OFGEM LOW CARBON NETWORK FUND

PROJECT PROGRESS REPORT

JUNE 2014

ACCELERATING RENEWABLE CONNECTIONS

Version: **1.0**

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SP ENERGY NETWORKS
ACCELERATING RENEWABLE CONNECTIONS (ARC)
REPORTING PERIOD DECEMBER 2013 – JUNE 2014

1. EXECUTIVE SUMMARY

1.1 PROJECT PROGRESS HIGHLIGHTS

The ARC project team has continued to progress the objectives of the Accelerating Renewable Connections (ARC) LCNF project. A number of deliverables in the reporting period are highlighted below;

- **Stakeholder Engagement –** On 27 February 2014 we hosted our inaugural ARC stakeholder workshop which was held in Edinburgh. In total **25** delegates attended the event which included representatives from developers, local authorities and National Government. The purpose of this event was to introduce the ARC project, its objectives and timelines and obtain initial feedback from stakeholders on what they expected from the project. We also completed a live stakeholder survey on stakeholders experience to date when seeking to connect generation projects to the distribution network of SP Distribution which forms the basis of our Successful Reward Criteria Deliverable (9.8) – Improving the Generation Connections Experience, through the delivery of objectives from the ARC project. Our second stakeholder workshop was held on 26 June 2014 and again this was an outstanding success due to the level of engagement and support expressed by stakeholders for our plans. In addition, we increased the numbers attending by nearly **100%**, from February with **48** delegates present at the event which afforded us the opportunity to obtain their views and feedback on our proposals for Commercial Mechanisms, Principles of Access and our prototype On-Line Curtailment assessment tool.

- **Delivery of First Community Workshop –** On 27 March 2014 we held our first community workshop in Dunbar. The event was organised and hosted in conjunction with ARC project Partner Community Energy Scotland (CES) and Sustaining Dunbar, a community based development trust and charity, who since 2008 have been working to bring local people together to assist and support new initiatives which create local jobs, assist people cut their fuel bills, grow food in a sustainable way, find alternatives to dependence upon fossil fuels and reduce Co2 emissions. Again we introduced the ARC project and thinking around the connection of local community generation schemes. Unfortunately the initial generation scheme which Sustaining Dunbar were progressing has been refused consent at both a Local and Scottish Government level but we continue to seek a viable community project within the trial area and are now liaising with Berwickshire Housing Association regarding their proposals for developing their own generation schemes that are directly linked to their housing stock that currently numbers around 1700 homes.

- **Agreement to Install Active Network Management to Existing Generator** – During the reporting period we have held extensive discussions with an existing distribution connected wind farm operator within the trial area which is currently curtailed during an N-1 condition on the transmission system at Dunbar GSP. By installing Active Network Management (ANM) at the site we can improve access to the grid and reduce the level of curtailment experienced by the developer during this type of network scenario. We have a number of planned outages on the existing network scheduled over the course of the ARC project, the first one being September 2014, and by installing ANM to the existing generator will enable SPD to deliver against Successful Reward Criteria (9.4) – Demonstration of Alternative Solutions as Detailed in Either Case Studies 2,3 or 4.

- **Establishment of SP Energy Networks ANM Working Group** – We have established an internal ANM group that will run in parallel with the ARC project delivery team and which has been tasked with rolling out ANM into our Business As Usual connection product offering. To commence this work now is expected to deliver ANM into Business As Usual ahead of the completion of the full ARC project scheduled for December 2016.

1.2 KEY RISKS IDENTIFIED

1.2.1 RECRUITMENT RISKS – In December 2013 we reported to OFGEM that we have received a number of inquiries from developers seeking to connect to the distribution network via an ANM solution from both within the trial area and throughout our distribution network. This trend has continued over the current reporting period and to date we have undertaken around 10 curtailment assessments and communicated the findings of those studies to interested parties to provide an indicative forecast of likely curtailment that would be experienced by connecting via an ANM solution.

Furthermore 6 of those developers have also obtained the necessary planning consents to progress their projects but are being delayed from progressing to connection in the absence of an ANM network connection solution. We therefore consider that any risk of parties not wishing to connect under ANM during the trial period is significantly low and that this potential risk has been fully mitigated.

1.2.2 COMMUNITY BASED GENERATION SCHEMES – As previously mentioned we have held one community workshop to date however we were informed that the generation scheme that the group had hoped to pursue had been refused planning consent. Successful Reward Criteria (9.6) – Demonstration of Community Level Generation Models, requires that the ARC project demonstrate at least one community level generation scheme to facilitate a new generation connection to the network. At this stage of the project this deliverable gives us the most cause for concern as we have seen a number of community generation schemes failing to obtain the necessary planning consents to proceed. We continue to pursue an opportunity to connect such a scheme within the trial area however may consider any scheme out with the trial area if agreed with OFGEM and we are satisfied enables the same learning outcome could be achieved.

1.3 LEARNING OUTCOMES ACHIEVED

1.3.1 Information gathered from our stakeholder engagement events to date has and will continue to define project priorities and deliverables. Stakeholders have already informed the ARC team that the accuracy of curtailment analysis is critical to understanding if a project is financially viable. In response the ARC team have worked with a number of interested developers to provide the assumptions and methodology used to provide the curtailment forecast and the ARC team have accelerated the development of the On-Line Curtailment Analysis tool that was presented at the stakeholder workshop held on 26 June and received overwhelming support for its continued development.

1.3.2 Changes to local planning regulations have had a detrimental effect upon proposed community distributed generation projects within the trial area to date. Whereas larger commercial projects go to appeal at the national level and have had the local decision overturned. This presents a challenge to identifying viable community projects for the ARC project.

