



Condition 31E.10: Supplementary Information on SPEN's Procurement of Flexibility Services

SPEN remain in the vanguard of developing of flexibility services. Our first flexibility tender in March 2019 sought 116MVA across just three sites. Since then we have continued to engage with providers, worked with industry, developed internal modelling capabilities and flexibility market knowledge, and rolled out a flexibility portal. This allowed us to forecast every likely network capacity constraint that would result across all voltage levels of our network in ED2 and tender for flexibility services for these in Spring 2021. We note that other DNOs have only recently completed this exercise as part of their Spring 2022 flexibility tenders¹, putting SPEN in a different position. As demonstrated below, **our flexibility commitment of 15.71MW per 100,000 customers is second only to one other DNO.**

Furthermore, we were the first DNO to include site-specific pricing signals in our tenders to provide potential providers with guidance and to understand the value of the opportunity. We were also the first DNO to tender for reactive power, creating a new service opportunity for providers.

	SP ENERGY NETWORKS	UK Power Networks	Scottish & Southern Electricity Networks	WESTERN POWER DISTRIBUTION <small>Serving the Midlands, South West and Wales</small>	NORTHERN POWERGRID	Electricity north west
RIIO-ED2 DSO Investment	£186m £53/Customer	£210m - £250m £25-30/Customer	£130m £34/Customer	£260m £33/Customer	£142m £36/Customer	£36.4m £15/Customer
Benefits	£370m £105/Customer	£45m to £55m £5-7/Customer	£18m to £46m £5-14/Customer	£94m £12/Customer	£156m £40/Customer	"Savings of over £88/Customer
Flexibility Commitment	550MW	1,126 MW	176-208 MVA	1,727 MW	22 MW	15 MW
Flexibility per 100k customers	15.71 MW	13.57 MW	5.33 MW	21.86 MW	0.56 MW	0.63 MW
Customer Numbers	3.5m	8.3m	3.9m	7.9m	3.9m	2.4m

SPEN notified Ofgem on 31st March 2022 that our next tender for flexibility services would be issued in April 2023. At this time, we believe it is necessary to pause our scheduled flexibility tenders temporarily for 12 months² to understand inconsistent market interest and to ensure our procurement and use of flexibility remains economic and efficient.

Responses to our tenders have been encouraging from 2019 until a significant downturn in our most recent Autumn 2021 tender, in which we received bids totalling 0.2MW in response to a requirement of 98.8MW (details in Appendix A). By way of contrast, for our Spring 2021 tender, we accepted bids for 555MW in response to a requirement of 1,420MW.

¹ [Flexible Services Spring 2022 requirement \(enwl.co.uk\)](https://enwl.co.uk)

² As per the terms of Condition 31E.13, should our intentions in respect of the procurement of flexibility services change, e.g. as a result of a network need that arose urgently, we will prepare a Distribution Flexibility Services Procurement Statement in accordance with the provisions of 31E.8 and submit it to Ofgem for approval.

As part of our cost benefit analysis using the Autumn 2021 tender, we assessed the cost of using the tender platform against the bid values. **In this scenario, platform costs alone represent 716% of bid values.**

As outlined in our March letter, we remain committed to building the fundamental structures that will allow flexibility services to succeed. We will use the coming months to put in place the structure, policies and procedures required to maximise the benefits of flexibility and enable close to real time procurement and operation.

To do this, we have commenced a programme of work which includes: seeking additional input from stakeholders on barriers to participation; implementing an extensive internal transformation; incorporating learnings from key trials; and consulting later this year on improvements to our framework for the procurement of flexibility services.

In the sections that follow, we have provided analysis of our historic tenders as context to our approach before elaborating on the programme of work mentioned above.

1. Performance of Historic Tenders

We have been tendering for flexibility services since 2019 and remain one of the front running DNOs for the volume of flexibility procured. We summarise our historic tenders in Table 1 below.

