

Atypical EJP

**Common Information Model for
Gas (INV-38)**

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Summary Table

Title Section	AEJP 2 for Digitalisation Investment: Interoperability Theme – Common Information Model for Gas Data
Name of Scheme	INV-38 Common Information Model (CIM) for Gas Data
Investment Driver	<p>The CIM standard for Gas Data defines the conceptual framework and relationships of gas data, ensuring interoperability between gas transmission and distribution data and transparency to other stakeholders within and beyond energy sector.</p> <p>By defining the standard, we are mitigating the risk that multiple digital projects and programmes that are supporting net zero transition for energy use different versions and structures of gas data impacting the interoperability of the solutions between each other, but also requiring custom project-specific data models, adding time and cost to their digital investments.</p> <p>This investment is a response to direct Ofgem’s request to signpost the level of spending that will be required to connect to the Data Sharing Infrastructure, including indirect investment that will improve general interoperability of data.</p>
BPDT/Scheme Reference Number	M8.19
Outputs	<p>This outcome is designed to be a pragmatic demonstration of the implementation by gas companies of the interoperability principle.</p> <p>It will establish a common standard, such that Data Assets related to physical gas assets, their main characteristics, condition; and Data Assets related to gas demand and gas supply published by any of Gas Distribution Network (GDN) will have the same layout, description and supporting information.</p> <p>Recommendation on the granularity of supply and demand data to enable publication of Data Assets under a Shared or Open Data Triage Outcome, whilst respecting CNI and Security requirements.</p> <p>The main deliverables from this investment:</p> <ul style="list-style-type: none"> • Gas CIM definition. • Proposal for a governance model for the standard and its future evolution. • Set of definitions of common User Persona Profiles associated with the data in scope. <p>Specification of minimum data requirements for each use case requiring gas Asset Data.</p>
Cost	[cost-sensitive data]
Delivery Year	FY 26/27
Applicable Reporting Tables	N/A
Historic Funding interactions	No historic funding
Interactive Projects	INV-37 Data Sharing Infrastructure, BPDT: Table M8.19

We expect the Spend Apportionment table below to be merged with the summary table above but have included it separately for accessibility purposes.

Spend Apportionment (£m)	(£m – 2023/24 prices)
RIO-2	[cost-sensitive data]
RIO-3	[cost-sensitive data]
RIO-4	[cost-sensitive data]

1. Introduction

This investment delivers on the joint ambition of, and working in collaboration with, all GDNs to develop a common data model standard for gas data. The need for this common data model reflects the growing needs of Stakeholders for interoperable gas Data Assets to support projects and initiatives, including those that enable energy transition and whole system planning.

A CIM standard would define the conceptual framework and relationships of gas data, ensuring interoperability between gas transmission and distribution data and facilitating transparency to other stakeholders within and beyond the energy sector on how gas data is structured and modelled.

By defining the standard, we are mitigating the risk that multiple digital projects and programmes, including those that are supporting net zero transition, use different versions and structures of gas data impacting the interoperability of the solutions. The work will also remove the requirement to develop custom data models for each of the projects, which would otherwise add time and cost to their digital investments.

This investment is a response to direct Ofgem requests to signpost the level of spending that will be required to connect to Data Sharing Infrastructure (DSI), including indirect investment that will improve general interoperability of data.

We see this investment as:

- an “indirect investment” related to DSI, that will be applied at the Data Preparation Node for the benefit of the participants and users of the Data Sharing Infrastructure; and
- of benefit to our individual stakeholders, who use Cadent Data Assets and other gas network Data Assets, to apply the standard and in the future offer interoperable Data Assets through our respective Open Data Portals, that will be common across gas networks.

Adopting a CIM standard for gas is crucial in harmonising data sharing efforts, particularly for stakeholders such as the National Energy System Operator, Ofgem, DESNZ and the wider net zero transition consideration at national level.

2. Background

The gas companies are currently collaborating (as part of Gas Data & Digitalisation Collaboration Group) to understand the level of interoperability between the datasets currently being shared with their respective stakeholders (the “foundational” datasets). This work embraces:

- The data that the organisations are providing to the National Underground Asset Register platform, that illustrates the information shared about the underground register of gas assets; and
- Plans to commence the work in FY 2025/2026 to compare demand data published as part of the 10-year development statement and other open datasets available in the open portals (mainly the datasets that support Local Area Energy Plans (LAEPs)).

This is discovery work contributing to a Minimum Viable Product (MVP) of a CIM standard for gas data.

To accelerate the work and provide more comprehensive interoperable standards we propose to extend the scope and build on a foundation that is planned to be achieved within RIIO-2. By formally collaborating under a common initiative in the first part of RIIO-3 period this will add three more use cases to the MVP (below ground asset information):

- AGIs – We will expand the standard derived from the below ground asset data use case by looking at Above Ground Installations (AGIs) to ensure that the network model is complete from the Gas Asset Register point of view.
- Demand – We will define the granularity level and scope of demand data (domestic, industrial and commercial demand levels) that is required to support the energy transition efforts for stakeholders like DESNZ, Ofgem and LAEPs, with the considerations on level of standardisations required for forecasts of the demand.

