WWU-Cat.1 - Non-operational Information Technology Capex Re-opener Application

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1 Table of contents

2 Glossary of terms

DBP	Data Best Practice
DSAP	Digitalisation Strategy and Action Plan
DESNZ	Department for Energy Security and Net Zero
RIIO	Revenue = Incentives + Innovation + Outputs
GD2	Gas Distribution 2
RFI	Request For Information
NUAR	National Underground Asset Register
ETL	Extract Transform Load

3 Introduction

This section is WWU's submission to Ofgem, requesting an adjustment to our RIIO-GD2 allowances related to data & digitalisation. This is required to ensure continued compliance with our obligations under Part D of Special Licence Condition 9.5 of our Gas Transporter Licence and to meet the evolving needs of our data users. This funding request reflects the evolved thinking and requirements in digitalisation that were not known at the time of the RIIO2 Business Plan, but which are required now to meet the needs of stakeholders and to give a sound platform for the further developments needed in RIIO3.

We understand the significance of data in enabling the transformation to net zero, supporting consumers and the vulnerable, and sharing externally information on the performance and operation of the gas network. We have made significant advances in data collection, quality, sharing and analysis in RIIO2 and have a culture, driven from the top, of continuous improvement in this area. We seek to facilitate an analogous scenario where data flows as readily, safely, securely and reliably as the gas in our network does to homes and businesses.

The shift in needs of stakeholders has been significant in recent years. We have responded to this and will continue to evolve to meet these expectations.

Our digitalisation strategy and action plan set out how we intend to deliver against the Ofgem guidance and licence conditions, the EDT findings and, crucially, our stakeholder needs. This submission represents the investment in systems and people we have already made, and need to make, in the remaining RIIO2 period.

The key challenges are being able to:

- identify the data information ask
- obtain, process and integrate the relevant data, meeting the data quality considerations of accuracy, completeness, reliability, relevance, timeliness and format
- analyse/aggregate the data if required
- make that data available to all relevant and appropriate stakeholders, risk assessed for any security, commercial, privacy and cyber considerations
- provide an easy feedback loop to drive future improvements

We have a clear view on how we meet these challenges. This view is explained, with justification, in this document.

4 Core narrative

This submission seeks [redacted] in RIIO2. This funding is required to resource and to support the necessary tools and platforms to develop DBP maturity and, importantly, to deliver what our stakeholders tell us that they want.

Our stakeholders' requirements align with our vision of an analytics hub or information hub i.e. they require data that has already been processed, combined, summarised and analysed as well as exclusively raw data. They want to be able to access this in a simple and timely manner with an intuitive feedback loop to our data experts.

To support this, we request funding for a data lake, an analytics tool and an open data platform to ensure a seamless flow of data and analysis to those who require it.

In addition, we will need to appoint several key roles to ensure appropriate governance is applied to the ever-evolving data needs and to support data users as they request, digest, navigate and feedback on our data assets.

The details of these systems and roles, the need to invest now and the benefits given are laid out in the sections below.

5 Needs case

The content of this submission is driven by the Data Best Practice guidance, our Digitalisation Strategy, Ofgem's 2022 digitalisation RFI and requirements gathered from our stakeholders and data users. Investment requested in our RIIO2 plan for digitalisation represented our views at the time, but thinking has developed significantly since then, as have requirements from stakeholders. We believe we need to act now in a number of areas and can't wait for the RIIO3 period. This request will deliver some key building blocks that will enable future ambition in RIIO3 to be delivered.

We are delivering against the 11 principles in the guidance, as tested in the Ofgem RFI

We have taken significant steps forward in this space since the first Digitalisation Strategy & Action Plan guidance.

- Our website went live with access to key datasets and a route for external data users to engage
- Created a Local Authority Energy Plan team to support Local Authorities with their data needs and the use of our Pathfinder tool for scenario planning
- Created a central team to provide a holistic approach to data, reporting and MI, data science and processing data requests
- Produced and published a data asset log – a log of data assets with owners and controllers
- Introduced a data triage process
- Risk assessed key data assets to determine level of data openness
- Assessed millions of data items to provide insight into data quality and feed our data improvement programme
- Built and launched a number of applications through our on-line mapping system to collect better data from the field to further improve asset health assessments and to inform the work on hydrogen conversion
- Centralised a data request tracker to aid our understanding of stakeholder needs

- Introduced improved governance through a Business / IT data & digitalisation steering group
- Created a business data group to inform data requirements and influence our digitalisation roadmap

In some areas our current resource and systems are limiting continuous improvement and funding is needed to further develop DBP maturity and to resource and support necessary tools and platforms. Our ask is a combination of new systems and key roles that link directly to the guidance and the direction of travel that stakeholders are asking us to take.

