phase 1

This deliverable is primarily focused on the stakeholder engagement activities used to inform the project Stage Gate decision. However, to provide context, this section summarises engagement throughout Phase 1 of the project. As with all innovation projects, engagement has been used to disseminate project learning, invite feedback, and seek views as input for specific deliverables to inform the development of the RaaS concept.

Key activities to raise awareness of the project and elicit external opinions have included:

- early stakeholder interviews with other DNOs and National Grid ESO
- discussions with teams from other relevant innovation projects[3], including regular meetings with other DNOs and National Grid ESO, specifically the Distributed Restart project team
- regular conference calls with the Ofgem Project Officer for RaaS, together with reviews of Project Deliverables, and a briefing session for participants from a range of Ofgem teams
- discussion with the Stakeholder Advisory Board for RaaS
- participation in events such as the Energy Networks Innovation Conference (ENIC), COP26 and Utility Week conferences and discussion events
- briefings with local, regional and national government stakeholders, such as Midlands Energy Hub
- discussions with other interested parties who have made contact with the project team in response to coverage following various press releases - this includes engagement with all other DNOs, National Grid ESO, ENA, aggregators, community organisations, local governments, NGOs, academia and consultancies
- engagement with the local community via Minginish Community Council, Skye Climate Action and through local media
- bilateral discussions between members of the project team and organisations with an interest in electricity resilience, including potential RaaS supply chain businesses and organisations, consultancies, academia, and the public sector
- stakeholder briefings with organisations from diverse industry sectors who may benefit from or engage with RaaS
- communications circulated to SSEN internal stakeholders associated with different aspects of the project to promote awareness across relevant business teams of the project plans and key activities
- an external peer review process of the Front End Engineering Design (FEED) for the RaaS scheme to seek to obtain a wide range of perspectives necessary to validate or challenge the proposals, as described in PD1 'Site Selection and FEED'[4] - peer reviewers comprised other network operators, related innovation projects, consultants, academics, and SSEN colleagues, and the feedback was then used to then inform development of the detailed design for the proposed scheme, as reported in PD2 'Detailed Design'[5]

Reports and associated project material are published on the project website - www.project-raas.co.uk - providing a useful resource for directing stakeholders to information of interest.

[3] the project team maintains a 'relevant projects for RaaS review' log which comprises a list of other projects and initiatives identified as being relevant to RaaS, and continue to engage with other projects to share learning which will compliment and build on individual project activities

[4] PD1 'Site Selection & Front End Engineering Design', February 2021

[5] PD2 'Detailed Design', October 2021

Stakeholder Engagement - Stage Gate Consultation Events

To provide detailed information on RaaS project activities and gather feedback from the wider industry, in November 2021 the project team ran a series of Stage Gate consultation events. The purpose of these was to share information and conclusions from Phase 1 of the project, and invite questions, observations and suggestions to inform both the Stage Gate decision and potential plans for the Phase 2 scope of work.

The four events were held on consecutive days from 2nd to 5th November, with each addressing a specific theme, as summarised in Table 1. Copies of the slide packs for each session are provided as Appendices 3a to 3h.

Table 1 - Details of Stage Gate Consultation Events

	Date	Time	Topic	Total Attendance
1	2nd November	10.30am	**Overview** - an introduction to the RaaS project, the work undertaken in Phase 1, and considerations for Phase 2	**34**
2	3rd November	10.30am	**Technology** - detail on the design of the RaaS solution and its integration into the distribution network	**30**
3	4th November	10.30am	**Business Case** - considering both the DNO and Service Provider perspectives on the value of RaaS and benefits of a reduction in loss of supply events	**26**
4	5th November	10.30am	**Market Structure & Procurement** - sharing thinking and gathering feedback on how DNOs might tender for RaaS, the potential participants in a scheme, and associated market arrangements that should underpin delivery	**21**

Widespread familiarity with online meeting platforms allowed the sessions to be held as live web-based events, as illustrated in Figure 3, supporting safe and effective engagement. In addition to presenting the work undertaken to date, the sessions were interactive with a range of questions posed to attendees via Slido polls to seek responses to specific points, and with the opportunity for open questions to the project team.