Responses to our tenders have been encouraging until a significant downturn in our most recent tender in Autumn 2021. In this particular tender round, we received bids totalling 0.2MW in response to a requirement of 98.8MW (details in Appendix A). By way of contrast, for our Spring 2021 tender, we were able to accept bids for 555MW in response to a requirement of 1,420MW.

Tenders	Spring 2019	Autumn 2019	Autumn 2020	Spring 2021	Autumn 2021
No. of Sites	3	10	1,138	1,554	97
Period	ED1	ED1	ED2	ED2	ED2
MWs Tendered	116	250	960	1,420	98.8
MWs Bid	10	145.3	342.8	1,649	0.2
MWs Awarded	0	53.3	139.6	555	0.2

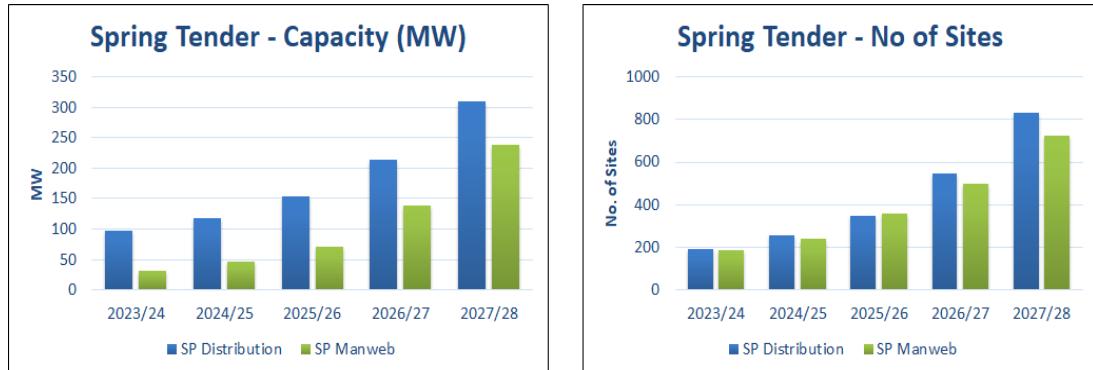
1.1 Spring 2021

From seeking flexibility services for just three sites in our first tender in 2019 we were able to tender for 1.4GW of flexibility across 1,554 sites (including 1,477 LV network sites) in Spring 2021, i.e. all of our RIIO-ED2 requirements. This is a significant step forward in just two years. This tender allowed us to defer £36m of network reinforcement in RIIO-ED2 in our baseline scenario. This saving rises to £145m of deferred reinforcement in our high scenario.

SPRING 2021 Total Requirements	Pre-Fault		Post Fault		Reactive
	Sustain	Secure	Dynamic	Restore	Reactive
Intact System, Scheduled Support	Intact System, Dispatched Support	Post Fault System Support	Post Fault Restoration	Reactive Power Support	
132kV		65.4MW (2 Locations)			
33kV		252.8MW (12 Locations)	23MW (2 Location)	394.5MW (3 Locations)	25.3MVar (2 Locations)
11kV		239.6MW			

LV	454.4MW (1477 Locations)	(58 Locations)			
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This tender for long term flexibility services looked to procure single or multi-year contracts and demonstrates the scale of our forecast flexibility requirements during the ED2 period. We illustrate these results by licence area in the charts below.



1.2 Autumn 2021

Following our Spring Tender, which tendered for all locations for the full ED2 period, our Autumn Tender focused on the years 2022/23 (12MW) and the shortfall for 23/24 (98.8MW).

AUTUMN 2021 Total Requirements	Pre Fault		Post Fault	
	Sustain	Secure	Dynamic	Restore
	<i>Intact System, Scheduled Support</i>	<i>Intact System, Dispatched Support</i>	<i>Post Fault System Support</i>	<i>Post Fault Restoration</i>
33kV		11.6MW (4 Locations)	2.2MW (1 Location)	72.5MW (3 Locations)
11kV		18.7MW (17 Locations)		
LV	5.7MW (72 Locations)			

For our Spring 2021 tender we received an encouraging response and were able to **accept bids for 555MW** from 9 individual Flexibility Service Providers (FSPs). However, for our Autumn 2021 tender, **we disappointingly received 200kW**. This is shown in Appendix A, which sets out the results of our Autumn 2021 tender. The results demonstrate that providers had already submitted significant bids for the longer-term contracts but couldn't offer any more for the contracts earlier in ED2. Furthermore, no new providers applied to take part.

