



2024-25 Business Plan

Annex 4 | Business Cases





This report was published in September 2023

**2024-25 Business Plan**  
**Annexe 4 Business Cases**

Business Case documents provide a comprehensive overview of an identified need for investment. Business Cases should contain an informed view of the challenges, opportunities or risk mitigation that investments seek to address, as well as the solution options, costs and benefits associated with the investment.

We include here the Business Cases for the BP24 period:

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## GENERAL CHANGE

### Overview:

Each year, Xoserve as CDSP is required to make changes to the systems, processes and services it provides to Data Service Contract (DSC) customers, to ensure that the services remain compliant with all industry obligations and align with any rule/code changes that are introduced during the course of the year. In addition, we routinely engage with customers on the improvements and value-add opportunities that may be realised if changes are introduced to non-code services.

This 'general change' investment is required so the funds are in place when needed and we are in a position to make changes in a timely and effective way; ensuring that the changes are developed and delivered in line with industry and DSC customer expectations.

**This business case is intended for holding budget purposes only - more detail will follow in due course.**

This funding approach also reduces risk, notably to UNC signatories, as it means that regulatory changes that are being introduced into industry codes can be developed and delivered with greater certainty; as solutions, costs and timescales can be defined, agreed and approved using available funds.

In addition, the investment allows for continual improvement and innovation based on feedback from customers.

The purpose and size of the general change investment has remained relatively static over recent years. However, the scope and composition of individual segments have evolved, based on changes in industry and customer feedback.

This year, it is proposed that the general change investment budget consists of four segments:

#### **DSC Change Budget**

This is an annual investment made by customers to deliver changes approved for design and implementation by the industry elected DSC Change Management Committee (ChMC).

#### **REC Change Budget**

As with previous years, we have proposed to include £350k for the support of customer change processes. This plan assumes that any consequential solution delivery funding would draw from the DSC Change Budget.

#### **Non-Standard Data Item Reporting Budget**

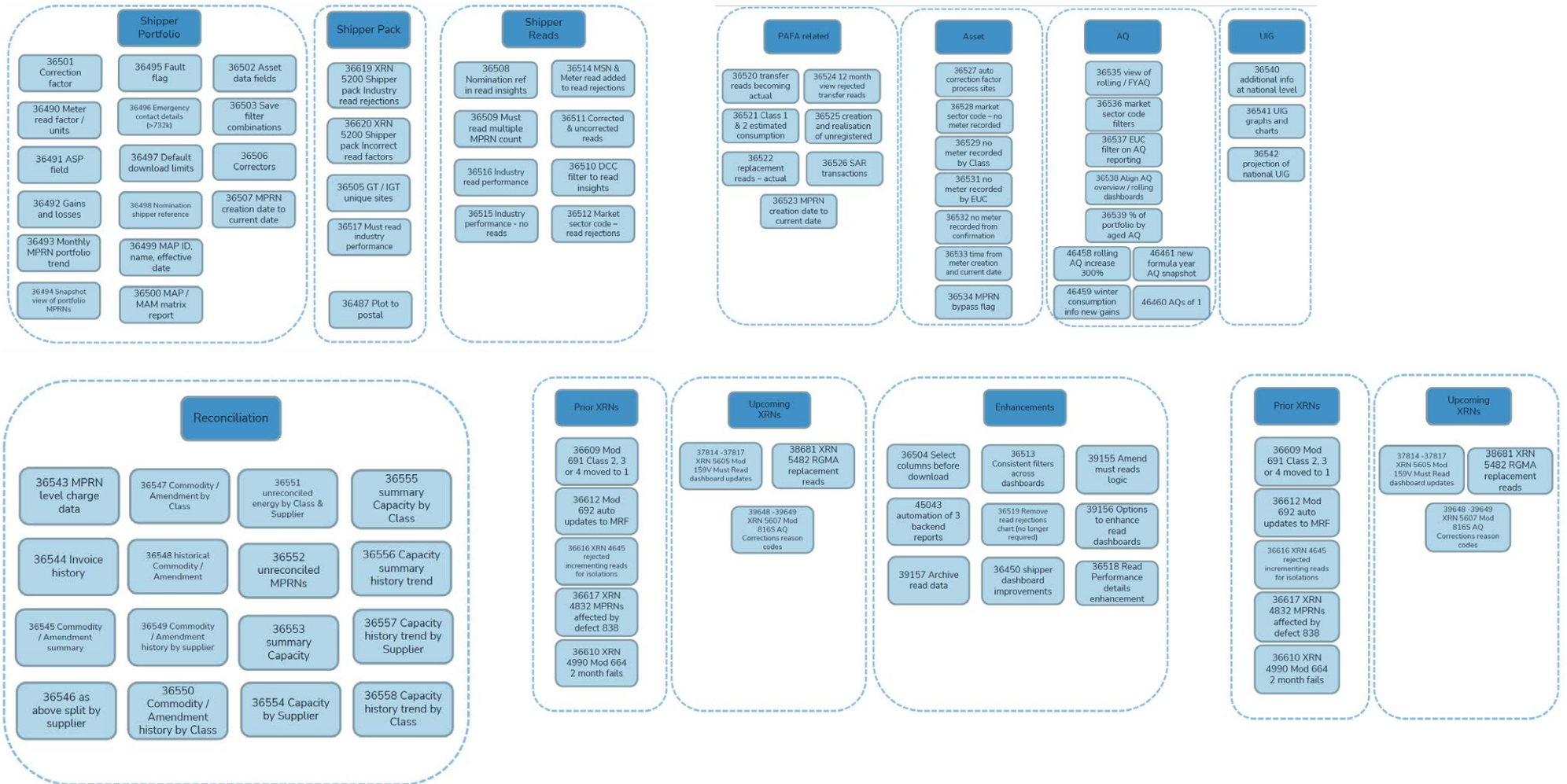
This is a budget reserved to fund additional reporting scope changes that may be necessary during the course of the performance year to ensure industry data reporting requirements are fully supported and adopted into the data landscape across CDSP systems.

#### **Open and Timely Data: Data Discovery Platform Core Delivery**

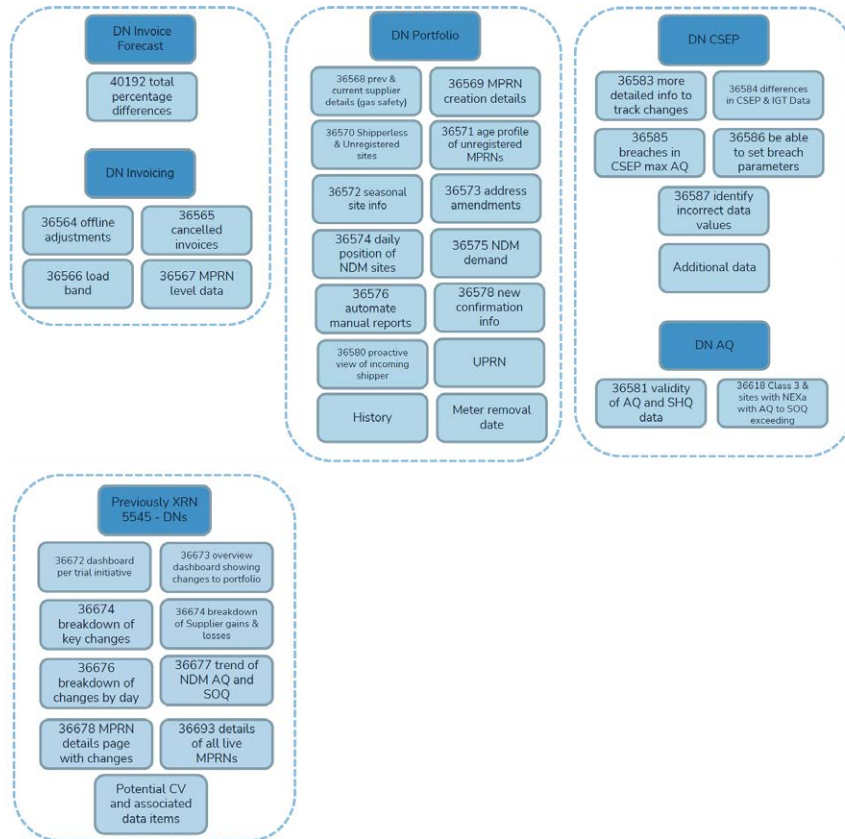
This funding allows for the continuation of improvements in how we provision data to customers through DDP, allowing customers to self-serve and access increased amounts of actionable insights.

## DDP Backlog

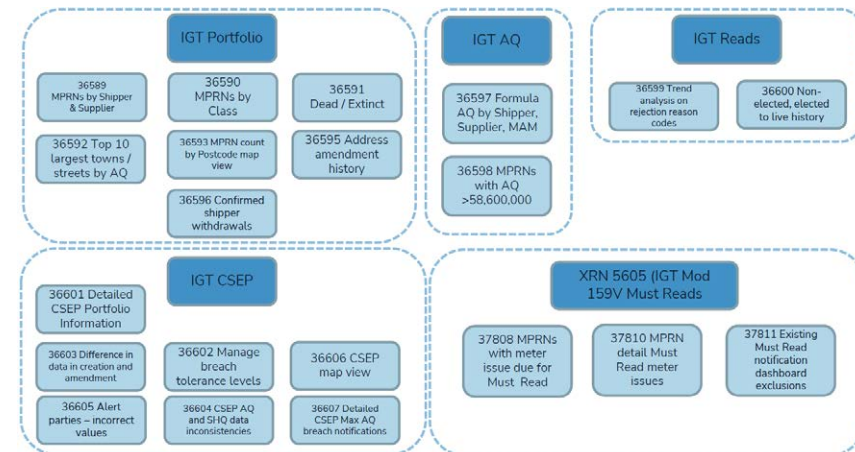
### Shippers



## Distribution Networks



## Independent Gas Transporters



## Solution options explained:

For DSC and REC change investments, Xoserve operates a 'draw down' approach to utilising investment funds.

This means that, for each change that is progressed, CDSP will provide multiple solution options where possible, with these being consulted upon and approved, prior to firming up delivery costs. These are in turn approved by our customers via our DSC ChMC to be drawn down from the general change budget as necessary.

Any unspent funds are reconciled and then rebated back to each DSC party based on the year-end financial position for the investment.

This allows for customers to make informed decisions based on cost, solution options and delivery timescales, and to be consulted and supported at an individual level. It also provides peace of mind that any funds which remain unspent will be returned as appropriate.

The Data Discovery Platform (DDP) investment operates on a time and materials basis, with all development and delivery activities progressing collaboratively with customers using an agile project approach.

- **Solution Option 1** proposes to retain the current total investment of £3.49m - while also introducing Open and Timely Data: DDP Core Delivery within the scope of general change investment.
- **Solution Option 2** proposes that DDP segment remains, as in previous years, as a separate investment within the Business Plan, with the general change budget covering only changes associated to Data Service Contract, Retail Energy Code and Non-Standard Data Reporting – this would see the general change investment totalling £3.11m, with the funds allocated to deliver DDP Core Delivery (£383k) being proposed under its own, individual Investment.

## Risks and Opportunities

As outlined in the Overview section, the key revisions of the general change investment budget are:

- reduction of the DSC change investment by £400k
- introduction of Open and Timely Data: DDP Core Delivery into the scope of general change investment, with the inclusion of associated funds of c.£383k

There is a risk that, by reducing the DSC change investment by £400k, there may not be sufficient funds available within the year to meet all of our customers expectations and delivery needs. However, given the historical trend of consistently returning large proportions of the funds from this investment area each year, and the ability to effectively plan and prioritise change demands with customers, we believe this risk has a low probability.

The main opportunity that will be realised by the proposed solution is to gain a consolidated view of all DSC customer driven change demand within a single investment area – allowing for UNC, REC, DSC and data-driven customer changes to be developed in a consistent manner with DSC customers, while also ensuring a well understood governance process and the criteria of DSC Change Management is applied across a full suite of customer changes.

This will further improve release planning and help us shape the DSC change delivery roadmap, informed by customer decisions.