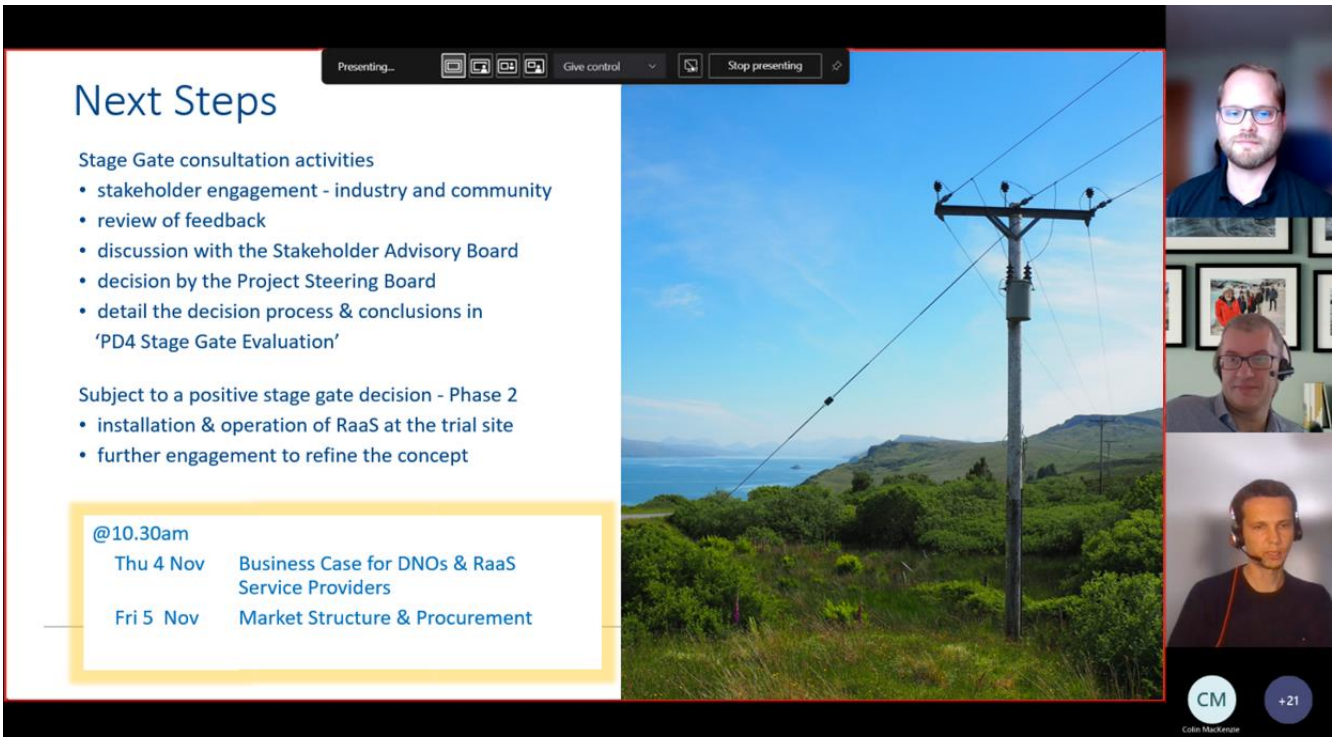

Figure 3 - Screenshot from the RaaS Stage Gate Stakeholder Engagement 'Technology' event

A range of approaches were used to invite participation. Direct emails were sent to all those who had engaged with the project team during the initial phase of the project. To promote engagement more widely, the events were also publicised via LinkedIn posts (corporate and individual), and via SSEN's 'events' page www.ssen.co.uk/stakeholderevent (see events listings for November 2021). The template text for the email invitation, subject 'Resilience as a Service Project - Learn & influence', and LinkedIn post are provided as Appendix 2.

