Data Sharing Infrastructure

Industry Webinar

12 December 2025

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System Operator

Opening Remarks

Marzia Zafar
Deputy Director of Governance for Data and Digitalisation, Ofgem

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Mobilising the DSI Coordinator & MVP

Alexandra (Sasha) Shipulina
Head of Data Sharing Infrastructure, NESO

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Welcome and introductions

Sasha Shipulina
Head of Data Sharing Infrastructure

Mo Ebrahim
Enterprise Architect

Jonathan Barcroft
DSI Product Owner

Greg Johnston
Integration Senior Lead

Simon Evans
Programme Director,
Virtual Energy System

Ed Gold
Solution Architect

Paul Peterson
Project Manager

Dave Belfield
Security Assurance Lead

Cameron Shade
Senior Delivery Manager

Anca Marinescu
Stakeholder
Engagement Lead

Kaviya Sivaraman
Technical Specialist

Maria Kordoni
Programme Manager,
Virtual Energy System

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Vision and mandate

Government response to the energy system 'digital spine' feasibility study

Launching a data sharing infrastructure in the energy sector

*"To **inspire, lead and facilitate** the step change within the **energy sector data sharing infrastructure** and future digitalisation"*

ofgem
Making a positive difference for energy consumers

Decision

Governance of the Data Sharing Infrastructure Decision

Publication date: 1/04/2025

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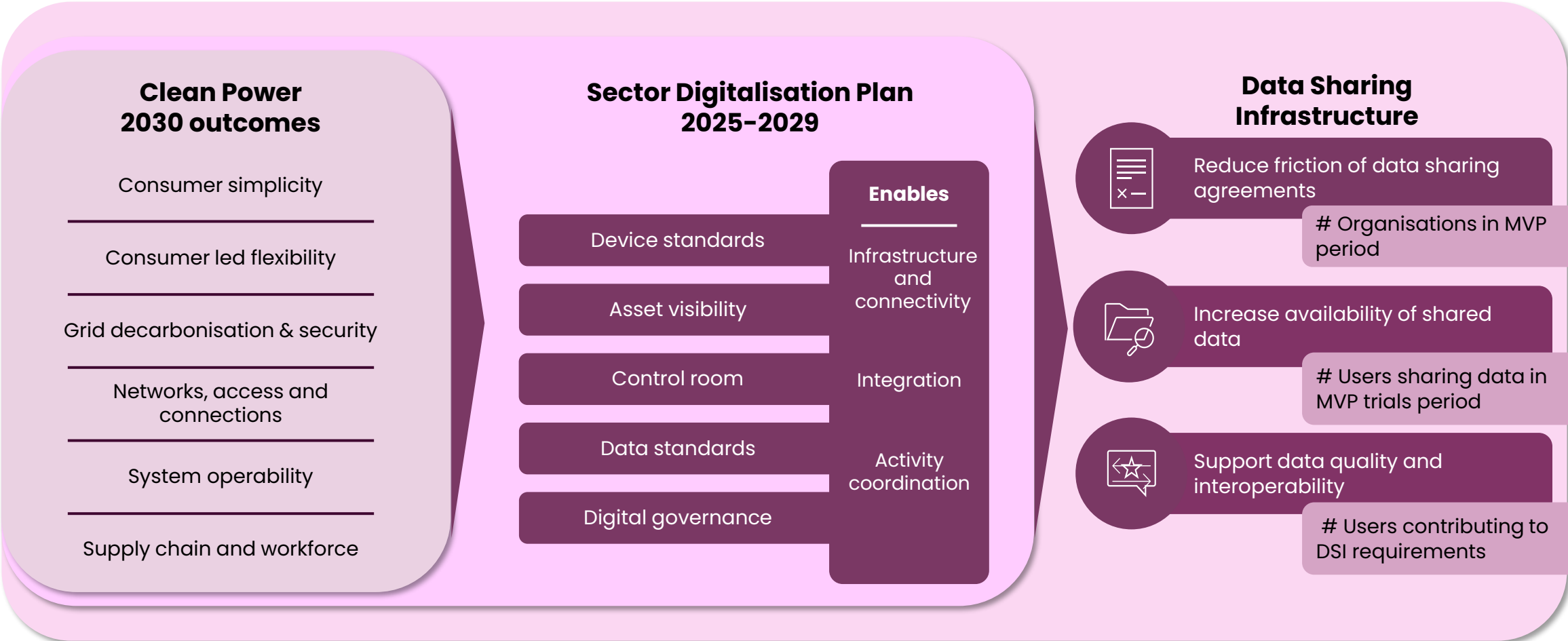
NESO's "two hats"