- Gas on/off - It has been communicated that one of the early use cases that Ofgem deems beneficial for customers that should be supported by DSI is “outage/interruption management”. While the initial use case has been established for electricity data, in order to understand disruption and impact on customers, especially these who might need additional or special support, gas data interruption would be a valuable component. Information about the time the customer is without a gas supply is the information that is owned by individual networks, and we believe that as minimum this data should be interoperable and available.

3. Optioneering

The following options have been considered to fulfil the needs of stakeholders.

Option 1: Do Nothing.

Continue to collaborate on interoperability standards as a business as usual effort from all Gas Networks. This option has been rejected as a suitable way of proceeding due to the following reasons:

- The lack of dedicated resources, especially in the area of model design, low level metadata definition and data architecture, would impact the timeline and likely require a multiyear collaboration effort that will significantly delay delivery; the CIM standard would not be available for core considerations when developing DSI.
- Internal efforts will be dependent and potentially suffer from the sole use of expertise which is currently available in the networks – being able to draw upon independent subject matter expertise would help to agree one interoperable standard and achieve a balance between efforts to implement the standards in each of the GDNs.

Option 2: (Preferred) Formalise collaboration between the GDNs in the form of a joint investment and lead the development of the common standard as quickly as possible.

This has been agreed to be a preferred option due to the following reasons:

- Dedicated funding would allow for full collaboration between GDNs, including through dedicated resources. It would also ensure that appropriate weight is given to the needs of all Data Users across the sector and the local needs of stakeholders that individual networks serve.
- Dedicated funding would allow GDNs to engage an appropriately skilled and knowledgeable expert to drive the development of the definition of CIM, removing the risk that the work relies solely on existing, in-house knowledge.
- GDNs would have opportunities to use the funding to individually assess the most appropriate path for the adoption of the standard, based on their internal data architecture, ensuring the implementation of standard in a timely manner.

Option 3: Wait for further development and use cases specific for gas data through the DSI, deferring the development of the standard until the next regulatory period.

This option has been rejected as suitable due to following reasons:

- It is not clear how many gas use cases will be in scope of DSI in the near future, therefore DSI consideration might not be for some time requiring the scope of the gas data that is required for energy transition.
- There is no guarantee that future use cases for DSI would have funding to answer the question of an appropriate standard and there is a risk that this task will be left to Data Custodians to agree.

While we put importance on DSI as a method of data exchange, we recognise that our current stakeholders (especially DESNZ and Local Authorities) already require the Gas Network Data for their projects and for the development of the path to net zero - waiting to address the topic of interoperable standards, is going to likely make the problem of lack of the standard only more complex and more difficult to address in the future.

4. Cost

The cost of the preferred investment option is driven by:

- Gross Staff Cost to support the delivery of the investment
- Resources to contribute to feeding the requirements and information about Cadent data definitions
- Resources to contribute to the implementation of the CIM standard in our data
- Professional Services costs – essentially the provision of suitable experts from the market to deliver the proposal of the definition of CIM

Cost driver	Cost (£m – 2023/24 prices)
Gross Staff Cost	[cost-sensitive data]
Contractor Cost	[cost-sensitive data]

Table 1: Investment cost drivers

The scope of this investment is defined as:

A common standard for Gas Data Model allows to produce interoperable Data Assets related to physical gas assets, their main characteristics, conditions and Data Assets related to gas demand and gas supply.

The main deliverables from this investment:

- Gas CIM definition.
- Proposed governance model for the standard and its future evolution.
- Set of definitions of common User Persona Profiles associated with the data in scope.
- Specification of minimum data requirements for each use case requiring gas Asset Data.
- Recommendation on the granularity of supply and demand data to enable publication of these Data Assets under Shared or Open Data Triage Outcome respecting critical national infrastructure and Security requirements.

5. Deliverability

The delivery of this investment will be realised through two phases:

Phase 1 – collaboration between all GDNs with a selected third party to define the proposed Common Information Model and agree the model as a standard for adoption.

During this phase, we will analyse the Data Assets available in each of the GDNs and engage with our stakeholders to ensure that we have a complete view of the gas data used across the industry. This is required to identify commonalities, discrepancies, and drive the definition of the interoperable Common Model that meets the needs of gas Data stakeholders.

We are dependent in this phase on participation and funding being available for all gas networks with their subject matter expertise, examples of Data Assets and supporting information to be made available to the selected expert from the market for the assessment.

The proposal of the CIM need to be evaluated by each of the network to ensure that the proposal meets each Network's requirements.

Agreement of the interoperable standard will ensure consistency in data sharing practices across the gas industry and deliver a standard proposal to be adopted in all future digital solutions that promotes seamless data exchange and integration.

Phase 2 – this phase is going to be the individual part of the investment for each of gas distribution network – dedicated work to adopt and implement the agreed standard within their organisation.