The key systems we need to invest in are:

[redacted]

There are areas such as interoperability, APIs and digital twins for which we have not included additional adjustments in this submission. Stakeholder requirements are not clear or compelling in these areas at this point in time. We continue to work with other energy companies and wider stakeholders to develop detailed plans in these areas. Investment to support these will feature in our RIIO3 Business Plan. The investment we seek to make in the remainder of RIIO2 considers these things and serves as a foundational enabler for these areas in future: [redacted] Is for ingesting and sharing data, as well as transforming it for interoperability and for attaching on relevant software such as for [redacted] as well as all the immediate benefits they will bring to our data stakeholders from day one.

Our offering is not just a data provision service, but an analytics and information provision service. From engagement with stakeholders, it is clear they need direct access to raw data but also data that has already been processed, combined, summarised and analysed. This has influenced our vision of an analytics or information hub and this plan will deliver against that.

5.1 Alignment with overall business strategy and commitments

We publish a data & digitalisation strategy and action plan in accordance with Special Condition 9.5. The requested adjustment to RIIO2 allowances will deliver in line with our strategy and commitment to the 11 principles set out in Ofgem's guidance. Our strategy and plan is included in this submission.

We have a separate commitment in our RIIO2 plan to support stakeholders with the use of our Pathfinder model – a tool to support local area energy planning. This Data & Digitalisation plan will improve accessibility to this tool and the data required to run the model.

5.2 Demonstration of needs case/problem statement

Currently in WWU [redacted]. This provides access to data at a point in time but there are challenges in providing regular updates as the process to obtain, combine, process and publish/share this data is manual. This medium provides little insight into who is digesting data and why. There are also limitations in how we collect feedback from data users on quality, general queries and potential improvements to data sets.

The range of data requested is varied, significant and sits across many systems in WWU as well as in external websites and data sources. This provides challenges in consistency of data shared.

Our data governance is good and has been tested by Ofgem's 2022 RFI, but is not centralised, is focused on current data and is driven mostly internally.

When considering DBP guidance and the stakeholder requirements highlighted above, we conclude that the priority investments and next steps are as follows.

- Invest in key systems to support future needs

  [redacted]

In addition to these roles, we are engaging with an organisation called [redacted]. Their aim is on developing skills in this space but with a focus on

diversity and inclusion. They employ and mentor [redacted] putting them into organisations such as ours to give them real life experience whilst delivering for the company. There is a large demand for skills in this area and we plan to bring [redacted] in RIIO2 to help deliver our digitalisation strategy with a view to expanding this in RIIO3 if successful.

Sections below expand on options we have considered to deliver the above, along with cost and delivery plans.

6 Options Selection

6.1 Description of options considered and selection process to reach preferred option

The proposed improvements to meet the digitalisation strategy and the needs of our stakeholders in line with the 11 DBP principles can be considered in two component parts:

[redacted]

[redacted]

[redacted].

This has enabled us to support stakeholder requests to date but gives significant challenges in moving forward to enable future stakeholder needs and ongoing maturity against the DBP principles. This option would also not scale to the data demands of our stakeholders in the future.

We have conducted a review of our existing platforms to identify the gaps that need additional capability to fulfil the requirements.

[redacted].

We have been engaging the market to understand available tools and capabilities to close these gaps and we propose deploying a cohesive set of tools to onboard, aggregate, analyse, meta-tag and publish open data to a publicly accessible platform as our vision.

REQ001:

In many cases we need to apply a different set of logic for external sharing compared to internal needs for running the business. A data lake will enable this which also makes it an essential tool in achieving data interoperability.

Preferred option: #2

REQ002:

[redacted]

[redacted].

Preferred option: #2

REQ003: Open Data Platform

There has been a significant move in energy networks to open data platforms. To share data, we currently post to a website, send by email or utilise secure file transfer systems. Stakeholders want more direct access to data, catalogues and metadata. Our website solution is open to all so we need to implement a system where particular data users can digest data we classify as 'shared' under legal agreements after a risk assessment – data that we would not publish for all.

We want to post data for external consumption in a more automated and timely way. We also want the ability to gather insight into who is digesting our data, how they're using it, what they think about it and what they want from it. Our current website solution is limited in functionality and user experience. We plan to implement an industry standard open data platform.

We have reviewed a number of products and solutions including:

Option 1: [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted], but it offered limited functionality above our current website solution and would not move us forward in this space.

Preferred option: #3

REQ004: [redacted]

[redacted]

[redacted]

[redacted] project completed by SGN and DNV and productionalise the benefits of real time network management.