DSI Coordinator

Responsible custodian for the development of the DSI on behalf of the sector

DSI Participant

Gaining benefits from sharing and receiving more data

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Target benefits and metrics

Clean Power 2030 outcomes

- Consumer simplicity
- Consumer led flexibility
- Grid decarbonisation & security
- Networks, access and connections
- System operability
- Supply chain and workforce

Sector Digitalisation Plan 2025–2029

- Device standards
- Asset visibility
- Control room
- Data standards
- Digital governance

Enables

- Infrastructure and connectivity
- Integration
- Activity coordination

Data Sharing Infrastructure

- Reduce friction of data sharing agreements
  - # Organisations in MVP period
- Increase availability of shared data
  - # Users sharing data in MVP trials period
- Support data quality and interoperability
  - # Users contributing to DSI requirements

Impact for stakeholders

Consumers

Drives down cost for consumers sector using data better

Participants

Reduces overheads and drive data standardisation

Data Sharing Infrastructure

Innovators & academia

Reduces barriers to accessing shared data for novel propositions

Regulator & government

Increases value of energy data to grow economy & drives down bills

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What is Data Sharing Infrastructure?

Jonathan Barcroft
DSI Product Owner, NESO

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Publications & policies asking for improved data sharing

	2019	2020	2021	2022	2023	2024	2025
BEIS, DESNZ, & DSIT		National Data Strategy highlights improved data sharing	"Digitalising our energy system for Net Zero" released	CPI consultation strengthened the need for shared data sharing fabric	DESNZ & Ofgem respond to EDiT	Digital Spine Feasibility Study commissioned	Data Sharing Infrastructure 'coined'	Formal response to Digital Spine Feasibility Study	Smart Data Schemes Consultation
Ofgem				DESNZ & Ofgem respond to EDiT	FSNR & Distributed Flex consultations formally recommend a DSI	Governance of a DSI consultation launched	Interim DSI Coordinator decision
Energy Sector Task Forces	EDTF releases "A Strategy for a Modern Digitalised Energy System"		EDiT recommends the Digital Spine and Data Sharing Fabric				
National Digital Twin Programme	NIC releases "Data For The Public Good" / CDBB releases "Gemini Principles"	NDTP defined the framework for connected digital twins / Pathways to an Information Management Framework	Digital Twin Hub and CReDO started	CDBB publish the "Gemini Papers" / NDTP moved to DBT, who start development on the IA	IoW used to demonstrate the IA / NDTP & NESO MOU signed	NDTP & NESO DSI technical alignment	Energy DSI Pilot phase start / IA published open source
NESO			COP26 announcement of the VirtualES	VirtualES socio-technical framework published	VirtualES key factors and HLD published	NDTP & NESO DSI technical alignment / DSI Pilot phase start	DSI MVP phase start
Cross-sector programme	Open Banking turns 1 year old as a UK policy			Water sector progress STREAM for enabling data sharing	DfT create TRIB roadmap and programme on connected digital twins / EU Energy Data Spaces development		