Based on this result, and given that any future tenders would be aiming to procure flexibility for the shortfall in Autumn 2021 as well as the shortfall for 2024/25, we assessed the cost of using the tender platform against the bid values. The table below shows that across SPEN, in this scenario, **platform costs alone represent 716% of bid values**.

TENDER PLATFORM COSTS	TOTAL		SPM	SPD
Tender Platform Cost (per Tender)	£ 42,500	£ 21,250	£ 21,250	
Estimated Value of Requirements	£ 445,345	£ 302,621	£ 142,724	
Estimated Value of Bids	£ 5,932	£ 396	£ 5,536	
Platform costs as % of Requirements	10%	7%	15%	
Platform costs as % of Bid Values	716%	5366%	384%	

Given this, SPEN decided it was not economic and efficient to continue to carry out flexibility tenders at this time, and instead undertake alternative activities in the next 12 months, in the form of market engagement and our transformation project, with the aim of producing more successful tenders in the future.

We note that other DNOs have recently tendered for their ED2 requirements as part of their Spring 2022 flexibility tenders³. Given that SPEN has already done this in Spring 2021, we are in a different position.

2. Understanding Barriers Faced by Flexibility Providers

We already engage closely with our FSPs to support them and promote participation in our tenders. Our approach includes regular dialogue with providers; for example, after each tender, we are keen to understand FSPs experience of the process and will arrange one-to-one meetings to discuss the next steps for those who have been successful and also arrange to discuss any rejected bids.

Understanding why some FSPs upload assets to the platform but choose not to bid, as well as why some large global FSPs are not operating within our licence areas is also key to identifying any barriers. This engagement is ongoing.

Following our disappointing Autumn 2021 tender results, FSPs informed us that the reason they did not bid in was a result of not yet being in a position to offer any additional capacity within the shorter timeframe, with the time between procurement and first service window not sufficient to allow for recruitment of the required assets / capacity. We believe this has demonstrated the need for us to gather more information and implement measures to reduce barriers to entry for FSPs.

We have therefore partnered with Oxera to undertake independent research on our behalf to understand the barriers currently faced by flexibility providers. We expect this work to conclude during Summer 2022 and we will implement the recommendations set out by Oxera in their report as part of our ongoing transformation project, detailed later in the report. The terms of reference for this exercise are provided separately in Appendix B and summarised below:

2.1 Phase 1. Report and survey design

Oxera will perform desk-based research and undertake targeted interviews in order to identify the key barriers that flexibility providers are likely to face. Oxera's assessment will cover both of the two groups for which SPEN are interested in understanding the barriers: FSPs and domestic electricity customers.

2.2 Phase 2. Survey to be run by a market research company

Oxera will work with a market research company to run a survey of flexibility providers and domestic customers to understand their concerns.

³ [Flexible Services Spring 2022 requirement \(enwl.co.uk\)](https://enwl.co.uk)

2.3 Phase 3. Analysis of survey and summary of results

Once the survey results are available, Oxera will analyse the qualitative and quantitative data to distil learnings for SPEN on what more needs to be done to incentivise further flexibility market participation. These learnings may include, among other things—implications for SPEN’s revenue arrangements with providers, behavioural insights such as those relating to removal of frictions and resolutions of information asymmetries, and suggestions on market reform (e.g. if revenue stacking with TSO flexibility services come up as an issue).

2.4 Consultation

We intend to publish Oxera’s findings on barriers faced by flexibility providers. The recommendations in this report will form the basis of proposals to evolve our approach and tender design. These proposals will be the subject of an open consultation at the end of the year. In the first quarter of 2023, we will launch an updated framework for the procurement of flexibility and will engage with providers to socialise the new arrangements.