2. PROJECT MANAGER'S REPORT

2.1. PROJECT OVERVIEW

As we enter the last six months of the second year of Project ARC, I am delighted that the momentum that the project team has built up over the previous 18 months has not diminished in any capacity. As a consequence of stakeholder feedback to date, it is evident that there is a clear desire from the developer community to accelerate the roll-out of Active Network Management to support the connection of renewable generation projects across our entire network. In response to this the ARC team have positively embraced the challenge of implementing key elements of the project into Business As Usual ahead of the scheduled completion date for the project of December 2016. The actions that we are taking to meet this challenge are highlighted below.

We remain on track to delivering an alternative commercial solution and reach agreement with National Grid on our proposed Stage 1, Stage 2 connection agreement that will permit those generators currently being prevented from accessing the network as a consequence of Transmission constraints, to connect under an Actively Managed Connection under Stage 1, then in parallel be investing in required reinforcement to gain a firm connection as part of their Stage 2 offer. This remains a key deliverable for the ARC project team and within the trial area alone would accelerate approximately 50MW of distributed generation to gain access to the network ahead of their initial offer of 2023.

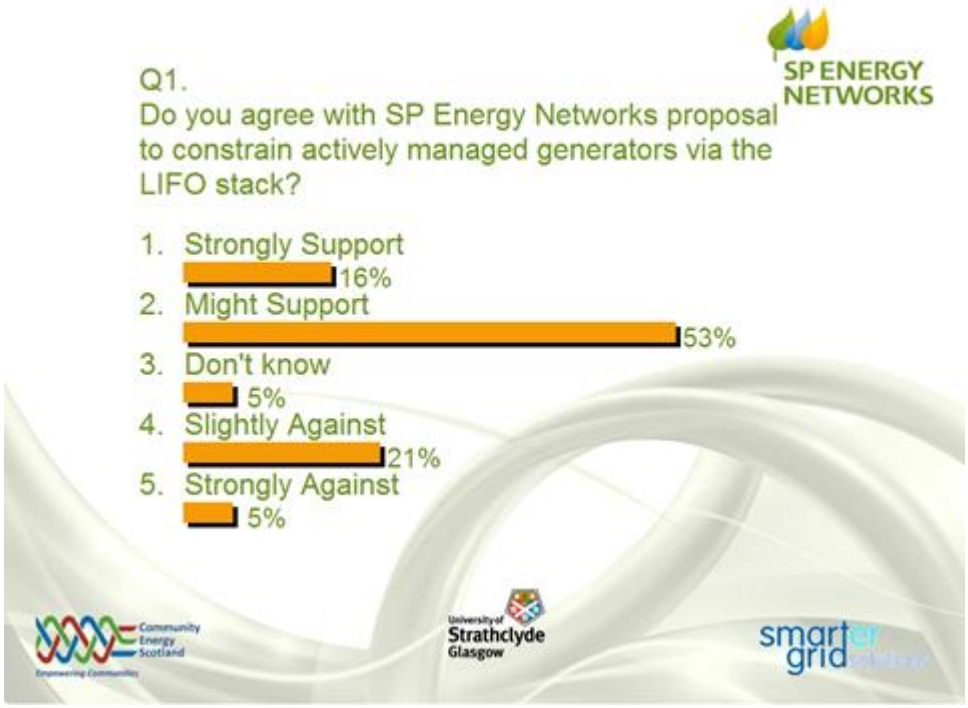
The development of our On-Line Curtailment Analysis tool was warmly received at our recent stakeholder workshop held on 26 June 2014 where we received overwhelming support to continue with its development and get it live and into the Business as soon as possible.

In addition, the majority of stakeholders also intimated their support for our proposal of adopting the Last In First Off (LIFO) principle of access and that a generator may only secure their position in the LIFO stack and be eligible for an Actively Managed Connection offer following the provision of evidence that they had received planning consent for their respective project.

As stated previously one of the key highlights from the project to date has been the positive stakeholder interaction that has been the foundation of taking the project forward and developing the policies and products that we are focused upon delivering into our Business As Usual activity. Such is the importance of stakeholder feedback we continually seek appraisal from those attending our workshops which is achieved by holding a live interactive stakeholder feedback session at the end of each event where questions are asked and results are provided instantly to all in attendance.

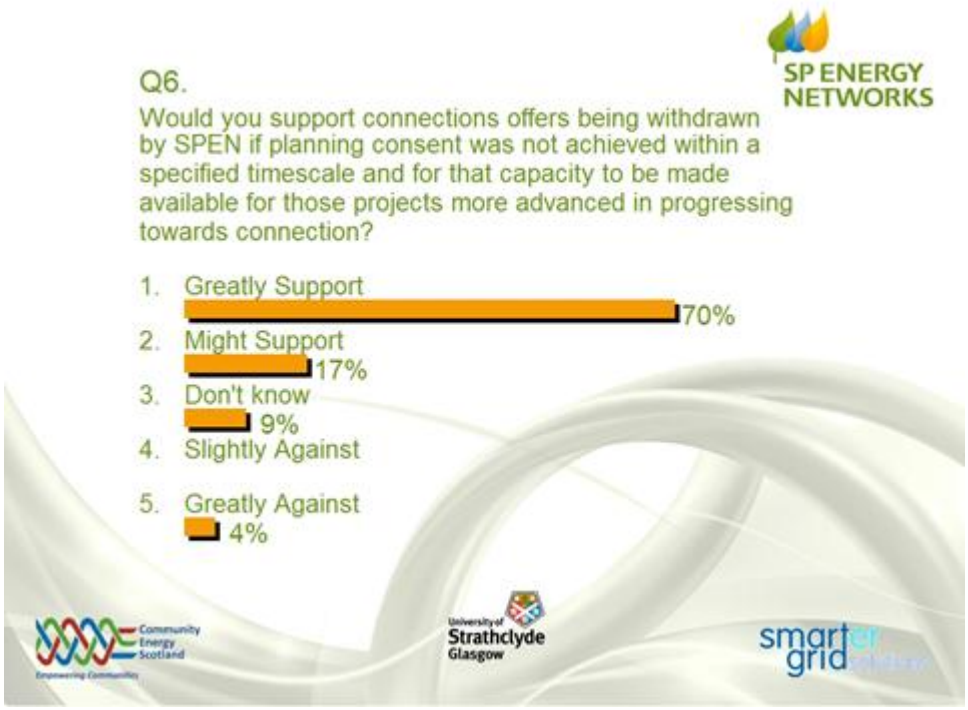
This engagement along with the many visits that we have undertaken to date at customer's premises and potential locations of renewable generation project, ensure that the ARC project is being taking forward in line with stakeholder aspirations and which will continue through to Business As Usual implementation.