The events were well attended, with a mix of participants including other network operators, technology companies and potential supply chain participants, consultancies, academia and local government.

The feedback received was both useful and highly positive. The responses and levels of engagement demonstrated clear evidence of positive support for the project to continue to Phase 2.

Table 2 shows the responses to two questions from the Slido poll used during the initial 'Overview' event. The full set of responses to the questions posed to participants during each event, questions asked by participants, and suggestions for things that may be of interest from Phase 2, are given in Appendix 4. A wide range of pertinent questions were raised, with some key themes centred on the interaction of RaaS with the wider energy system; system testing; operational control and monitoring; and system requirements specification and battery sizing economics.

Table 2 - Responses to Slido polls - RaaS Stage Gate Stakeholder Engagement 'Overview' event

To what extent do you think RaaS will benefit customers in remote or rural locations ?		Are you supportive of the proposal to proceed to the trial phase ?	
significant benefit	16	yes	16
some benefit	2	no	0
minimal benefit	0	not sure	0

The project team thank all those who participated in these events, and supported the work undertaken to develop the outputs and conclusions from Phase 1.

Stakeholder Engagement - Stage Gate Community Survey

Customer perspectives on the RaaS concept and the impact of supply interruptions were invited via a Community Survey issued in December 2021. The survey was mailed out to addresses in the area served by Drynoch primary substation, and in addition to seeking the views of the local community, this engagement allowed key information on the aims of RaaS and the plans for the project to be shared with SSEN customers.

A copy of the survey, including the information provided, is given as Appendix 5, and the question pages are illustrated in Figure 4. Respondees had the option to complete the paper questionnaire and return it using a pre-paid envelope or provide responses online via Slido[6].

Prior to distributing the survey, a community focused press release was issued to local media in November 2021. This publicised the request for customers to respond and help inform decisions around the trial implementation of RaaS, and as represented below, received both written and radio coverage:

- an article in The Highland Times thehighlandtimes.com/local-community-encouraged-to-provide-their-views-on-sse-project-on-skye
- an interview with Radio Skye broadcast during the morning and evening drive time shows (see the 'Breakfast Show with Suzy & Ruth 8am - Thu 25 Nov' ~27 minutes in) radioskye.com/listen-again

In developing the plans for this community consultation, the project team welcomed further valuable support from Minginish Community Council[7] and Skye Climate Action. By providing feedback on the proposed approach for issuing the survey, reviewing a draft copy of the survey information and questions, and providing quotes for inclusion in the press release, their contributions helped to shape the engagement to provide useful information, and promote participation.

