SIF Alpha Round 2 Project Registration

Date of Submission

Project Reference Number

10061309

Initial Project Details

Project Title

Park and Flex

Project Contact

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Challenge Area

Accelerating decarbonisation of major energy demands.

Strategy Theme

Net zero and the energy system transition

Lead Sector

Electricity Distribution

Project Start Date

01/10/2023

Project Duration (Months)

6

Lead Funding Licensee

UKPN - South Eastern Power Networks Plc

Funding Mechanism

SIF Alpha - Round 2

Technology Areas

Commercial

Demand Response

Electric Vehicles

Project Summary

Park & Flex aims to unlock the potential of V2X-enabled EVs in public carparks. This untapped resource will harness new technology and infrastructure to transform how flexibility services are provided. By collaborating with key stakeholders, we are actively developing and testing real-world flexibility products and customer offerings.

Initial findings indicate these innovative propositions hold commercial promise in theory. Uncertainty exists with how much customers will embrace these, so we are developing a trial-ready customer proposition(s) for demonstration.

Park & Flex is changing the future of mobility and empowering customers to redefine the way they interact with EVs and public carparks.

Add Preceding Project(s)

10061309 - Park and Flex

Add Third Party Collaborator(s)

baringa

Fermata

Greater London Authority

Project Budget

£517,417.00

SIF Funding

£465,674.00

Project Approaches and Desired Outcomes

Problem statement

A smart and flexible power system plays a crucial role in our journey towards a Net Zero future. To effectively meet this challenge, it is essential to unlock new possibilities for flexibility, aiming to reduce the burden and cost associated with preparing the network for this transition.

Park & Flex aims to explore using EVs in carparks to access flexibility services, facilitating the efficient connection of low carbon demand and generation while avoiding expensive network investments. It is the first project to assess the opportunity of leveraging flexibility in publicly accessible car parks, which offer scalability and aggregation advantages due to the numerous bays per connection point; all managed by a single entity – the car park owner/operator.

During the Discovery we estimated that there are 2.4 million car park spaces in UK Power Networks' (UKPN) areas – 6% in 'long stay' settings (e.g. airports), 13% in 'mid stay' settings (e.g. train stations, hotels), and 81% in short stay settings (e.g. public spaces, shopping).

The flexibility/value available per customer is expected to be highest in long-stay settings, lower in mid-stay settings, and small in short-stay settings. Developing attractive customer propositions in short-stay settings may be more difficult, however given the large number of such sites, insight from Discovery has highlighted the need to explore this segment further.

Scaling benefits across UKPN's patch could yield total revenues by 2050 of £1.3bn in long-stay settings, £2.1bn in mid-stay settings, and up to £3.2bn available in short-stay settings.

Discovery Phase provided strong reason to believe that there is flexibility capacity available in car parks, and therefore, continues to meet the Innovation Challenge 4: Accelerating the decarbonisation of major energy demands – by enabling the use of flexibility from EVs in car parks to effectively facilitate, manage, and integrate multiple demands and demand-side solutions.

This project also continues to be relevant for Challenge 2: Preparing for a Net Zero power system – by increasing the ability to access system support from novel demand-side technologies.

Alpha and Beta Phases will continue to focus on (a) testing V2X EV driver engagement and the required rewards and incentive mechanisms to encourage participation in flexibility provision; and (b) investigating business models (including revenues, costs, and margins) for multiple stakeholders – the car park operator, landlord, the EV driver, the flexibility aggregator and charge point operators.

Through Discovery our view of the needs of potential users of the innovation evolved, and we are reflecting this in our forward focus for Alpha Phase:

· V2X EV owners – clear propositions will exist in long- and mid-stay settings due to the high value per bay, but a key challenge will be how to access value in the large volume of short-stay car parks where the value per customer is low. Propositions will also need to address V2X driver concerns, such as battery degradation and state of charge on return;

· Car park V2X business model stakeholders – car park owners and operators, charge point infrastructure providers and operators, investors, aggregators, suppliers – there is no one-size-fits all business model and the Alpha Phase must ensure that clear business models are examined, roles and responsibilities defined, and value to all parties evidenced, in a neutral way;

· System operators – we will ensure that the business models developed provide open access to all buyers of flexibility, and understand the extent to which car parks could be incentivised to provide DSO services given the locational and temporary nature of DSO incentives;

· DNOs – the ability of V2X to alleviate connections challenges (e.g. reducing connection costs or timeframes, or operating under flexible/timed connections arrangements) will need to be further understood.