To further reinforce this viewpoint, we have provided below some of the feedback received at our last stakeholder workshop held on 26 June on the proposals for implementation of the LIFO stack, commercial mechanisms, ANM offers limited to those generators in receipt of planning consent and development of our On-Line Curtailment Assessment Tool.

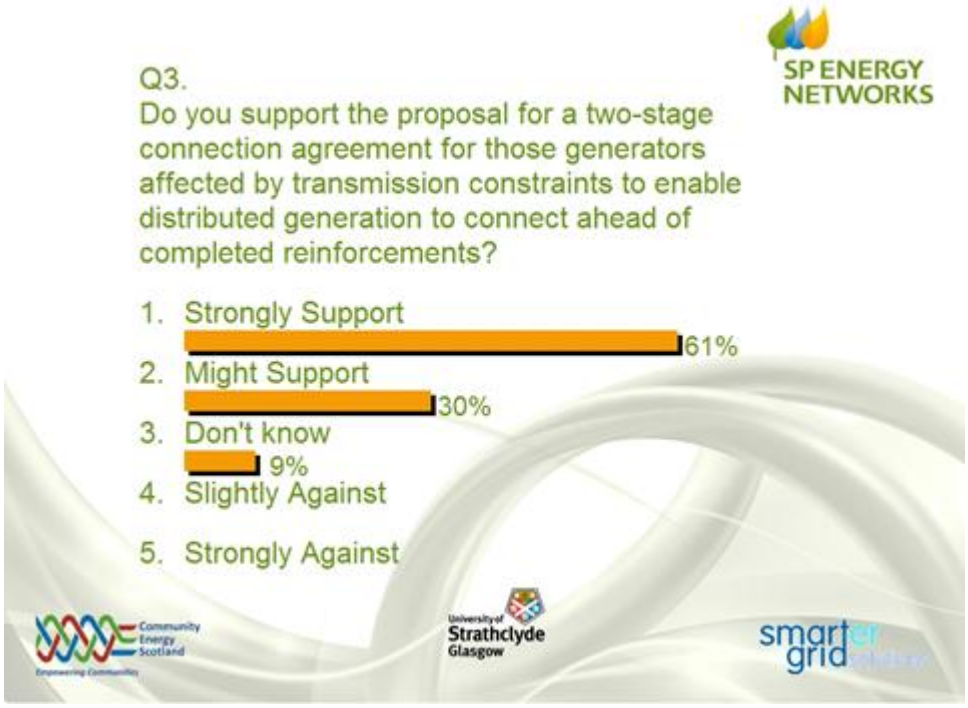


Of the 48 stakeholders surveyed, **69%** support the implementation of the Last In First Off (LIFO) principles of access.

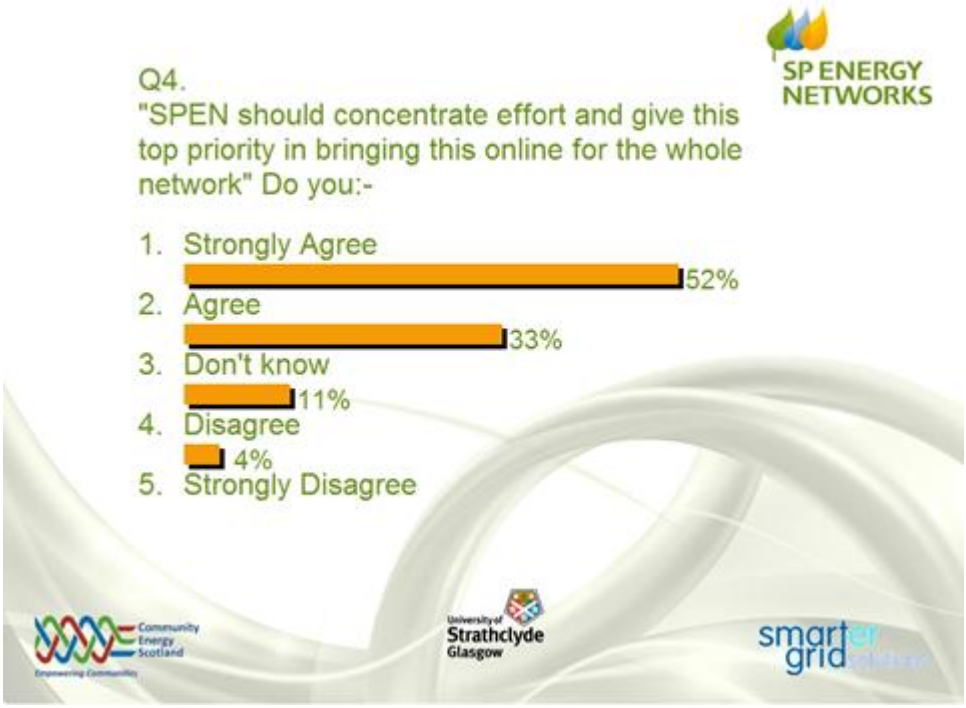
Of the 48 stakeholders surveyed, **75%** support the position that a developer should only receive an Actively Managed Connection offer and secure their place in the LIFO stack upon receipt of planning consent or following connection of their generation project.



