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SECMP0046 'Allow DNOs to control Electric Vehicle charges connected to Smart Meter infrastructure'

14 October 2020 Joint DCUSA Working Group – Meeting Summary

Attendees

Attendee	Organisation
Ali Beard (AB)	SECAS (Chair)
Holly Burton (HB)	SECAS (Meeting Secretary)
Abhay Soorya (AS)	Gemserv
Joachim Brandt (JB)	Gemserv
Ben Cattermole (BC) (<i>part</i>)	BEIS
Dennis De Cala (DDC)	BEIS
Simon Trivella (ST)	British Gas
Rajni Nair (RJ)	Citizens Advice
David Walsh (DW)	DCC
Paul Bedford (PBe)	Drax
Paul Barnfather (PB)	EA Technology
Peter Dennis (PD)	Ecotricity
Paul Saker (PS)	EDF Energy
George Dawson (GD)	ElectraLink
Richard Colwill (RC)	ElectraLink
Heather Ward (HW)	Energy Assets
Joseph Cosier (JC)	Energy UK
Matthew Cullen (MC)	E.ON
Claire Addison (CA)	Flexitricity
Joseph Nolan (JN)	GTC
Elias Hanna (EH)	Landis & Gyr
Peter Whittaker (PW)	Leep Utilities
Richard Sarti (RS)	Nodes
John Noad (JN)	Npower
David Sykes (DS)	Octoenergy
Francesca Barrick (FB)	Ofgem
James Nixon (JN)	Scottish Power
Alessandra De Zottis (ADZ)	Sembcorp
Paul Farmer (PF)	Shell Energy

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Eric Taylor (ETa)	SLS
Bob Hopkins (BH)	SSE
Paul Fitzgerald (PF)	SSE
Richard Hartshorn (RH)	SSE
Emslie Law (EL)	OVO-SSE
Rustam Majainah (RM)	OVO-SSE
Evie Trolove (ET)	UK Power Networks
Steve Halsey (SH)	UK Power Networks
Lisa Waters (LW)	Waters Wye Associates
Richard Brady (RB)	Western Power
Sven Hoffmann (SH)	Western Power

Welcome and introductions

The Smart Energy Code Administrator and Secretariat (SECAS) Chair welcomed attendees to the meeting and reiterated the “Competition Law Guidance”.

Outcomes

The Chair highlighted proposed outputs from today’s joint session include agreeing what elements of the solution governance need to be included in the Distribution, Connection and Use of System Agreement (DCUSA), agree the specifics that need to be included in the DCUSA and lastly, agree next steps.

Overview

SECAS recapped on the solutions discussed at previous Smart Energy Code (SEC) Working Groups and the last joint Working Group meeting noting:

- The current Proposed Solution will enable Distribution Network Operators (DNOs) to curtail Consumers’ power under the specific circumstances not turn it off.
- The Data Communications Company (DCC) at the last meeting stipulated that the SEC Proposed Solution is implementing control to the Home Area Network (HAN) Connected Auxiliary Load Control Switch (HCALCS) or Auxiliary Proportional Load Control (APC) Device and the attached load.
- There is HCALCS infrastructure but there is no government mandate to connect Low Carbon Technologies (LCT) to HCALCS. One Working Group member (ETa) asked for this to be taken into consideration when discussing Slide 4 at this meeting.
- The Working Group previously touched on British Standards Institution (BSI) Publicly Available Specification (PAS) 1878. This was circulated as part of the meeting materials and highlights flexibility and control of consumer Devices but not through the Smart Metering Network. In addition, it was confirmed the role of the Demand Side Response Service Provider (DSRSP) and the environment in which it operates in respect of PAS1878 is described in PAS1879 which is due for publication in 2021.

Further investigation of the Road Map leading to the use of the SEC solution

The Working Group noted the roadmap provided by the Proposer at the previous meeting, detailing the process to reach the point requiring the proposed SEC solution. An action had been raised at the last meeting for SECAS to re-draft and expand the roadmap diagram ahead of this meeting to ensure boxes are expanded to specifically highlight the governance arrangements.

