Gate 1 queries process

Strategic solution(s)	Severn Trent Sources
Query number	STS003
Date sent to company	23/07/2021
Response due by	27/07/2021

Query

Section 5.22

Please provide the method and any key assumptions used to calculate embodied and operational carbon in the submission.

Solution owner response

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Query 1

Section 5.22

Please provide the method and any key assumptions used to calculate embodied and operational carbon in the submission.

Query Response

The majority of our carbon assessments, which cover both embodied and operational carbon, are based on our internal Gate 2 Carbon Calculator Tool as this covers most of the common asset types. Where we have proposed assets not covered by the Tool, our consultant has undertaken a high-level bespoke assessment, which was then manually input into the Gate 2 Carbon Calculator to derive a scheme total. This is the only deviation from the use of our internal calculator and mirrors the process we adopted for our WRMP19 submission.

In the case of the two Netheridge WwTW options submitted in our STS SRO gate-1 submission, all the proposed assets are covered by the Gate 2 Carbon Calculator Tool. The major assets include the tertiary treatment plant at Netheridge and the transfer pipeline and pumping station.
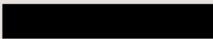
We undertook two carbon assessments. The full flow assessments assume the assets are operational for 365 days per year at full transfer capacity. The sweetening flow assessments assume assets are operational for 365 days per year and operate at 10% transfer capacity. As detailed in paragraphs 6.19 to 6.24 of our gate-1 submission, we will review the utilisation requirements based on Thames Water's needs and re-evaluate the carbon assessments accordingly for Gate-2.

These assessments were submitted as part of our response to STS001 for our two Netheridge wastewater treatment options.

Carbon emissions are calculated from carbon-curves derived from a best fit line through an existing data set of emissions and capacity. Operational emissions for the proposed tertiary treatment plant are taken from the UKWIR 08/WW/20/3 'Water Framework Directive Sustainable Treatment Solutions for Achieving Good Ecological Status' report and include direct emissions from the process and indirect emissions from electricity use.

Most notably for Gate-1, the assessments assume the use of normal grid electricity. At this stage, we have not adjusted the assessments based on our internal carbon reduction activities. We will include this refinement in our gate-2 submission.

We are currently in the latter stages of developing a new carbon calculator for our WRMP24 submission. This will form the basis of our Gate-2 submission along with utilisation of frameworks such as PAS2080 to identify existing gaps and implement industry best practice methodologies for carbon accounting and reduction.

Date of response to RAPID	27th July 2021
Strategic solution contact / responsible person	▉▉▉▉▉▉▉▉▉ STSources@severntrent.co.uk