

RIIO-ED2 Investment Decision Pack

Systems for Contracting Flexibility and new Access Rights

Investment Reference No: 1/SSEPD/IT-DSO/FLEX



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Definitions and Abbreviations

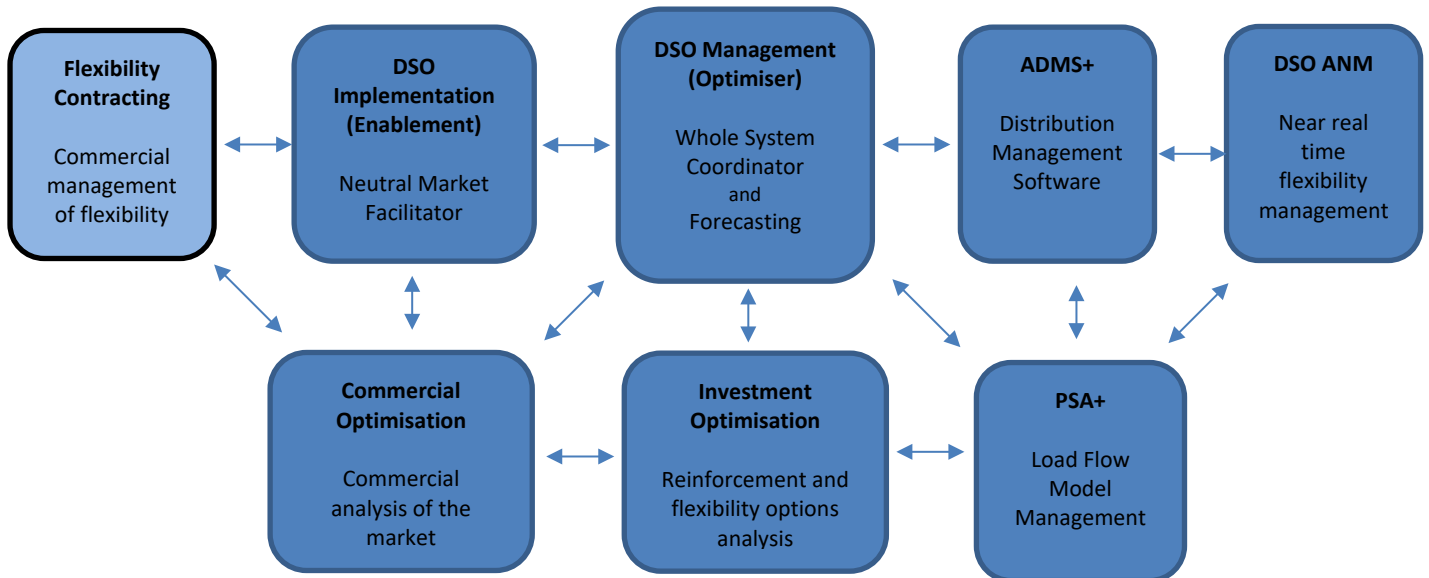
BPDT	Business Plan Data Table
CAPEX	Capital Expenditure
DER	Distributed Energy Resources
DG	Distributed Generation
DNO	Distribution Network Operator
DSO	Distribution System Operator
DUoS	Distribution Use of Service
EJP	Engineering Justification Paper
ENA	Energy Networks Association
ESO	Energy System Operator
EV	Electric Vehicle
FTE	Full Time Equivalent
GSP	Grid Supply Point
IDP	Investment Decision Pack
LCT	Low Carbon Technology
MEC	Maximum Export Capacity
NPV	Net Present Value
OPEX	Operational Expenditure
TNUoS	Transmission Network Use of Service

1. Executive Summary

Flexibility services are playing an ever-increasing role in the efficient development of the distribution network alongside the new Access Rights being defined through Ofgem’s Access Rights and Forward-Looking Charges Significant Code Review (SCR). Both have a key role in the UK’s transition to Net Zero.