Our search of the market has shown no other products that enable these requirements.

REQ005 - [redacted]

[redacted]

[redacted]

[redacted]

6.2 Preferred option details

REQ001: [redacted]

[redacted]

REQ004 [redacted]

[redacted]

[redacted]ur platform meets their needs

[redacted]

[redacted]

[redacted]

Dataflow

[redacted]

[redacted]

10. [redacted]

6.3 Project delivery and monitoring plans

REQ001: [redacted]

Project Milestone	[redacted]	Project Deliverable
Investment approval	[redacted]	**Approval to spend from our executive**
Procurement	[redacted]	**Achieving best price for the product**
Design	[redacted]	**A design document that meets requirements for the data we wish to hold and how we plan to use**

Implementation	[redacted]	**Initial data load of 5 key datasets**
Testing	[redacted]	**Sign off of functionality and operability**
Handover into support	[redacted]	**Providing a 24/7 support function for users**
IT Project closure	[redacted]	**Formal sign-off of the IT project element of this investment**
Further data loads	[redacted]	**Intention to have all significant data assets, prioritised by data users, in our lake**

REQ002[redacted]

[redacted]

[redacted]

Project Milestone	[redacted]	**Project Deliverable**
Investment approval	[redacted]	**Approval to spend from our executive**
Procurement	[redacted]	**Achieving best price for the product**
Design	[redacted]	**A design document to enable build**
Implementation	[redacted]	**Installed in our landscape and accessible to users**
Testing	[redacted]	**Sign off of functionality and operability**
Handover into support	[redacted]	**Providing a 24/7 support function for users**
Project closure	[redacted]	**Formal sign-off of the IT project element of this investment**

REQ003: [redacted]

[redacted]

[redacted]

Project Milestone	[redacted]	**Project Deliverable**
Investment approval	[redacted]	**Approval to spend from our executive**
Procurement	[redacted]	**Achieving best price for the product**
Design	[redacted]	**A design document to enable build**
Implementation	[redacted]	**Installed in our landscape and accessible to users**

Move data from current website	[redacted]	**One of load to replicate our current sharing on our website**
Testing	[redacted]	**Sign off of functionality and operability**
Handover into support	[redacted]	**Providing a 24/7 support function for users**
IT Project closure	[redacted]	**Formal sign-off of the IT project element of this investment**
Further data loads, responding to stakeholders	[redacted]	**Intention to have all significant data assets, prioritised by data users and subject to data triage, on our platform**

REQ004: [redacted]

[redacted]

[redacted]

Project Milestone	[redacted]	**Project Deliverable**
Investment approval	[redacted]	**Approval to spend from our executive**
Procurement	[redacted]	**Achieving best price for the product**
Design	[redacted]	**A design document to enable build**
Implementation	[redacted]	**Installed in our landscape and accessible to users**
Testing	[redacted]	**Sign off of functionality and operability**
Handover into support	[redacted]	**Providing a 24/7 support function for users**
Project closure	[redacted]	**Formal sign-off of the IT project element of this investment**

REQ005: People and skills

[redacted].

7 Stakeholder engagement and whole system opportunities

Our progress in RIIO2 to date and our plan for the remainder of the period is driven by the needs and requirements of stakeholders.

Ofgem is a key stakeholder in this space. The 2022 data RFI, subsequent feedback and conversations, coupled with the latest Data Best Practice Guidance has given us clear direction from Ofgem.

This has highlighted areas where, although compliant, further development is needed to deliver the long terms aims.

- **Describe data accurately using industry standard Metadata**
- **Make Data Assets discoverable to potential Data Users**
- **Ensure data quality maintenance and improvement is prioritised by Data User needs**

Whilst the principles are very valid and helpful, it is important we understand what they mean to our stakeholders to enable prioritisation of actions for continuous improvement.

We have proactively sought out data information and services that stakeholders want and need. As an example, we now use each data request interaction as a chance to understand what the data is being used for and how we can help facilitate the end goal. In a number of cases these conversations have led to us being able to give data that the stakeholder didn't realise they needed, or where we could pre-process the raw data to accelerate their projects. This is part of our intention to offer analytics and information, rather than purely the exact raw data asked for, as has been the historical tendency, which was an approach that can lead to lots of follow up questions and the realisation that the data asked for is not quite what is needed to achieve the end goals. From this more collaborative approach, our data stakeholders are getting more useful and more relevant data in the formats that work best for them, and we are able to understand the sorts of themes and objectives of the projects associated with the data requests. Recently, for example, we went through this process with the Environment Agency which was of great benefit to both parties as we were also able to learn more about their flood modelling work and how this could affect our network.