It is clear from our stakeholder engagement activity to date that the vast majority of developers are becoming increasingly frustrated with their fellow developers who are currently holding onto capacity but are not progressing their projects to connection. There was a strong message that DNOs should be stronger in withdrawing offers if projects were not progressing through key stages of development such as planning, construction, connection in order to release greater network capacity.



Over **90%** of stakeholders support our proposal for a two Stage connection agreement where a generator was Actively Managed through Stage 1, but could connect whilst the wider reinforcement takes place and a firm connection is realised as part of their Stage 2 connection agreement.



Following demonstration of our proposed On-Line Curtailment Assessment Tool, **85%** of stakeholders agreed that SP Energy Networks should progress this tool into Business As Usual ASAP.

To provide some further context around the results, 48 delegates attended the Stakeholder Workshop held on 26 June 2014 and who were mainly from the renewable generation developer community.

In addition to the progress made above I am delighted to advise that as a consequence of the early success of the project to date and the feedback received

from our Stakeholders, the ARC team have facilitated the establishment of an Active Network Management Business Roll Out Group. This group, chaired by the Future Networks Team Manager, David Campbell, and made up of key internal stakeholders from business functions such as Design, Real Time Systems, Connections, Regulation & Commercial and Operations, have been tasked with putting in place the process and policies to enable ARC to be extended beyond the trial area and implemented into Business As Usual day to day activity.

Over the remainder of 2014, the Group will work in parallel with the ARC team with the key deliverable being the submission and presentation of a paper to the SP Energy Networks Executive Team detailing the requirements and strategy for rolling out Active Network Management across our wider distribution business and make recommendations for targeted roll out of key elements of ARC to take place during 2015, one year ahead of the completion of the ARC LCNF trial.

2.2. PROGRESS IN THE CURRENT REPORTING PERIOD

Work Package 1 (Empowering Customers)

Establishing A Stakeholder Forum

On 27 February 2014 we held our inaugural stakeholder workshop in Edinburgh. The purpose of the workshop was to introduce the ARC project and provide an overview on its aims and objectives. Three speakers performed on the day that included:

Euan Norris, Senior Project Manager SP Energy Networks – Introduced the ARC project and its aims and objectives.

Felix Wright, Community Energy Scotland – Spoke about CES's involvement in the project and how the project would aim to bring new opportunities for local community and commercial renewable generation developers to connect to the distribution network.

Richard Jenkins, Chairman, North Wind Associates – Mr Jenkins provided an overview of his experience to date following connection of his own wind farm within the SHEPD Registered Power Zone (RPZ) on the island of Orkney which uses the same Active Network Management technology as being trialled under ARC.

Thereafter an open forum was held where Stakeholders were able to discuss the project, issues that they faced today in connecting renewable generation to the network and highlight what support they required from both the ARC project and SP Energy Networks in general in connecting their projects.

The majority of issues raised during the discussion were around accuracy of the curtailment assessment and the process that was used to derive it. It was also felt that the project was an extremely good concept with some participants keen to explore accessing the network via an Actively Managed Connection. A number of participants highlighted the importance of assisting financiers of renewable generation projects to understand the concept and any perceived risks to projects from connecting via an Active Network Management solution.

Mr Jenkins was able to communicate some of the lessons learned from the SHEPD Orkney Registered Power Zone (RPZ) and Stakeholders agreed that the ARC project team should focus on the following areas and that any proposal should include;

- Frequent and transparent communications between stakeholders i.e. developers and the SP Energy Networks Connections team to understand changes in

curtailment expected post connection of schemes contracted under an Actively Managed Connection Contract is essential. It was requested by stakeholders that an ongoing quarterly meeting with SP Energy Networks would be welcomed post connection of projects.

- The principles of access to the network and how developers would be curtailed on an ongoing basis had to be clearly defined at contract acceptance stage and that the proposed access arrangements introduced at the workshop by the ARC team of Last In First Off (LIFO) offered the most transparent and long-term certainty for the generation project to be financeable.

- Stakeholders also agreed that generation projects should only be offered and thereby secure their place in the LIFO stack following receipt of planning consent for their generation project to proceed. This was considered a fundamental principle of access as it would ensure that those projects that had secured planning consent would gain accelerated access to the distribution network.

- Although recognised that any Curtailment Assessment would not be contractually binding, stakeholders agreed that the Curtailment Assessments had to be as accurate as possible and that the process and methodologies used by SP Energy Networks to undertake any calculation had to be transparent and available to each generation developer. They welcomed the commitment of the ARC project team to undertake Curtailment Assessments using the generators own assumptions used to generate a forecast of future energy production and said that this would provide the most acceptable method of understanding the likely curtailment that may be experienced over the life of the project.

- Whilst all stakeholders agreed that connecting under a Non-Firm access arrangement or Actively Managed Connection would accelerate access to the distribution network in the short-term, there was a strong view that this should only be on a temporary basis and that developers would seek to undertake the necessary investment to secure Firm access capacity for their generation projects in the longer term. In addition, we have spoken to developers since the stakeholder workshop and a similar message has been communicated that progress towards a Firm access arrangement in the longer term remains the preferred end solution regardless of the option to be Actively Managed for the majority of developers.

Our second stakeholder workshop took place on 26 June 2014 and following Stakeholder feedback focussed upon Curtailment Assessments and Commercial Agreements.