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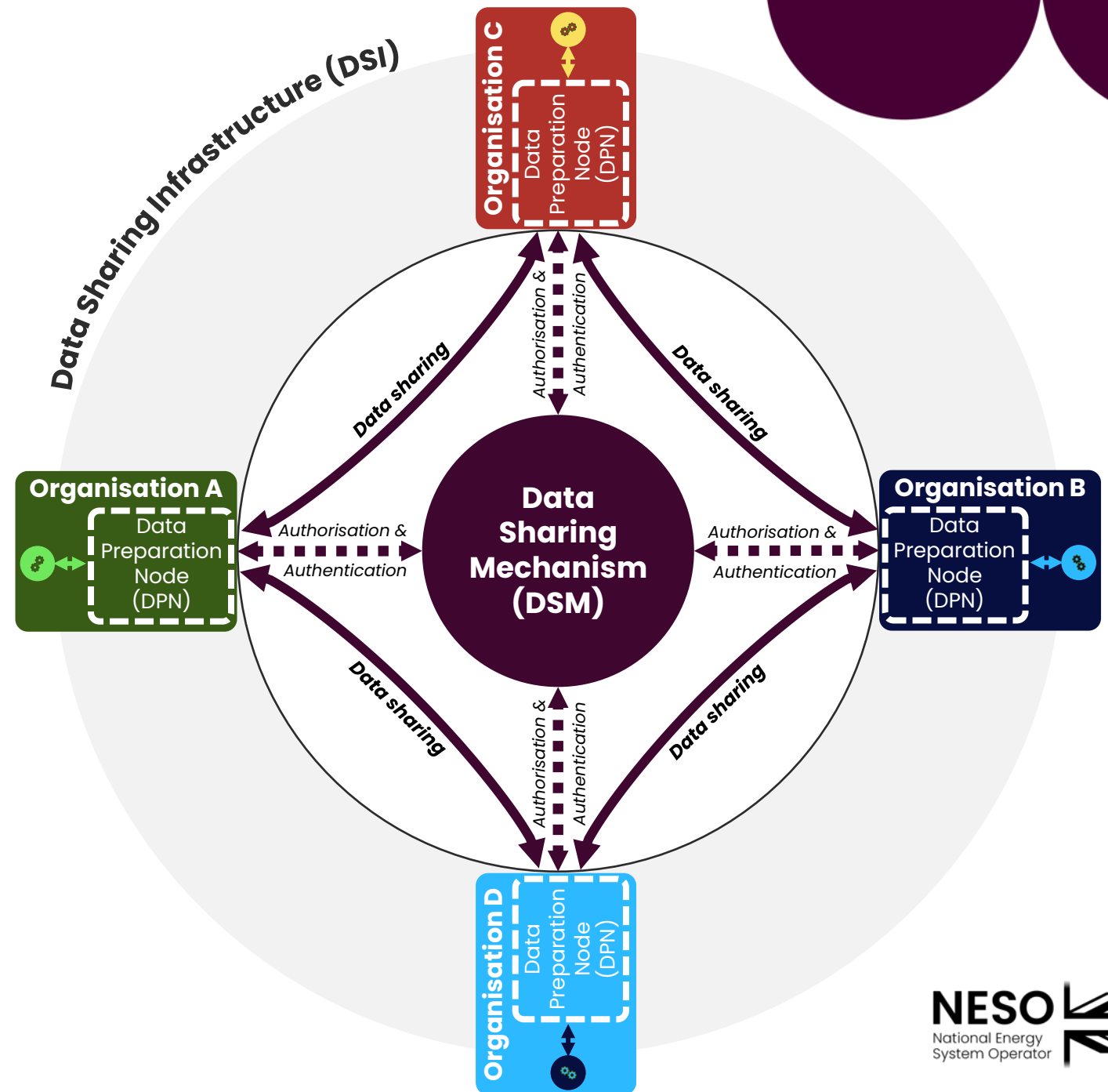National Energy System Operator

Data Sharing Infrastructure

A **socio-technical** solution.

