

Ref 5.7

PR19 Direct Procurement report

September 2018

Contents Page

1. SUMMARY RESULTS AND CONCLUSIONS.....	2
2. INTRODUCTION TO DPC	3
3. ASSESSMENT METHODOLOGY	4
4. ASSESSMENT RESULTS.....	5
5. OUTCOME	9
REFERENCES.....	10

1. Summary results and conclusions

In line with Ofwat’s PR19 methodology we have assessed our totex programme for AMP 7 to identify potential schemes to be taken forward under Ofwat’s proposed Direct Procurement for Customers (DPC) approach. The results of our assessment are set out in the table below for the two significant schemes contained within our PR19 investment programme, Gwili Gwendraeth Wastewater Treatment Works (GTW) and Merthyr Water Treatment Works (MTW).

Table 1 – Assessment summary results

Assessment tests	Projects	
	Gwili Gwendraeth Wastewater Treatment Works	Merthyr Water Treatment Works
Scheme size relative to £100m threshold	<ul style="list-style-type: none"> Borderline on most measures and relatively low initial capex at only £50m. 	<ul style="list-style-type: none"> Exceeds £100m threshold on all measures and significant initial capital investment. Lowest result is £256m.
Technical suitability	<ul style="list-style-type: none"> More separable and less integrated with wider network. Only one criteria considered ‘less suitable for DPC’. 	<ul style="list-style-type: none"> Highly integrated and strategically important asset part of SEWCUS. Three out of the four criteria were considered ‘less suitable for DPC’.
Scope to deliver customer value for money	<ul style="list-style-type: none"> Base case and sensitivities suggest VFM case is challenging and is unlikely to realise value for money for customers under a DPC model. 	<ul style="list-style-type: none"> Likely to provide value for money based on current input assumptions under almost all sensitivities.
		<ul style="list-style-type: none"> If gearing is held at 60%, in line with Ofwat notional gearing levels, it is unlikely that the project will provide customer value for money under a DPC delivery route as project finance typically requires higher levels of gearing.

Key: *green* denotes more suitable; *Amber* denotes less suitable

The results of our analysis suggest that neither scheme is suitable for DPC.

- Although GTW is considered technically suitable, it requires a relatively low initial capital investment and capital expenditure which reduces the potential to deliver benefits in comparison with a conventional price control framework.
- MTW is part of a highly integrated conjunctive use system and needs to operate on a dynamic basis with the rest of the network and is of strategic importance, serving a population of 1.4m people including two major Welsh cities (Cardiff and Newport). The value for money analysis suggests that the project may realise customer value for money under DPC but this is largely driven by financing benefits under a project finance arrangement. However, this analysis assumes the project would significantly exceed Ofwat’s notional gearing levelsⁱ and the Board of Welsh Water would not be comfortable for a third party operator of such a strategic asset to be this highly leveraged as we believe it creates unacceptable risk for our customers in the event of default or financial difficulty.

2. Introduction to DPC

We welcome new opportunities to deliver value to our customers and have carefully considered the DPC approach in the context of our planned investment programme for PR19. Our assessment of project eligibility is based on Ofwat's PR19 Final Methodologyⁱⁱ and the accompanying technical guidance. We engaged an expert external advisor to support us and developed a robust approach to provide an objective assessment against Ofwat's framework.

Our unique ownership model makes our customers the shareholders of the business. This removes any disincentive not to consider DPC and allows us to examine the benefits of the new market for our customers openly. Other companies with private investors may be concerned over the impact on growth in the Regulatory Capital Value through DPC and may seek to provide a defensive response. We are free to consider the merits of both models and as shareholders, our customers will benefit most through whichever is truly the most efficient approach.

Indeed, we have previously operated a fully outsourced model where significant aspects of the water and wastewater operations were provided by independent third parties. We therefore have experience of the opportunities and challenges associated with this type of delivery model.