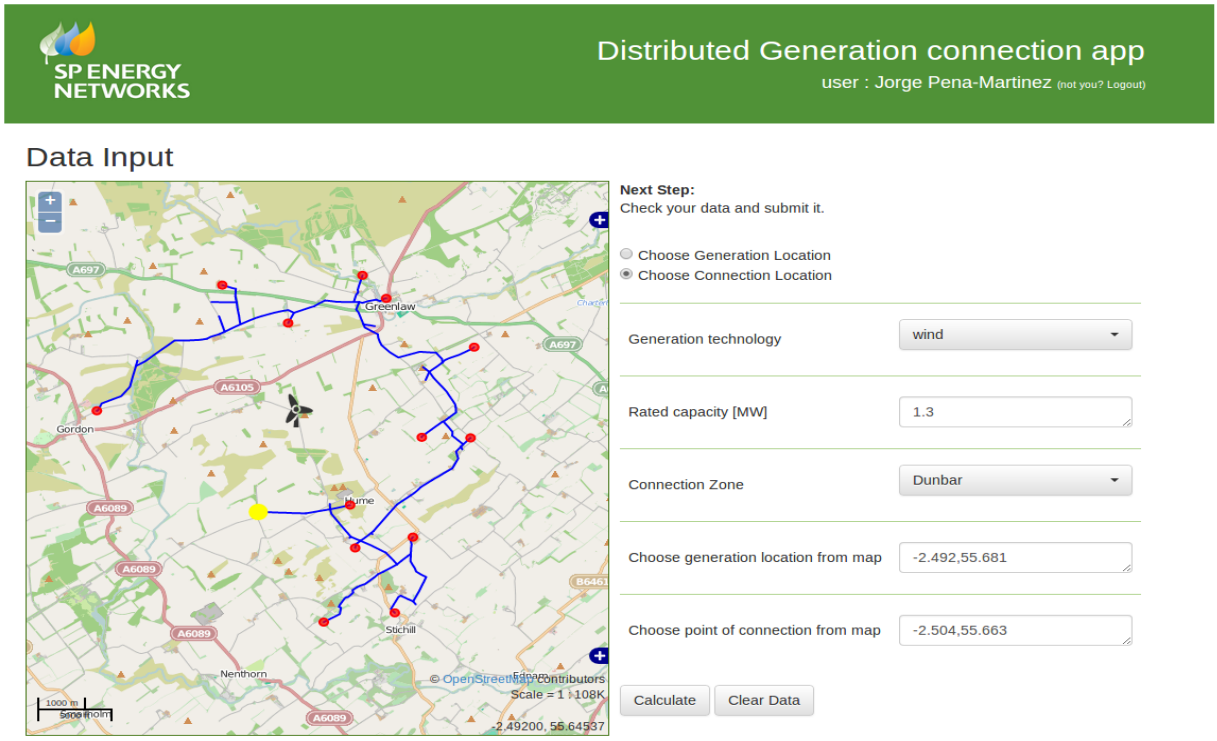
Publication of a more Frequently Refreshed Network Data and Network Heat Maps with Additional Information on Smart Connection Options

This work package focusses upon the collation and delivery of improved 'real-time' network capacity data that will be made available to customers via an on-line tool. Following the initial stakeholder workshop, work progressed in developing a proposed on-line Constraint Analysis Tool that was presented at our second stakeholder workshop held on 26 June 2014. This provided stakeholders with the opportunity to review and provide feedback to the ARC project team on whether the proposed tool provides the data that they require and consider if it will be of longer term benefit when deciding where to connect to our network.

In parallel to developing the on-line tool, we have also commenced the development of a Constraint Analysis database that pulls information from our existing network systems and presents them in a format that can be correlated with a new generation

connection application in order to provide an on-line assessment of likely constraints and expected curtailment of the generator on an annual basis.

The picture below provides a view of the prototype On-Line Curtailment Assessment Tool and how it may be presented via a web portal. This will be refined and developed through our stakeholder engagement process.



Visibility Studies

We continue to provide curtailment assessments to every generator that is interested in accessing the network within the trial area via an Actively Managed Connection arrangement. Each curtailment assessment is based upon three years of network data and correlated to the forecast output of the generator dependent upon technology. We have also undertaken curtailment assessments for developers seeking to connect PV arrays and limited our analysis to day light hours only to ensure that the information being provided is meaningful and enables the developer to make an informed choice on how to proceed with their connection.

Following on from our previous update in December 2013, we have now acquired the skills and have the capability in-house to undertake all curtailment assessments and are no longer reliant upon our external collaboration partner to complete this work.

Not only does this reduce our risk of being reliant upon external providers to provide such assessments in future, it also represents a considerable step forward in being able to empower customers in selecting the most appropriate connection option for their generation project and will have the added value of improving the overall customer service delivered by SP Energy Networks as part of the connection application process.

Work Package 2 (Connections Design)

Design Policies

As part of our December 2013 report we detailed the work that had been undertaken to identify those network policies that would be affected and would need reviewed ahead of the introduction of Active Network Management (ANM) as a Business As Usual proposal to permit distributed generation projects to access the network ahead of wider reinforcements.

Having considered this aspect of the project in greater detail, the ARC project team recognise that the introduction of ANM into Business As Usual (BaU) cuts across a number of different departments of the SP Energy Networks business and therefore in order to ensure that ANM transitions into BaU in a seamless manner, have recommended to the business, during February 2014, that a separate ANM Working Group be established that will work alongside the ARC project team to undertake a comprehensive review of existing policy, process and commercial arrangements with the key deliverable of the group being the completion and presentation of an ANM Business As Usual rollout strategy paper to the SP Energy Networks Executive team by November 2014 for approval.

Network Visibility

During our December 2013 update we informed OFGEM that we had identified a number of critical measurement points within the trial area that required greater visibility of data in respect of network loading which affect the design assumptions and types of connection arrangements that can be offered.

To that end we have entered into a procurement exercise to purchase network monitoring equipment that will be deployed at pre-determined measurement points throughout the trial area. The deployment of network monitors will also be used to critically evaluate the work being undertaken by Western Power Distribution in respect of their LV Templates LCNF project. By comparing the actual network data being collected through the monitors vs. using the LV Templates methodology, will enable us to make an informed decision on the validity, accuracy and reliability of WPD's LV Templates LCNF project based upon whether it is truly transferable and replicates the characteristics of the SPEN network and can be relied upon in the absence of network monitoring.