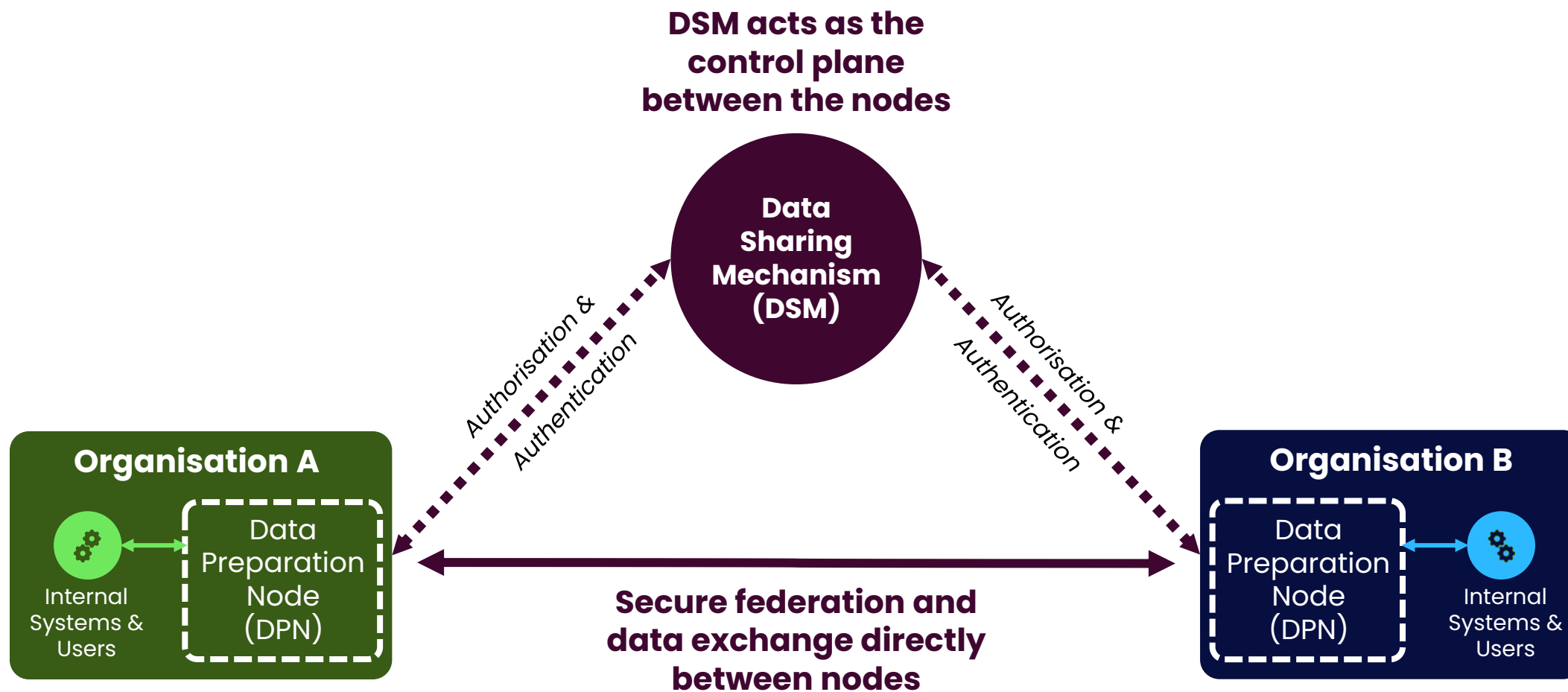That reduces the **friction** and **barriers** to data sharing.

By providing a **secure**, **resilient**, and **scalable** method for sharing data and models between **any energy sector participants**.

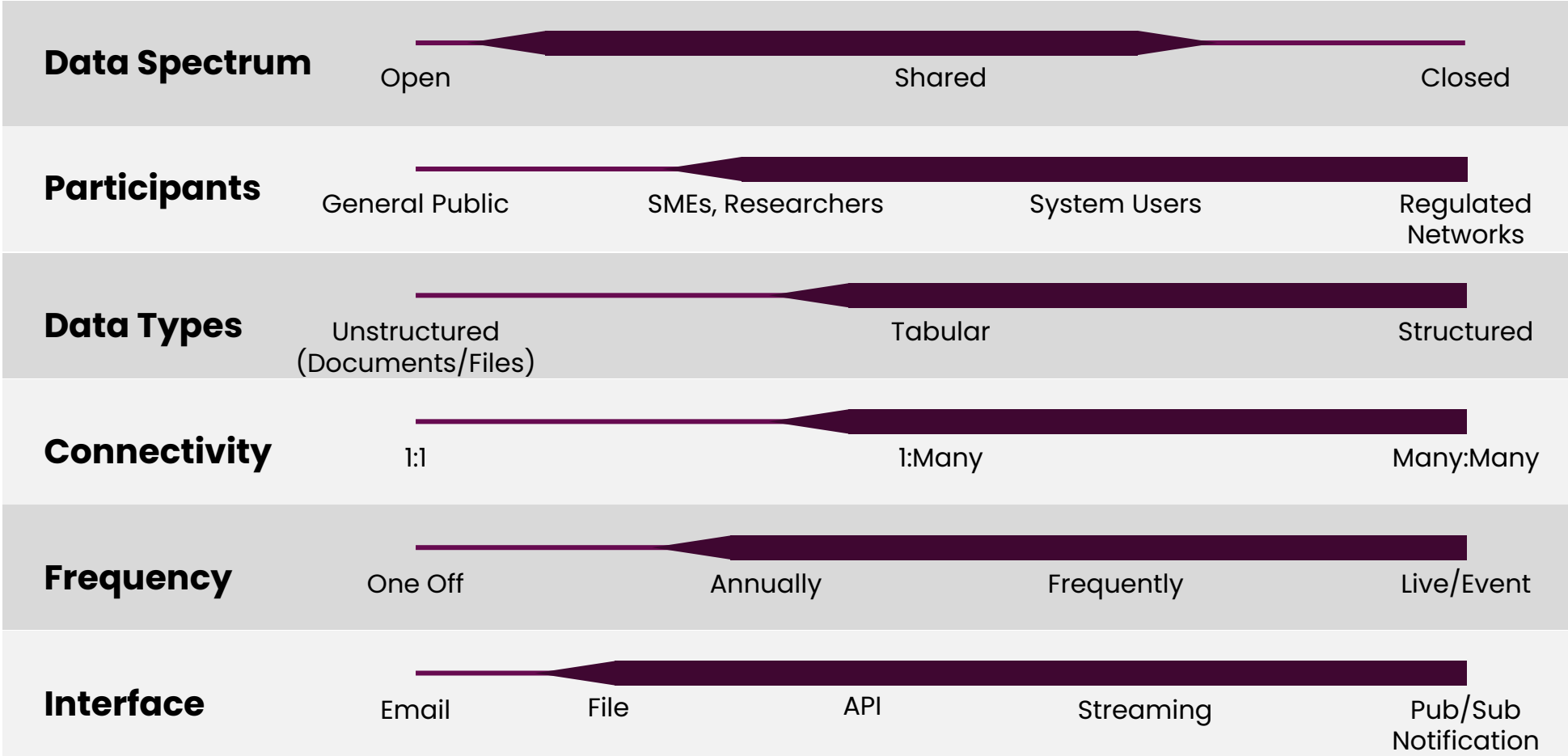Accelerating **trust**, **semantic interoperability** and facilitating **cross-sector** connectivity.