1. Step 1

The Working Group noted step one where loads on feeders and substations are automatically monitored. If load reaches a predetermined level (90%) then a flexibility services tender is issued.

Should the 90% be set in DCUSA?

Working Group member (PBe) questioned why 90% had been used as the trigger. It was confirmed by the Proposer (Scottish and Southern Electricity Networks (SSEN)) that 90% is not set in stone, instead the trigger could sit just above or just below 90% as the aim is to prevent the fuse blowing resulting in Customers going off supply. Fuses do not blow instantaneously in load related events, but it is important to make sure that the fuse load is not exceeded by 100%.

ElectraLink (RC) noted forecasting the first step and thinking for the future, asked what SSEN envisage the DCUSA governance would look like. Would each DNO have different approaches or would DCUSA need to be restrictive?

The Proposer stated that as each DNO will have different investment plans, the level at which the trigger would be set would be different for each DNO and each area. This would be based on the investment plan but also on topology, age, operation and design of the network. Working Group (RM) agreed this roadmap is the first step before reaching the scenario where the SEC solution would be used, DNOs should ask for flexibility before proceeding straight to the SEC solution of curtailing loads. Furthermore, as each DNO would have their own methodology to monitor this would not sit under the DCUSA.

PB supported the assertion of the Proposer that the operation of DNO systems and planning for Electric Vehicle (EV) uptake around the country varies and are subject to different designs, it is unlikely that there would be one single method for determining the 90% trigger. As part of the governance, to ensure transparency, he suggested DNOs should be required to publish how these figures are calculated. This was agreed by the Working Group.

What is the definition of last resort?

One member confirmed they sit on the Grid Code GC0147 Working Group who currently hold a definition for the last resort where 'every commercial option has been exhausted' and suggested that this should be adopted before falling back on the SEC solution.

Working Group members noted that when DNOs are tendering for Network Services business requirements, there is a lead time of roughly one/two years which provides minimal risk of DNOs using the SEC solution as a last-minute tool. The idea is that DNOs will try to avoid using the SEC solution therefore early market engagement is key. The SEC solution will only be used when flexibility has failed and there is no other option to keep customers on Supply.

PS suggested the current definition within DCUSA could be used - 'Capacity Headroom' means the minimum margin below the maximum capacity of the Distribution System which the Company reasonably believes is necessary and justifiable to maintain Security of Supply and other technical parameters.

PB reiterated that if a Party exceeds a certain percentage then flexibility service would need to be tendered within a given lead time. Whilst it is appreciated that lead times will vary across different DNOs, if left too late then the flexibility services will not be effective.

JN offered a definition of 'all reasonable steps' which is a standard phrase used in many Codes. BH agreed that this phrase has 'stood the test of time'. However, DS felt this was too loose and felt a more commercial definition should be used (for example where flexibility costs less than any proposed compensation, for instance)

PW informed members that independent DNOs (iDNOs) do not have sufficient monitoring activities on their networks to know when they have reached maximum load therefore, 90% will be an issue to understand. The Working Group agreed that if there was no monitoring and therefore no ability to procure flexibility, the SEC solution should not be available to those Parties.

2. Step 2

The Working Group noted this step is where if the load begins to increase, if necessary, the flexibility contracts will be renegotiated.

SSEN (BH) clarified this is in place to cover increasing loads that are greater than expected and where possible, to renegotiate a tender with flexibility providers to avoid a network outage and the subsequent need to use the SEC solution.

One member raised concerns regarding the singularity in 'tender'. The member felt there should be more than one flexibility option considered by the DNO.

Suppliers and flexibility providers will possibly already be contracting with a variety of customers and there is no 'less than 1GW' list. Work needs to be done in this area to understand possible multiplicity of flexibility providers behind each substation and how the DNO flexibility procurement might cut across those contracts already in place. The Chair replied that on low voltage networks, there is not yet a great deal of flexibility available, however agreed, more investigation is needed to identify how much information should be included within DCUSA and what type of flexibility should be sought.

One member was concerned that if the flexibility solution is predicated on one provider winning the tender for a substation, this would cause questions about how this would interact with other contracts that have already been agreed as part of the previous flexibility services. RH advised there are several different ways to engage with market services, the use of flexibility tender has been referred to as singular as an example but could easily be more than one provider. Furthermore, it was agreed that the wording relating to issuing a flexibility tender to a provider within the road map should be changed to plural to avoid confusion.

The Chair highlighted that the last resort is only a temporary solution whilst distribution companies determine what the better solution is long term. If flexibility is proven successful then Parties are encouraged to continue with that however, if a feeder is at increasing risk then the DNOs would be looking at long term options such as network reinforcement etc.

Another member highlighted there should be an obligation in place where DNOs talk to the Suppliers or, a mechanism where the market is notified of areas that have hit or are likely to hit the 90% trigger. The DNOs could also consider contacting the impacted customer advising them to liaise with their Suppliers.

BH stated Article 32 within the Clean Energy Package (CEP) states 'DNOs should procure flexibility services in accordance with transparent, non-discriminatory and market-based procedures unless the regulatory authorities have established that the procurement of such services is not economically efficient or that such procurement would lead to severe market distortions or to higher congestion.'

There was a question about Load Managed Areas (LMAs) and how the SEC solution would affect these areas as consumers in these areas were not allowed to change charging times.

3. Step 3

The Working Group noted this step will come into play when all flexibility has failed, and a Network outage occurs.

One member noted this was dependant on what caused the power outage to occur, whether it is a recurring issue or a one-off issue. For example, if there was an IT issue/car crash into a substation causing a failure, then the ability to use the SEC solution would not be triggered. The group agreed that, as suggested by the Proposer, an investigation needs to be carried out so that this would not be a one-off event but instead is a wider network issue. In addition, this would need to be included in the DCUSA.

4. Step 4

This consists of a new provider being appointed, if no interest is received in providing services or the cost is uneconomic then the SEC solution will be implemented by DNO.

Some Working Group members questioned the definition of 'uneconomic'. The Proposer commented that flexibility procurement is based on the economics namely reinforcement costs and customer interruption costs are the two main drivers (but would depend on how each DNO reviews their schemes).

DS pointed out that the costs will be passed through to the consumer whether they are reinforcement costs or flexibility costs.

5. Step 5

Customers with EV Charging equipment will be contacted and asked if they wish to participate in the SEC solution to mitigate network interruptions while a permanent solution is investigated and put in place. Previous questions asked, 'why an EV owner would sign up to their DNO (for free) when they do not sign up to flexibility providers (where they would get paid)?'.

RN asked if consumers had been asked about the costs and had microbusiness consumers been asked? BH offered several surveys showing customers had been asked but confirmed that microbusiness had not been involved in these.

Working Group members discussed a survey carried out by Impact Utilities (IU) to understand perceptions of the SEC solution mechanism. A survey called the Shift Survey was also circulated during the meeting. The IU survey noted community education was needed for majority opt-in and for the scheme to run successfully. 69% found the curtailment mechanism acceptable with 14% stating they would not take part in the scheme. Knowledge of LCTs was highest amongst Heat Pump (HP) and EV owners. A proportion of customers believed they would be able to save money if they chose to override the curtailment and charged at a time when the mechanism was

being enacted. One other point made was that those who are vulnerable with heat pumps would need constant heat available (therefore should not be involved in the SEC solution).

The Working Group noted ownership of EVs and heat pumps by region, two thirds of which also own a Smart Meter though only a quarter of these are modern Smart Metering Equipment Technical Specifications (SMETS)2 Devices. Heat pump and EV owners are generally most informed about the issue of peak demand and management strategies.

69% of respondents found the curtailment mechanism acceptable, with this percentage increasing for those who live in the South East aged 18-35. With many liking the fact that the scheme reduces likelihood of a power cut, but some felt it would be too intrusive and inconvenient if reduction lasted longer than two hours. Most respondents stated they would like a reduction on their bill of around 10-50%.