Our assumption is that due to different technologies and internal architectures within gas distribution network organisations, the implementation scale and effort might vary by company. As such, the challenges, and opportunities associated with adopting the standard might be different.

The success of the investment is going to be recognised when gas asset and network related Data Assets published by each of the GDNs adhere to the same definition, construction and description, and when this data requires minimal investment from Data Users who want to combine the Data Assets made available by each of the GDNs. The performance measure best demonstrating the success will be the number of interoperable Data Assets published by each of gas networks.

We have made the assumption that this standard would be later shared with the Gas Transmission organisation to support them in their efforts of increasing interoperability in the sector and will be proposed to Ofgem to form part of formal standards falling under Data Best Practice Guidance and as such the agreed CIM model is not only used within the networks but also sets the best practice and standard to follow for any other digital solutions in the energy sector.

We see this investment as time critical, and propose the investment to be realised at the beginning of the RIIO-3 period. This will ensure timely input to other digitalisation initiatives in the energy sector. It will also allow us to contribute to the standard adopted for Data Sharing Infrastructure that has an anticipated roll-out date in mid-2028 (as expressed in the Ofgem Consultation on the governance of DSI).

Digitalisation RIIO-3 Roadmap	FY2026/27	FY2027/28	FY2028/29	FY2029/30	FY2030/31
Common Information Model for Gas (INV-38) in £m	[cost-sensitive data]	[cost-sensitive data]	[cost-sensitive data]	[cost-sensitive data]	[cost-sensitive data]

Table 2: Indicative timeline for investment

Figure 1 below illustrates how this investment contributes to our RIIO-3 Data Architecture Target:

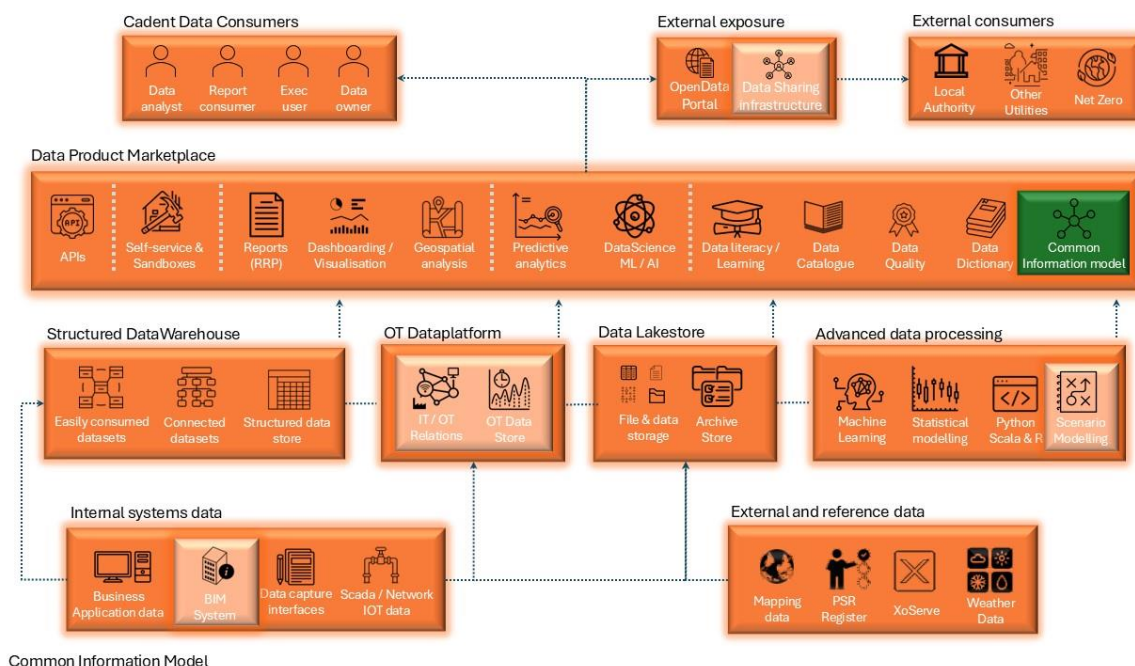


Figure 1: Cadent Target Data Architecture

6. Conclusion

This investment is a direct, joint gas distribution network response to the need for increasing interoperability within the sector. The proposal is to deliver this in an agile way using case studies to support the development of the model.

The most common Data Sharing requests from Stakeholders are for Data Assets describing at various levels of granularity the construction of the gas network and gas demand, contributing to energy transition discussions and analysis. This has been confirmed by our stakeholder engagement and is included in our [Digitalisation Strategy](#). The investment in the proposed common standard will support outcomes described under Principles: 2, 3, 4, 8, 9 and 11 of Data Best Practice and significantly mature our compliance with the guidance

7. Glossary

Acronym	Definition
AGI	Above ground installations
CIM	Common Information Model
DESNZ	Department of Energy Security and Net Zero
DSI	Data Sharing Infrastructure
GDN	Gas distribution network
LAEP	Local Area Energy Plans
MVP	Minimum Viable Product