New flexibility markets will grow to include a large number of participants, and new access rights may extend to many ‘CT metered’ customers; all of whom will have contracts with their respective DNO and will require payment, charges or credits for the provision of agreed services and use of the distribution network. At present the management of contracts and payments is undertaken manually, but as the Flexibility Market increases in ED2 this will not be able to deliver the timeliness of response the market needs. This IDP sets out the systems required for contracting flexibility and enabling new Access Rights.

The diagram below shows the interactions between the key systems outlined in our IDPs related to DSO. It should be noted that these systems are closely supported by our ED1 investments in our Asset Management Database and Geographic Information System.

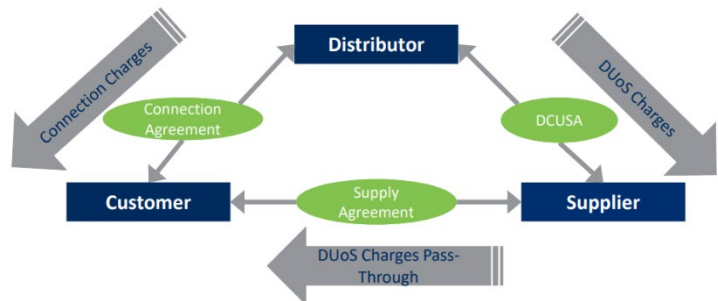


2. Investment Summary Table

Summary Table			
Name of Scheme / Programme	Flexibility Contracting		
Primary Investment Driver	Progress to Net Zero		
Scheme Reference / Mechanism or Category	1/SSEPD/IT-DSO/FLEX		
Output References / Type			
Cost (CAPEX)	■		
Delivery Year	RIIO ED2		
Reporting Table	C4		
Outputs Included in RIIO ED1 Business Plan			
Spend Apportionment	ED1	ED2 ■	ED3

3. Introduction and Background Information

Distribution Use of System (DUoS) charges with respect to a customer's access rights (i.e. arrangements for agreed capacities and other connection characteristics) are the primary mechanism through which SSEN receives its income and influences ongoing customer investments and operational behaviours. These charges apply to every connection to the distribution network and make up the revenue which Distribution Licensee needs to build, operate, maintain, repair and invest in the network. DUoS charges are one component of a customer's electricity bill and typically represent around 15% for a domestic customer. DUoS Charges are not invoiced directly to the customer: the Distribution Network Operator (DNO) invoices the customer's Supplier. The diagram opposite summarises current arrangements, and how these differ from initial connection charges (which are 'one-off' charges for any new connection).



In RIIO-ED2 our use of flexibility services will continue to increase and will maximise efficient network development in combination with network investment. Flexibility services will be accessed through marketplaces where DER suppliers, aggregators and those with flexibility will provide options to manage available system capability most effectively. New definitions and types of access right will help customers set out their network requirements to further drive efficient operation and development. An optimised network will enable the uptake of low carbon technologies to meet our Net Zero aspirations.

The overall commercial framework will offer a variety of network access options alongside charges, credits and service payments reflecting the costs and benefits individual network users bring. The exact mechanisms for these payments continue to develop; we have set out our current thoughts and proposals in other DSO enabling projects.

This will lead to changes to our contracting and charging mechanisms. For example, we expect there to be a significant increase in the number of commercial transactions and types of network access. The changes will affect the current DUoS systems, and many supporting systems, particularly regarding customer data flows, forecasting and access management. This project covers the system changes that will be required to engage with flexibility services using a directly contracted model.