Completion of this analysis will enable SPEN to make an informed investment decision in respect of rolling out Active Network Management as a Business As Usual product and understand the most reliable and accurate methodology to derive network data on any part of our network. In addition, once further analysis has completed we will provide feedback to Western Power Distribution.

Planning Tools

Through the work being taken forward in developing the on-line curtailment assessment tool, we have already built a script that is capable of working with our Power Factory DigSilent network modelling software and can interact with current SP Distribution network modelling data to enable the autonomous production of Curtailment Assessments.

In addition we are currently building a database that will hold the latest network modelling information that will mean that both network planners and generators can obtain visibility of available capacity based upon real-time, refreshed at regular intervals i.e. daily, weekly, information as opposed to the data that is currently out of

date from between 6 months to 1 year based upon the limited data that DNOs throughout GB currently have access to.

Work Package 3 (Network Enablers)

Design & Evaluation of Enablers

As part of the development of ARC we have already undertaken assessments of technologies that are available or have been tested through various LCNF projects that can enhance the deployment of Active Network Management into Business As Usual. We are already considering the roll-out of Dynamic Line Rating and Statcoms that would work alongside the Active Network Management technology to further benefit the ability of renewable projects to connect by enhancing the available network capacity for generation. By installing Active Network Management enabling technology, this will provide the platform to exert autonomous control over devices such as Dynamic Line or cable Rating (DLR) and Statcoms from the standalone offerings currently available and we consider that through the integration of smart technologies such as this we will be able to better accommodate additional capacity on our existing networks in a safe and reliable manner.

Telecoms Platform for Communicating Across Trial Network

To enable the deployment of the Active Network Management system we plan to utilise the existing fibre infrastructure for EHV connected generators. We have tested the ability of the ANM system to obtain current flow data from existing Remote Terminal Units (RTU) located within the enabled Grid Supply Points (GSPs). We are currently in the process of working with our Real Time Systems department and Corporate Systems UK teams to develop the requirements for a Smart Communications Network which would enable the roll out of Active Network Management across our licence area.

The development of this Smart Communications Network would have many advantages over the current method of deployment due to its ability to be incorporated into our existing communications and network security processes and procedures. Furthermore, as the ARC project requires interaction with the Transmission Operator and Transmission System Operator, we must consider network communications infrastructure that offers a high degree of cyber security which can be replicated across our network.

ANM Platform for Managing Generators

Following on from our previous progress report, during the reporting period we have completed Factory Acceptance Testing for all the ANM systems that will be installed within the Berwick and Eccles Grid Supply Points (GSP). Our original submission detailed that we would install an ANM system at Galashiels GSP however, due to the level of generation enquires that have been received to connect to the network supported by the Eccles GSP, it is considered that the enablement of the Eccles GSP with ANM technology is more appropriate. This is simply a redefining where the ANM technology will be deployed based upon stakeholder feedback and a direct response to where generators are seeking to connect.

Substation Environment

Following an audit of existing SPD assets within the trial area, we identified a list of primary transformers unknown to be able to accommodate reverse power flow. Work has therefore commenced to review transformer tap change capabilities in respect of reverse power flow.

Work Package 4 (Network Connections Trials)

Management of Exporting Distribution Networks

We continue to engage positively with National Grid (NGET) in the development of commercial arrangements that will permit the connection of additional embedded generation onto an already exporting GSP. At the end of June 2014, the ARC project team will present our commercial proposal to NGET for review.

This documentation will detail our policy in offering an Actively Managed Connection at GSPs currently recognised as exporting and from discussions with NGET to date will detail a two staged contractual agreement. Initial response to this approach has been positively received in principle by NGET however we are now in the position where we are seeking to clarify the detail that will form any commercial agreement for the connection of generation via and ANM platform.

The final document will be available as part of our next progress report due December 2014.

We have worked with NGET and our Regulation & Commercial department to ensure that any proposal continues to satisfy SP Distribution's obligations under both its Electricity Distribution Licence and the Connection Use of System Code (CUSC).

Active Management of Generation around Constraints

We have held a number of internal commercial workshops in addition to our engagement with NGET. We are now at the stage where we will be able to document and release our principles of access and policy for connecting generation under an Actively Managed Connection agreement. To ensure completeness the final aspect prior to release of this documentation will be to incorporate the commercial interface agreed with NGET for generation connected under an exporting GSP which was positively received by stakeholders at the workshop held on 26 June 2014.

Community Level Connections

As described previously within this report this aspect of the project gives us the most cause for concern given that we have been unable to identify a Community Level Connection that satisfies the deliverables of the project. To date we have held a number of Community Workshops however they have not resulted in a firm project. On a more positive light, University of Strathclyde have undertaken significant work in developing the virtual model for connecting renewable generation at lower voltage levels and it is our intention of introducing this work at our next Stakeholder Engagement Workshop scheduled for September 2014.

Work Package 5 (Project Evaluation)

At this stage of the project no work has commenced on this Work Package however through the establishment of our parallel ANM Business As Usual workgroup we expect to develop output in respect of this work package over the course of the year.

Work Package 6 (Knowledge Transfer)

Knowledge Import

From the inception of the project we have taken a very proactive approach to engaging with GB DNOs to obtain the learning from relevant LCNF and RPZ projects.

To that end during April 2014 we held a one to one workshop with UK Power Networks (UKPN) to exchange learning and experience from their Flexible Plug & Play project. In addition UKPN provided valuable information on the detail that sits behind their commercial offerings. We also were able to understand the communications infrastructure that has been implemented to support the rollout of ANM within the UKPN trial area.

Similarly through engagement with Scottish Hydro Power Electricity Distribution (SHEPD) we have gained valuable insight into their Orkney RPZ project and indeed invited one of their own generation customers (Mr Richard Jenkins) connected under ANM on the island, to address a group of our own Stakeholders to provide his experience both positive and negative, of operating a distributed generation project as part of an Actively Managed Scheme.