Innovation justification

Park & Flex aims to unlock the potential of flexibility services from EVs in car parks, facilitating quicker and efficient connection of low carbon demand and generation, while deferring or avoiding costly network upgrades. This project addresses two SIF challenges – Challenge 4: Accelerating the decarbonisation of major energy demands and Challenge 2: Preparing for a Net Zero power system.

In the Discovery Phase, we examined perspectives of consumers, car park stakeholders, and the DNO, by engaging with stakeholders including the British Parking Association, Gatwick Airport, and QPark, and reviewed published research. This confirmed a large untapped resource of potential flexibility exists in public car parks, provided attractive propositions can be developed. They must engage/encourage V2X drivers, and provide investable business models for car parks. This work also suggested that further research should examine propositions in long, mid, and short-stay car parks as a material source of flexibility can exist in all settings.

V2X propositions are innovative for car park owners for several reasons:

· Current business models rely on fees for the use of charge points for charging but V2X propositions will differ in that drivers earn revenue from flexibility service provision or energy sales. This allows for alternative models where these benefits could be shared (e.g. free parking).

· Current charge point offerings are in areas where drivers will need to charge and encourage short stays, but V2X offerings will enable charge points in new locations and may encourage longer stays.

Car park operators are hesitant to invest in these propositions because V2X technology is still in its early stages and V2X capable vehicles are scarce. If viable propositions can be demonstrated and the investment case validated, this could build further interest from car park operators, encouraging further investment.

V2X offerings will also enable new services for electricity networks and system operators, requiring investigation of the commercial arrangements needed to facilitate them. While V2X charge points may pose connectivity challenges for DNOs, innovative commercial arrangements could potentially overcome or mitigate network limitations. This would enable faster connections and facilitate integration of wider load or generation. Additionally, V2X charge points have the potential to address wider system challenges, such as absorbing excess renewable energy or providing ancillary services. They also present an attractive storage opportunity as the battery cost itself does not need to be recovered in the investment case.

The technology for Park & Flex exists – i.e. IRL7 and TRL9 have been achieved for V2X charge points and the supporting market access platforms. The focus of Park & Flex is on demonstrating a new commercial application, propositions, and consumer engagement. As such the CRL level of a V2X proposition in public car parks could be assigned following Discovery to be CRL2-3, with the intent in Alpha to progress to CRL4-5, and in Beta to CRL6-7.

However, whilst the technology exists, given low uptake of V2X enabled vehicles it is too risky for car park stakeholders to invest in unproven V2X propositions. In addition, it would be challenging for DSOs to invest from within price control allowances as many of the benefits will accrue to other parties. A full demonstration is necessary to test consumer behaviour and engagement with V2X propositions in public car parks, to move beyond theoretical value. The SIF Beta fund sizing matches the size and scale compared to other innovation funding sources.

The counterfactual approach is assumed to be a continuation of existing charging-only business models with limited exploration of V2X and flexibility propositions in public car parks. This is supported by evidence from stakeholders and Fermata Energy.

Impact and benefits (not scored)

Financial - future reductions in the cost of operating the network

Environmental - carbon reduction – direct CO2 savings per annum

Revenues - improved access to revenues for users of network services

New to market – products

New to market - services

Impacts and benefits description

At present, the prevailing business model for charge points in public car parks is charging-only. We assume based on stakeholder engagement that this will continue as the status quo whilst take-up of V2X cars is low. The results of our cost/benefit assessment are set out in our Discovery report and summarised under the benefits headings below.

Financial - future reductions in the cost of operating the network

Our Discovery Phase analysis estimated that over 500,000 V2G enabled charge points could be installed in UKPN's areas by 2050 – leading to an aggregate capacity of 4.2 GW of flexibility. This flexibility could reduce network operating costs for the DNO by:

· Reducing the price of flexibility through increased competition, and

· Potentially assist in mitigating connection challenges for car parks and associated customer sites – for example through on-site self-consumption (where power is consumed by e.g. the airport / shopping centre rather than being exported to the grid);

· Additional storage connected to the network will also potentially reduce renewable curtailment related costs. These benefits were not assessed in Discovery but will be examined further in Alpha.