Enabling better **outcomes** for society, the environment, and the economy.

Data Sharing Interactions

DSM acts as the control plane between the nodes

Data Sharing Mechanism (DSM)

Authorisation & Authentication

Authorisation & Authentication

Organisation A

Internal Systems & Users

Data Preparation Node (DPN)

Organisation B

Data Preparation Node (DPN)

Internal Systems & Users

Secure federation and data exchange directly between nodes

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Scope of the DSI

Data Spectrum			
Open	Shared		Closed

Participants			
General Public	SMEs, Researchers	System Users	Regulated Networks

Data Types			
Unstructured (Documents/Files)	Tabular		Structured

Connectivity			
1:1	1:Many		Many:Many

Frequency			
One Off	Annually	Frequently	Live/Event

Interface				
Email	File	API	Streaming	Pub/Sub Notification

DSI target capabilities

Possible but not target

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Architecture & design principles

General principles	Organisational ownership	Self-service enablement	Federated computational governance	Low barrier to adoption	Use case driven approach
Data principles	Make data Findable, Accessible, Interoperable & Reusable	Data-as-a-product	Alignment with Ofgem Data Best Practices		
Technology principles	Use open standards and open source	Modularity and Optionality			
Security principles	Operate under a Zero Trust Architecture	Alignment with National Cyber Security Centre (NCSC) best practices and guidance			

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Pilot objectives

6-month timebound proof of concept

Evaluate DSI value and user journey validation
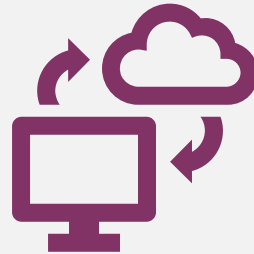
Deploy and configure PoC of the DPN and the DSM

Demonstrate secure and standardised data sharing

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Pilot summary

Outcomes

Built Proof of Concept (PoC)

Demonstrated secure data exchange

Tested upcoming changes GC139 / GB CIM

Demonstrated value opportunity

Showed reusable schema validation

Challenges

Complex deployment

Restrictive size

Limited automation

Time and resource pressures

Test environment challenges

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In two words...

Adoptability

Lower technical prerequisites, simplify, focus on integration with existing capabilities.

Lift capability with supporting documentation, guidance and libraries.