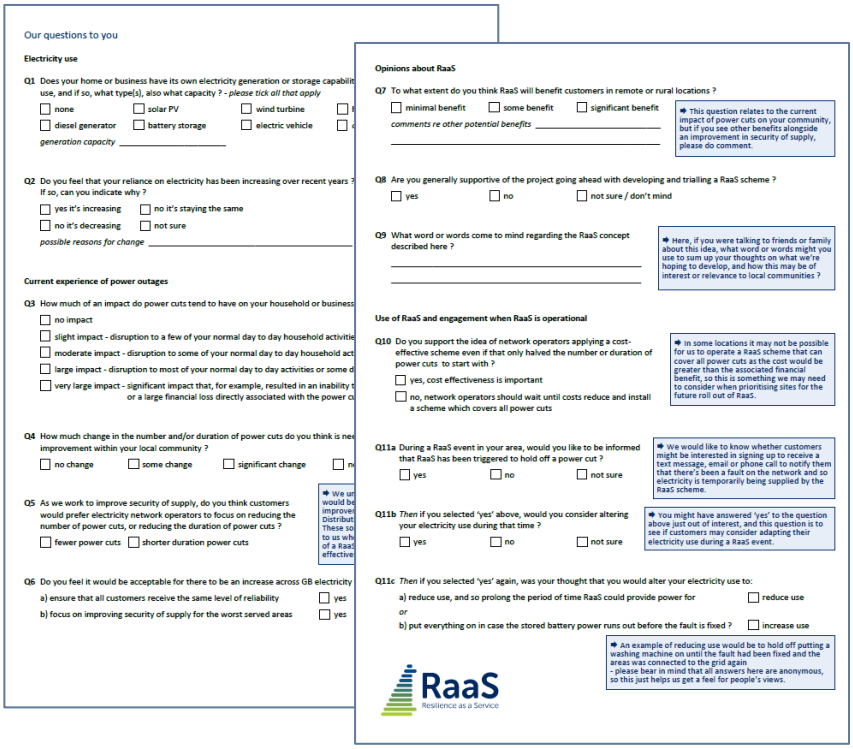

Figure 4 - Illustration of questions from the RaaS Community Survey

[6] the questions could be accessed online by going to www.sli.do and entering the code #RaaS-survey

[7] Minginish Community Council also have a representative on the Stakeholder Advisory Board for RaaS

To date 110 responses have been received via post and online. To give an indication of the level of change sought with regard to power cuts, Table 3 shows that 81% of respondees expressed the view that change is needed to benefit the local community.

Table 3 - Responses to RaaS Customer Survey question regarding the level of change required to address power cuts

Q4 How much change in the number and/or duration of power cuts do you think is needed to provide a notable improvement within your local community ?		
no change	7%	(8)
some change	58%	(64)
significant change	23%	(25)
not sure / don't mind	12%	(13)

With regard to RaaS, as shown in Table 4, support for proceeding with the trial is very positive. Of the two negative responses received to this question, the sole comment provided raised a concern around visual intrusion from construction of the battery.

Table 4 - Responses to RaaS Customer Survey question regarding the trial phase of the project

Q8 Are you generally supportive of the project going ahead with developing and trialling a RaaS scheme ?		
Yes	82%	(89)
No	2%	(2)
not sure / don't mind	16%	(18)

A summary of the responses to all multiple choice and open text survey questions is provided as Appendix 6. Very considered and detailed written comments have been received, with many individual responses reflecting multifaceted considerations, including such things as the use of local energy resources; improvements to security of supply; economics (including the context of higher electricity costs experienced in remote areas); and uncertainties representing areas requiring further information. As may also be expected, in addition to positive statements and suggestions, even where individual responses support the RaaS project going ahead with implementing a trial scheme, negative opinions and observations on some energy related matters are also evident, reflecting current views which are relevant to broader industry and strategy considerations. Such wide ranging responses preclude a clear categorisation of individual responses into specific themes, however indicative numbers of responses against broad classifications are given in Table 5 and Table 6 for two of the key open text questions. The associated text of all responses is included in Appendix 6.

Table 5 - Indicative themes and numbers of responses to an open text question regarding the RaaS concept

Q9 What word or words come to mind regarding the RaaS concept described here ?			
security of supply	16	progress	11
positive	15	economics	4
negative	4	uncertain	10
local solution	7		

Table 6 - Indicative themes and numbers of responses to an open text question inviting further comments

Q12 Do you have any further comments ?			
negative	1	economics	9
benefits	9	consulting via survey	7
local solution	6	suggestions	5
uncertain	4		

In addition to informing the Stage Gate decision, the responses and written feedback received will inform the application of RaaS at the proposed trial site, and how SSEN continue engagement with customers to provide information and updates to the community on project activities, and to understand and address any concerns that are raised.

The RaaS project team express sincere thanks to all those who responded to the survey.

Stakeholder Advisory Board Engagement

As part of the project governance plans, a Stakeholder Advisory Board (SAB) for RaaS was established following project initiation. The role of the SAB is to provide strategic oversight, ensuring that the project:

- remains relevant to strategic direction of the GB electricity sector
- considers relevant learnings from other innovation projects
- flexes according to changes in regulation and to new market trends
- delivers learning outcomes relevant to all GB DNOs

The board represents a range of stakeholder perspectives, with participation from the following organisations: BEIS, Citizens Advice, ENA, Minginish Community Council, National Grid ESO, Northern Powergrid, Ofgem, Scottish Government, Sustainability First. Representatives continue to provide valued insight and challenge to help refine project thinking.