Our investment programme for PR19 includes four proposed schemes that are sufficiently large in terms of value for consideration under a DPC model as set out below:

- **Merthyr Water Treatment Works, part of the South East Conjunctive Use System (SEWCUS) (approximate whole life totex value £455m):** This involves the construction of a new water treatment works and the decommissioning of three existing works to improve water quality and reduce high operating costs associated with older treatment plants which use outdated treatment processes.
- **Gwili Gwendraeth Wastewater Treatment Works (approximate whole life totex value £100m):** This involves the consolidation of seven wastewater treatment works and construction of a new treatment works to meet stricter consent levels and improve the ecological status of the rivers, reduce operating costs and create capacity required for increasing demand.
- **Improving the Customer Acceptability of Water (approximate whole life totex value £160m):** This includes upgrades to 17 water resource zones over three AMPs targeting different interventions based on results of zonal studies.
- **Reservoir safety (approximate value £347m):** This involves upgrades to 21 reservoirs over three AMPs to improve reservoir condition.

Our assessment of these projects concluded that our programmes for improving customer acceptability of water and reservoir safety would not be suitable for DPC given the nature of these projects. These projects are largely upgrades to existing assets through a large number of much smaller targeted maintenance interventions and after discussion we did not consider that they would be suitable for DPC. As such, our assessment was focused on the suitability for DPC of the Gwili Gwendraeth Wastewater Treatment Works (GTW) and the Merthyr Water Treatment Works (MTW). Both of these schemes involved the construction of new works that appeared to have a whole life totex around or in excess of the £100m soft threshold.

Given the process complexity and relatively high operational costs associated with treatment plants, we have considered that a Design, Build, Finance and Operate model (DBFO) is most

appropriate, ensuring there are incentives in place during design and construction to ensure whole-life operating costs are minimised. We also believe a 'late' tender model is more appropriate as it enables us to retain control through the planning and development stages of the project which has a number of significant risks which we think third party investors are unlikely to accept. It also ensures we maintain the interactions with key stakeholders and manage these relationships which are critical to our reputation and which can impact on our statutory and licence obligations.

3. Assessment methodology

The assessment methodology employed to evaluate the suitability of projects for DPC is based on Ofwat's PR19 Final Methodology and comprises of three key tests as set out below. We engaged KPMG to review our DPC methodology and to support us in developing a robust approach in adopting the Ofwat framework and facilitating the process which required input from key subject matter experts across our company.

- **Size test:** The value of the scheme relative to Ofwat's suggested threshold of £100m whole-life totex. We considered different interpretations of whole-life totex in our analysis, including a discounted and non-discounted approach¹ and considering project expenditure over both the life of the contract² and the total asset life.
- **Technical suitability:** The suitability of the asset for DPC given how discrete the project can be considered and the level of integration with the wider network. We used the criteria set out in the KPMG technical guidanceⁱⁱⁱ that accompanied the Final PR19 Ofwat Methodology as well as the methodology itself.
- **Value for Money:** The potential for the scheme to reduce costs to customers if delivered under a DPC model compared with the conventional price control approach. We examined the present value cost to customers under a project finance arrangement based on a number of key input assumptions and compared this with the costs that would be borne by customers under a typical price control framework and performing a range of sensitivities. Following the guidance from Ofwat's consultation '*Putting the Sector back in Balance*' we also considered the potential for the schemes to deliver customer value for money at a lower level of gearing in line with Ofwat's guidance and where the risk of a third party (DPC) default would be reduced.

The full details of the methodology can be found in the full report contained within the appendix (Supporting Document 5.7.1).