In addition we have also worked with both our Regulation & Commercial Department and NGET Transmission System Operator colleagues to understand what existing commercial frameworks could be developed to accommodate the roll out of Active Network Management on the distribution network.

A Stakeholder forum and Community Workshop have been held in the trial area: Edinburgh and Dunbar respectively. A report detailing the discussion and conclusion from the Stakeholder events are available online at www.arc-project.com.

Knowledge Export

A multi-media approach has been used to disseminate information: website, blog, Facebook page and Twitter are all used. Events such as conferences have also been used to speak target a wider audience. The project team have attended Scottish Renewables conference 18/ 19 March, All Energy 21/ 22 May and attended the Royal Highland Show 19 – 22 June. Also, the team grasped the opportunity to exhibit at both NGET conferences in Glasgow and London 25 Feb and 3 Mar to highlight the Transmission Distribution boundary issue the ARC project is facing.

Extensive thought has already been given to understanding how SPEN will adopt the findings of the ARC project into business as usual. A workshop has been conducted that identifies all the areas of the business affected, the individuals in those areas that require engaging and to what purpose i.e. Policy update, procurement strategy, training for installation, maintenance and operation etc.

Power Network Demonstration Centre (PNDC) Facility

At this stage in the project it is too early to comment on this work package.

3. BUSINESS CASE UPDATE

The Business Case remains as per our original submission with no events or developments taking place in industry over the period of the project today that would adversely affect the delivery of the ARC project.

4. PROGRESS AGAINST BUDGET

The table below provides a summary of the project budget position in respect of the expenditure to date.

Activity	Budget Jan 13 – Jun 14 £k	Actual to Jun 2014 £k	Variance £k	Comments
Labour	£1,471.0	£396.0	£1,075.0	Direct Labour costs are debited from ARC bank account on a quarterly basis. Realised staff cost efficiencies to date.
Contractors etc	£2,662.0	£921.0	£1,741.0	All contractors and collaboration partners are invoiced to date. We have delivered the enablement of the three GSPs and will see additional costs being borne in respect of the development of the On-Line Curtailment tool
Travel & Accommodation Expenses	£13.0	£11.4	£1.6	Efficiencies realised in respect of travel & accommodation
Total	**£4,146.0**	**£1,328.4**	**£2,817.6**	

As we move to develop the On-Line Curtailment Assessment tool we will start to incur significant IT development costs which should accelerate the expenditure over the course of the remainder of the project.

5. BANK ACCOUNT

A copy of the ARC bank account statement is shown below.

Account information:				Balance information as of 02/07/2014	
Sort code		Account type	SPECIAL INT BEARING	Last night's ledger	6,982,029.51 Cr
Number		Bank name	Royal Bank of Scotland	Start of day ledger	6,982,029.51 Cr

6. SUCCESSFUL DELIVERY REWARD CRITERIA (SDRC)

- **Criterion (9.1) Project Budget** – We remain on track to deliver the objectives and deliverables of the Accelerating Renewable Connections project within the existing budget provision as set out within our Tier 2 Full Submission document.

- **Criterion (9.2) Project Timeline Delivery** – We remain confident that we will deliver the entire project within the Project Timeline as agreed within the Project Direction documentation and hope to deliver some aspects of the project into Business As Usual ahead of the deadline for completion of the project in December 2016.

- **Criterion (9.3) Demonstration of Alternative Solutions as Detailed in Case Study 1** – Through a combination of the roll out and installation of ANM equipment at Dunbar, Berwick and Eccles Grid Supply Points our successful engagement to date with both generation developers and National Grid that is designed to implement a long term vision for the roll out of Active Network Management across our distribution franchise area we believe that we are on track to deliver this SDRC over the course of the remaining 6-months of the current reporting year.

- **Criterion (9.4) Demonstration of alternative solutions as detailed in Case Studies 2, 3 and 4** – Similarly to our response in respect of SDRC 9.3 we believe

that our approach to date in taking the ARC project forward will facilitate the delivery of SDRC 9.4.

- **Criterion (9.5) Creation of community energy generation scheme & model for community level generation** – We have held a number of workshops with Communities interested in connecting renewable generation to date but as yet have not been able to identify a project that completely satisfies the objectives of the ARC project. This is due to a variety of reasons and we continue to work with Project Partner Community Energy Scotland to progress this work package. On a more positive front, University of Strathclyde have completed a number of reports and commenced modelling work on developing scenarios for connecting renewable generation and also looking to challenge the existing design principles for constraining generation at LV as a consequence of its contribution to voltage rise. We expect to present this work at our next Stakeholder Engagement Workshop scheduled for September 2014.

- **Criterion (9.6) Demonstration of top-down Active Network Management** – We have completed Factory Acceptance Testing for all sites where the Active Network Management enabling technology will be deployed. In addition we have engaged with a number of developers who seek connection in the trial area some of which have planning consent to proceed. Following agreement with NGET on the proposed commercial arrangements, we foresee being in a position to make ANM offers to those customers who meet the criteria for being offered and ANM connection and are happy to proceed with an actively managed connection.

- **Criterion (9.7) Detailed publication and dissemination of learning from project** – In developing the strategy and commercial principles for the roll out of Active Network Management, we have done so by developing our learning from existing projects such as SHEPD's Orkney RPZ. Some things we have replicated as we consider, along with our Stakeholders, that they are the best approach such as the roll out of LIFO principles of access, however with respect to other aspects of our commercial offering such the implementation of a Stage 1, Stage 2 connection agreement whereby Stage 1 would allow generators to enter into an Actively Managed Agreement whilst in parallel investing in wider network reinforcement that would realise a firm connection upon an agreed date that would form Stage 2 of the connection agreement. This approach would avoid the potential for those parties that had secured a position at the end of the stack being subject to uneconomic curtailment and improve the network access for all generators connected under and ANM scheme.