The third meeting of the SAB was held on 1 December 2021, allowing the project team to present the key conclusions from Phase 1 and the feedback received through the Stage Gate Consultation Events.

SAB members were positive about the project continuing, and emphasised areas for further consideration including impacts of energy price volatility and winter storms, consideration of how whole systems thinking could be applied, and ensuring alignment with other initiatives such as the BEIS Smart Systems and Flexibility Plan.

Stage Gate Decision Process

Context

The Stage Gate decision rests with the RaaS Project Steering Board (PSB), however, to help ensure that what's developed through the project is beneficial for customers and widely applicable across different networks, this decision must be based on the outcomes of Phase 1, and consultation with external stakeholders.

Accordingly, detailed information was provided to the PSB to inform their decision, concluding with a meeting to review all relevant project material and conclusions, and allow discussion between the PSB and project delivery team.

The subsections below summarise the information provided to the PSB, and confirm the decision made.

Project Steering Board Stage Gate Decision meeting

The PSB Stage Gate Decision meeting was held on 21 January 2022. In advance of the meeting, a briefing note summarising key points for consideration and discussion was circulated to the PSB. The paper set out the work completed to date, feedback received through stakeholder consultation, potential project risks, and key points to explore during Phase 2. A copy of the PSB briefing note is provided as Appendix 7.

Attendees comprised:

	Project Steering Board	Project Team
SSEN	Stewart Reid	Sarah Rigby, Maciej Fila
Costain	Tony Davies	David Jukes, Rob Middleton, Ben Clague, Hywel Woolf, Sarah Bowles
E.ON	Simon Duncan	Dan Jerwood, Inigo Berazaluce Minondo

The stated purpose of the Stage Gate Decision meeting was:

> "To review & discuss the conclusions from Phase 1 allowing the RaaS PSB to make a decision on whether or not to proceed to Phase 2, with the demonstration of RaaS at the proposed trial site of Drynoch primary substation on Skye"

The subsections below summarise the information presented and discussed during the meeting. The slide pack used to guide discussion and provide detail on each of these themes is included as Appendix 8.

Summary of Phase 1 work & conclusions

The meeting included a review of the suite of work completed during Phase 1, signposting the specific milestone deliverables and Project Deliverables created by the project partners. Whilst the PSB meet quarterly and remain well informed of project activities, this review consolidated the scope of the work before then discussing key conclusions.

Technical feasibility

The detailed technical design for the proposed RaaS scheme is documented in PD2 'Detailed Design'[8].

The breadth of work undertaken to create each aspect of the detailed design supports the understanding that it is technically feasible to implement a RaaS solution that can swiftly and automatically, restore supply to customers in the event of a fault, using services provided by a local BESS, and incorporating local DER.

The detailed design built on the initial Front End Engineering Design, and incorporated feedback received during the external peer review of the FEED, as described in PD1 'Site Selection and FEED'[9].

Business Case viability

The work undertaken to assess the business case for RaaS from both the DNO and RaaS Service Provider perspectives is detailed in PD3 'Business Model'[10].

Drawing together the RaaS Service Provider and DNO business cases, it is acknowledged that the assessments based on current prices for individual BESS schemes of the ~4MW/4MWh size, and the original 'RaaS product concept' of reserving sufficient capacity to cover the significant majority of faults with little granularity in the DNO's specification of service requirements, currently indicates a gap between what the RaaS Service Provider Willing to Accept and the DNO would be Willing to Pay for some of the sites that would benefit from a RaaS scheme.