¹ Based on HMT Green Book Social time preference discount rate

² Where the life of the contract is defined as the construction period plus the contract life of 20-25 years and the asset life will reflect the generally much longer life of water and wastewater assets

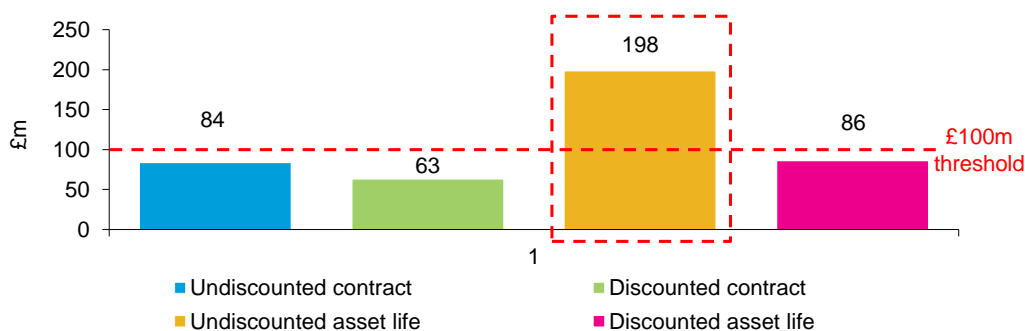
4. Assessment results

4.1. Size test

The results of the size test, comparing the schemes against the Ofwat threshold are set out for both of the schemes below.

Gwili Gwendraeth Wastewater Treatment Works

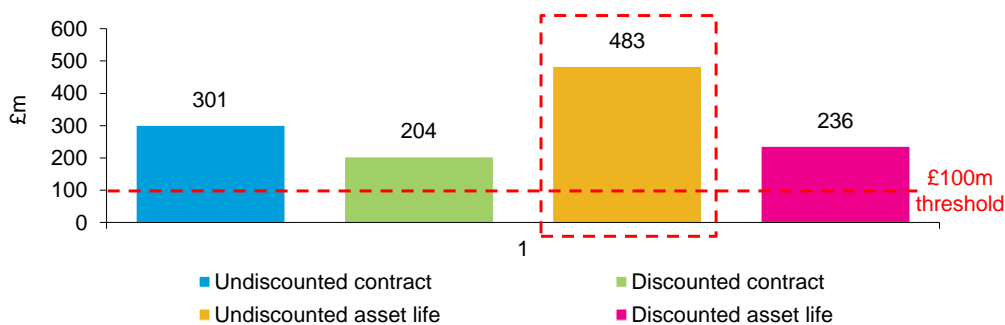
Figure 1 – Totex over the concession period and asset life undiscounted and discounted to 2022 NPV



Totex on an undiscounted basis over the contract life is £16m below the threshold. On a discounted whole life of the asset it is within £14m of the threshold. On an undiscounted basis over the entire life of the asset the threshold is significantly surpassed, this is the most literal interpretation of the Ofwat guidance. However, it is noteworthy that under this scenario opex makes up 72% of total expenditure, compared with 40% of totex under the concession period.

Merthyr Water Treatment Works

Figure 2 – Totex over the concession period and asset life undiscounted and discounted to 2022 NPV



Expenditure costs for all four scenarios are substantially over the £100m threshold. Even on a discounted basis over the concession period, the 2022 NPV of totex is still over twice the threshold.

4.2. Technical suitability

In order to assess the technical suitability of projects the following activities were undertaken:

1. We developed a structured assessment framework and process for evaluation using Ofwat’s PR19 Methodology and technical guidance for DPC projects.

2. This framework was validated with our subject matter experts to help ensure it captured the key issues we would expect it to address.
3. A review of the project documentation and interviews with project leads within asset management was conducted to identify key project characteristics and the role of the scheme within the context of the wider network.
4. A workshop was held with key operational and asset management staff to evaluate projects against the framework criteria for both of the schemes. Follow ups were also undertaken on specific areas where further understanding was required to inform the assessment.
5. The assessments were written up with supporting rationale for review and validation with SMEs before being finalised.