- **Criterion (9.8) Improved Generation Experience** – The proof of this deliverable will be the reaction of customers that engage with SP Energy Networks post the implementation of Active Network Management as a Business As Usual offering and how they receive and use the On-Line capacity tool that we are currently developing. However as we take the ARC project forward we continually seek the feedback from stakeholders to ensure that we are communicating and delivering a service that is expected by our stakeholders, which again is evidenced below based on the responses to Question 12 asked at our recent stakeholder workshop held on 26 June 2014.

The response of stakeholders confirms that **81%** of attendees endorse the ARC project team's approach to date in engaging stakeholders and informing on the outputs of the project.

7. LEARNING OUTCOMES

A Stakeholder Mapping report has been published and identifies the key organisations and individuals the ARC project should engage. This report is published on the ARC website, www.arc-project.com. This report informed the invitation list for both the Stakeholder forum and Community workshop.

Two groups of stakeholders that remain at a distance from the project but have huge impact are financiers to distributed generation projects and local council planning committees. Further work is ongoing to understand who financiers are and what issues they have that the project can support. Also, Planning Regulation changes have prohibited small community Distributed Generator projects. Large commercial projects that are rejected, appeal at a national level and local decisions are routinely overturned. More information can be found on www.arc-project.com Community Energy Scotland Community Workshop report dated 27 Mar 14. Over the coming months we will aim to engage the larger financial organisation that support the development and invest in renewable generation projects in order to raise their awareness of the impact upon project of the introduction of Actively Managed Connecitons.

The project team continues to prioritise progress into business as usual. An internal SPEN workshop has highlighted the key business units and individuals together with what is required from them to deliver a successful project into business as usual. A human resource has been identified outside the project team to map the process of getting the project into business as usual. It is increasingly likely a SPEN implementation team will be required due to the change; processes and cultural required within the business to adopt this project successfully.

8. INTELLECTUAL PROPERTY RIGHT (IPR)

The project is not funding the development of any technology which should create foreground IPR. All partners have accepted the LCNF default IPR arrangements.

9. RISK MANAGEMENT

The project risk table below has been updated with developments and any risks identified as part of the project activity to date. Similar to our last report we consider that the project management approach adopted by the ARC team has mitigated any perceived risks from materialising.

Risk	WP	Risk Description	P	C	PR	Mitigation	Action
1	WP 1.3	Developers unwilling to trial new commercial and connection arrangements	1	3	3	Targeted Stakeholder Engagement with developers ensuring benefits of ANM are understood	Identify key stakeholders within trial area Hold one-to-one meetings will all developers seeking to connect within the trial area
	WP 1.2	Dynamic network constraints and volume of data leads to IT issues	1	3	3	Ensure network planning tools and data requirements meet the needs of the network planners	Review of existing Network Modelling data and production of up to date network data
2	WP 2.1	The Development of new tools and processes for connection design involves complexity and time/cost risk	2	2	4	SPD has engaged technology partners to develop up to date tools and processes for connections design	Deploy internal IT support and resources where possible and transfer learning from external technology partners into the business
	WP 2.2	Increased visibility of network may have an impact on the available network headroom	2	1	2	Traditional design headroom has been conservative	Utilise learning gained from Flexible Networks project on headroom available
	WP 2.3	Integrating existing data sources and tools is not successful due to incompatibility	2	1	2	SPD will engage technical experts to conduct integration of data and tools into a single streamlined solution	Expand on previous IFI trials
3	WP 3.2	There are communication issues with telecoms platform meaning that some areas cannot be covered by ANM	3	2	6	SPD will carry out site surveys and specify telecoms that will meet the requirements of the trial area	Use of existing communication technology under Business As Usual
4	WP 4.1	Failure to establish SPD/NGET process and policy	2	2	4	Robust engagement with NGET.	Key deliverable – maintain dialogue with NGET to reach agreement on commercial interface and policy for mgt of GSP constraint
	WP 4.2	Procurement of technology and software tools to facilitate trials could defer project deliverables	1	3	3	Alignment with Business As Usual policy on selection of technology providers	BaU
5	WP 5.2	Network evaluation finds that generation triggers cannot be categorised	1	3	3	Academic partner to carry out analysis and report	Work with key stakeholders
6	WP 6.1	Knowledge Import from other projects	1	1	1	Assignment of dedicated resource to import learning from existing LCNF projects	Appointment of Knowledge Transfer Lead
	WP 6.2	Knowledge Dissemination	1	1	1	Delivery of knowledge sharing events	Identification of key stakeholders Regular engagement with UK DNOs Regular review, update of ARC website Use of various media resource to capture and impart learning
	WP 6.3	PNDC Demonstration of technology	1	2	2	Selected technology does not function as specified	Robust assessment of new technology used to constrain or facilitate embedded generation

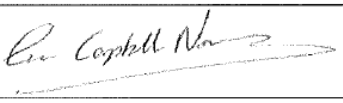
10. CONSISTENCY WITH FULL SUBMISSION

We confirm that the project is being taken forward in accordance with the full submission and Project Direction with the exception of choosing an alternative Grid Supply Point to install ANM enabling technology. This development however was driven by network characteristics and interest from the generation community of connecting within that area.

ACCURACY ASSURANCE STATEMENT

Steps taken to ensure this are:-

- Regular update reports from each project team member for their area of responsibility.
- Evidence of work undertaken by the project team is verified by the section manager as part of their day-to-day activities. This includes;
  - Checking and agreeing project plans.
  - Holding regular team project meetings and setting/agreeing actions.
  - Conducting frequent one-to-one meeting and setting/agreeing actions.
  - Confirming project actions are completed.
  - Approving and signing off completed project documents.
  - Approving project expenditure.
- Weekly reports are produced by each section manager of the progress of the work their department is undertaking.
- Director and Senior Management summary reports for the project progress are produced.

Author		Date	27th June 2013

Euan Campbell Norris – Senior Project Manager

Signed (1)		Date	27th June 2013

David Campbell – Future Networks Manager