However, it is important to note that that gap is 'at present', and based on the original 'RaaS product concept' of procuring a battery which reserves sufficient energy to meet 4 hours of electricity demand for 90% of the year. In light of these findings, and drawing on key stakeholder engagement activities[11], the project team has identified a range of factors that will act to better align these figures and support the future application of RaaS. These address such considerations as evolving technologies and data capabilities; developments that will influence costs; and variations to the 'RaaS product design', as described in PD3 'Business Model'. With a positive Stage Gate decision these aspects of the business model will be further investigated through the project.

In addition to the work undertaken to evaluate the business case for RaaS as a network solution, an update on indicative battery prices with comparison to the original project budget figures was provided to the PSB - this represents confidential information provided by potential suppliers, and so is not included in the slide pack provided as Appendix 8. The review of the project budget assumptions suggests that the budget remains appropriate.

Alignment with the ENA's Open Networks project

The ENA's collaborative Open Networks[12] project provides a foundation for DNO flexibility services and products. To support the future, wider roll out of RaaS, there is clear value in aligning project activities with the outputs being developed through Open Networks, and feeding back perspective relevant to a RaaS solution.

[8] PD2 'Detailed Design', October 2021
[9] PD1 'Site Selection & Front End Engineering Design', February 2021
[10] PD3 'Business Model', January 2022
[11] the conclusions regarding the business case for RaaS were presented during the RaaS Stage Gate Stakeholder Consultation events held in November 2021, and presented to both the RaaS Stakeholder Advisory Board and Ofgem, prior to the PSB Stage Gate Decision meetings
[12] the Open Networks programme brings together the nine electricity grid operators in the UK and Ireland to collaborate in standardising customer experiences and aligning processes to make connecting to the networks as easy as possible, and support the connection of significantly increasing levels of renewable and distributed energy resources to the local electricity grid www.energynetworks.org/creating-tomorrows-networks/open-networks

Examples of how the Open Networks project has shaped the development of RaaS during the first phase of the project are given below:

- the three RaaS Product Design Scenarios assessed through E.ON's RaaS Service Provider business case assessment were informed by the methodology applied by Open Networks for flexibility service design
- the Open Networks programme currently defines four broad DSO flexibility products[13] - Sustain, Secure, Dynamic, Restore - Costain's early project stakeholder engagement supported the view that RaaS most closely aligns to the Restore flexibility service, however with some key distinctions related to such things as the 'provider' giving the ability to restore all customers (rather than 'remaining off supply' or reconnecting with a lower demand to support faster load restoration to other customers under depleted network conditions), and the speed of response (with RaaS seeking to provide fault ride through capability) - it is acknowledged that a RaaS asset could also support other DSO products when not providing RaaS
- a Standard Agreement for procuring Flexibility Services[14] has been developed through Open Networks as a common contract for use by all DNOs to provide consistency which will support increased engagement by third parties with DNO flexibility services - it is appropriate that this should be adopted (and adapted where necessary) for the future procurement of RaaS, and accordingly within the review of Heads of Terms for RaaS, this contract template has been assessed to identify any changes necessary to ensure the suitability of its use for RaaS - this review has established that it would be both possible and appropriate to incorporate the procurement of RaaS into the agreement, and identified key revisions that would be necessary to accommodate RaaS identified - during Phase 2 of the project these points will be raised with the Open Networks project, and discussed with the Flexibility Workstream to reach an industry consensus which ensures that the standard agreement will be suitable for the future BAU roll out of RaaS
- the DNO valuation methodology developed by TNEI aligns with, and importantly adds detail to, the Common Evaluation Methodology for flexibility services and network investment decisions developed through the ENA's Open Networks project, particularly with regard to services associated with restoring the network

Stakeholder feedback

Interactions and responses from the activities presented in the **Stakeholder Engagement** sections of this document were presented to the PSB during the meeting, with discussion on how this feedback is being used to inform future project work.