Scalability

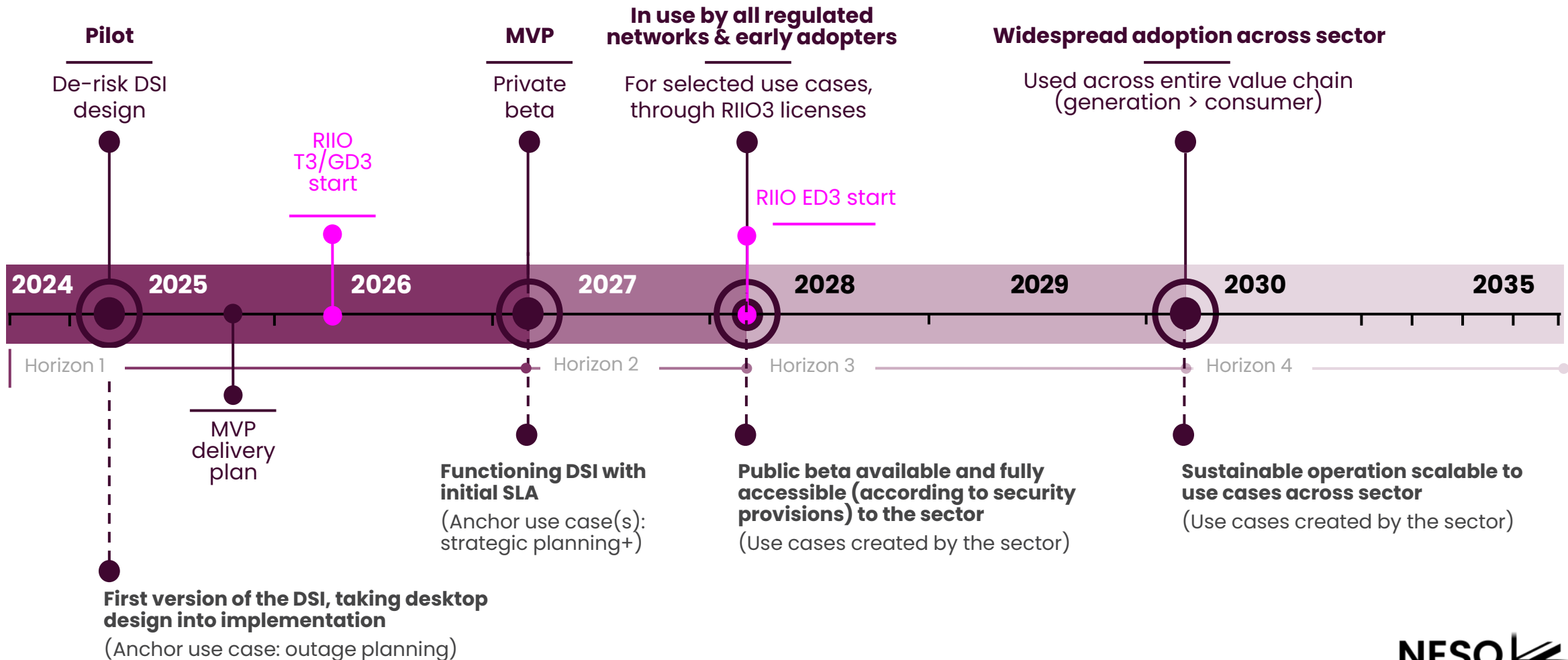**Delivering core capability quickly so users can get hands on and build use cases.**

Support multiple integration patterns and data types.

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MVP and the future

Alexandra (Sasha) Shipulina
Head of Data Sharing Infrastructure, NESO

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DSI Roadmap

Pilot

De-risk DSI design

MVP

Private beta

In use by all regulated networks & early adopters

For selected use cases, through RIIO3 licenses

Widespread adoption across sector

Used across entire value chain (generation > consumer)

RIIO T3/GD3 start

RIIO ED3 start

| 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2035 |

Horizon 1　　　　　　　　　　　Horizon 2　　　Horizon 3　　　　　　　　　　Horizon 4

MVP delivery plan

Functioning DSI with initial SLA

(Anchor use case(s): strategic planning+)

Public beta available and fully accessible (according to security provisions) to the sector

(Use cases created by the sector)

Sustainable operation scalable to use cases across sector

(Use cases created by the sector)

First version of the DSI, taking desktop design into implementation

(Anchor use case: outage planning)