Gwili Gwendraeth Wastewater Treatment Works

Table 2 – Gwili Gwendraeth Wastewater Treatment Works technical assessment summary

Criteria	Rationale	Overall assessment
Interactions with stakeholders	<ul style="list-style-type: none"> • The scheme has a number of key stakeholders including the NRW and given the local environmental impacts and discharges into bathing waters and shellfish waters from the proposed treatment works which may require complex interactions and incur risk and costs for the CAP. • Timing of the scheme could make DPC delivery challenging given the lead time and immature state of the market and discussions with NRW are ongoing to establish a mutually agreeable timetable. <ul style="list-style-type: none"> • Regular and ongoing interactions with NRW would need to continue and involve the DPC provider which could create duplication of costs and some challenges given we will retain the licence obligations. 	Less suitable for DPC
Interactions with existing network	<ul style="list-style-type: none"> • Relatively passive connections with the network reduces costs of interoperability and need for control to ensure flexibility. However GTW would be connected downstream of seven separate catchments that will impact on treatment works performance. • Potential loss of synergies associated with management and shared operations across multiple sites. • Some complexity associated with bio-resources assets that would form part of scheme and which are not eligible for DPC under Ofwat proposals which could reduce efficiency of build costs but expect this could be overcome. 	More suitable for DPC
Contributions to supply/capacity	<ul style="list-style-type: none"> • Predictable capacity and quality standards that are easily measurable albeit some risk of future changes based on changes to consent requirements and impact on upstream discharges from customers etc. This should enable a contract to be more easily developed. • Unlikely to be material changes in capacity requirements over the asset life based on projections and plant sizing which reduce potential volatility and risks to the CAP. 	More suitable for DPC
Asset and operational failures	<ul style="list-style-type: none"> • Well established supply chain and a number of recent UK precedents providing greater certainty over costs of construction and operation and reducing risks that could be passed into pricing. • Impacts of failure well understood but potential for fines given local environmental challenges could be costly but likely to be manageable. 	More suitable for DPC

Summary assessment

GTW will be based on conventional technology and there is a mature supply chain established. The contractual outputs could be well specified with relatively high levels of certainty over potential variability and which are easily measurable. There are connections with 7 separate catchments but these are relatively passive and downstream of the network, reducing the need for close integration. The sensitivity of the local environment and the impact of effluent

discharges involves a number of stakeholders which creates greater interactions than a typical wastewater treatment scheme.

Merthyr Water Treatment

Table 3 – Merthyr Water Treatment Works technical assessment summary

Criteria	Rationale	Overall assessment
Interactions with stakeholders	<ul style="list-style-type: none"> Merthyr would contribute up to 20% of the overall company supply output, making it a strategically important asset serving two major Welsh cities (Cardiff and Newport) and increases the risk profile of the scheme. The project will attract a high level of scrutiny from stakeholders given its scale and proximity to Cardiff and as such, is likely to require more complex interactions which could create risks for the CAP. The scheme has very high potential impact on statutory obligations in terms of quality, availability and failure and will impact significantly on ODIs and could have significant reputational impacts with regulators. 	Less suitable for DPC
Interactions with existing network	<ul style="list-style-type: none"> The management of the SEWCUS network is complex and highly integrated in nature. Network management requires dynamic production planning between works and the distribution network to balance supply input and distribution demand. The Merthyr scheme will include five raw water input feeds and which are controlled under our existing abstraction licences. In addition, three of the direct feeds for Merthyr include associated storage and utilise impounding reservoirs which have DWI undertakings with respect to taste and odour and therefore require close management by us. Third party operation could reduce flexibility, increase costs, impact network optimisation and delay failure response. The maintenance team serving MTW and the other local works would be sized to support the standby arrangements for multiple sites. If the MTW team was operated by a third party, additional resource would still be needed to cover out of hours standby operations for other works in the near vicinity, increasing costs to serve or creating dis-economies of scale. Balancing of supply output between works on the SEWCUS network requires daily production plans and close co-ordination between teams in order to manage seasonal fluctuations, periods of planned and reactive outages, potential issues with raw water input quality and availability and impacts of cold and dry weather which impact on demand. As such, it would be more challenging to operate MTW where a third party was involved and a contractual relationship could constrain flexibility and responsiveness. 	Less suitable for DPC
Contributions to supply/capacity	<ul style="list-style-type: none"> Supply output is well understood and variations are limited to normal seasonal variations making outputs easier to specify in a contractual arrangement. Outputs can be clearly defined and are well specified however inputs could change due to deteriorating raw water quality upstream of works which could create additional costs of treatment over time. Unlikely future growth would impact on asset over its lifetime based on projections. 	More suitable for DPC
Asset and operational failures	<ul style="list-style-type: none"> Connection into SEWCUS network means a pollution incident could impact up to 1.4 million customers which would be a significant risk for a third party to accept and maybe reflected in higher pricing and return expectations. Supply chain is well established but limited precedents of plants of this scale recently in the UK and which may create greater uncertainty of costs. Failure is relatively well understood but there is potential for very significant impacts given size and scale of scheme from both a financial and reputational perspective (ODIs and fines) which is likely to be challenging to transfer to a third party. 	Less suitable for DPC