Central to the process for capturing points for consideration that have become apparent over the course of the project is the 'RaaS - additional considerations' log. Thoughts and ideas highlighted through engagement with external stakeholders and during internal project team discussions are recorded and assigned to appropriate project partners or work packages to ensure that relevant points are appropriately addressed and incorporated into project plans. The items recorded in this log complement the original project plans by ensuring that thoughts triggered by ongoing project activities and stakeholder engagement inform the project work and development

[13] **Sustain** (pre-fault) - scheduled Constraint Management for an agreed change in input or output over a defined period of time which the DNO can procure to prevent the network from going beyond its firm capacity
Secure (pre-fault) - an ad-hoc Constraint Management service allowing the DNO procure the ability to access a pre-agreed change in service provider output based on network conditions close to real-time, either manually or via an automated system
Dynamic (post-fault) - Constraint Management providing DNOs with the ability to procure delivery of an agreed change in output from a service provider following a network fault, with utilisation instructed when a fault occurs
Restore (post-fault) - a service providing restoration support following a loss of supply where a provider either remains off supply, or reconnects with lower demand, to support increased and faster load restoration to other customers under depleted network conditions

[14] Standard Agreement for Procuring Flexibility Services, ENA Open Networks project, www.energynetworks.org/creating-tomorrows-networks/open-networks/flexibility-services

of the RaaS solution. Items described in the 'Key points to explore during Phase 2' subsection below reflect points recorded and evaluated through this process.

Key risks associated with Phase 2

Key risks that may lead to a further re-evaluation about whether to proceed with the trial include:

- agreeing the Collaboration Agreement for Phase 2 (inc. CDM roles, site access, etc.) in a timely manner
- final cost figures for the BESS - it won't be possible to have a full, clear view on these until tender and procurement processes associated with Phase 2 have commenced
- procurement & delivery timeframes for battery and DNO (switchgear) equipment
- obtaining necessary consents (e.g. planning approval, grid connection) in a timely manner - need for alignment with procurement as specific system design information is required for application
- any significant issue picked up during testing and/or commissioning

Should any issues become apparent, they will be raised with the PSB at the earliest opportunity, and escalated further as necessary/appropriate.

Project Team recommendation and reasons for proceeding

The RaaS project team recommended that the project does proceed to Phase 2.

The following points summarise the key reasons for proceeding, as presented during the stakeholder engagement events, to the SAB, and during the PSB Stage Gate Decision meeting:

- the modelling and design work undertaken during Phase 1 indicates that the proposed solution is technically feasible (as documented in PD1 'Site Selection & Front End Engineering Design' and PD2 'Detailed Design'), and Phase 2 would provide the opportunity for gaining experience from the technical application of RaaS for fault response and local resilience, with associated learning for other flexible solutions
- though the business case based on the original RaaS concept (4 hrs cover available 100% of the time) is challenging at Drynoch, a range of factors will act to influence future costs and provide additional drivers for rollout of RaaS to other sites (as reported in PD3 'Business Model')
- high levels of interest and support from all stakeholder engagement activities
- the wider policy context for RaaS, including additional use cases for a local energy storage scheme
- the potential for technical & flexibility market learning for other use cases
- the opportunity to provide an increased understanding of the supply chain for RaaS / other flexible solutions, and how this can be grown

Key points to explore during Phase 2

With a PSB decision to continue, areas for further work during Phase 2 identified by the project team include:

- proving the technical solution for fault response and local resilience
- the approach to DNO requirements specification for procurement/tendering
- measures that could reduce or remove any associated network import/export constraints, or allow load or generation schemes to connect and operate optimally where there are network constraints

- the role of forecasting - demand, interruptions, income from other flexibility markets
- the implications of different RaaS fee structures
- participation in ESO markets that currently require specific commitment (e.g. Dynamic Containment)
- the possible concept of 'double booking' capacity
- potential for 'bundling' of additional DNO services
- the concept of 'transportable RaaS'
- potential benefits from maintaining visibility of the 11kV system following an outage on the higher voltage network during an extreme weather event, to support the identification of faults and deployment of field teams
- RaaS as a low carbon alternative for island locations where DNO owned diesel generation is already in place to provide standby generation
- potential value for distributed generation through removing MEC limits in place due to constraints on the higher voltage network upstream of the primary substation

Conclusion - RaaS Stage Gate Decision

The PSB elected unanimously **to proceed to the trial stage of the project**.