Environmental – carbon reduction – indirect CO2 savings per annum

Increasing the level of energy storage available on the grid through V2X services will enable an increased ability to store energy at times of high renewables output when the carbon intensity of the generation mix is low. The stored energy can then be used to reduce the need for carbon peaking generation at times of high demand, contributing to indirect CO2 savings per annum.

We did not forecast the impact of this in the Discovery Phase because layered assumptions need to be made on when vehicles will charge and discharge and the carbon intensity of the grid at those times. We will reassess methods to quantify carbon emissions in the Alpha Phase.

Revenues - improved access to revenues for users of network services:

The revenue streams envisioned for Park & Flex exist today – i.e. wholesale market arbitrage, the capacity mechanism, ancillary services provision for the ESO, and DSO services. However, the customer propositions and business models do not exist and need to be demonstrated.

Our cost/benefit assessment modelled these opportunities for various car park settings, and suggests potential benefits on a per-bay basis, considering charger CAPEX, as running costs, and energy costs, providing opportunity for car park operators and drivers.

Scaling these benefits across UKPN's patch could yield revenues by 2050 of £1.3bn in long-stay settings, £2.1bn in mid-stay, and

up to £3.2bn in short-stay.

For EV drivers the benefits of individual sessions can be small (as with many customer incentives) but accrue over a year. For short stay, a customer can make c. £4.50 a day (c. £1,600 per year) on wholesale arbitrage if exporting for four hours. Our surcharge proposal (from Discovery) would entail a £1.60 fee on days where that export happens in a car park. For mid and long-stay, assuming a required IRR of 8% to investors with the remaining going to customers, a customer in a train station every week could earn c. £200 per year off their parking charge, or in long-stay £25 for a week (£1,300 per year). It is unclear which scenarios may appeal to customers, hence the need for a trial.

New to market – products and services:

The propositions proposed through Park & Flex will be new to market, providing additional sources of revenue for car park operators and EV customers. The success of the project could be judged based on the number of car park operators that engage with the insight generated in dissemination stages, and subsequently launch V2X offerings.

Teams and resources

Each of the partners – UKPN, Baringa, Fermata Energy, Greater London Authority – from the Discovery Phase have played a valuable role in shaping the insights and recommendations for the future of this project in Alpha Phase. Additionally, we will partner with UKPN Services who are joining the project in the Alpha Phase.

UKPN Services are a commercial business that provides energy solutions for infrastructure and decarbonisation projects. They will lead on identifying car parking spaces and associated electrical infrastructure that would be required for the Beta Phase. They have longstanding contracts with Gatwick and Heathrow Airports to provide energy network services, including EV infrastructure provision in the airport's car parks, which will provide a critical link to de-risking the recruitment of suitable car park operators for the Beta phase.

UK Power Networks will lead project management, informing and developing the Beta Phase plan, while supporting the route-to-market assessment and cost/benefit assessment. With unique insight into the connection process, engineering solutions, and costs associated with V2G. Leveraging their Innovation Project Managers' skills and experience, UKPN will guide the overall project, develop plans and partner selection for the Beta Phase. UKPN will lead on developing the sourcing strategy for all trials enablers, including market scan for providers outside of the core consortium and will identify procurement requirements and timeframes.

Fermata Energy is a leading V2X technology provider and flexibility aggregator specialising in V2X hardware and software, with a strong focus on best-in-industry user experience to lower the barriers to adoption to V2X. Their software is the bridge between the grid and bidirectional EV owners and is compatible with all industry charging standards. Fermata Energy has global partnerships with bidirectional charger and vehicle OEMs to deploy leading solutions for the project. They will lead on developing the hardware and software required to deliver the developed propositions.

Baringa are a specialist energy sector consultancy with deep commercial and market expertise as specialising in the energy industry. Baringa will lead on stakeholder engagement and the complex commercial design aspects of this project. They are ideally suited to these activities given their role advising government, regulators, and networks on flexibility market development, as well as their work for a wide range of market participants building customer propositions and business models in the energy services industry. These are specialist skills that most industry and market participants do not retain in-house and turn to providers such as Baringa when needed. They also bring specific IP for use on the project, for instance in the form of energy market modelling software and price projections that they will use to model the value from flexibility. Finally, Baringa bring an independent viewpoint to protect against bias toward any solution.