Summary assessment

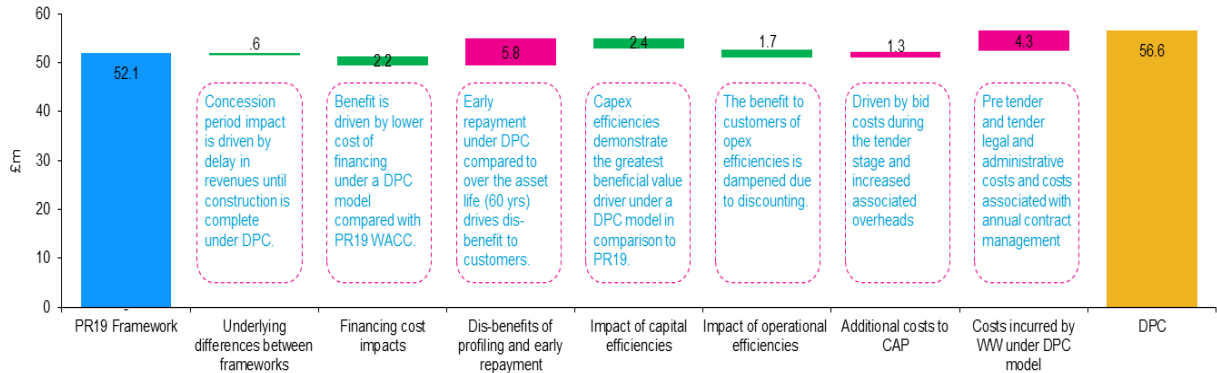
A contract could be developed between ourselves and a third party for the DBFO of MTW. However, the asset is embedded within a critical water supply network (SEWCUS) and used conjunctively with other assets on a daily basis which makes it highly integrated. The criticality of the asset and its strategic importance within the network suggests the impact of failure could result in significant costs and reputational impact for us and is a risk that may be challenging to transfer to a third party at a reasonable cost.

4.3. Value for Money (VfM) for customers

The outputs of our customer value for money analysis are contained in the table below and which show a base case and a range of sensitivities.

Gwili Gwendraeth Wastewater Treatment Works

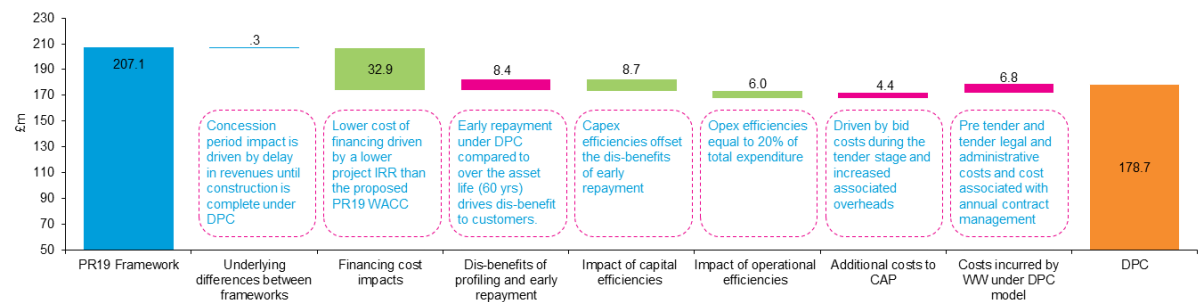
Fig 3 – Customer value for money analysis: Base case