At around £30, compensation was acceptable to half of EV and HP owners. £20 was acceptable to half, only when further reassurances are made to those saying they were 'not sure'. EV owners were less accepting of compensation than HP owners. It was questioned whether customers were expecting compensation, to which it was advised there was a fair split of customers that would like to receive compensation.

6. Step 6

The SEC solution would be implemented for a maximum of 12 months however, it was previously agreed that this solution should not be used for 12 months unless necessary. This will need to be written into DCUSA after agreeing timescales for implementation.

One member expressed concerns regarding the 12-month implementation timescale such that, if a Party must undertake the SEC solution where EVs have been curtailed with no compensation, is there an option to go back to customers offering payment retrospectively.

RM questioned what would happen if the problem has failed to be fixed within the 12-month period, would DNOs continue to have power cuts on substations (as the SEC solution would no longer be allowed) or would the SEC solution continue, and the case be referred to Ofgem. SSEN advised the idea is for the solution to not exceed the 12-month period, the intention is to have this resolved but there is a possibility that something could potentially extend past the deadline. This would be covered by the current requirements for DNO reporting to Ofgem and is when Ofgem would be advised.

RN asked if Penalties had been considered.

SECAS/DCUSA took an action to provide some options on Compensation and Penalties.

7. Step 7

DNO investigates permanent solution to the situation. Options include upgrading cable, overlaying cable, replacing transformer, new smart solutions as they become available before issuing further flexibility tender. The Working Group agreed they were happy with this approach.

Proposed New Diagram

At the last Working Group, members agreed to re-draft the diagram to show that when a Network outage occurs, the DNO should start to investigate the solutions at the same time as flexibility arrangements start to take place.

Working Group member (SH) advised the first step should note that load on feeders and substations are automatically monitored if the load reaches a predetermined level (90%), once the maximum trigger level has been reached, the DNO should then investigate a permanent solution (one of them being the flexibility tender).

The Working Group also requested to change the 'EV charging equipment' to the correct terminology (LCTs) given the scope of modification has been expanded. As such, the Chair agreed that future terminology will be referenced as 'Low Carbon Technology' or LCT. This will also be amended in the SEC Modification.

The cost of HCALCS/Auxiliary Proportional Load Controller (APC)

The Working Group noted, if the Supplier wishes to offer the customer load control services then the Supplier will need to pay for the HCALCS/APC and installation. If, however, the DNO wants to control the load the DNO would then pay for the HCALCS/APC and installation.

PS reminded the Working Group that there are increasing numbers of Type 2 Devices available, leading to consumers having direct control of Devices. DS noted in the case where a Supplier offers a control load service, they may choose to proceed through another route instead of HCALCS which is what was highlighted within PAS. He believed that the consensus from the market is that people are choosing not to continue via the HCALCS route. When Suppliers are putting in load control services for customers, typically those customers will buy a charger and within this is embedded smart control services. As a result, Suppliers are not adding extra kit or installation charges to make the charger controllable or smart. CA advised the BSI has been tasked to complete PAS 1878 and PAS 1879 by BEIS who are involved, and specifically states that Smart Meters do not need to be used.

The understanding through explicitly asking BEIS is that BEIS do not have a set position on mandatory use of the Smart Meter programme and had requested the PAS development to ensure there were some regulatory controls around the load control options available outside the Smart system. BC advised BEIS had consulted on regulating charge points and proposed Smart Metering as the provisional lead for a Smart Charging EV system, subsequently BEIS have not yet made any decision beyond this.

One Working Group member asked about Vehicle to Grid (V2G) export. ET confirmed meters and HCALCS can manage import as well as export.

Further questions were raised about the ownership and responsibility of the HCALCS once installed as currently Smart Meters are owned by third party Meter Asset Providers (MAPs). ET advised DCC Users could install equipment connected to the HAN which would then bring benefits to the Consumer. Having an ownership should not be covered in the DCUSA unless the current provisions are inadequate in some way. It is worth noting that there will soon be a further option for the DNO which will be a standalone auxiliary proportional load control (SAPC) Device which can achieve the same as the HCALCS. This would not go through the ESME.