Greater London Authority, as the local government representative will provide access to and insight into London's car park operators, and the associated stakeholder landscape.

No additional resources are required for the Alpha phase, which will focus on design activity. Further enablers for the Beta phase (e.g. charging equipment, software configuration, a market access provider) will be identified in the Alpha phase and procured at the start of the Beta Phase.

Project Plans and Milestones

Project management and delivery

UKPN will lead project management using best practice methods and tools – including bi-weekly management meetings and status reporting, more frequent team stand-ups for design sprints, a RAID log, and a stakeholder governance schedule aligned with project work package timelines as detailed in the accompanying project management plan.

All Work Packages have clear ownership and accountabilities, with assigned lead partners, and clear activities and deliverables. Project management will be led by UKPN, but all partners will partake and feed into the process to enable effective project tracking against progress.

The project plan and accountabilities are set out in the Gantt chart and project management pack. The proposed work packages are:

· WP1, Project management (UKPN): Managing end-to-end delivery;

· WP2, Stakeholder engagement (Baringa/UKPN): Engaging car park stakeholders to develop propositions and business models and source refined assumptions to update the CBA; and wider stakeholders to test viability of propositions. This will include EV customer research led by UKPN.

· WP3, Flexibility Use Case Development (Baringa): Designing the access products, flexibility service use cases, and supporting industry model;

· WP4, Develop customer value propositions and business models (Baringa/Fermata Energy): Developing customer-facing propositions and business model options with car park stakeholders, and assessing forecast costs and revenues to all parties;

· WP5, Technical Architecture (Fermata Energy): Designing the technical architecture required for the trials, including systems, data flows, and software requirements, and planning for implementation;

· WP6, Design Beta Phase Trial (Baringa/UKPN): Development of the experimental design for the trial and trials protocol document (Baringa), as well as planning for putting in place the required enablers to support the trial (UKPN);

· WP7, Charger deployment scoping (UKPN Services): Identifying electrical infrastructure required for the Beta Phase, including EV charger functionalities, preparing for connections, and identifying procurement and ownership requirements;

· WP8, Partner selection (UKPN): Confirming partners for the Beta Phase (e.g. any new car park operators) as well as any further services required for the Beta Phase (e.g. aggregator/software services and charging infrastructure).

Key dependencies are:

· WP2 will provide input to WP3, WP4 and WP5;

· WP3 and WP4 will work in tandem and are interdependent;

· WP5 will require input from both WP3 and WP4 to enable definition of the technical architecture required to support the propositions;

· WP6 will require input from WP3, WP4 and WP5 to enable development of the trials protocol document, as well as from WP6 and WP7 to develop the Beta phase approach;

· WP6 and WP7 will require input from WP2, WP3, WP4, and WP5 to finalise the partners, infrastructure requirements and technical architecture for the trial, and inform planning.

Two checkpoints will mitigate risks associated with the dependencies:

1. (End December) – To ensure interim findings from WP3 and WP4 can sufficiently inform WP6 enabling the physical site to be scoped; and,

2. (End January) – To ensure sufficient progress has been made on WP6 and WP7, running in parallel to get the connection application and partner selection defined.

The key risks and mitigation strategies for this project are set out in the risk register. We will manage risks and issues using a RAID log, refreshed for fortnightly project meetings.

Example key risks include:

· Low levels of V2G penetration may inhibit the trial – mitigations include targeting high penetration locations, utilising high-volume car parks like airports, curating an experiment with specific EV owners, or testing V1G propositions to capture relevant customer behaviour; and,

· If we are unable to engage the right stakeholders early enough in the project, we may not get the input we need to develop propositions.

No planned or potential unplanned supply interruptions are anticipated at Alpha Phase, as the work will focus on design and planning.

Key outputs and dissemination

The key outcome for the Alpha Phase is to have all the pieces in place for a Beta Phase trial, having validated the business case and confirmed stakeholder willingness to participate in a trial.

To pursue this outcome we intend to:

· Co-develop the customer propositions and business models to be tested in each priority car park archetype (long stay, mid stay, short stay);

· Develop a clear view of the flexibility service use cases and supporting industry model required to underpin the customer propositions, including entities, commercial arrangements, and technical architecture;

· Engage with car park stakeholders to validate Discovery Phase assumptions in detail, and validate the cost/benefit assessment; and,

· Design the Beta Phase trial, including development of the experimental design as well as planning for putting in place the required enablers to support the trial.

The proposed outputs and owners across the workstreams are:

WP1, Project management:

· Status report (UKPN)

· Governance meeting materials (UKPN)

· RAID log (UKPN)

· Beta phase application (UKPN)

WP2: Stakeholder engagement:

· Stakeholder map/list (Baringa)

· Consumer research outputs (UKPN)

· Engagement schedule, event materials, and outputs (Baringa)

· Minded-to participant consortium for Beta phase (UKPN)

WP3, Flexibility Use Case Development:

· Flexibility Use Cases to underpin propositions, including a high-level process and business architecture (entities, functions, data flows, commercial flows) (Baringa)

· Flexibility service and market access requirements (Baringa)

WP4, Develop Customer Value Propositions and Business Models:

· Proposition development workshop materials (Baringa)

· Customer proposition options (Baringa)

· Business model options (Fermata)

· Lead option rationale and value assessment (Baringa)

WP5, Technical Architecture Design:

· Technical architecture (systems, data flows) (Fermata)

· High-level requirements and delivery approach for the trial (Fermata)

WP6, Design Beta Phase Trial:

· Develop trials protocol, including specific testable hypotheses statements, experimental design and outline analysis approach, and data requirements and statistical significance (Baringa) Develop Beta phase implementation plan, including identification of trials enablers (e.g. technology), implementation plan and costs for trials enablers, and activity plan and costs for running the trial (UKPN)

WP7, Charger Deployment Scoping:

· Identified car parking spaces and associated electrical infrastructure that would be required for the beta phase (including the EV Charger functionalities) (UKPN Services)

WP8, Partner Selection:

· Agreed trials partners (UKPN)

· Sourcing strategy for Beta phase (UKPN)

· Trial ownership and risk management strategy (UKPN)

A key forum to report our findings will be the British Parking Association (BPA) conference (ParkEx – May 2024) to build interest and engagement in the propositions we are exploring and provide insight to parties who may wish to explore the development of propositions of their own.

Details of all our Alpha Phase projects awarded will be uploaded to the Smarter Networks Portal and feature on the UKPN innovation website with specific project learnings being disseminated at the IUK Show & Tell events and other SIF dissemination events. Findings will also be reported back to stakeholders through the stakeholder engagement process.

In addition, UKPN will host an in-person event in London to disseminate the learnings and key outputs of all successfully awarded Alpha Phase projects to a wider audience. UKPN will look to share project successes and discoveries via its social media channels with the possibility of publishing external press media where appropriate.

Commercials

Intellectual property rights, procurement and contracting (not scored)

The parties agree to adopt the default IPR arrangements for this project as set out in Section 9 of the SIF Governance Framework.

The partners recognise that knowledge transfer is one of the key aims of the SIF, and that the benefits of this project will be maximised by the ability of other licensees to be able to learn from the Project so as to create improved outcomes or reduce costs for consumers. The partners do not anticipate that the Alpha Phase (or any potential subsequent phases) will result in the creation of IPR that cannot be freely disseminated, and have no expectation of creating income streams or royalties from IPR outside of participation in a competitive marketplace for services that may be informed or stimulated via the outcomes of the project.

We do not anticipate any subcontracting arrangements, tenders, or procurements to be run by any partner during the Alpha Phase.

It is envisaged that for the Beta Phase trial we will need to procure three key enablers:

1. Charge points and related infrastructure – the trial will require installation of a small number of V2X enabled charge points. We intend to evaluate the best timing and method for procurement during the Alpha Phase. It is likely to commence at the start of the Beta Phase. As part of the evaluation, we will assess which party is best placed to undertake the procurement and who will own, operate and maintain the charge points.

2. Software architecture – most elements of software needed for the trial will be provided by Fermata Energy and UKPN Services (i.e. platforms and back-end communication network for the charge point infrastructure). However, we anticipate that a UK market access provider will be required as a service. We intend to assess evaluate the best timing and method for procurement through the Alpha phase, which will likely kick off at the start of the Beta Phase.

3. Energy – for the Beta phase, energy supply arrangements will need to be in place for the installed charge points to enable wholesale arbitrage opportunities. This opportunity is envisaged to be profitable (i.e. revenues would cover the costs) but would carry working capital requirements to procure energy in advance of selling at a higher price, which will need to be considered.

Commercialisation, route to market and business as usual

Maintaining competitive markets

Park & Flex is not working to support any singular market participant in developing a proprietary approach or technology. Whilst Fermata Energy and UKPN Services will gain learning as project partners and will develop their services alongside this project, they are already active in the market and will not gain significant advantage from participation in the trial. All technologies will be treated fairly and analysed independent of partner bias, safeguarded via the neutral position of Baringa.

To promote competitive markets, any propositions and business models developed through this project will be made available to all market participants as part of business-as-usual (BAU). Whilst the project will work closely with a selection of providers and car parks for any installation and trials, all data gathered and insights developed – either into technical solutions or potential market-side business models – will be made available through knowledge dissemination.

BAU adoption

To ensure new flexibility products are quickly adopted into BAU, we will work with the relevant UKPN business teams on design

and testing throughout the project. This will include network planners, to ensure new insight regarding car park flexibility resources can be adopted into network development; the connections teams, to co-develop services to be offered to installers of car park infrastructure; and the DSO team, to ensure any resulting incentives and/or commercial products are aligned with business practices and priorities.

Once proven effective and increased confidence in delivering a return for customers and shareholders has been established, any new services and/or incentives to be provided by the DNO or DSO would be funded through BAU allowances. The aforementioned teams will be involved in any trials and demonstrations to ensure they are fully aware of project outcomes as they occur and ready to adopt practices should they be proven effective.

Implementation of the car park propositions and technical solutions will be the responsibility of active market participants.

IRL7 and TRL9 have been achieved for V2X charge points and the supporting market access platforms. The focus of Park & Flex is on demonstrating a new commercial application, propositions, and consumer engagement. As such all key partners required to deliver the trial (specifically Fermata and UKPN Services, and car park operators recruited) are established businesses with BAU operations and limited requirement for additional investment to support the trial and onward scaling if the commercial can be established.

Policy, standards and regulations (not scored)

At this stage we are not aware of any specific derogations that would be required to proceed with a demonstration or trial of the technologies within the scope of this proposal. All relevant market access requirements are possible under current arrangements.

Several regulatory enablers could support the accelerated delivery of flexible technologies in the future – e.g.

· Reducing barriers to entry: Policymakers must ensure a proportionate and flexible licensing framework is in place for organisations providing services to car parks to facilitate flexibility service provision on their behalf.

· Flexibility and access products and services: Products and services must be launched that enable the procurement of flexibility from car parks. To maximise participation these should be consistent across DSOs, available for the widest possible range of devices, and provide access for car park flexibility to deliver against the widest possible range of products. They should also enable greater incentives on technology types and propositions that can be most useful to the system.

· Market access: Flexibility providers need to choose which flexibility value streams they wish to access. They need to understand potential conflicts, and access these value streams via different routes, with different platforms, contracts and eligibility criteria. Product designs themselves can create complexities and barriers to participation or inhibit the full value of flexibility being realised.

Further enablers through standards may also be required to accelerate the uptake of DSR from V2X assets in future:

· Technology readiness: Appropriate technologies and reliability, including availability of V2G capable EVs, will need to be demonstrated to prove the ability for cost-effective flexibility provision from car parks, and appropriate standards put in place to allow their connection and operation for service provision.

· Route to market: Ownership models of car parks may introduce complexities regarding how entities can mobilise investment in V2X charger infrastructure and control services and share in the benefits of flexibility service revenues. Publicly owned car parks in particular may require policy decisions to enable investment.

· Cyber security: Minimum cyber security regulations must be met before widespread use of flexibility from car parks is introduced to the market. Primarily, the hurdle relates to ensuring that V2X solutions can meet the existing regulations, but the regulations themselves may need to be reviewed to ensure that they remain appropriate.

· V2X charge point standards: Lack of standardisation of device functionality creates barriers to broad service participation,

limiting market depth, as well as creating interoperability and security risks. BSI standards PAS 1878 and PAS 1879 are designed to enable demand side response from smart appliances, EV chargers, energy storage and electrical heating. Consequently, additions and modification to the standards related to energy smart appliances could have an unexpected effect on interoperability of systems

Barriers and enablers were explored during the Discovery Phase and will be explored further in Alpha, and our intention is to inform future policy and regulation through the Beta Phase by:

· Assessing the value case, urgency, and any required enablers for accessing flexibility from car parks, thus informing the priority for policymakers.

· Designing and trialling real-world flexibility products from car parks, thus creating evidence to support proposed policy changes and support market participants in investing in the required capabilities and propositions.

Value for money

The overall benefits case for Park & Flex is to unlock 4.2 GW of flexibility across 500,000 parking bays in UKPN's area by 2050, driving £6.6bn of revenues for market participants and consumers.

Alpha Phase will be a complex design stage of Park & Flex. In developing resource estimates we have balanced a need for efficiency with the need for building stakeholder confidence that customer propositions and business models are robust and ready for trials.

The project team has been assembled to enable a rapid design of propositions and implementation of capabilities required for a trial. Partners have prior deep experience in EV charging propositions, and bring the technology, expertise, and relationships needed to deliver this work efficiently. We have experience of EV charging innovation projects across the team and can leverage prior knowledge to avoid rework. The addition of UKPN Services with their relationships at Gatwick and Heathrow airports are targeted at capturing multiple car park settings with a single trials participant.

The proposed total costs for the Alpha phase are:

Total Project Costs: £517,416

Total Partner Contribution: £51,741 (10%)

Total SIF Funding requested: £465,674

UK Power Networks

Total Costs: £78,265

Contribution: £7,830 (10%) with labour in-kind contribution

Total SIF Funding Request: £70,435

Fermata Energy

Total Costs: £56,950

Contribution: £5,695 (10%) with labour in-kind contribution

Total SIF Funding Request: £51,255

UK Power Networks Services

Total Costs: £37,675

Contribution: £3,767 (10%) with labour in-kind contribution

Total SIF Funding Request: £33,908

Baringa Partners

Total Costs: £344,025

Contribution: £34,403 (10%) with labour in-kind contribution

Total SIF Funding Request: £309,622

GLA

Total Costs: £2,500

Contribution: £250 (10%) with labour in-kind contribution

Total SIF Funding Request: £2,250

Baringa are a specialist energy consultancy with deep commercial and market expertise. They advise government, regulators, and networks on flexibility market development, and work for a wide range of market participants building customer propositions and business models in the energy services industry.

We are aware that consulting rates will appear high compared to other rates. However, we believe they represent value for money for this phase because:

· At Alpha, a key focus of the work is design. We expect in any Beta trial, the focus will shift to delivery and there will be less need for specialist consultancy skills.

· Baringa's costs are based on their UKPN Framework Contractor rates, which has been determined through an ODEU-compliant procurement process run by UKPN, have been challenged competitively, and represent fair market value for the services required in this project. These are specialist skills that most industry and market participants do not retain in-house and turn to providers such as Baringa when needed.

· Baringa have proposed to invest 20% of their costs – expressed as a 10% discount to their rates, and a further 10% benefit-in-kind contribution – which is double the % contribution of all other project partners. They are prepared to do this because the work itself is meaningful, exciting for their people, and deepens their relationship with UKPN and UKRI in the longer term.

· Baringa bring specific IP for use on the project, for instance in the form of energy market modelling software and price projections that they will use to model the value from flexibility in the CBA, and informal access to a wide pool of experts and experience.

The combination of benefit-in-kind contributions across partners totals 10%, with Baringa discounting their rates a further 10% demonstrating commitment to the project.

There are no sub-contractor costs in the Alpha phase, nor funding from other innovation funds. Partners will leverage their own facilities (e.g. offices and IT). Baringa and Fermata will leverage background IP to assist in their roles.

Associated Innovation Projects

- ○ Yes (Please remember to upload all required documentation)
- ◉ No

Supporting documents

File Upload

Park & Flex - R2 Alpha - Show and Tell.pdf - 685.1 KB
Park & Flex - R2 Alpha - End of Phase Meeting FINAL.pdf - 2.8 MB
Park and Flex - Alpha - Mid Point Meeting.pdf - 736.6 KB
SIF Alpha Round 2 Project Registration 2024-01-23 3_18 - 84.1 KB

Documents uploaded where applicable?

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