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MVP delivery partners

MVP lead

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Continued support

NATIONAL DIGITAL TWIN PROGRAMME | HM Government

MVP participants

Electricity Distribution

Electricity Transmission

Gas Distribution

Gas Transmission

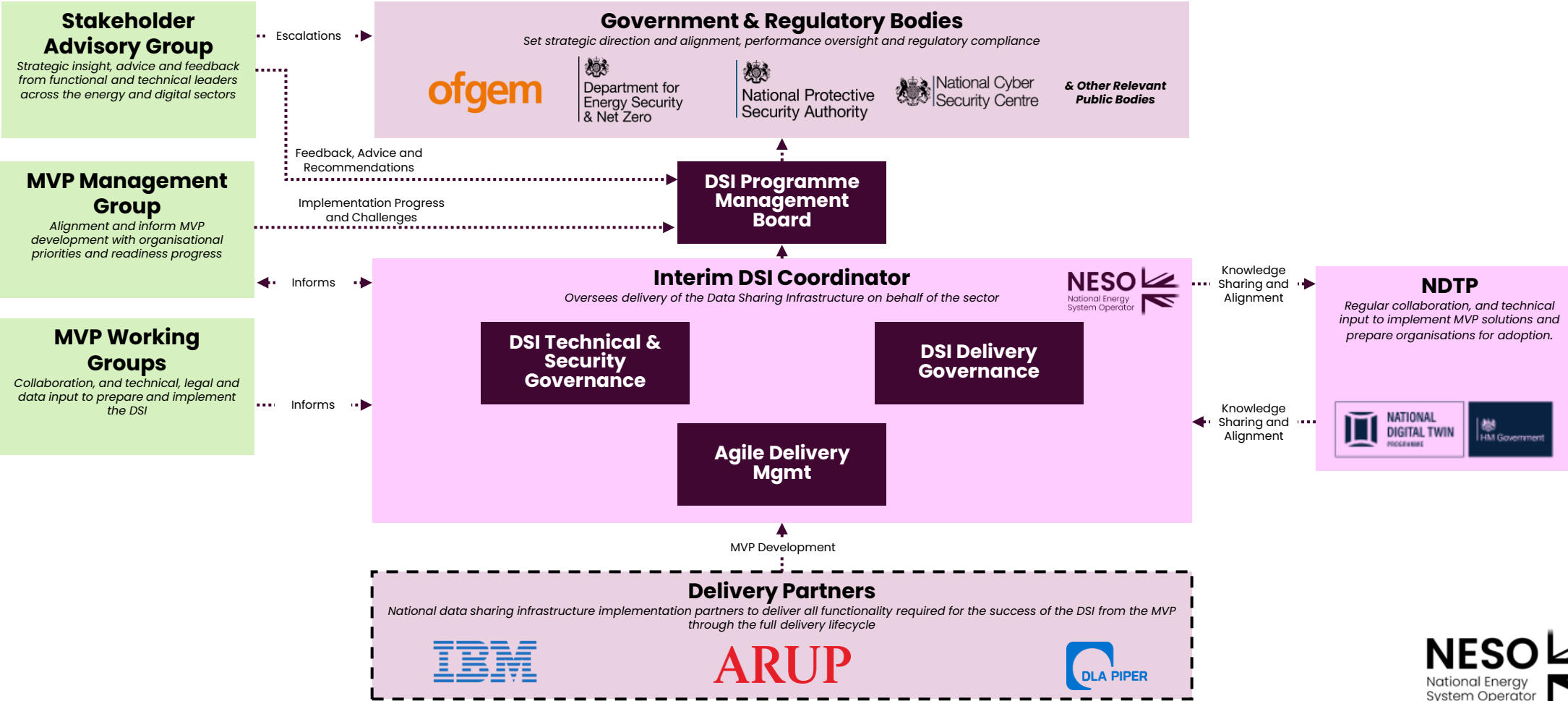Market Service Providers

Delivery partners

ARUP

IBM

DLA PIPER

Observers

Department for Energy Security & Net Zero

ofgem

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DSI Coordinator Governance

By May 2027 success in MVP is...

Develop MVP solution

Outcome: *DSM and DPN delivered in line with the DSI specification and requirements catalogue.*

Implement Trust Framework

Outcome: *Participants can be onboarded with a clear understanding of their rights and responsibilities.*

Provide operable service for trials

Outcome: *Make early-stage service available for trials under a defined Service Level Agreement*

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What we need from you

Critical Friend

Expertise

Participation

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Stay engaged

We're developing our role as the Data Sharing Infrastructure coordinator function and want to hear from you.

Feedback form	Webinars
NESO newsletter	DSI website
DSI@neso.energy	Shared Knowledge Base

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All questions via Slido
slido.com
Code: #DSI2025

Q&A

You can also email:

dsi@neso.energy

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Thank you

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