- The chart shows the VfM analysis results as the 2020 NPV difference in customer value for money under the base case assumptions for GTW between delivery under a price control framework and under a DPC model. The bridge identifies the key movements in costs to customers associated with differences between key input assumptions.
- Under the base case assumptions, the DPC model results in a greater cost to customers at £4.5m than the price control framework. There are limited financial benefits given the size of the scheme. Accelerated depreciation and additional costs to Welsh water offset potential efficiencies.
- The full range of sensitivities are shown in the full report contained within the appendices. The sensitivities show the price control framework to be more beneficial in all cases except where assumed efficiencies under DPC are very high, financing costs are low and the asset is depreciated over a much longer period. In this case, DPC is then shown to be marginally beneficial for customers.

Merthyr Water Treatment Works

Fig 4 – Customer value for money analysis: Base case



- The chart shows the VfM analysis results as the 2022 NPV difference in customer value for money under the base case assumptions for MTW between delivery under a price

control framework and under a DPC model. The bridge identifies the key movements in costs associated with differences between key input assumptions.

- In the base case, the PR19 model shows a greater cost to customers. The NPV difference between the DPC and PR19 delivery models at a base case is £28.4m.
- The key value driver is the lower cost of financing under a DPC model compared with PR19. The early repayment and additional costs offset the capital and operational efficiencies realised by the CAP under the base case assumptions.
- Sensitivities examined suggest MTW would provide value for money under most cases however where financing costs are higher, efficiencies are low and the depreciation profile is shortened, the price control framework appears more beneficial to customers by approximately £13m.
- We also considered the impact of holding gearing at the Ofwat notional level and the impact this would have on the customer value for money. In our analysis, reducing the gearing from c.90% to 60% for the MTW scheme shows that the NPV cost to customers under DPC is greater by approximately £20m.

5. Outcome

Based on our analysis we have decided not to pursue either of the treatment schemes via a DPC route at this stage or progress them to a full business case. The value for money analysis suggests GTW would not be beneficial for customers if delivered through DPC even though it is largely eligible based on size and technical suitability. Whilst the value for money analysis looks positive for MTW, albeit under a highly leveraged project finance model, the scheme is a highly integrated asset operating dynamically as part of the SEWCUS network which we consider is likely to make it much more difficult to operate efficiently via a third party interaction. The scheme is also of significant strategic importance to us representing a critical asset that will serve a significant proportion of our customer base. In particular, the Board of Welsh Water would find it difficult to rely on the provision of an essential large part of its statutory obligations by a highly-leveraged project finance vehicle (which would not itself meet Ofwat's governance principles). As such we do not consider it suitable for delivery under DPC and believe it would create risks for our customers that do not exist under the conventional delivery framework.

We welcome the opportunities provided by DPC and will continue to assess the emerging DPC market and review our decision in the light of any new evidence that may suggest we could realise greater value for customers through the application of this delivery approach. We have also put in place a robust assessment framework that we can adopt as part of the ongoing business planning and price review process.

References

ⁱ *Ofwat, April 2018, Putting the Sector back in Balance Consultation*

ⁱⁱ *Ofwat, Dec 2018, Delivering Water 2020: Our final methodology for the 2019 price review*

ⁱⁱⁱ *Ofwat, Dec 2017, Direct Procurement for Customers: technical review. A KPMG report for Ofwat*

Supporting Document

5.7.1 DPC assessment report