Compensation

The Proposer is not suggesting compensation is paid as it is a voluntary agreement for the customer. In addition, the customer may be paid for curtailment services through a commercial agreement with a flexibility provider.

SSEN confirmed compensation is not being suggested at the moment but are happy to engage in discussions for what compensation might look like should this become the position. Further work

could be done where Suppliers survey their customers to establish if compensation should be offered and what level would be acceptable. This could form part of the cost benefit analysis. One member believed it seemed important to understand the likelihood that 'x' percentage of customers will take part with no compensation as a minimum. In addition, it was suggested that the compensation could be linked to the loss load figures published by Ofgem.

The Working Group agreed a decision on compensation is essential.

LW clarified the reason why she believed Customers should be compensated. Customers pay a standing charge for the Network capacity with a firm booking for the right to use. She stated that Customers' time is not best served by having to liaising with the DNO.

Conversely, Grid Code modification GC147 provided rationale that compensation should not be paid to customers as they do not have a firm supply.

The Working Group it would be beneficial for SECAS/DCUSA and the Proposer to circulate a paper on compensation before the next scheduled Joint Working Group meeting, highlighting the pros and cons for each option alongside outlining evidence to help aid discussions.

DCUSA Customer Impact Assessment

DCUSA confirmed a Consultation would be required as opposed to a Customer Impact Assessment, to seek industry feedback on the proposed solution and legal text. Questions relating to any Customer impact assessment can be incorporated into the Consultation. This information will be sought from industry once drafting of the Consultation has begun.

Change of Tenancy

A question was raised at the last Working Group meeting noting if the customer has an agreement with their DNO for them to turn down their usage and a Change of Tenancy (CoT) occurs. What would the DNO need to do to ensure they do not curtail the customer until an agreement has been reached?

SSEN confirmed the DNO already receives information on CoT and would take note of the customer data flows as they come in. If there is a change in tenant for an MPAN then, this would need to be logged in the system and would need to be visited if a last resort solution occurred.

One Working Group member questioned progress to date with the business case, to which SSEN confirmed projections are in place and have been published to SSEN's website. In relation to the customer impact survey, it is envisaged that heat pumps will not be a problem in the foreseeable future as these will be primarily installed in new housing developments which generally have new connections.

RN and DS requested more information on the business case, in terms of reinforcement costs versus compensation vs flexibility costs.

Full end to end Journey for a DNO

ST suggested that we should see the full end to end journey for a DNO using the SEC solution especially regarding joining and unjoining HAN Devices.

Next steps

The following actions were recorded from the meeting:

- SECAS to liaise seek wording for a formal definition of a 'Last Resort'.
- DCUSA to liaise with SECAS to create sufficient wording to address the issues for lead times when issuing flexibility tenders.
- SECAS to re-draft documentation so that information relating to the flexibility provider is read as plural not singular.
- SECAS and DCUSA should work to provide potential legal text drafting for steps that have been taken to determine what could lead to a last resort. (i.e. a one off failure or a wider network issue)
- SECAS to re-align the new flow diagram to show that DNOs should start to investigate longer term solutions once the predetermined level [of 90%] has been reached.
- SECAS/DCUSA to liaise with Working Group members/Suppliers to draft a cost benefit analysis survey (quoting the language used in Impact Utilities survey) which can be circulated to Customers seeking views and potential numbers for those who wish to take part where 'No' compensation is paid.
- SECAS to draft a paper and circulate as part of meeting materials ahead of the next scheduled Joint Working Group meeting highlighting the pros and cons for each option associated with paying compensation and to also outline any evidence/rationale for each.
- SECAS/SSSEN to liaise with DCC to draw up a diagram of the join/unjoin process for the SEC. solution.

Next Meeting Date:

Thursday 19 November 2020