Full support was expressed for both the learning that could be provided through implementing the pilot scheme, and the future potential of RaaS in delivering low carbon network resilience. The depth and quality of the deliverables issued through the first phase of the project was also acknowledged, and together with the feedback received from stakeholders, this gave confidence in the decision to proceed. The minutes of the PSB Stage Gate Decision meeting are provided as Appendix 9.

The opportunity to now put the concept into practice is very welcome - the RaaS project team look forward to sharing learning from the trial phase and activities to successfully apply the scheme at the demonstration site.

Contact Details

Interested parties are very welcome to contact the RaaS project team with any enquiries via the contact details below:

SSEN RaaS Project Manager - Sarah Rigby

email RaaS@costain.com

website www.project-raas.co.uk

Appendices

Appendix 1 - RaaS Project Deliverables

Appendix 2 - Stage Gate Consultation Events - email invitation & LinkedIn text

Appendices 3a to 3h - Slide Packs for each of the Stage Gate Consultation Events

- Appendix 3a - RaaS Stage Gate Stakeholder Engagement - Overview
- Appendix 3b - RaaS Stage Gate Stakeholder Engagement - Technical
- Appendix 3c - Technical - BESS Components and Network Integration
- Appendix 3d - Technical - DNO RaaS Controller - SGS
- Appendix 3e - RaaS Stage Gate Stakeholder Engagement - Business Case
- Appendix 3f - DNO Valuation - TNEI
- Appendix 3g - RaaS Stage Gate Stakeholder Engagement - Market Structure & Procurement
- Appendix 3h - Payment Structure Options - TNEI

Appendix 4 - Stage Gate Consultation Events - feedback responses

Appendix 5 - Community Survey - questionnaire

Appendix 6 - Community Survey - collated responses

Appendix 7 - Stage Gate Decision - PSB Briefing Note

Appendix 8 - Stage Gate Decision - PSB slide pack

Appendix 9 - Stage Gate Decision - PSB meeting minutes

Appendix 1 - RaaS Project Deliverables

To provide the context for PD4, Table 7 presents the Project Deliverables defined in the RaaS Project Direction.

Table 7 - RaaS Project Deliverables

Deliverable	Description	Evidence
1	Front End Engineering Design (FEED)	Report detailing the selected site for demonstration and proposed use case(s) for the RaaS demonstration. External peer review of FEED.
2	Detailed Design	Detailed design of controls, electrical integration, available DER and the BESS complete. Publish Trial Programme on SSEN RaaS webpage.
3	Business Model for potential RaaS suppliers	Construct investment business case for RaaS supplier. Produce draft Heads of Terms for RaaS method.
4	Stakeholder Feedback Event (Stage Gate)	Stakeholder feedback event to disseminate and gather feedback on outputs. Evidence provided to Project Steering Board to inform Stage Gate decision including technical design, stakeholder feedback, alignment with Open Networks Project, updated budget and business case.
5	Supply Chain Engagement	Publish Commercial Strategy on SSEN RaaS webpage. Present Enterprise design for Resilience as a Service on SSEN website.
6	Network Adaptation and Acceptance Testing	Produce interface and configuration specifications and commissioning reports.
7	Trial 1 - Demonstration at first site complete	Publish Demonstration analysis results on SSEN RaaS webpage covering both technical and commercial aspects. Stakeholder dissemination event showcasing learnings.
8	BAU Preparation	Technical design to support second demonstration site. Consultation with potential RaaS market for second demonstration site.
9	Comply with knowledge transfer requirements of the Governance Document	Annual Project Progress Reports which comply with the requirements of the Governance Document. Completed Close Down Report which complies with the requirements of the Governance Document. Evidence of attendance and participation in the Annual Conference as described in the Governance Document.