4. Business Plan Fit

This project can be mapped to following strategic themes:

Progress to Net Zero	Safe, resilient and responsive networks	A trusted and valued service to customers and communities	Positive Impact on Society
✓	✓	✓	✓

5. Optioneering

The systems required for contracting flexibility and enabling new Access Rights will be modified and extended to reflect the following changes:

- A significant increase in the number of payments and transactions, including:
 - The various payments made to DER suppliers.
 - The credits, payments or tariffs offered for flexibility services.
 - Time Profiled rights for example to run Electric Vehicles (EVs) and run Heat Pumps.
 - Limited curtailment access rights for non-firm connections.
 - Further adjustment as necessary to support vulnerable customers, key workers, etc.
- An increased number and type of access rights alongside mechanisms to transfer these rights between parties.
- To monitor, manage and enforce complex access products and service provision across a large customer base.
- Peer to Peer trading and Bilateral Contracts to maximise use of available system capacity amongst users.
- Potential mechanisms to manages securities and liabilities.
- Reciprocal changes to line loss factor analysis and factors.
- Asset Database reporting.
- Billing management.
- Commercial data management.
- D0265 flow internal system modifications.
- Tariff publishing and setting.
- Forecasting, settlement data processing and model population.
- Changes to forecasting toolsets.
- ESO data exchange.

These changes will affect new and existing systems, including:

- The new tools needed to contract for flexibility services
- Access right management systems
- DUoS and other payment systems
- Our core accounting systems (e.g. General Ledger).
- Customer record systems.
- Systems managing data flows.

Our approach is to use industry standard software to implement these changes as far as possible, ensuring security measures are adhered to as required. We will work with our supply chain and with other DNOs/DSOs to develop these packages in a form that means they are readily portable in any organisation undertaking these functions. We note that the regulatory arrangements in the UK are unique in terms of flexibility markets, which means that the market for this software is relatively small and may drive prices higher. We will therefore work with our partners to mirror international arrangements and help reduce costs as far as possible. We also believe that there should be a cautious approach to the deployment of changes, to minimising risk and maximise learning throughout the RIIO-ED2 period. To that end some functionality, such as intraday facilities may be better deployed in RIIO-ED3 and some elements may therefore be better trialled through Innovation projects. In light of this anything which we believe fits into this category has not been included in this project.

5.1.1 Alternative Options

As the driver for this project is managing all the new contracts and commercial arrangements that the Flexibility Market will demand, doing nothing is not an option.

Other than an IT based solution the only other option would be to vastly increase staff numbers. Some projections for staff increases have been set out in our benefits. However, based on the current Innovation projects and other trials on-going nationally and internationally, it is exceptionally unlikely that manual processing would not be able to deliver the timeliness demanded by the market once it scales up, and hence lead to increased network constraint. It has therefore been discounted.

The proposed solution has been based on the best value IT solution that is currently available. However, given the pace of IT development, the market will be re-examined at project commencement to ensure the best value solution at that time is chosen for delivery.

6. Stakeholder Evidence

Our LCT stakeholders are keen to participate in flexibility markets and there is general acceptance of the need for flexibility amongst our customers, especially to assist with the drive to Net Zero. These tools will enable the market to operate efficiently.

Ofgem's minded-to decision on the Access and Forward-Looking SCR identifies the benefits of better definitions for Access Rights in terms of Curtailment and Time Profiling and the key role for monitoring and enforcing these rights.

More details of overall stakeholder engagement are set out in the ***Digital Investment Plan (Annex 5.1)***.

7. Analysis and Cost

Costs have been built using a bottom up approach and have been based on the best currently available solution. IT is a rapidly changing area, so the market will be re-examined prior to delivery, and the best value option to meet the requirements set out above will be chosen. The project has been assessed over a 5-year lifecycle, with both Opex and Benefits equated for that operational period, as IT solutions often need updating after 5 years. NPVs of both 5 and 45 years have therefore been quoted below.

7.1 Cost Profile

This project has the following cost profile and will be delivered as a series of sub-projects, some waterfall, other iterations. NPVs have been calculated using the standard CBA, however no alternative has been defined that will meet the full set of requirements (manual management would not allow timely transactions, leading to more network constraint). The full build-up of costs is contained in the ED2 IT Investment Plan (Non-Op Capex) Cost Estimate spreadsheet.