## Drivers and analysis

The need for an investment to iteratively fund customer change has been a historic requirement, therefore a 'do nothing' scenario has not been considered.

Rather, the way the investment is structured has considered a combination of 'Bottom-up' assessment – based on known change demand and a 'Top-Down' assessment based on delivery bandwidth/utilisation and predicted customer and industry demand in the forthcoming period.

With respect to our 'Bottom-Up' assessment, we have used known and anticipated BP23 DSC delivery costs to shape BP24 Change Budgets, based on changes that reside within our Change Delivery plans, the latest version of which can be found [here](#).

We have also considered historical trends which have regularly demonstrated the need to have funds available to support urgent market-driven changes identified mid-year (e.g. seasonal industry critical change demand or urgent industry change demand linked to Incidents).

From a 'Top-Down' perspective, we have considered emerging customer and industry needs which CDSP is likely to support and deliver for our customers, relating to UNC Modifications and linked to key industry settlement arrangements (inclusive of UIG, Shrinkage), in addition to possible changing customer requirements relating to Meter Read, Annual Quantity and Supply Meter Point Class provisions – with several industry Reviews planned to take place over the coming year which are assessing industry arrangements relating to Supply Meter Point Classes and Meter Read provisions.

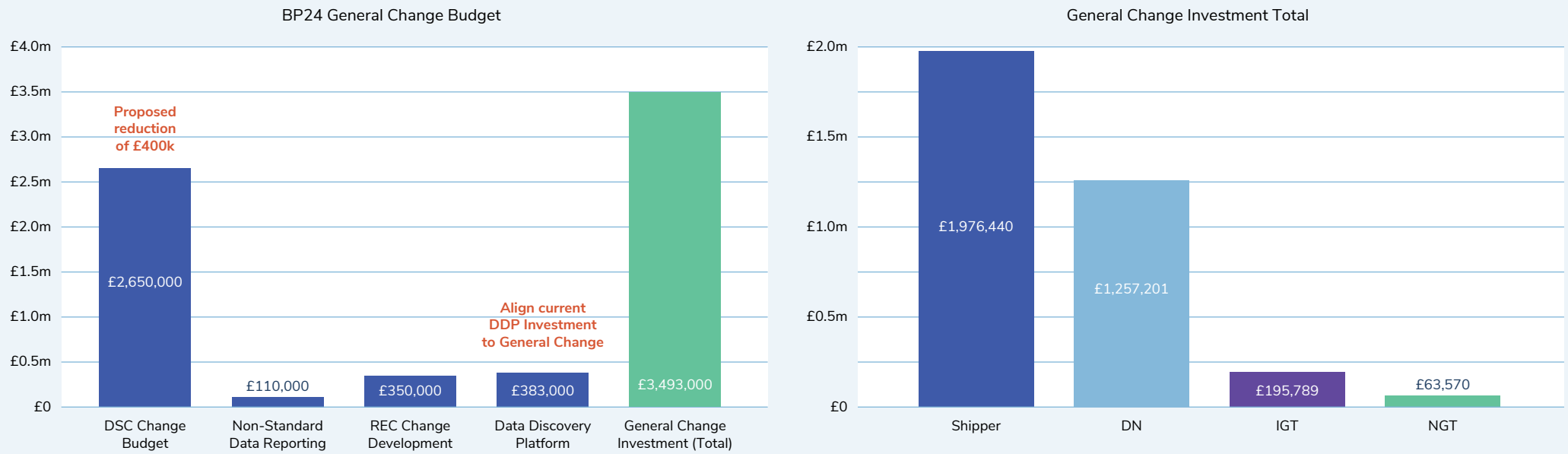
We also envisage a continued demand for customer driven changes linked to Supply Point Registration and Administration processes, as greater emphasis is placed on the reliability and accuracy of data which is integral to services that are afforded to our varying customers and their associated consumers.

Additionally, the inclusion of Data Discovery Platform within the general change investment supports our assessment that a consolidated view of delivery across our different suite of services will further improve our ability to collaborate and plan our activities with customers. Information on the DDP Backlog which has been captured and validated with customers is available (attached) - with current information reflecting approx. 150 User Stories across 21 topics.

## Financials

The graph provides a headline view of the breakdown of costs associated to each segment of the general change investment. The costs provided reflect those relating to Solution Option 1.

No impact on S&O costs has been identified, with this being an annual, draw down DSC investment. With respect to the changes that are delivered on behalf of customers, it is possible that 'operate' costs will be impacted by changes delivered via this investment. Historically, ChMC has approved uplifts to future S&O costs as a result of changes that require the provision of a new DSC service.



Further detail on the individual customer allocation of costs for each element of proposed budget are illustrated within the table below;

| Element                                  | Total £           | Shipper           |              | DN                |              | IGT             |             | NTS            |             |
|--|-------------------|-------------------|--------------|-------------------|--------------|-----------------|-------------|----------------|-------------|
|  |                   | £                 | %            | £                 | %            | £               | %           | £              | %           |
| DSC Change Budget                        | £2,650,000        | £1,529,050        | 57.7%        | £922,200          | 34.8%        | £143,100        | 5.4%        | £55,650        | 2.1%        |
| Non-Standard Data Reporting              | £110,000          | £49,390           | 44.9%        | £51,040           | 46.4%        | £1,650          | 1.5%        | £7,920         | 7.2%        |
| REC Change Development                   | £350,000          | £206,500          | 59.0%        | £124,250          | 35.5%        | £19,250         | 5.5%        | £0             | 0.0%        |
| Data Discovery Platform                  | £383,000          | £191,500          | 50.0%        | £159,711          | 41.7%        | £31,789         | 8.3%        | £0             | 0.0%        |
| <b>General Change Investment (Total)</b> | <b>£3,493,000</b> | <b>£1,976,440</b> | <b>56.6%</b> | <b>£1,257,201</b> | <b>36.0%</b> | <b>£195,789</b> | <b>5.6%</b> | <b>£63,570</b> | <b>1.8%</b> |

## Benefits

As with previous Business Plan years, the benefits realised for the changes that are developed and delivered using this investment are unique to each individual change proposal. Typically, benefits include making industry processes or central systems more efficient or improving varied industry processes such as Settlement, Supply Point Administration, Reconciliation and Invoicing.

In the case of changes that are brought about by modifications to the UNC, consumer benefits form an integral part of the industry Panels and Authority decision making process. These benefits are then realised once the change is made to central systems, such as UK Link.

Benefits range from improving arrangements within the competitive gas market to reducing costs associated with inefficient or inequitable processes, which in turn are passed through to consumers.

Should customers choose not to secure this investment funding there is a risk that this could lead to delay in the development and delivery of industry and customer benefitting changes, while necessary funds are agreed and recovered.

## Performance measures

Impacts on existing performance measures/new performance measures will be determined by the solutions being delivered relevant to each individual change. We would expect that any impact would be either neutral or positive improvements to existing KPM/PIs.

All KPMs relating to Managing Change will continue to be adhered to (namely PI 14 - 16 inclusive and PI27) – with these measuring the quality (in terms of identified delivery defects) and timeliness (in terms of missed project milestones) of project deliveries.

Inclusive within customer requirements that are agreed and approved, we will ensure data is available to support successful delivery tracking of changes that are implemented, with statistical insights and management information (MI) being regularly reviewed by Business Owners and shared with customers to demonstrate how successfully adopted changes are that have been delivered.

No specific capabilities or requirements are needed for the overall investment, with available funds from each budget being drawn down to secure the necessary resource and technology, tools and systems to be able to deliver agreed solutions.

## VfM

### Efficiency

Investing in general change enables funds to be included in customers' financial forecasts, preventing the need to iteratively agree funding arrangements for incremental changes that need to be progressed and delivered on behalf of customers and industry. By definition, this also allows for certainty of budgets and for faster turnaround of change activity.

### Economy

Operating a drawn down approach to the DSC change and REC change budgets ensures that only changes that have been approved by industry or agreed by customers can utilise these budgets, with all unspent funds being rebated to respective customers.

In addition, the proposed £400k reduction of DSC change budget from BP24 recognises that previous years' Business Plan investments in Test Automation have produced an expected 25% reduction in delivery efforts associated with project testing activities.

### Effectiveness

Our approach provides the flexible and customer-driven capability to enable the delivery of known, and as-yet unknown, changes and the ability to deliver change at short notice. This is especially important when change is mandated by industry code obligations. We have used our experience, trend data on change delivery from previous years, and Change Pipeline and Backlog information to ensure that the requested funds allow for options to remain open in the face of uncertainty in the market.

Additionally, the inclusion of DDP within general change investment will enable the same level of control and governance operated under DSC ChMC procedures to be applied to customer driven DDP deliverables.

### Equity

Costs for each segment of general change investment are allocated in the same way as has been agreed in previous years, details of which are available within the financial section of this business case. A summary of the overall percentage share per customer for the total investment is outlined below;

- **Shipper: £1,976,440 - 56.6%**
- **DN: £1,257,201- 36.0%**
- **IGT: £195,789 - 5.6%**
- **NGT: £63,570 - 1.8%**





## UK LINK

### Overview:

The UK Link roadmap is a multiyear programme of work with the objective of completing a mandated upgrade of the UK Link estate by 2027 (or 2030 with extended support). Investments made under previous Business Plans for 2020-2023 were consistent with the stated drivers and were critical to sustaining performance of the platform and reducing the cost to serve.

The upgrade of UK Link components was successfully completed in January 2021 and ensured that the platform remained within mainstream vendor support. Specific investment under BP22 delivered UK Link's move to the public cloud, which was implemented in April 2022. The programme also redeveloped customer interfaces such as UK Link Portal and set up robust security and operational layers in the cloud.

Customers have benefitted from a reduction in platform downtime and service disruption, significant improvements to infrastructure scalability and flexibility, and a £727k annual operational cost saving from 2023 onwards.

BP23 continued the journey to modernise UK Link application layers, as standard support for the current System Applications Product (SAP) software comes to an end in 2027 (or 2030 with enhanced support).

Due to the complexity of the UK Link estate and to ensure the best outcome for customers, investment in BP23 focused on a detailed discovery project, along with 'Sustain and Service' improvements. This is to determine the options that are available to transition from the current application suite to a target solution in the most efficient way - and one that can adapt to the changing energy landscape.

The discovery project is ongoing at the time of writing and is expected to conclude in Q2 2024. This phase will be critical to providing Xoserve and its customers with the information required to make the right investments at the right time; to ensure that the platform remains sustainable and continues to evolve alongside the changing needs of the industry,

We will then seek to use the investment to continue the multi-year transformation of UK Link in accordance with the decisions that DSC customers make when armed with the information from the discovery phase.

BP24 therefore proposes a 'Sustain' budget for essential maintenance and an 'Optimise' placeholder budget to enable us to respond to customer spending choices based on discovery findings.

## Solution and options explained

There are three core options for moving forward, with differing timescales:

| Options & Timeline  | Scope   | Customer Impact  | Benefits   | Costs*                    | Ranking  |
|---|---|--|--|---------------------------|----------|
| <p><b>Option 1 – Sustain only</b></p> <p>Timeline: 2024-2030 (and beyond)</p>                           | <p>This option does not implement any discovery findings other than sustaining activities in the medium term. Transformation commences much later (2027 or later if customers accept an unsupported solution beyond 2030).</p>  | <p>Lower level of investment from 2024 to 2026 but high investment from 2027 onwards. Full use of extended support, greater risk of technology failure if the programme extends beyond 2030.</p>   | <ul style="list-style-type: none"> <li>• Low Investment in years 2024-2027</li> <li>• Extended support model.</li> <li>• Transition commences much later (2027 or later).</li> </ul>   | <p>£2.4m<br/>(£4.6m)</p>  | <p>2</p> |
| <p><b>Option 2 – Commence transformation activities from BP24</b></p> <p>Timeline: 2024-2027</p>        | <p>Start transformation from the current application version at pace. This option allows for some opportunity for Optimisation. However, the transformation journey would finish prior to some major energy industry decisions, e.g. the decarbonisation programme.</p>   | <p>Higher levels of investment from BP24 to BP27 – avoids the extended SAP support period. Approach doesn't allow for full optimisation, likely to result in regret spending and more cost post 2027 to adapt to major energy Industry decisions.</p>      | <ul style="list-style-type: none"> <li>• Transformation for current applications starts immediately and at pace.</li> <li>• Higher near-term investment outlay for modernising platform (2024-2027)</li> <li>• Avoids the need for extended SAP support from 2027 onwards.</li> </ul>                                      | <p>£4.6m<br/>(£19.6m)</p> | <p>3</p> |
| <p><b>Option 3 – Optimise and replace in line with Industry changes.</b></p> <p>Timeline: 2024-2030</p> | <p>Implement discovery phase recommendations in a phased manner over the next five years in consultation with customers. This will allow time to fully optimise UK Link and more opportunity to align transformation to major industry changes such as decarbonisation (synergise investment where possible).</p> | <p>Uses extended support period, investment profile over 5 years, greater opportunity to reduce overall run costs through UK Link optimisation, lower risk of regret spending due to targeted alignment with Industry programmes e.g. decarbonisation.</p> | <ul style="list-style-type: none"> <li>• Maintain and sustain current UK Link systems to 2030.</li> <li>• Opportunity to undertake a phased transformation based on discovery outcomes and customer choice.</li> <li>• Increased flexibility to accommodate the increasing pace of industry/regulatory changes.</li> </ul> | <p>£3.9m<br/>(£13.2m)</p> | <p>1</p> |

\* Costs are reflective of the singular BP24 amounts as well as the forecasts for 3 years totals (2024-2026) All costs shown are estimated and will be further refined based on discovery work and the transformation option(s) chosen. BP25 and BP26 costs will be requested and approved in future business plan years.

Our recommended option is **Option 3 – Optimise and replace in line with Industry changes**. This investment plan is focused on fully understanding all options before progressing on a path of UK Link modernisation and requests a placeholder budget that allows customers to make conscious choices on spending, based on discovery outcomes. Further explanation of the discounted options can be found here.

Option 3 will be undertaken as a continuation of previous years' Sustain phases, following the discovery phase in BP23. It allows us to implement robust, cost-efficient transformation plans over the next five business plan years, to maintain and upgrade the systems as needed and ensure the changes are aligned with the direction of industry changes such as decarbonisation. We believe that the two roadmaps should be closely aligned to maximise synergies and to avoid extra cost and/or rework.

The recommended option adheres to these key strategic principles –

- UK Link Roadmap delivers long term value and efficiencies to the way we operate and deliver change to our systems.
- We maintain and sustain current assets to 2030, thereby protecting UK Link and removal of risk to DSC service provision, while simultaneously rationalising and optimising the estate.
- We minimise disruption caused by decarbonising gas systems - conducting transformation activities in step with major industry changes to deliver VfM, minimise rework and deliver operational savings.

The key benefit of taking this approach is that it allows for least-regret investment. It delivers sustained CDSP systems and provides the opportunity for timely and optimised investment cases. Through this approach, we can confidently deliver true VfM to all parties by transforming current legacy components into a modern, cost-efficient and scalable platform. Operating costs and the ongoing cost of change will be reduced.

Benefits of the recommended option are:

- the opportunity to undertake a phased and transparent transformation based on discovery outcomes and customer choice.
- improved efficiency through reduced or avoided UK Link operating costs.
- increased flexibility to accommodate the increasing pace of industry and regulatory changes.
- the opportunity to implement secure-by-design architecture that maintains and enhances data security.



## Investment drivers

UK Link continues to hold a place at the heart of the gas industry, supporting CDSP service provision. We can expect to see an increased pace of regulatory changes as the market evolves to accommodate various industry wide initiatives, such as gas blending, and it is important UK Link transforms into a future-fit system that can continue to adapt to industry requirements.

The BP24 investment programme consists of three main roadmap themes of change, collectively looking to reduce risk and inefficiencies and deliver savings opportunities.

- **UK Link Sustain+ (formerly UK Link Future Enhancements):** The key aim of this investment is to reduce risk and maintain the current application suite into 2030 and beyond. The application layers have remained largely untouched since their design and delivery through the Project Nexus Programme (2014-2017) and have increased in complexity with various industry changes including the CSSC Programme delivery in 2022.

There are three steps that will need to be taken to protect the estate:

1. Firstly, sustain our estate and realise VFM transformation for some of the UK Link estate (output will be from the discovery project being delivered during BP23).
2. Reduce future transformation complexity and risk, by modernising legacy applications and removing redundant custom code.
3. Confidently transform at the right time to an optimised and innovation-agile landscape driven by CDSP strategy rather than product vendor mandated upgrades.

- **Core platform migration:** Due to the monolithic nature of the UK Link SAP system, there are many Enterprise Resource Planning (ERP) components that form UK Link, and all require migration via application replatforming to a suitable platform. The discovery phase will determine the options for this.

The current applications are not easily composable from prebuilt components. Some are inflexible and do not readily align to a modern approach to application architecture. This roadmap seeks to drive efficiency to deliver a robust, flexible, scalable and value for money solution by upgrading or replacing/synergising the various application layers as per the discovery findings Key drivers for this theme are:

1. Careful transition to modern, efficient and a more modular architecture.
2. Support the future-fit enterprise needs of adaptability, flexibility, and resilience.
3. A roadmap and ecosystem to foster future success: taking a longer-term outlook of the market and ability to deliver changes in line with industry demands.

Please note this investment does not request any funds for core platform migration in 2024 preferring to focus on Sustain plus activities first.

- **UK Link service essentials:** This focuses on the continuation of the IT Operations Management (ITOM) workstream to improve the reliability and confidence in UK Link critical file monitoring and delivery.

The File Transfer Interface technology upgrade continues to support customers in a move to a more secure, flexible, and scalable model, as well as mitigate the issues associated with removal of BT ADSL lines by the end of 2025, which would result in much higher Physical Information Exchange (PIX) charges for customers.

The three themes described above are the recommendations for spend that will underpin Xoserve's core CDSP systems strategy, reduce risk, improve customer experience, and enable new services to be designed that align to the right architectural principles to support industry transition to a low-carbon gas future.

The discovery phase being undertaken in BP23 will lay the firm foundations for the transformation journey by describing the most viable and cost-effective options to undertake the value transformation of UK Link. These options will be presented to DSC customers to enable investment decisions to be agreed. This is consistent with our previously communicated vision for UK Link systems.

Should this investment not be made, there is an increasing risk of reduced satisfaction with the provision of Xoserve CDSP services, increased cost for customers due to an unsustainable platform and greater risk of the failure of key systems and processes.

By adopting the approach in option 3, we would continue to provide oversight and governance across all projects, drive the delivery of transformation, provide a consistent view of progress to all customers and stakeholders, and seek appropriate approvals at various points of significant investment as per the agreed CDSP governance.

Option 3 will deliver the required sustain programme, while awaiting the delivery of discovery results to determine the right cadence of investment.

Key projects within the 3 main themes are listed below -

**UK Link Sustain+:**

- Sustaining activities associated with UK Link SAP, infrastructure, and networking components. Sustaining current UK Link solution components (reporting, data transformation and monitoring layers) and continuing to maintain current assets as long as technically feasible.
- Sustaining and maintaining UK Link Batch Integration and file processing.
- Placeholder budget for findings of discovery phase and proof of concept (PoC) to inform the direction of the UK Link Roadmap, allowing for transformation of parts of the estate where optimisation is possible.

**Core Platform Migration:** In Option 3, no new investment is sought for core platform migration related activities until BP26 (post completion of Sustain+ activities in 2024-2026).

**Service Excellence:** Software and integration of the New Operating Model (ITOM) into the Service Management modules that support the UK Link estate.

From the high-level assessment completed so far, there is high confidence that discovery outputs are likely to provide opportunities for some UK Link components to be transformed in order to realise value.

This solution option therefore creates opportunities to:

- maintain and sustain the UK Link suite of systems while commencing core transformation activities much later in 2026/2027.
- operate within previous BP years' budget allocations for Sustain+ while requesting a placeholder budget to fulfil any opportunities where solution options have a clear benefit ahead of core transformation.
- delay further UK Link investment in BP24, allowing us to avoid some of the risks associated with uncertainty related to decarbonising gas systems. The time delay will allow us to fully understand the decarbonisation journey and incorporate known dependencies (such as blending) into our solution design, reducing wasted effort and the need for rework.

## Capability requirements

The capabilities required to deliver the UK Link programme are detailed in the table below.

As the projects are interconnected, these resources would be required across the overall programme delivery function.

| Capability   | UK Link Programme |                    |                         |
|--|-------------------|--------------------|-------------------------|
|  | UK Link Sustain+  | Service Excellence | Core Platform Migration |
| Programme management   | X                 | X                  | X                       |
| Project management   | X                 | X                  | X                       |
| Business analysis  | X                 | X                  | X                       |
| SAP analysis and design  | X                 |                    | X                       |
| Architecture support   | X                 | X                  | X                       |
| Functional SMEs  | X                 |                    | X                       |
| Technical SMEs / developers<br>(skills dependant on final designs) | X                 | X                  | X                       |
| Quality assurance and testing                                      | X                 | X                  | X                       |
| Training   | X                 | X                  | X                       |
| Service architecture   | X                 | X                  | X                       |

There would also be a dependency on Xoserve’s customers and stakeholders to be involved in options review/approval through the established governance process.

## Financials

| Theme                        | Costs  |        |        |
|------------------------------|--------|--------|--------|
|                              | BP24   | BP25   | BP26   |
| UK Link Sustain+ a) Sustain  | £1,800 | £1,000 | £1,000 |
| UK Link Sustain+ b) Optimise | £1,500 | £2,000 | £2,500 |
| UK Link service essentials   | £560   | £270   | -      |
| Core platform migration      | -      | -      | £2,500 |

The Sustain+ investment theme consists of Sustain and Optimise elements, of which Optimise is a drawdown budget for BP24 based on discovery phases during BP23.

The Sustain budget consists of the following cost estimates for BP24:

| Cost Estimate Breakdown* | BP24 |
|--------------------------|------|
| Third Party Costs        | £750 |
| Licence/Subscription     | £550 |
| People Costs             | £500 |

Allocation of investment funding;

| Funding Split %*                                | NTS  | GDNs  | IGTs | Shippers |
|---|------|-------|------|----------|
| BP23 (2023/24)                                  | 7.2% | 46.4% | 1.5% | 44.9%    |
| BP24 (2024/25)                                  | 7.2% | 46.4% | 1.5% | 44.9%    |
| BP24 – other years<br>(If different from 23/24) | 7.2% | 46.4% | 1.5% | 44.9%    |

\* As per rules laid down in the DSC+ Budget & Charging methodology. Historically, this methodology has been used when all industry parties benefit from a change investment.

The licensing and subscription costs will cover the requisite licences, environment, and subscription costs for maintain/sustain components to ensure our sustaining elements are delivered safely and efficiently. Licences will include Batch software, File/API transfer, Public Cloud environments, Database (e.g., SQL), Compute costs and other Infrastructure costs (CPU cores, memory, Network fabric) and Storage (Object, File and Block), Security and Monitoring.

Third-party and people costs provide specialist resources and tools with the relevant proficiency required to deliver the projects under this programme.

The proposed investment is a value driven, optimised upgrade or replace path to the new platform.

The UK Link programme will look to bring continuous, shareable resources across the projects where possible.

It is planned to only use third-parties where the following drivers are met:

- Specialist resources required to support programme delivery, and
- Existing knowledge of the wider ecosystem.

The investment supports the maintain and sustain objectives in place for the current platform as well as all transformational changes to UK Link effectively and efficiently.

The simplification of the platform will support Ofgem's direction for a decarbonised, decentralised, and digitalised energy future by leveraging the capabilities and flexibility of the estate. This approach can drive efficiencies and respond to market changes faster and more easily.

## Benefits

The preferred solution provides a UK Link roadmap which meets the drivers for a robust, responsive and value for money solution by rewriting/replacing the current UK Link platform. This will be achieved through the multi-year UK Link programme.

### Risk avoidance:

- We will avoid negative impact on DSC service levels by undertaking the near-term sustain activities required to remain in vendor support for the current architecture. If this were not to occur, there would be the high risk of application performance lag, bugs being introduced to the platform, application/infrastructure failure or security breaches, which could result in complete service failure or unavailability.
- Technology upgrades will deliver a more sustainable platform, reducing the risk of future product or infrastructure failure.
- The UK Link Roadmap establishes a controlled approach to maintaining service, rather than reacting to an increasing service risk profile that may exist by running 'end of version/life' components. This increases the possibility of application and infrastructure errors being encountered that cannot be rectified by the vendors. This approach will deliver greater platform flexibility to respond to potential future customer needs.

**Cost avoidance:**

- This approach will avoid the costs of an enforced upgrade of physical Information Exchange (IX) hardware (due to mandated ADSL decommissioning) of c.1.5m per year.
- We will also avoid increased licence costs from BP24 onwards for batch integration.

**Efficiency benefits:**

- Operating costs will be reduced for UK Link infrastructure layers (£727k/year) BP23-27.
- Customers will be on-boarded onto a reliable, and scalable virtual IX network.
- Implementation of end-to-end file and data monitoring will simplify reconciliation, monitoring and alerting of file flows.

**Reputational benefits**

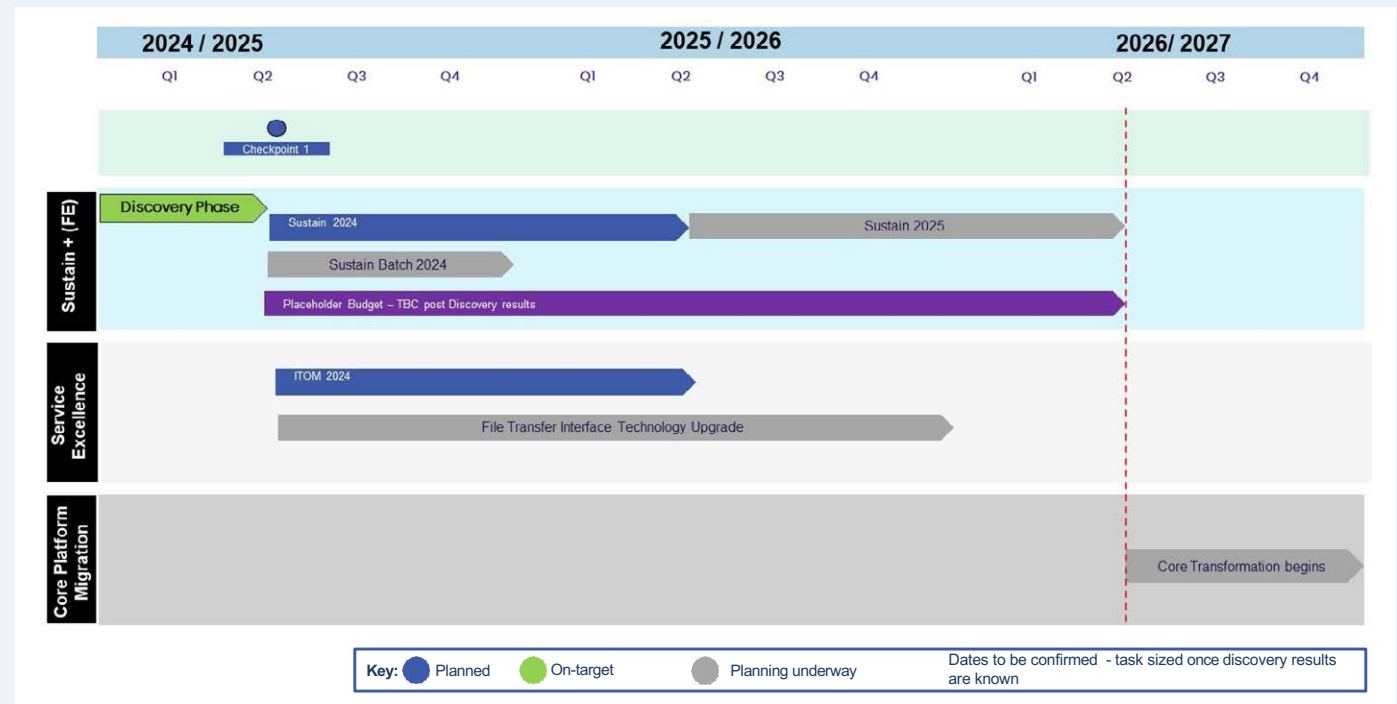
- A sustained platform will result in fewer failure points within the UK Link application landscape. A lower number of incidents will be raised, therefore minimising the impact on industry participants and system downtime.
- All UK Link systems will have the latest requisite upgrades applied to aid resolution of any bugs and inefficiencies in processes and reduce the risk of failure, protecting CDSP service provision.
- Relevant security upgrades will be prioritised for the remainder of the Sustain+ period.
- Financial and operational impacts will be reduced for all industry participants, by reducing the likelihood of files or data not being processed and allowing for early intervention and remediation following an incident.

## Performance measures

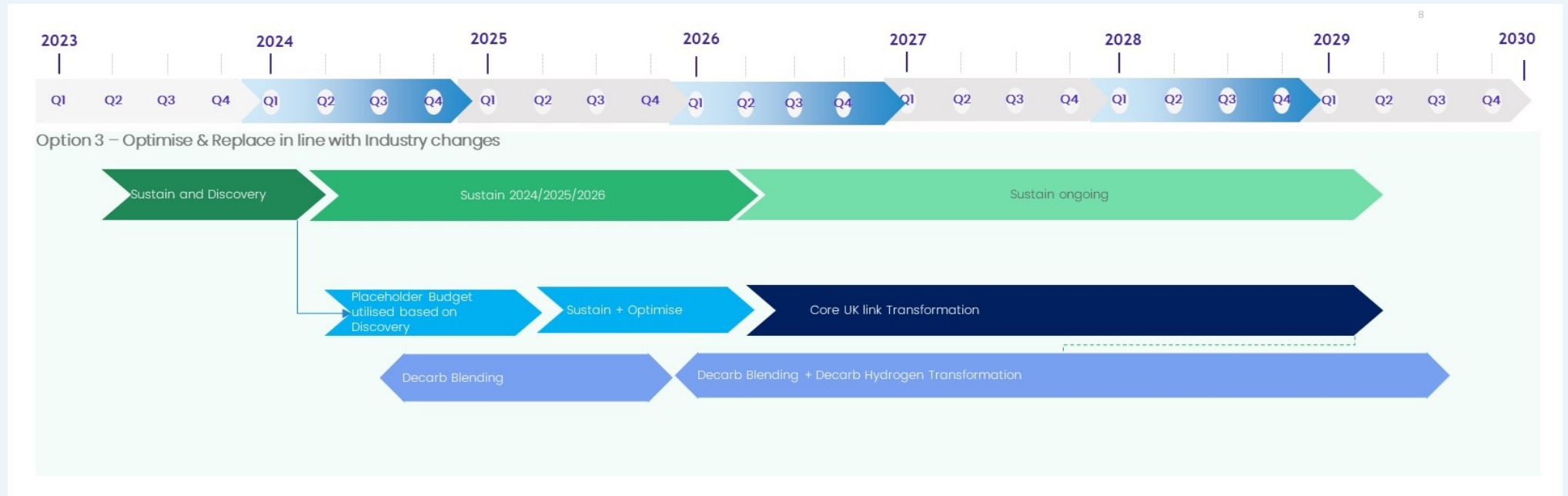
KPMs remain the same for the UK Link suite of systems, as defined in DSC contractual obligations. Further measures may be defined as per the individual projects required for core transformation in future years. These will be identified and agreed as part of any projects approved.

## Implementation approach

The implementation approach for this programme will be split into key deliverables for the 2023 – 2024 period for Correla and our third-parties to deliver, to ensure that the key prerequisites for BP24 are in place. The plan below covers the BP24, 25 and 26 period and is indicative of forecasted delivery timescales.



It is expected that this programme will continue into BP25-29 depending on customer feedback and what is identified in the discovery assessment phases of each project. The potential indicative delivery roadmap is shown below, but is dependent on completion of BP23, BP24 and associated BP25 investment years.





## Milestone summary:

Milestones will be dependent on the statement of works (SoW) approval and are intended to be indicative of timescales. These timings will be reviewed during detailed project planning:

| Project / Delivery           | Project Ref | Milestone  | Description  | Target Date |
|------------------------------|-------------|--|--|-------------|
| UK Link Platform - Discovery | XRN5619     | High level solution options  | Options defined from the discovery and PoC projects.   | 31/03/2024  |
| Sustain 2023                 | XRN5663     | Implementation complete  | All sustaining activities complete for the scope of UK Link Sustain 2023                             | 31/03/2024  |
| Sustain 2024                 | TBC         | Sustain elements for 2024 based on Discovery & Sustain 2023          | All sustaining activities complete for the scope of UK Link Sustain 2023                             | 31/03/2025  |
| Service essentials - ITOM    | TBC         | ITOM Phase 4 complete  | Completion of the activities in IT Operations Management (ITOM) workstream                           | 31/03/2025  |
| Service essentials - PIX     | TBC         | Completion of technology upgrade                                     | All technology upgrade activities complete for the file transfer solution                            | 31/12/2025  |
| Placeholder budget           | TBC         | Project(s) initiated and approved as per recommendations of XRN 5619 | This is a placeholder budget to be requested as appropriate based on findings of the discovery phase | 31/03/2025  |

The programme manager, along with the respective project managers, will review these milestones, in line with the tasks that need to be performed to achieve delivery. The programme is not forecasted to close at the end of BP24, there is an expected continuance of the programme into BP29 and potentially BP30. The discovery and assessment phases are to gauge the success of the projects, to forecast the next set of deliverables, and to identify any lessons learned.

## Risks and opportunities

### Risks

- There is a risk that without continued investment in UK Link core components these would become unsupported. In the event of an incident this could lead to a loss in service for a sustained period, impacting customers in the delivery of DSC contractual services and causing wider issues across the UK Gas industry. This risk is being mitigated by requesting the continuation of funding to ensure all components are suitably sustained in the coming years.
- The delivery of the technical solutions is dependent on the successful completion of a series of PoCs) and the discovery project being completed during BP23. This risk is being mitigated by ensuring BP23 continues to deliver to its stated objective of completing discovery in 2023/2024.
- There is a risk to the solution around the timing and scale of additional regulatory changes due to the unknown nature of the decarbonisation programme plan as it awaits key government decisions. We continue to work closely with all industry participants to plan adequately to face this uncertainty.
- There is a risk of delay in the discovery, design and implementation of the new platform given the scale and complexity of the roadmap delivery. This risk is being monitored through the current business plan.
- There is a risk of paying higher maintenance costs for extension in 2027. This is subject to the SAP end of service life (EOSL) date and support charges which could be revised by the vendor. This risk is being monitored closely.

### Opportunities

- The following key opportunities will be delivered by the solution:
- Improvement of business resilience and reduction of risk to DSC service provision by delivering the required UK Link Sustain projects.
- An opportunity to explore all potential optimisation and efficiency options offered by the discovery phase.
- Delivery of transformation via a phased transition that allows us to begin to test the value of future technology on a smaller scale and evolving the estate to a more modern application framework that can scale and flex according to our future needs.
- Improved efficiency through reduced operating costs.
- Delayed investment into UK Link, with current investment enabling cost-efficient change to meet the demands of the industry. As future requirements become clearer, required changes to the UK Link platform can be synergised with the decarbonisation programme.

## The alternate solutions

The alternate solutions for UK Link are limited considering the mandated approach of the platform upgrade and the discovery investment undertaken in BP23. As a result, we only considered two viable alternatives: Sustain Only and Commencing Transformation activities from BP24

### 1 – Sustain Only

This alternate option entails a sustain only approach to UK Link systems and pushes for the maximum extension of current system architecture to continue the delivery of UK Link services.

A sustain only budget would be required to undertake minimal sustain/maintain work until 2027 (and beyond, depending on customer choice). Delivery recommendations from the discovery phase in 2023 is moved out to 2027 under this option.

Key pros/cons for this approach are:

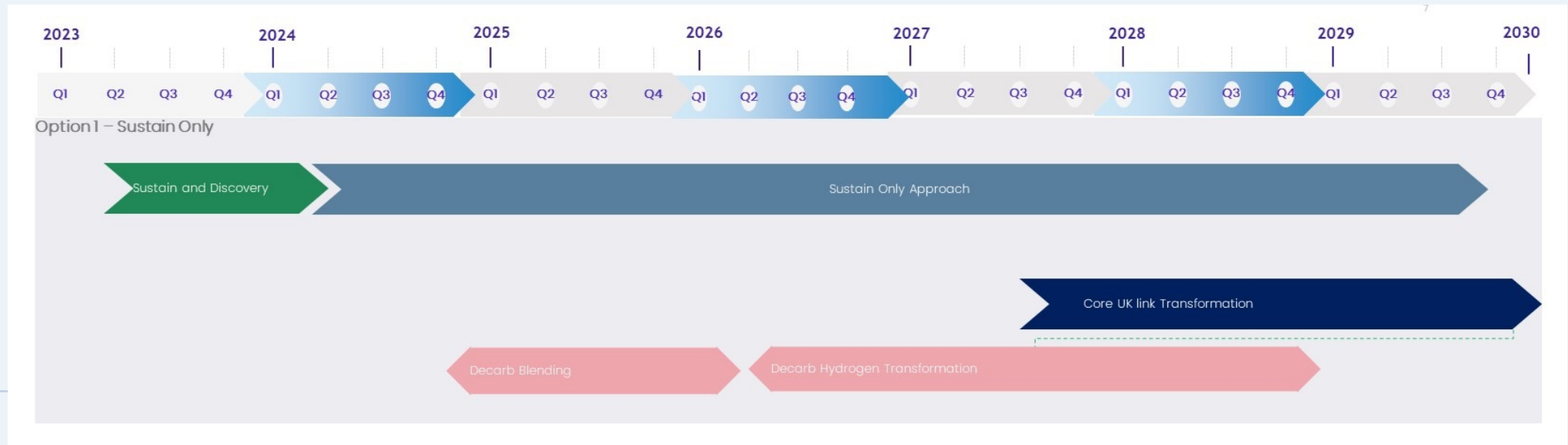
- This option does not consider any discovery findings other than sustaining activities in the medium term.
- Transformation commences much later (2027 or later if customers accept an unsupported solution beyond 2030).
- Customer impact – lower level of investment from 2024 to 2026 but high investment from 2027 onwards.
- Full use of extended support - extended support costs would be incurred from 2027 to 2030.

- Continuing sustain work only on UK Link systems would lead to the need for a very long stabilisation period and an increased associated spend profile.
- Performance, efficiency, or cost benefits are not realised against the current systems and CDSP Value for Money (VFM) cannot be suitably demonstrated.
- Future Industry changes into the UK Link systems and processes may lead to increasing complexity in the current system, making it more difficult to transform at a later point.
- Rework of the discovery phases may be needed in BP27 to understand system stability and transformation effort leading to regret-spending.
- UK Link will remain a depreciating asset with little new functionality from the product vendor (SAP) due to their focus on newer technologies.
- Transformation costs and efforts would need to be reassessed and validated.
- Greater risk of technology failure if the programme extends beyond 2030.

**Due to the negative impact that this option would have on Xoserve and DSC customers, we do not recommend this as an option for BP24**

### Forecasted Programme Continuance

It is expected that this programme will continue to sustain into BP29/30 depending on customer feedback and what is identified in the discovery assessment phases of each project. The potential indicative delivery roadmap is shown below for this alternate option but is dependent on completion of BP23 and decisions on UK Link Strategy in BP 24-27.



## Finances

An indicative spend profile is shown below for Sustain only activities. Please note, an increased spend profile may be required in future years based on potentially increased risk of failure of UK Link systems and remedial activities needed.

| Theme  | Costs   |         |         |
|--|---------|---------|---------|
|  | BP24/25 | BP25/26 | BP26/27 |
| UK Link Sustain+<br>(formerly Future Enhancements) | £1,800  | £1,000  | £1,000  |
| UK Link Service Essentials                         | £560    | £270    | -       |
| Core Platform Migration                            | -       | -       | -       |

Allocation of investment funding;

| Funding Split %*                                | NTS  | GDNs  | IGTs | Shippers |
|---|------|-------|------|----------|
| BP23 (2023/24)                                  | 7.2% | 46.4% | 1.5% | 44.9%    |
| BP24 (2024/25)                                  | 7.2% | 46.4% | 1.5% | 44.9%    |
| BP24 – other years<br>(If different from 23/24) | 7.2% | 46.4% | 1.5% | 44.9%    |

## 2 - Commence transformation activities from BP24

This alternate option entails commencing transformation activities for UK Link systems from BP24/25 and would require immediate commencement of the programme of work after the discovery phase, in April 2024.

This option requires Xoserve to commit to a large transformation programme from 2024-2027 to meet the mandated end to SAP standard support in December 2027. Due to CDSP functions and business model being unique, the transformation programme moving at pace entails significant data migration, code rewrite, remediation, and conversion across our various functions; such as business processes, integration, and reporting.

Delivery of the transformation programme commences in 2024 and is targeted to complete in 2027.

Key pros/cons for this approach are:

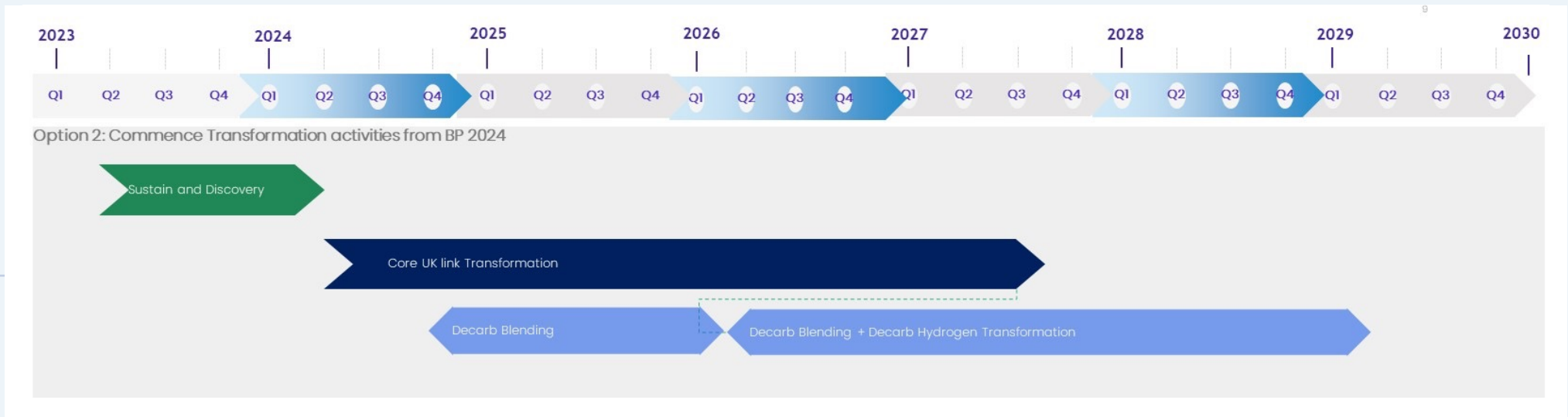
- Transformation for current applications starts immediately and at pace.
- This option allows for some opportunity for optimisation. However, the transformation journey would finish prior to major energy industry decisions, e.g. the decarbonisation programme.
- This option requires a higher level of investment from BP24 to BP27 due to the initial outlay for cost of rewrite, migration, software/licences, and hardware.
- This option avoids the need for extended SAP support from 2027 onwards.
- The clear scope but rigid approach doesn't allow for full optimisation, which is likely to result in regret-spending and more cost after 2027, to adapt to major energy industry decisions.

- The transformation journey is expected to be complex and may entail rewriting of large parts of code due to current levels of customisation within UK Link systems.
- A “migrate first, innovate later” approach is needed to ensure the UK Link production data, processes and services are first rewritten and migrated successfully on to the new systems and further innovations are gradually brought into force.

This option is not recommended due to uncertainty (the BP23 discovery phase is still ongoing), lack of consultation time with industry participants, potential costs and uncertainty around the changes needed for decarbonising our gas systems.

### Forecasted Programme Continuance

It is expected that this programme will continue to sustain into BP29/30 depending on customer feedback and what is identified in the discovery assessment phases of each project. The potential indicative delivery roadmap is shown below for this alternate option but it is dependent on completion of BP23 and decisions on UK Link Strategy in BP24-27.



## Finances

An indicative spend profile is shown below for commencing transformation activities for the next three years. Please note, discovery options will add more certainty to the spend profile based on the chosen option. These finance numbers are based on very high-level estimates at this point of time (August 2023). Key assumptions include commencement of UK Link transformation at pace in 2024 and industry readiness to sign off UK Link transformation commencement. The indicative figures are based on previous UK Link transformation experience.

The outlay estimates will need substantiation and revision of spend profile post discovery completion. An increased spend profile may be required in future years if the discovery phase uncovers a greater level of complexity and/or risk in any of the options.

| Theme  | Costs   |         |         |
|--|---------|---------|---------|
|  | BP24/25 | BP25/26 | BP26/27 |
| UK Link Sustain+<br>(formerly Future Enhancements) | £4,000  | £4,000  | £4,000  |
| UK Link Service Essentials                         | £560    | £270    | -       |
| Core Platform Migration                            | -       | £3,800  | £2,800  |

Allocation of investment funding;

| Funding Split %*                                | NTS  | GDNs  | IGTs | Shippers |
|---|------|-------|------|----------|
| BP23 (2023/24)                                  | 7.2% | 46.4% | 1.5% | 44.9%    |
| BP24 (2024/25)                                  | 7.2% | 46.4% | 1.5% | 44.9%    |
| BP24 – other years<br>(If different from 23/24) | 7.2% | 46.4% | 1.5% | 44.9%    |



## GEMINI SUSTAIN

### Overview:

The Gemini system has recently benefited from significant investment, alongside ongoing maintenance, this has included moving the platform to a private cloud, system enhancements and the addition of functionality in line with regulatory requirements.

Due to the legacy nature of the Gemini system, there are many components that no longer align with a modern approach to application architecture. To sustain the system, most core components require a significant upgrade. This work has begun and is ongoing; to run over a period from October 2022 to October 2024.

Ongoing Gemini running costs and the cost of change have historically been significant.

During the BP24 period, we will use the allocated funds to conclude the modernisation of the Gemini platform and complete the delivery of modifications required to support evolving regulatory regimes.

### Investment drivers:

The Gemini Roadmap was developed in collaboration with National Gas and we have defined a roadmap to deliver a robust, agile, responsive and value-for-money solution by upgrading the current platform. This is being achieved by retaining and building on the core 'process engine capability' of the Gemini application. The Sustain Plus approach will provide:

- increased reliability and security
- better flexibility to adapt to new regimes and implement change
- an improved quality of service and user experience
- a modernised and well-supported platform.

Key areas that will be addressed to support the Sustain Plus approach include:

- **Hosting and infrastructure:**  
We are moving towards a true platform-as-a-service (PaaS solution) approach, aligned to modern application architecture. The cloud-based platform will be capable of supporting a cost-effective, secure, and scalable on-demand solution.



- **Network:**

We are removing heavy dependency on complex and costly physical networks, replacing this with secure cloud access solutions.

- **Identity and access management (IDAM):**

We are moving away from a centralised, non-federated IDAM platform with its high operational overheads and exposure to security risks, and introducing a fully federated IDAM solution. Customers will be able to manage user onboarding and offboarding for their organisation.

- **System interfaces:**

We will replace legacy file interfaces, user interfaces (UIs) and application programming interfaces (APIs), along with their inherent risks and constraints, with modern and secure cloud API and UI capabilities. There will be improved support for reporting and dashboard customisation.

- **Application and database architecture:**

Our investment will remove the ongoing and significant upgrade activities required to remain within the parameters of vendor support. Current architecture complexity and constraints will also be removed, to be replaced by new, modular functionality with simplified operation and management.

- **Batch processing and scheduling:**

We are moving away from batch processing and towards real time processing, reducing the dependency on scheduled maintenance and housekeeping tasks with the introduction of platform services.

- **System availability:**

We aim to achieve 100% system availability and a 99.99% uptime service level, thanks to a highly available solution architecture approach.

- **System security:**

We are addressing security risks in the legacy components of the current platform, by replacing these components with up-to-date, security enhanced platform services and a secure-by-design architectural approach.

- **Change delivery:**

We are implementing a fully automated continuous integration and continuous deployment (CI\CD) change release pipeline, to greatly increase the speed of change delivery and move towards a fully agile approach.

- **System testing:**

We will continue the development of testing automation capability, to speed up change delivery, improve regression testing, reduce costs and integrate with the CI\CD pipeline.

- **System training:**

We are improving the ease of system use and adding integrated help features, to reduce classroom style training requirements. We will also update training materials and introduce a sandboxed training and testing environment.

- **National Gas strategy:**

We are introducing modernised platform capabilities that can support and enable the National Gas technology and data strategy.

This investment aims to ensure that all the software, security and hardware components that Gemini depends on are maintained, to maximise availability. Without this investment there would be an increased risk of software bugs, hardware failure or cyber-security breaches, with consequences including temporary system unavailability or complete service failure. Investment will reduce the risk of downtime, and prevent a critical situation or loss of the system with no possibility of restoration.

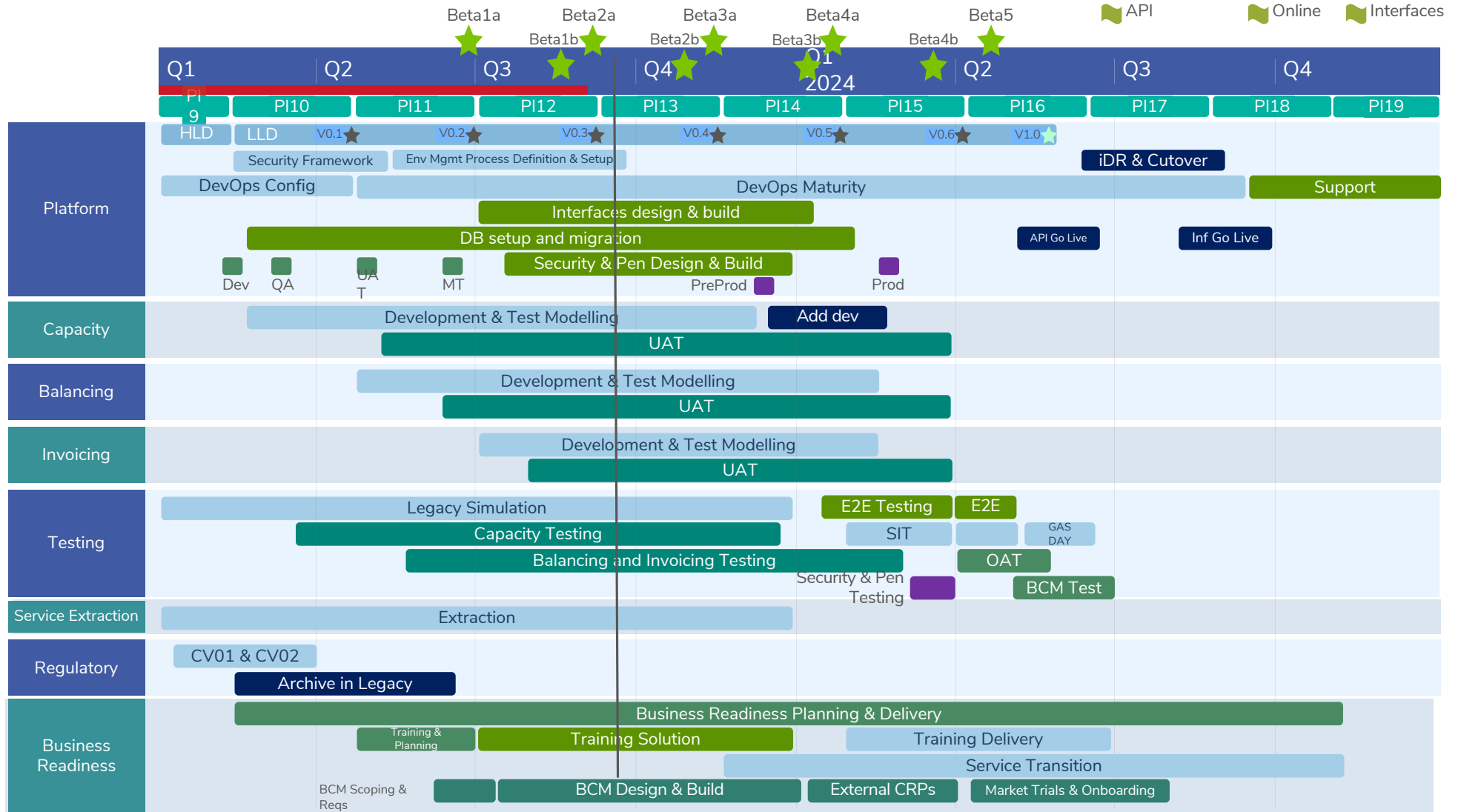
**The Gemini system will be made live September 2024.**

The solution roadmap defines key dates and beta release timescales. This is used for tracking and monitoring purposes across the programme. The following key dates are included within the roadmap”

|                                       |                       |
|---------------------------------------|-----------------------|
| End to End Testing:                   | Feb '24 – Mar '24     |
| Training:                             | Feb '24 – June '24    |
| Market Trials (inc. user onboarding): | Apr '24 – Mid Aug '24 |
| Go Live:                              | Sept '24.             |

This builds upon the previous Gemini Sustain investments that have assured a reduction in system downtime, reduction of service interruption in the event of incidents and increased performance of the business processes.

The investment in BP24 concludes the delivery of the Gemini Roadmap. There will be a draw-down investment pot remaining for delivery of regulatory change to provide support as the market evolves.



### Solution and options explained:

The Gemini roadmap centres around the sustenance and modernisation of core system components. This involves transforming current legacy components into a modern, cost-efficient and scalable solution, significantly reducing operating costs and the ongoing cost of change.

The proposed solution for Gemini is to continue to use the current Gemini assets wherever possible, utilising the existing code base and data model as far as possible; adding new or replacement code as required to support new functional requirements. The objective is to create a sustainable, cost-efficient solution that requires less resources to operate and update. This significant upgrade to the Gemini system provides the opportunity to simultaneously accelerate change, improve user experience and decrease costs.

### A closer look at the options

Beyond the essential functional changes to Gemini that have been required by industry modification, our approach to date has been to follow a Sustain strategy for the Gemini infrastructure; ensuring that the support status of components is known and upgraded based on a jointly agreed risk profile and cost/benefit analysis approach.

Alongside this sustaining strategy, National Gas and Xoserve have assessed the risks associated with the application's life expectancy and considered what the trigger point would be to initiate a rewrite of the application. The following options were considered when defining the current Gemini investment:

- **Minimal Sustain:** The health of the Gemini system would be continuously evaluated, and responses decided accordingly; maintaining a level of support in line with our risk profile. This would most likely result in re-platforming every 5-6 years. The application layer of the system would remain largely unchanged. The Minimal Sustain option would ensure that all Gemini components remain in support, with activity based on an understanding of the current architecture's end of life/end of support signals. This, along with the ongoing performance of the platform, would validate the required sustaining activities that needed to be delivered.
- **Hosting modernity:** This option would leverage the advantages and capabilities of public cloud-based hosting, namely 'unlimited' growth potential, modernised technology and flexibility around the cost of maintenance. Additionally, it would be likely to reduce the need for regular sustaining activity, as the host provider would maintain a supported platform. This would be reflected in service charging through operating costs. As with the Minimal Sustain option, the functional components of the system would remain largely unchanged.
- **Rewrite with bespoke application:** This option would allow for a rewrite of the entire application, its existing fundamental logic and underlying infrastructure. Given the unique nature of the functionality, industry requirements and business rules, it is assumed that a replacement bespoke application would be required. Hosting the solution in the public cloud would allow us to leverage the capabilities of the cloud provision to simplify the development, but this option would require a considerable amount of development and testing effort.
- **Sustain Plus (chosen option):** Enhancing the Gemini platform via the Sustain Plus option was chosen as the most cost-efficient way of delivering ongoing benefits through the Gemini roadmap. It responds to the pain points of National Grid and wider industry participants, while ensuring a sustained and stable platform is continuously maintained. This option also reuses the capability of the Gemini application logic, which successfully supports the current capacity and gas balancing regimes. It is worth noting that the option to do nothing to maintain or enhance the Gemini landscape would mean failing to respond to the current customer pain points regarding the application and puts the stability and longevity of the platform at considerable risk.

We continue to enhance the roadmap which formed the basis of the Sustain investment in the current platform. The main difference with the chosen Sustain Plus option was to modernise the underlying UI and existing application code base. This was mainly driven by the availability of a good-fit, 'off the shelf' product, which could be introduced into the estate to deliver the Capacity and Balancing Services - explained further below.

The following tables demonstrate the analysis that was undertaken on the discounted options based on complexity, benefit being delivered and associated costs of implementing the solution.

Decision Drivers Analysis:

|                                       | Sustain | Hosting Modernity | Re-write with COTS | Bespoke Application | Sustain Plus |
|---------------------------------------|---------|-------------------|--------------------|---------------------|--------------|
| <b>Implementation Costs</b>           | Lowest  | Medium            | Medium             | Highest             | Medium       |
| <b>Subsequent Operating Costs</b>     | Highest | Medium            | Medium             | Highest             | Lowest       |
| <b>Change Delivery Ease / Cost</b>    | Highest | Highest           | Medium             | Medium              | Lowest       |
| <b>Service &amp; Performance Risk</b> | Highest | Highest           | Medium             | Lowest              | Lowest       |
| <b>Customer Impact</b>                | Lowest  | Lowest            | Highest            | Highest             | Medium       |
| <b>User Experience / Interface</b>    | Least   | Least             | Medium             | Medium              | Best         |

Discounted options analysis

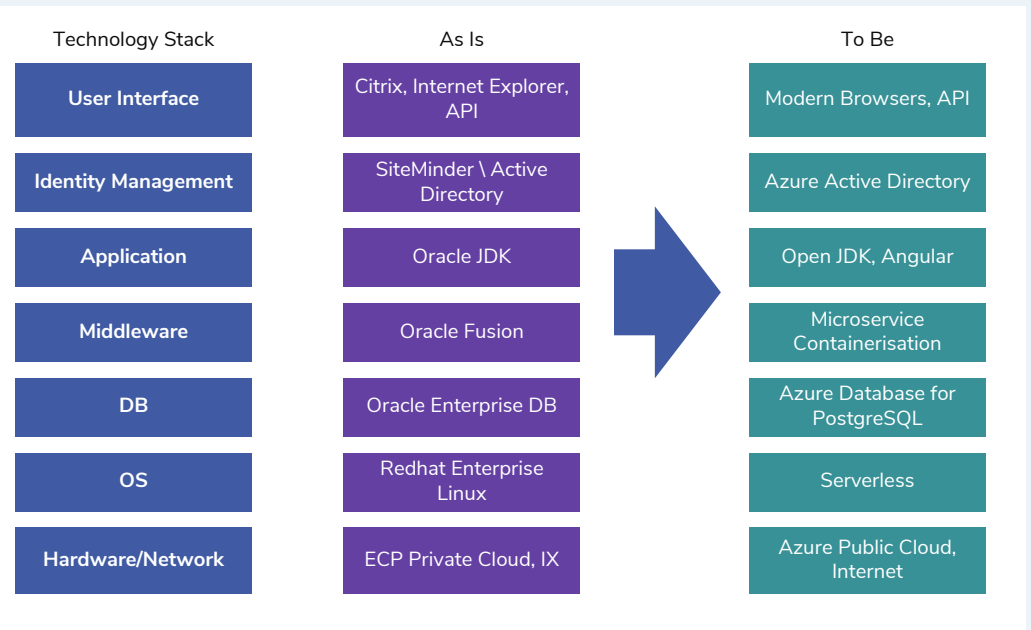
| Option                                    | Benefit  | Delivery Risk / Complexity  |
|---|--|---|
| <b>SUSTAINING OPTIONS</b>                 |  |   |
| <b>Sustain</b>                            | <ul style="list-style-type: none"> <li>Continued support</li> <li>Minimal change therefore minimal risk</li> </ul>   | <ul style="list-style-type: none"> <li>Upgrade Oracle 12c to 18c not viable without high level of application changes ('re-architecture' rather than re-write)</li> <li>May require level of application code changes that are not yet known</li> </ul>   |
| <b>Hosting Modernity (Public Cloud)</b>   | <ul style="list-style-type: none"> <li>Commercial strength, lower cost</li> <li>'Unlimited' growth potential</li> <li>Modernised technology</li> <li>Flexibility and cost of maintenance</li> </ul>                        | <ul style="list-style-type: none"> <li>Current security concerns</li> <li>Upgrade Oracle 12c to 18c not viable without high level of application changes ('re-architecture' rather than re-write)</li> <li>May require level of application code changes that are not yet known</li> </ul>  |
| <b>RE-WRITE OPTIONS</b>                   |  |   |
| <b>Rewrite with COTS (where possible)</b> | <ul style="list-style-type: none"> <li>Utilise existing Industry best practice</li> <li>Utilise industry proven solution(s)</li> <li>Reuse and integration of industry systems, rather than duplicate functions</li> </ul> | <ul style="list-style-type: none"> <li>Continued complexity of Energy Balancing (therefore not COTS and need for reuse of current or new application development)</li> <li>Compatibility of COTS to business requirements (may need to compromise and change business rules)</li> <li>Integration complexity of COTS multiple products</li> </ul> |
| <b>Bespoke Application</b>                | <ul style="list-style-type: none"> <li>Most tailored solution to requirements</li> <li>Enables design rationalisation</li> </ul>   | <ul style="list-style-type: none"> <li>Most complex option</li> <li>Greater industry interaction to test</li> </ul>   |

Due to the complexities and bespoke nature of the Gemini Capacity and Balancing Services, it was not felt commercially viable to deliver a new bespoke application. The decision to use the existing core application engine of Gemini and deliver a modernised platform with enhanced UI was the most cost-efficient way of maximising the benefits and removal of existing pain points.

The architectural principle of the Gemini roadmap is to minimise the impact to the industry participants who rely on Gemini. All existing file interfaces and API configurations will remain unchanged. Fundamentally, the system will still perform the same functions as before the modernisation, but it will benefit from a new security framework, an internet-based connectivity and significantly improved user experience.

The following diagrams show the existing and planned architecture diagrams, detailing the technology choices that have been made.

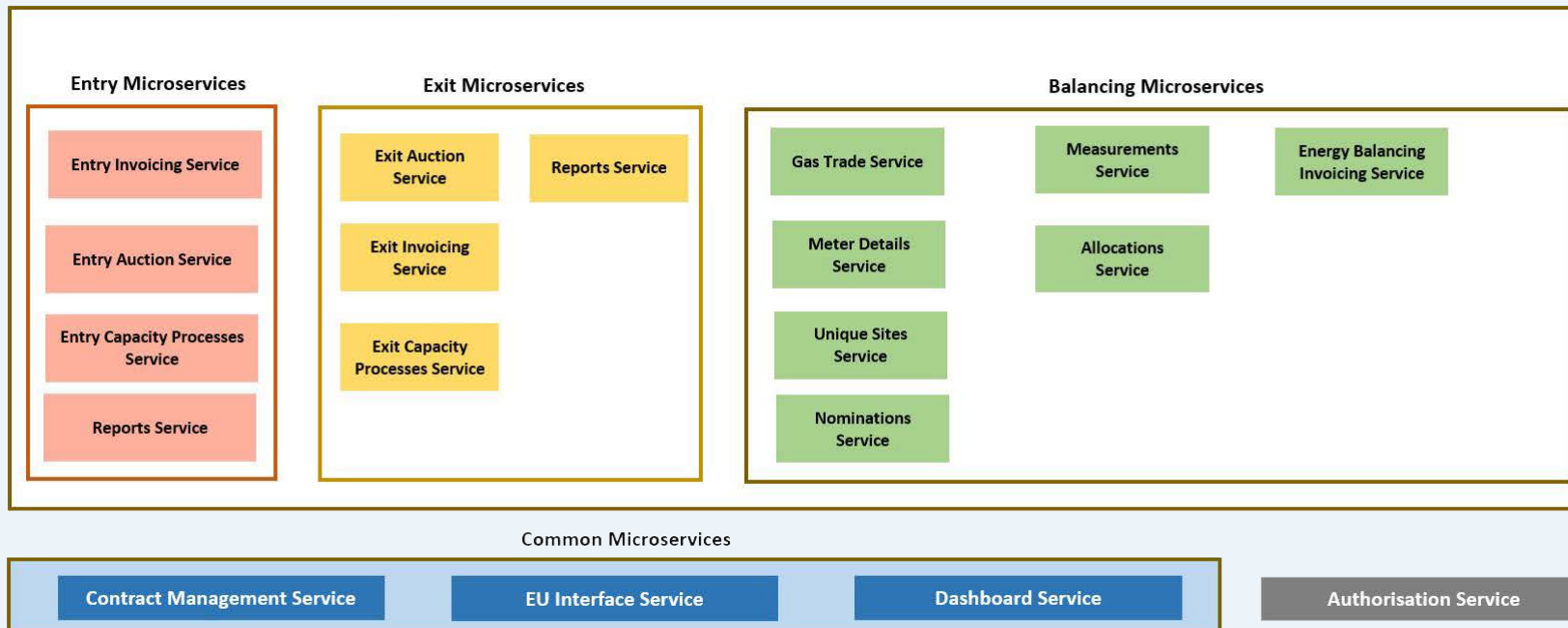
Technology choices:





In order to modernise the application and reduce the ongoing cost to serve, Gemini is being deployed using a microservice architecture. This will allow the solution to use loosely coupled components, enabling easier, more cost efficient change and management. The microservices will each support distinct Gemini functions and will contain several different application components to support the functionality provided.

This approach supports the business objective of making the Gemini platform more agile and supports a more streamlined change delivery approach. The microservices have been defined using the below groupings, and all services will share a common application database except for the authorisation service, which will use its own database.



**Pain points analysis:**

When assessing the solution for the Gemini roadmap, the final review considered the pain points that had been defined by the industry to ensure that the Gemini Sustain Plus option delivered the required benefits.

| Current Pain Points   | Proposed Solution   | Customer Benefits  |
|---|---|--|
| Outdated and inefficient user experience, including issues with Citrix login, screen navigation and reporting | <ul style="list-style-type: none"> <li>• Creation of all new UI screens</li> <li>• Removal of Citrix and provision of internet access to system and APIs</li> <li>• Enhance reporting and data provision modules</li> </ul> | <ul style="list-style-type: none"> <li>• Improved performance of the Gemini application</li> <li>• Enhanced customer experience</li> <li>• Reduction in customer effort</li> </ul> |
| Limited browser and device compatibility  | <ul style="list-style-type: none"> <li>• Remove restrictions by redeveloping interfaces</li> </ul>  | <ul style="list-style-type: none"> <li>• Enhanced customer experience</li> <li>• Support for multiple device types</li> </ul>  |
| Restricted performance of the application   | <ul style="list-style-type: none"> <li>• Selectively enhance the performance of the application</li> </ul>  | <ul style="list-style-type: none"> <li>• Enhanced customer experience</li> <li>• Reduction in customer effort</li> </ul>   |
| Inflexible and incomplete access to data through API technology and the low speed of data sharing             | <ul style="list-style-type: none"> <li>• Creation of new modernised and flexible API platform</li> </ul>  | <ul style="list-style-type: none"> <li>• Flexible approach to data provision for customers</li> <li>• Speed and accuracy of data provision</li> </ul>                              |
| Slow response to deliver change due to architecture and application complexity                                | <ul style="list-style-type: none"> <li>• Simplifying the Gemini application and delivering process and test automation</li> </ul>   | <ul style="list-style-type: none"> <li>• Reduced timescales and costs for delivery of change to Gemini</li> </ul>  |

## Risks and Opportunities

The ongoing risk to this programme comes from additional, unforeseen regulatory changes, especially if modifications are of significant complexity. This could cause unwanted delay in the implementation of the new platform.

The primary benefit created for customers is the availability of a modern, sustainable platform which has increased functionality, supports agile change across the industry and their organisation, and can be operated at a lower cost - while also improving user experience and system stability.

## Financials

Allocation of investment funding;

| Funding Split %    | NTS  | GDNs | IGTs | Shippers |
|--------------------|------|------|------|----------|
| BP23 (2023/24)     | 100% | 0%   | 0%   | 0%       |
| BP24 (2024/25)     | 100% | 0%   | 0%   | 0%       |
| BP24 – other years | 100% | 0%   | 0%   | 0%       |

Sustain

| BP24 Proposed (£'000)  | Chg Stmt Classification | 2023-24      | 2024-25      | 2025-26 | 2026-27 |
|--|-------------------------|--------------|--------------|---------|---------|
| Gemini Sustain   | Infrastructure          | 6,080        | 3,434        | -       | -       |
| <b>Projects Total</b>  |                         | <b>6,080</b> | <b>3,434</b> | -       | -       |
| <b>Service &amp; Operate - Reclassify, Increase &amp; Saving</b> |                         | -            | -            | -       | -       |
| <b>Total Expenditure</b>   |                         | <b>6,080</b> | <b>3,434</b> | -       | -       |

Regulatory

| BP24 Proposed (£'000)  | Chg Stmt Classification | 2023-24      | 2024-25      | 2025-26      | 2026-27      |
|--|-------------------------|--------------|--------------|--------------|--------------|
| Gemini Regulatory Change   | Change                  | 2,970        | 2,420        | 1,940        | 1,940        |
| <b>Projects Total</b>  |                         | <b>2,970</b> | <b>2,420</b> | <b>1,940</b> | <b>1,940</b> |
| <b>Service &amp; Operate - Reclassify, Increase &amp; Saving</b> |                         | -            | -            | -            | -            |
| <b>Total Expenditure</b>   |                         | <b>2,970</b> | <b>2,420</b> | <b>1,940</b> | <b>1,940</b> |

## Benefits

Sustain Plus provides a roadmap towards a robust, agile, responsive and value for money solution. This is being achieved through the retention of the core process engine capability of the Gemini application, and is a solution that provides answers to the industry's current pain points. The solution will provide:

- automated code deployment
- application modernisation to micro-service technology
- a new UI layer including provision of analytical dashboarding
- modernisation of all integration layers that support the Gemini application.
- Oracle database replacement and data archival solution
- workflow and process automation.

### Measurable benefits:

- Delivery of platform enhancements will result in a reduction of the current annual change budget (£3m per annum) by 33% by end of BP24/25.
- Enhancements and cost-efficiency delivery of the Gemini roadmap components also aim to reduce the operating costs of the Gemini platform by 23% by the end of BP24/25.
- Benefits also include an increase in the system availability from 99% to 99.9%.

### Reputational benefits:

- Useability: Faster and easier access to the Gemini platform.
- Flexibility: Enhanced APIs and dashboard reporting.
- Customer Experience: Look, feel and navigation will be significantly improved.
- Reusable platform: Enhancing the Gemini platform will allow for the development of new products and services linked to decarbonisation, such as blended gas products.
- Sustained platform: Enhanced monitoring and fewer incidents will minimise system downtime.

## Performance measures

The following KPMs will be effective from the point of go-live:

- System availability will increase from 99% to 99.9%.
- Screen performance response times will be 98.9%.
- Capacity and Balancing batch processes will complete and execute 99.9% of the time.
- API availability will be 99.9%.
- Accurate and timely invoices will continue to be issued 100% of the time.
- Suitable response times for fault and query resolution will be adhered to depending on the severity of the fault/query.
- Suitable response times for incident resolution will be adhered to depending on the severity of the incident.
- There will be 99.9% availability of the system to enable retrieval of historical data.
- All ad hoc data requests will be responded to within 10 business days.
- ROM cost estimates will be delivered within 10 business days of the request.
- Maximum recovery time for the full system service remains at four hours post go-live.
- Gemini training solutions will be available 24 hours a day.
- Business reports will be provided within five business days of the biannual code contingency process.
- Production of reports regarding Gemini system performance for regular Xoserve and Industry Committee meetings will be produced five business days after the calendar month end.

## Capability requirements

The Gemini roadmap is being delivered within an agile framework. This approach to maintaining the system and managing change will continue after go-live and will be governed under a DEVOPS operating framework.

The vision for new Gemini DevOps provides a cost-efficient change and operate service that meets customer demand for fast, efficient delivery of change, while driving continuous improvement.

To support this way of working, the team is undergoing training to ensure that specific roles and functions within the agile model are understood and adapted to within our ways of working and daily practices. This approach is being applied to all teams contributing to the Gemini Roadmap.

The new Gemini solution will be complemented by a training and testing sandbox environment, providing an ongoing support service for customers. Alongside this, we are developing a training solution with LMS training to support industry participants and ease the process of onboarding new customers to the market.

To support the ongoing need for delivering faster and cost-efficient change to the platform, automation tool kits will be provided to the new Gemini DevOps support functions. This will increase the speed to market for change, increase quality by removing manual steps and provide cost efficiencies.

## VfM

The existing Gemini Change Delivery Team is responsible for overall product development. The wider programme team consists of National Gas representatives, Wipro personnel and Correla Business Process Owners, each funded by the Sustain Plus programme.

### Efficiency

The Gemini roadmap programme is being delivered in a full Scaled Agile Framework (SAFe), maximising the use of all resources from customers and suppliers. The roadmap itself uses the core engine of the Gemini application and business process logic as the basis for modernising the platform.

### Economy

By meeting the pain points and addressing the existing restrictions within the existing platform, we are targeting the changes to maximise both the financial and non-tangible benefits to Gemini users.

The design principle being adopted for the roadmap is to have no downstream or upstream impact to systems or organisations who use the wider Capacity and Energy Balancing services. This is to minimise the amount of rework required and not materially impact market participants by imposing changes to their systems and decision-making tools.

### **Effectiveness**

Everything that is delivered as part of the Gemini roadmap can be materially linked to the objectives of the investment: to maintain a high level of service, to improve the user experience, to remove repetitive manual processes, to increase security, and to manage change effectively and efficiently.

### **Equity**

This investment is 100% funded by National Gas, with the costs and benefits already approved due to the investment being across three business plan years.





## DECARBONISATION

### Overview:

Decarbonisation of the energy industry is critical to the UK meeting its net zero targets in 2050. Almost 86% of the UK's existing housing stock is currently heated with natural gas, making decarbonisation of heat a top priority. Looking at the [gas market](#) as a whole, industrial and commercial use accounts for 11% of demand, 29% is used for electricity generation and domestic heating accounts for 38%.

Unfortunately, while reaching net zero is of the utmost importance, the policy we need to enable a mass roll-out of low carbon technology is not yet in place. Without policy direction, we must be careful how and when we invest in systems and processes to support decarbonisation.

The decarbonisation investment line exists for four key reasons:

**This business case is intended for holding budget purposes only - more detail will follow in due course.**

1. To enable us to support low-carbon trials and pilots, and gain an understanding of the implications of potential gas market changes to existing licence conditions, regulatory requirements, and settlement and billing processes. To allow us to plan, design, build and implement the required changes to central data systems and processes without investing heavily in unnecessary system development, and while minimising technical debt.
2. To enable us to plan and design system requirements for future energy scenarios and to develop appropriate licence conditions, regulatory requirements, and settlement and billing systems and processes; allowing for least-regret investment when implementing future system and process change.
3. To enable us to lead and manage cross industry engagement, providing regular updates and discussion opportunities, facilitation and subject matter expertise representation at energy events and discussions.
4. Innovation – To manage a pipeline of development work where project requirements are reviewed, assessed and tested prior to the start of any formal industry change or modification process; supporting scenario planning and system-led design and development.



## Investment drivers:

- **Efficiency:** The Decarbonisation Team, and associated change fund, supports efficient use of gas industry investment on the path to net zero. They do this by supporting trials and pilots of low carbon gas solutions and technologies. The team endeavours to always take a best value approach and develop minimal system and process changes to support activity. The strategic planning and design provided will enable larger system and process changes to be developed at speed and helps to ensure minimal regret spend.
- **Innovation:** This year, we plan to further develop system and process design to support the [Future Energy Scenarios](#) as detailed by the ESO/FSO. In lieu of confirmed policy decisions, we will review and assess all four possible scenarios so we can determine the best options for no/low regret and also start to design the gas system of the future. For example, we know that however the industry develops, we need to ensure that CDSP systems and processes can support a much wider Calorific Value range; investigating how this can be developed for the best value to industry would be considered a low regret spend.

We are expecting a decision on hydrogen blending towards the end of 2023, and have worked with the gas industry to introduce blending at a level that will not impact existing systems and processes. As hydrogen production develops, changes will need to be made to enable blending of up to 20%. Xoserve is already supporting the development of system and process design to ensure that technological developments are not delayed due to existing process constraints.

- **Risk avoidance:** This investment is designed to reduce unnecessary spend, ensure that the development of key products and services are planned well in advance, and that changes are trialled and tested before implementation. Given the changing energy environment and shifting policy landscape, the system and process development changes needed to support net zero and the decarbonisation of the energy industry will feasibly be as large as the Project Nexus programme, so ensuring we have a robust plan in place is crucial to avoiding additional cost and complexity and to mitigate development risks.

All future energy scenario system design will be utilised to develop both the UK Link and Gemini roadmap programmes, mitigating the risks of any overlaps, synergies or dependencies that may not be apparent when reviewing the programmes in isolation.

Cross-industry engagement is key to the energy transition, but without Xoserve-led engagement around both the planning and development of CDSP future energy scenarios and low-carbon gas trials and pilots, key industry parties may not receive the relevant information to ensure a smooth transition. By gathering together decarbonisation experts, we will endeavour to ensure that subject matter knowledge is built and retained where needed.

### Solution and options explained:

All dedicated decarbonisation resources have moved from investment funding into S&O costs, to enable us to manage the ongoing programme of work within CDSP, while keeping a separate change investment line fully funded by Transporters. The aim of this approach is to ensure the retention of key personnel and reduce contractor costs.

Key decarbonisation personnel currently span Xoserve (XO) and Corella (CO), with marketing support provided by The Marketing Pod (TMP).

- Strategy Lead (XO)
- Change Coordinator (XO)
- Programme Manager (XO)
- Change Delivery Manager (CO)
- Business Analyst – Ideation (CO)
- Business Analyst – Change (CO)
- Change Engagement Lead (CO)
- Business Architect (CO)
- Change Solutions Lead (XO)
- Change Analyst (XO)
- Regulatory Development Lead (XO)
- Marketing/Comms Support (TMP)

The decarbonisation investment will be used for a range of decarbonisation related projects. These include, but are not limited to, those currently in scope:

- H100
- Hydrogen Village
- Hydrogen Town
- Project Union
- Beyond the Meter
- Future Energy Scenarios development – CDSP
- 20% Blending
- Managing a variable CV

## Risks and Opportunities

Moving key decarbonisation roles in-house with Xoserve empowers us to retain and develop crucial subject matter expertise within the CDSP as the gas industry evolves. It also allows us to reduce our reliance on the expertise of key personnel within third-party organisations, and to cut contractor costs.

There is a risk that with few policy decisions in place to support the decarbonisation of gas, the resource may prove unnecessary - but we believe in the long-term viability of decarbonisation development work.

There is a risk that not investing in CDSP services to support the changes required to settlement and billing processes now will lead to delay when policy decisions are eventually made.

## Financials

This business case recommends holding a change budget of £677,555 for incremental use throughout the financial year. We're also proposing a total of £1,122,445 is reallocated to S&A. As highlighted above, this reclassification means we can reduce contractor spend, ensuring critical knowledge and experience remains within the CDSP.

The total £1.8m investment is split across Distribution and Transmission Networks:

|              |                       |            |
|--------------|-----------------------|------------|
| <b>95.6%</b> | Distribution Networks | £1,720,800 |
| <b>4.4%</b>  | National Gas          | £79,200    |

| Current funding split                      |  | Value              |
|--|--|--------------------|
| Xoserve Annual Resource budget             |  | £752,045 per annum |
| Correla Annual Resource budget             |  | £523,640 per annum |
| <b>Total resource budget</b>               |  | <b>£1,275,685</b>  |
| <b>Proposed total resource budget</b>      |  | <b>£1,122,445</b>  |
| <b>Total decarbonisation change budget</b> |  | <b>£524,315</b>    |
| Suggested funding split                    |  | Value              |
| S&O Xoserve Annual Resource costs          |  | £652,045 per annum |
| S&O Correla Annual Resource costs          |  | £470,400 per annum |
| <b>Total S&amp;O</b>                       |  | <b>£1,122,445</b>  |
| <b>Change budget</b>                       |  | <b>£677,555</b>    |

Standard change budget is £1,185 for comparison

## Benefits

With this approach, customers will see a reduction in their in-house costs within each network (One CDSP representative is required rather than five representatives across all five network companies). With Xoserve managing decarbonisation comms, on behalf of the industry, there will be a reduction in duplicated efforts; individual comms teams across network organisations won't need to create individual engagement plans.

Xoserve will provide an increased presence across decarbonisation projects and discussions, improving visibility and engagement with all stakeholders.

## Performance measures

The impact on existing performance measures and creation of new KPMs will be determined by the solutions being delivered by the Decarbonisation Team. Our expectation is that there will be no negative impacts to KPMs or PIs.

All KPMs relating to Managing Change will continue to be adhered to, i.e. number of valid defects raised during PIS.

All KPMs relating to Customer Contacts will continue to be adhered to, and we expect these measures to be positively impacted by having a dedicated Customer Engagement Lead.

## Capability requirements

The investment in decarbonisation will support us to build the following CDSP capabilities:

- Ability to manage transition to net zero
- Ability to maintain existing processes
- Ability to manage decarbonisation regulatory change
- Ability to receive, update, send and maintain data
- Ability to provide data
- Ability to manage stakeholders
- Ability to manage demand
- Ability to calculate energy
- Ability to manage reconciliation
- Ability to manage variable billing and invoicing

Data systems and tools will be developed under this investment and built into roadmaps for existing products and services, with the potential for new systems, products and services to be designed and tested to further support the capabilities listed above.

## VfM

### Efficiency

Investing in decarbonisation resources ensures that existing resources can be focused on delivering today’s CDSP business-as-usual service, which will not need to be juggled with supporting Future of Energy trials and pilots. However, it’s vital that we build this in-house knowledge and grow our skills now, to ensure that we are ready as CDSP to deliver the required changes to support decarbonisation of the gas system.

### Economy

We will achieve a forecast reduction in in-year costs of £153,240 by moving decarbonisation investment to S&O.

### Effectiveness

This investment enables us to understand the impacts of trials and pilot schemes on existing licence conditions, regulatory requirements, settlement and billing systems and processes. It allows us to make minimal changes to central data systems and processes. to enable support without investing heavily in unnecessary system development or creating technical debt. It allows us to better plan for future energy scenarios, and identify least-regret investment options, while supporting the gas industry transition to a low-carbon future. It also allows us to be the voice of our customers in the decarbonisation discussion; leading and managing cross industry engagement, providing regular updates and discussion opportunities, and facilitation or subject matter expertise at energy events and discussions.

### Equity

The total cost of this investment will be funded by:

|             |                       |            |
|-------------|-----------------------|------------|
| <b>5.6%</b> | Distribution Networks | £1,720,800 |
| <b>4.4%</b> | National Gas          | £79,200    |





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