

Gate 1 queries process

Strategic solution(s)	Thames to Southern Transfer
Query number	TST003
Date sent to company	19/07/2021
Response due by	21/07/2021

Query

- 1) Please explain how the 50, 80, 120 and 200 MI/d capacities have been selected.
- 2) Please state the demand deficit that is needed to be fulfilled by the T2ST.
- 3) Please explain the methods which underly the Thames Water and Southern Water carbon footprinting tools cited in section 10.2.

Solution owner response

- 1) *Please explain how the 50, 80, 120 and 200 MI/d capacities have been selected.*

The Final Determination referenced a “potential scheme capacity of 100MI/d” however the potential demand deficit is not known at this stage and is dependent on the outcome of the WRSE regional modelling (see response to query (2)). Following consultation and early engagement with the regional planning team (prior to any modelling) it was initially agreed that a larger scheme capacity of up to 120MI/d should be considered as there were deemed to be some scenarios where more than 100MI/d may be required, although no exact upper limit was known.

Through discussion and agreement with the T2ST Programme Management Board (PMB) and Water Resources South East (WRSE), 50MI/d, 80MI/d and 120MI/d scheme capacities were agreed to be progressed for gate one for each of the six constrained options. This was considered to be an appropriate range of scheme

capacities for gate 1 to inform the WRSE regional plan modelling. Dependent on the outcome of the WRSE modelling, it is however possible that a wider range of scheme capacities for T2ST may need to be developed in gate 2.

Following feedback received in April 2021 from WRSE, it was agreed that a larger 200MI/d capacity option should also be investigated and inputted into the regional modelling to ensure the regional model was not being constrained by an upper limit of 120MI/d as there were potentially some scenarios when a larger capacity transfer may be required. This 200MI/d option was not reported on in gate one due to the timing of the feedback from WRSE, however it is proposed to be looked at further for gate two if WRSE still requires such an option.

2) Please state the demand deficit that is needed to be fulfilled by the T2ST.

The utilisation of the T2ST is dependent on the outcome of the WRSE regional modelling. At this stage it is expected that the transfer would only be required in periods of extreme drought but increased utilisation of the transfer may be required to meet the longer term supply demand balance of the Hampshire region depending on the implementation and timing of other schemes and future environmental ambition targets.

As the exact demand deficit is not known at this time, a range of capacities from 50 to 200MI/d has been looked at, as discussed in the query above.

It should also be noted that the T2ST is reliant on a new source of water from other strategic resource options and is therefore not expected to be available in the short-term.

3) Please explain the methods which underly the Thames Water and Southern Water carbon footprinting tools cited in section 10.2.

The All Company Working Group (ACWG) Cost and Carbon Consistency Methodology has been utilised to calculate costs and carbon for T2ST gate one estimates.

Carbon footprint estimates for T2ST have been derived using the Thames Water Engineering Estimating System (EES), comprising a database of Thames Water capital project cost/embedded carbon information against a common asset coding structure. The EES system was introduced to Thames Water in 2000 and holds construction costs for all Thames Water capital expenditure within infrastructure and non-infrastructure assets. Carbon data was introduced later circa 2008 and mirrors the cost model structure for infrastructure and non-infrastructure assets.

The system holds over 6 million embedded carbon values and each value is held against a common asset structure. As cost data is collected and imported into the system against the milestones stated above, carbon is automatically calculated based upon code, volume, size and/or attributes unique to the project. The EES

database includes in excess of 1000 unit cost models spanning a wide variety of processes/techniques from sewer/water pipelines to pumping stations and/or large scale treatment works.

Thames Water internally and externally validate the cost/carbon models periodically to ensure accurate costing outputs. Over the years the system has been independently audited by Ofwat and has a proven track record of being a robust and auditable data capture and cost/carbon modelling system.

Southern Water cost models were used to benchmark the costs but the Southern Water carbon models were not used which is not explicitly made clear in paragraph 10.2 of the gate one report.

Date of response to RAPID	21/07/2021
Strategic solution contact / responsible person	