This, alongside our standard forms of stakeholder engagement, informs our process for proactively identifying the most relevant, useful, highest priority datasets to pass through our triage process and prepare for sharing.

Our vision, as put forward in this paper, would take this to the next level by allowing for a streamlined approach to pulling data out of various systems and files, ingesting into our analytics tool, where it can be processed, analysed, summarised and represented at various levels of regional aggregation, then fed into the data lake as a central hub for all core data, then published from there into the open data platform, tagged by themes, which will serve as a data sharing and collaboration hub.

This open engagement with stakeholders has shaped our plans in terms of responding to data information requests when identified by stakeholders. There is a clear requirement for not only providing raw data but also providing formatted data that informs, influences and inspires.

We have engaged with a range of stakeholders on the matter of data and data sharing over the RIIO2 period. Key stakeholders are:

- All 42 Local authorities in our region and their consultants working on Local Area Energy Plans
- DESNZ and their consultants working on net zero transition Welsh government
-
- Environment Agency
- Academia
- Independent gas transporters
- Other utilities including energy, water and transport
- Renewable energy producers
- NUAR
- Our own people

Their views on data needs are broadly focused on the current priority areas below:

- Network asset data
- Future work plans
- Supply and demand data
- Emissions data
- Vulnerability data

This data is increasingly required to be presented regionally and supported by metadata and data catalogues.

Digesting data

There is a clear mix of requirements from users, from needing one-off data snapshots with support from WWU personnel to understand the data, to easily accessing data online with supporting catalogues and metadata. There is also a clear need for provision of analytics on data rather than raw data, such as when presenting data by Local Authority, combining various raw datasets, or when aggregating data that cannot be shared in granular form for sensitivity reasons such as giving counts of customers on gas in a region, rather than by individual property.

For example:

- DESNZ need asset, emissions, consumer demand and cost data to support the hydrogen decision. They provide their own analytical capability. They are happy with one-off raw data snapshots in the short term but need quick access to data on an ongoing basis so want to be able to self-serve data access via a data portal
- The Environment Agency have requested access to our data via API – the foundation of this is first bringing the data into a central data lake and establishing a data portal
- Local authorities and their supporting consultants want supply and demand data coupled with asset data presented regionally. They want analytical support to develop their energy plans so raw data is often not the answer. They also often prefer a relationship with a WWU data expert rather than understanding data via metadata and catalogues
- Other utilities are interested in asset data but also future work plans. This data needs to be regularly updated for relevance and digested into core and common mapping systems.
- IGTs and renewable producers need a picture of our network that is regularly updated to reflect network changes. They seek a WWU system where they can log on when needed to digest the most recent data
- Academia are more exploratory and have a preference for the ability to access data on line with support from metadata and data catalogues

8 Cost information

Level of detail of cost information

Summary of Additional Allowance Sought:

[redacted]						
[redacted]						
[redacted]						

The forecast cost of systems and people is itemised in the tables below.

The cost of systems is derived through engagement with the market and our preferred system providers. This also includes implementation and ongoing support costs that reflect our experience of installing new applications, integration and costs of support through our external service providers.

We are using opportunity to minimise cost of systems through various means such as using the buying power and relationships within our ownership group for Microsoft products and understanding data size and volume for the open data platform. All system's specs are based on the actual data we hold and are being asked to share, with a realistic forecast of growth in the remainder of RIIO2. We have also minimised internal users for the analytics platform to ensure we don't pay for more licences than we will use.

Prices are in £000's and in 2018/19 prices.

REQ001 [redacted]

[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				

REQ002: [redacted]

[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				
[redacted]				

REQ003: [redacted]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

REQ004: [redacted]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

REQ004: [redacted]

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

The salaries of staff are based on a review of current salaries offered for the roles. It is important we attract talented people so need to pay a market rate. We have used the government guidance on key data and digitalisation roles so there is significant evidence of salary offering to recruit. [redacted]

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9 Project Breakdown and Delivery Management

The projects are at a pre-procurement stage and any procurement events will be run by our internal procurement department and the technical platform delivered by our infrastructure and application partners selected via OJEU compliant procurement events. Programme management is provided by internal IT project resources. The projects will be tracked and governed through our Business Performance Development Committee. Members include our CEO, Executive Team and the relevant asset, IT, Finance, and delivery senior managers. We will appoint a dedicated project manager to oversee the implementation of digitalisation related upgrades. This is consistent with our approach to system upgrades and new IT systems installations.

We have a cyber team that will review the systems, integration and access, to manage cyber risk.

Overall programme timeline: