Gate three query process

Strategic solution(s)	SESRO
Query number	SER004
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Response due by	05/09/2025

Query

This query is in relation to the information provided in Appendix A3 Cost Report. It is broken down into a number of separate questions.

1. Capital Expenditure

When reviewing Appendix A3, we note the breakdown of your changes to capex costs since Gate 2 and additionally, in Section 6.2, supporting commentary around a small number of the projects elements.

Please can you provide further commentary around the remaining elements, particularly those which have seen an increase of £50 million or more since Gate 2?

2. Operating Expenditure

When reviewing Appendix A3, we note the commentary around changes to operating expenditure and the drivers for changes seen in the numbers for gate three.

However, we have only been able to identify a total sum of operating costs, broken down into fixed and variable. Please can you break these down further into individual elements to enable us to understand the composition of the fixed and variable opex costs?

3. Assumptions and Environmental and Water Quality Mitigations

On Page 10, 1.5.6, it has been stated that environmental and water quality costs have been included within total capex costs (or risk).

a. In your assumptions on Page 17, Table 2, you state that all cost and risk information remains at the pre-mitigation stage. Please can you provide further information around this statement as it contradicts the information provided on Page 10.

b. When reviewing the rest of the documents and other parts of your submission, we have been unable find any further information or evidence against this statement. Please can you provide us with further details of what mitigations have been identified and the breakdown of costs associated with these?

4. Risk Analysis and QCRA

In Appendix A3, we note the information provided around your risk analysis work and the approach to QCRA. On Page 28, it states that the number of risks identified in the QCRA has increased from 75 at gate two to 274 at gate three.

Please can you provide a further breakdown of this analysis and the risks that have been identified with their associated costs?

Solution owner response

Query Part 1: Capital Expenditure

Please see below table providing further commentary for remaining elements which have seen an increase of £50 million or more since Gate 2.

Description	% increase since gate two
Rail sidings: the location of the rail sidings and materials handling facility has been changed following an options appraisal undertaken as part of the Gate 3 development. This identified that the Gate 2 location to the east is not viable due to technical railway constraints. The Gate 3 location is approximately 3km to the west of the Gate 2 location. The arrangement of the rail siding and materials handling area has been	111%

revised to suit the new location. This has resulted in the need for additional earthworks (e.g. sheet piling and fill) to allow connection to the Great Western Main Line (GWML) track which is on an embankment at the selected location.	
Road diversion: Between Gate 2 and Gate 3 a 3D design of the road has been developed, including swales and footpath/cycle path requirements. This has resulted in a better understanding of the amount of fill required to form road embankment. In the Gate 3 cost estimate it has been assumed that the material required to construct the road embankment will need to be imported, whereas at Gate 2 it was assumed that the material could be excavated from within the site.	183%
Public facilities: between Gate 2 and Gate 3 the design of the recreational buildings has been updated. The buildings are larger and more complex in comparison to those that were assumed at Gate 2 stage. At Gate 3 an allowance for the earthworks associated with the Wilts and Berks Canal (between the GWML and the A34) has been added.	135%
Pipework: At Gate 2 there was no specific requirement to include delivery of scope for the interfacing schemes of T2ST and Farmoor. The Gate 3 scope includes for the following pipelines: • *T2ST water treatment works (WTW) to the Sesro pumping station* • *T2ST WTW to the southern boundary of the Sesro site to connect to the T2ST scheme and* • *Sesro pumping station to the northern boundary of the Sesro site to connect to the Farmoor scheme.*	100%

Query Part 2: Operating Expenditure

Please see below table providing a breakdown of fixed and variable Operating Expenditure .

Fixed Opex

Item	**Cost per annum (£m FY22/23 prices)**
Electricity Consumption – fixed	0.26
Operational Staff	0.26
Abstraction licence	1.13
Maintenance	2.53
Total	**4.18**

Variable Opex

Item	Cost per annum (£m FY22/23 prices)
Electricity Consumption: variable for filling	1.74
Electricity Consumption: variable for transfer	0.78
Electricity Generation	(0.25)
Total	**2.26**

The variable opex is calculated on a 'theoretical high utilisation' of 271Ml/day and equates to a rate of £22.9/Ml.

Query Part 3: Assumptions and Environmental and Water Quality Mitigations

Part 3a: Cost and risk information remains at pre-mitigation stage

The statement on Page 17, Table 2, that cost and risk information remains at a pre-mitigation stage clarifies how risks have been evaluated. In the context of risk assessments, pre-mitigation means that the potential impacts of risks have been modelled without mitigations that could reduce the likelihood or extent of the risk impact. This is common practice at the early stage of a project whilst designs continue to develop and risk indentification matures. As the project develops specific mitigations will be identified and costed, with an update to risk likelihood and impact being undertaken. This is termed post-mitigation.

The statement on page 10 is articulating the basis of the Gate 3 design and uses the term mitigation in a different context. It is a project requirement to mitigate the impact the project has on the environment and water quality. Mitigations have been scoped and costed. Where there is still uncertainty, risks have been identified. Please refer to part 3b below for further detail.

Part 3b: environmental & water quality mitigation costs

Environmental & water quality mitigations have been identified in the scope as outlined in the Gate 3 Basis of Design report. At Gate 3, this includes permanent works such as an air diffuser network, diversion of existing watercourses, intake screens and water quality sampling, creation of new habitats, relocation of species as well as temporary works during the construction process such as silt lagoons. The indicative construction cost of these mitigations included in the Gate 3 cost estimate is c. £0.3bn (22/23 prices), excluding risk and optimism bias. It should be noted that the process for identifying such mitigations is onging through the development of the project design, undertaking of surveys and preparation of environmental assessments for the DCO process. It is likely that additonal items will be identified and the associated costs will be drawn

from the costed risk allowance and optimism bias included in the overall estimate.

Query Part 4: Risk Analysis and QCRA

Please find below the risks and associated costs broken down further as requested. The table present all risks in the QCRA and break down the data by both project stage and RAPID risk breakdown structure.

Project Stage	Qty	EMV (£m FY22/23 prices)
Development	101	146
Enabling Works	51	234
Main Works	119	861
Commissioning	16	42
Total	287	1,283

RAPID Risk Breakdown Structure	Qty	EMV (£m FY22/23 prices)
Business case	14	160
Communication	4	4
Design uncertainty / complexity	80	300
Ecology & environmental constraints	23	104
Financing	3	20
Health & safety	2	6
Information management	1	0.4
Planning and approvals	44	68
Procurement	33	61
Regulation	21	35
Resources	6	260
Site characteristics and project data	34	219
Stakeholder	21	37
Sustainability	1	8
Total	287	1,283

Please note that the values in these tables are Expected Monetary Values (EMV) will not match a P50 QCRA output. EMV is based on a calculation using likelihood and mean cost impact, whereas the P50 QCRA is an outcome of a monte-carlo simulation which models all risks through many iterations of likelihood and impact.

Date of response to RAPID	05/09/2025
Strategic solution contact / responsible person	