3. Transformation Project

As well as the engagement research detailed above that we are undertaking with flexibility providers, we are also undergoing an extensive internal transformation project. It is well understood that the energy landscape is changing fast as the way our customers generate, use and interact with energy evolves. This means that our role – how we plan, design and operate the network for our customers must evolve with it. Our Distribution System Operation (DSO) Strategy⁴ details how we will respond to these challenges, so that we can enable decarbonisation targets whilst continuing to deliver exceptional service to our customers and communities.

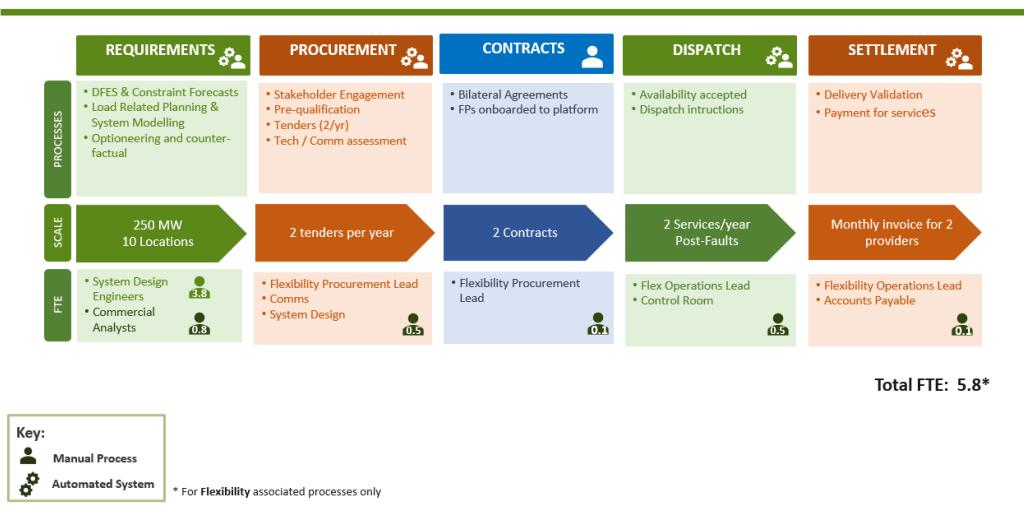
Within our ED2 business plan we made the commitment to create a new discrete DSO functional model and directorate within SPEN by the start of RIIO-ED2 and we are now concentrating on the practical changes needed to ensure this happens. We will now dedicate time and resources to put in place the structure, policies and procedures required to maximum the benefits of flexibility and enable close to real time procurement and operation.

In terms of our capabilities in flexibility services, this includes a significant step up in systems and processes, as well as the necessary resource to manage these new systems and processes, as detailed below. We would welcome the opportunity to elaborate on the contents of these diagrams in a follow up discussion with Ofgem.

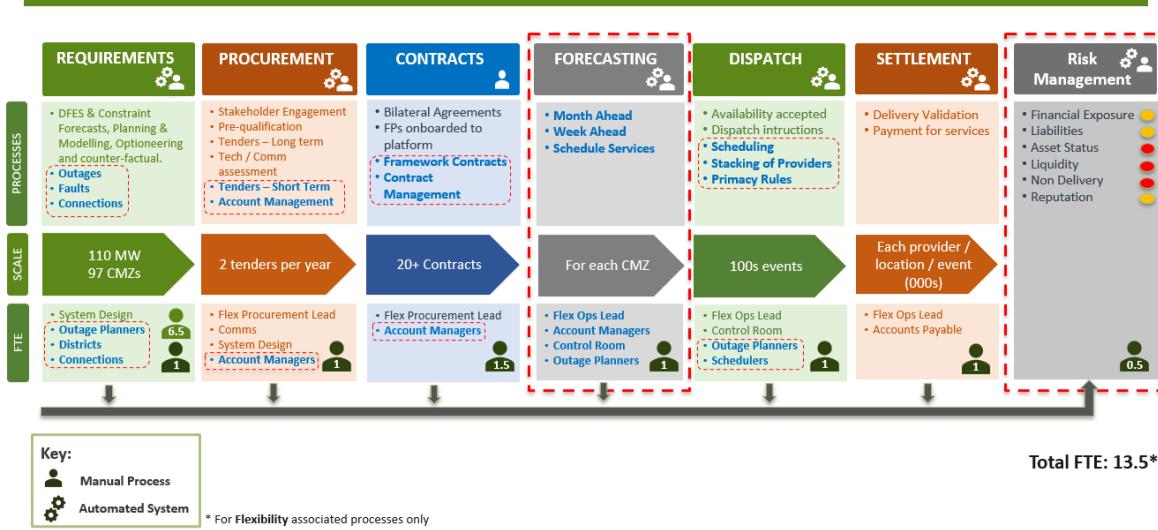
In summary, this will involve advancing our current position of having 5.8 FTE to 13.5 FTE tendering twice a year by April 2023 (in a currently very challenging recruitment environment for such skillsets). By the end of RIIO-ED2 we are planning to increase our capabilities, including being able to tender continuously, which will require 21 FTE.

⁴ [Annex 4A.3 - DSO Strategy .pdf \(spenergynetworks.co.uk\)](#)

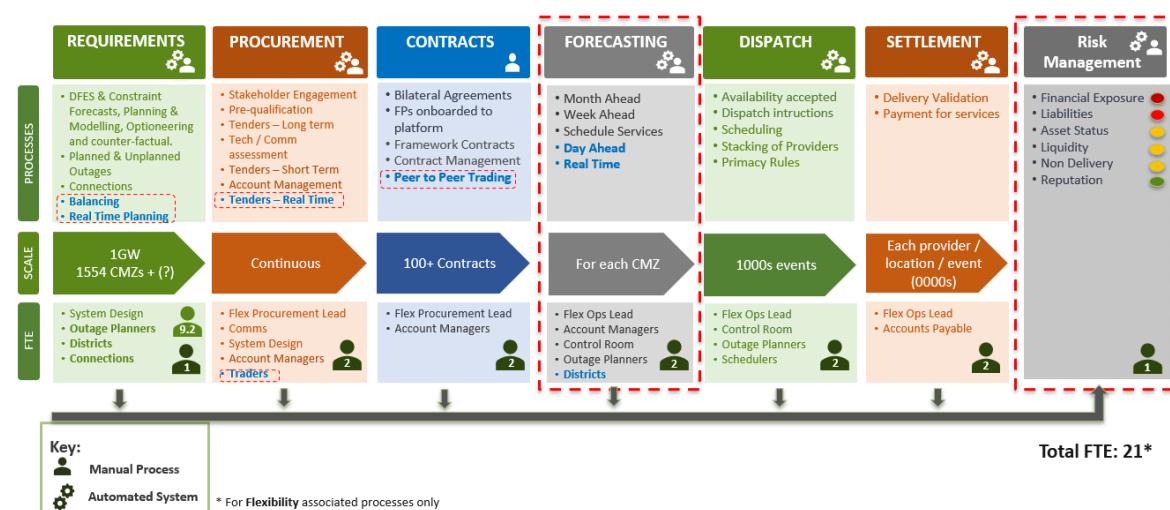
ED1 - NOW



ED2 – APRIL 2023



ED2 – APRIL 2028



It should be recognised that the same expert design and commercial resources will also be supporting the implementation of Ofgem's Access and Forward-Looking Significant Code Review decision⁵, developing and managing the commercial and design principles that govern network connections in a post Access SCR regulatory environment. Our RIIO ED2 Access SCR Annex⁶ forecasts an increase of between £277.8m and £542.4m to our ED2 plan. Alongside the increased volume of connections will be an increase in the complexity of connections solutions from both a commercial and design perspective, provided largely by the same resources that will support the use of flexibility services. This is also at a time where customer expectations are driving improvements in metrics such as Time to Connect and Time to Quote.

4. Ongoing Trials and Other Activities

We have recently commenced a trial to evaluate customers shifting demand to specific time-periods when excess generation is available on the network. We are working with Octopus Energy to seek response from up to 9000 of their domestic customers in the Dumfries and Galloway area to move their demand following an instruction delivered less than 24 hours in advance. We believe this will provide valuable learning on what is achievable, the level of response we can expect and the impact on our network. Running a trial of this scale takes a considerable amount of time and effort by SPEN and Octopus Energy to both process the data generated by the trial and to measure the impact on the network, customers response and behaviours. This is demonstrates how processes and systems will need to be developed to manage the large volumes of data generated by new markets. We will report on the findings once this trial is complete later in the year.

Building on the learnings from this trial, and considering the scale of LV flexibility services we have contracted in ED2, we plan to develop additional trials related to LV flexibility services and on the types of platforms that will be required. One such trial will be our Strategic Innovaiton Fund (SIF) submission, 'Flexible Heat', which will explore the capabilities of domestic heat systems to provide flexibility services.

Furthermore, an extension of our previous Reactive Power trial will commence in early 2023 further expanding the opportunities for 3rd party providers to engage in flexibility service markets.

With regards to industry development, we remain represented on all workstreams within the Open Networks project and will continue to contribute to the development and alignment of procurement and use of Flexibility Services alongside other DSOs/DNOs and the ESO. The work being undertaken this year by the Open Network project aligns well with the work we will be undertaking internally. For example, the implementation of the Framework Agreement being developed by Product 4 of Workstream 1A will be a key facilitator to the close to real time/real time procurement and utilisation of services.

5. SUMMARY

Our commitment to the roll-out of flexiblity services is undiminished and the overarching objective of the programme of work we are undertaking is to realise the full potential of flexibility service solutions at the lowest overall cost to our customers. We intend to be fully transparent in our activities and will keep Ofgem updated on progress. at regular intervals.

⁵ [Access and Forward-Looking Charges Significant Code Review: Decision and Direction | Ofgem](#)

⁶ [SP Energy Networks RIIO-ED2 Business Plan Annex 5A.6 Access SCR](#)

Appendix A: Autumn 2021 Tender Results

SPM

CMZ	Voltage	Product	Capacity MW	Year	Start Month	End Month	Start Time	End Time	Total Risk Hours	Total Est Cost*	Bid Capacity MW	Est Bid Cost**
Acer Avenue	11	Secure	0.99	22_23	Dec-22	Mar-23	17:00	20:00	8.0	£ 792	0.05	£ 396
Sandbach	11	Secure	1.13	22_23	Nov-22	Mar-23	08:00	17:00	37.5	£ 3,178		
Acer Avenue	11	Secure	0.99	23_24	Nov-23	Mar-24	17:00	21:00	8.0	£ 792		
Sandbach	11	Secure	1.63	23_24	Apr-23	Mar-24	07:30	21:00	804.0	£ 98,571		
Aberystwyth - Rhyddylan	33	Secure	1.35	23_24	Nov-23	Mar-24	15:00	20:00	27.0	£ 5,459		
Newtown-Morda-Oswestry	33	Secure	5.94	23_24	Nov-23	Mar-24	09:00	19:30	173.0	£ 77,113		
Colwyn Bay - Dalgorrug	33	Dynamic	2.24	23_24	Apr-23	Nov-23	08:00	20:00	118.0	£ 32,090		
Formby - Southport	33	Secure	2.25	23_24	Jan-24	Mar-24	10:00	21:00	36.0	£ 16,198		
Various Locations (47)	LV	Sustain	4.62	22_23	Nov-22	Mar-23	16:00	22:00	315.0	£ 68,429		
										£		
				<u>21.15</u>					<u>302,621</u>	<u>0.05</u>	<u>£ 396</u>	

SPD

CMZ	Voltage	Product	Capacity MW	Year	Start Month	End Month	Start Time	End Time	Total Risk Hours	Total Est Cost*	Bid Capacity MW	Est Bid Cost**
Ayton	11	Secure	0.23	22_23	Nov-22	Feb-23	16:30	18:30	23.0	£ 397	0.05	£ 198
Hamilton	11	Secure	0.44	22_23	Oct-22	Nov-22	09:30	16:30	4.0	£ 352		
Irvine	11	Secure	0.80	22_23	Sep-22	Mar-23	09:00	16:00	10.5	£ 5,023		
Larbert	11	Secure	1.09	22_23	Nov-22	Jan-23	10:00	19:30	27.5	£ 2,254		
Levenbank	11	Secure	0.83	22_23	Nov-22	Mar-23	16:00	19:00	87.0	£ 8,986	0.05	£ 4,492
Stonehouse	11	Secure	0.55	22_23	Nov-22	Mar-23	16:30	19:00	61.5	£ 1,691	0.05	£ 846
Stranraer	11	Secure	0.26	22_23	Sep-22	Mar-23	01:00	20:00	55.5	£ 1,420		
Warout Road	11	Secure	0.37	22_24	Jul-23	Sep-23	11:00	12:30	1.0	224		
Irvine	11	Secure	0.15	22_24	Jan-24	Mar-24	13:00	15:30	2.0	175		
Mitchell Street	11	Secure	0.48	22_24	Jan-24	Mar-24	10:30	15:00	5.0	£ 1,440		
London_Lockend	11	Secure	1.06	22_24	Apr-23	Mar-24	15:30	21:00	98.0	£ 41,511		
Levenbank	11	Secure	0.63	22_24	Oct-23	Mar-24	16:00	19:30	52.5	£ 4,159		
Hamilton	11	Secure	0.60	22_24	Oct-23	Jan-24	09:00	17:30	8.0	960		
Ayton	11	Secure	0.51	22_24	Apr-23	Mar-24	15:30	20:30	137.5	£ 5,239		

Commercial Rd	11	Secure	0.19	22_2 4	Oct-23	Mar-24	16:3 0	19:0 0		3.5	£ 49		
Larbert	11	Secure	0.32	22_2 4	Oct-23	Feb-24	16:3 0	18:0 0		2.0	£ 48		
Monktonhall	11	Secure	0.54	22_2 4	Jan-24	Mar-24	16:3 0	18:3 0		1.5	£ 82		
Tranent	11	Secure	0.65	22_2 4	Oct-23	Mar-24	14:3 0	20:3 0	28.0		£ 1,824		
Kirknewton	11	Secure	1.53	22_2 4	Apr-23	Mar-24	06:3 0	18:3 0		4.0	£ 764		
Stonehouse	11	Secure	1.49	22_2 4	Apr-23	Mar-24	07:0 0	21:3 0	400.5		£ 29,862		
Stranraer	11	Secure	0.30	22_2 4	Oct-23	Mar-24	07:0 0	20:3 0	59.5		£ 1,798		
St Andrews	11	Secure	0.95	22_2 4	Apr-23	Mar-24	08:0 0	20:3 0	24.5		£ 6,984		
Lockerbie group	33	Secure	2.11	22_2 4	Oct-23	Mar-24	06:3 0	18:0 0	41.0		£ 6,486		
Cupar GSP	33	Restore	16.92	22_2 4	Apr-23	Sep-23	00:0 0	23:5 9	514.5		£ 2,100		
Ayr GSP	33	Restore	21.78	22_2 4	Apr-23	Sep-23	00:0 0	23:5 9	2,801.5		£ 2,100		
Braehead Park GSP	33	Restore	33.84	22_2 4	Apr-23	Sep-23	00:0 0	23:5 9	4,194.5	600			
Various Locations (25)	LV	Sustain	1.09	22_2 3	Nov-22	Mar-23	16:0 0	22:0 0	315.0		£ 16,197		
										£			
				<u>89.71</u>						<u>142,724</u>	<u>0.15</u>	<u>£ 5,536</u>	