	Total £'M	2023/24 £'M	2024/25 £'M	2025/26 £'M	2026/27 £'M	2027/28 £'M
CAPEX	■	■	■	■	■	
ED2 OPEX	■				■	■
ED2 Benefits	■				■	■
5 Year OPEX	■					
5 Year Benefits	■					
NPV (5 Year)	■					
NPV (45 Year)	■					
<i>NPV (5 Year) – partial alternative option (not full delivery)</i>	■					
<i>NPV (45 Year) – partial alternative option (not full delivery)</i>	■					

7.2 Benefits

7.2.1 Financial Benefits

Benefits are shown for the first 5 years after the project is implemented.

	Total	Year 1	Year 2	Year 3	Year 4	Year 5
The systems in this IDP avoid the need for additional resource to manually monitor and assess 'CT metered' customers with new access rights and/or participating in flexibility services. The manual alternative assumes 4 minutes per customer per month saved, with 30,000 CT customers, giving a total saving of 4,800 days (i.e. circa 14 new FTE avoided at SS03 rate)	■	■	■	■	■	■

We anticipate new access right definitions and the monitoring/enforcement of these rights to extend to all customer with a presently defined access right (i.e. CT metered).

7.2.2 Non-Financial Benefits

The prime non-financial benefit is the optimisation of customer incentives to efficiently use the distribution network and participate in flexibility services, to maximise the use of Low Carbon Technology, and hence achieve the Net Zero objectives. It will of course deliver the obligations of Code changes, and hence meet new license condition.

7.2.2.1 Foundation to other Projects/Initiatives

These changes will be a foundation for DSO working as they will underpin the efficient network access and flexibility services. Without them our ability to efficiently complete the transactions mentioned within this paper will be significantly impeded.

7.3 Key Assumptions

The current programme and costings assume that all planned RIIO-ED1 system changes, in particular project Osiris, will be complete before the start of RIIO-ED2. If some of the current planned application changes are not completed, this will increase the complexity, and hence cost and timescale, of this project.

We assume that rules around the new Access Rights and DUoS charges will be set before or early in RIIO-ED2, otherwise delivery in the period will be at risk.

7.4 High Level Dependencies

This IDP draws on the current work by the ENA and various Innovation projects (notably MERLIN). Should the current assumptions on those initiatives and projects change significantly before the implementation of this project, change may be required.

7.5 Deliverability & Risk

Our ***Ensuring Deliverability and a Resilient Workforce (Chapter 16)*** describes our approach to evidencing the deliverability of our overall plan as a package, and its individual components. Testing of our EJPs has prioritised assessment of efficiency and capacity, and this has ensured that we can demonstrate a credible plan to move from SSEN's ED1 performance to our target ED2 efficiency. We have also demonstrated that SSEN's in house and contractor options can, or will through investment or managed change, provide the capacity and skills at the right time, in the right locations. This assessment has been part of the regular assessment of our EJPs, IDPs and BPDTs. We have now refined our bottom up efficiencies and work plan phasing for our ***Deliverability Strategy (Annex 16.1)*** and ***Supply Chain Strategy (Annex 16.2)*** which are included in the Business plan Submission. Our deliverability testing has identified a major strategic opportunity which is relevant to all EJPs.

- In ED2 SSEN will change the way Capital Expenditure is delivered, maximising synergies within the network to minimise disruptions for our customers. This is particularly relevant for a Price Control period where volumes of work are increasing across all work types.
- The principle is to develop and deliver Programmes of work, manage risk and complexity at Programme level and to develop strategic relationships with our Suppliers and Partners to enable efficiency realisation.

8. Conclusion

Flexibility services and new definitions of Access Rights have a key role in the UK's transition to Net Zero. This IDP sets out the systems required to enable both and help ensure that we deliver our aspirations and required improvements in terms of excellent customer value and delivering our low carbon future.