IAP Response

Ref WSH.CMI.A5

DPC Suitability Assessment Merthyr

1 April 2019

Contents

1. Introduction

Ofwat's detailed actions on Direct Procurement for Customers (DPC) contained in its PR19 Initial Assessment of Plans (IAP) contained specific follow up actions on the Merthyr Water Treatment Works (WTW) scheme and Gwili Gwendreath Wastewater Treatment Works Scheme. This report specifically references action WSH.CMI.A5.

WSH.CMI.A5 is stated below:

"A full explanation and supporting risk analysis for the Dŵr Cymru Board's decision to reject the Merthyr Water Treatment scheme as suitable for DPC on the grounds of "unacceptable risk to our customers". This should include, but not be limited to, the risks to customers in the event of default or financial difficulty of a third party operator and the areas where there was insufficient risk management available to the Board."

[DCWW to address point on insufficient risk management]

The response to this action is structured under the following sections:

1. Introduction: Purpose and background to this note.

2. Technical considerations – Scheme risks and technical characteristics making MTW less suitable for DPC versus in-house delivery: A number of scheme specific characteristics that are likely to make a DPC contract more challenging in a context of delivering value for money to customers and present risks for DCWW.

3. Financial considerations – Reduced benefits for customers under DPC delivery: DCWW's unique financial and not for dividend model means that customer lose the additional benefits arising from not paying returns to shareholders under a DPC model where equity returns are not reinvested for the benefit of customers.

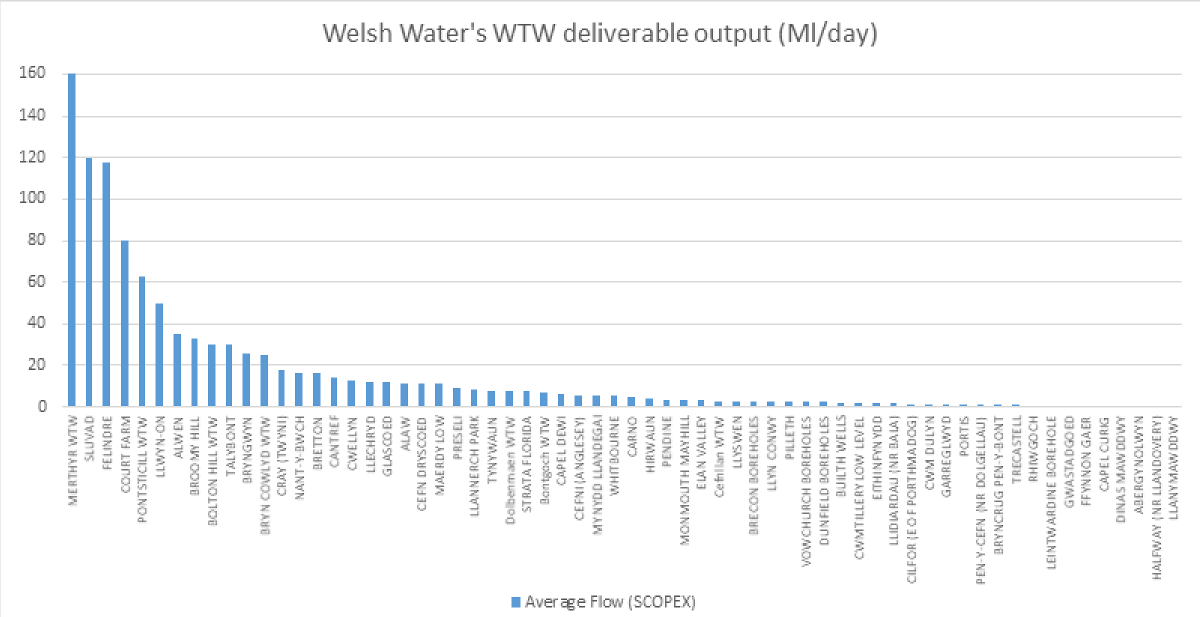
2. Technical considerations

We set out below a number of scheme characteristics which we consider reduces the suitability of MTW under a DPC delivery model, alongside our rationale. This section first looks at the strategic importance of the scheme and then addresses the various contractual challenges that are likely to impact on customer value for money and DPC suitability from a technical perspective.

2.1 Strategic importance

MTW output has the highest average volume of water in the Welsh Water supply region, see Figure 1 below, and the largest investment over the next 2 AMPs for the company. As such, the scheme is of significant strategic importance and is critical to the delivery of a number of customer benefits underpinning DCWW's business plan.

Figure 1 Welsh Water WTW Forecast Average WTW Outputs (Ml/day)



As such, we want to maintain full control of the project delivery programme and ongoing operations to ensure we secure full value from the investment. If we were to embark on a DPC delivery route for this asset, we would effectively be reducing the level of control we have over this investment and will become heavily reliant on a third party delivery, managed through a contractual mechanism. This will also impact on our ability to achieve and maintain overall service delivery, and our operational resilience will suffer if the asset is not available. This is discussed in more detail under the '*ODI impact*' subsection.

MTW will be one of the largest water treatment works to be constructed in England and Wales in the next 2 AMP periods. The only example of a WTW operated under contract by a third party in the UK is Project Alpha in Northern Ireland, which has now been bought back by Northern Ireland Water. Northern Ireland Water have stated to us that they expect to deliver better customer value for money through acquisition of these projects and will realise cost savings against the costs they were paying under the PFI contracts which would suggest that the value for money they expected to realise has not been delivered and it is in fact more beneficial to customers to bring these contracts in-house. There are no comparable examples in England and Wales for a WTW of this size being operated by a third party. This would be the first time a project of this kind has been delivered and therefore presents an increased level of risk which we would have concerns about accepting on behalf of our customers. Consequently, a first of its kind premium is likely to be expected from the private sector for delivering the scheme under a DPC model due to the unique nature of this project across WTW, raw and clean water network.

The key incremental risks assessed included those set out in the table below:

Table 1 Key risks associated with Merthyr Water Treatment Works under DPC delivery model

Risk	Description	Impact	Potential mitigation	Residual risk
CAP default	▪ Third party CAP enters administration and requires re-tender of contract or in house delivery	▪ Increased costs associated with recovery and re-tender of scheme ▪ Delays to customer benefits ▪ Negative reputational impact	▪ Due diligence on contract bidders ▪ Ongoing contract management and review ▪ Insurance or performance guarantees from corporate sponsors alongside SPV	▪ Whilst bidder due diligence can help identify potential issues it cannot prevent an unforeseen event creating financial pressures for investors and who may enter administration.
Inability to secure customer VFM through DPC contract	▪ Unable to structure the project in a way that allows an acceptable risk return balance for a third party investor and protects DCWW customers from costs and loss of benefits associated with non-performance.	▪ Higher overall costs to customers of third party risk transfer ▪ Legal costs associated with potential contractual claims	▪ DCWW accepts higher risk through reduced transfer of risk under DPC contract ▪ Customers share a greater share in risk under a DPC delivery model	▪ DCWW takes on greater level of risk that increases costs and risks to customers. ▪ DCWW has to deliver the project in house after incurring costs/effort associated with pursuing DPC model.
Project slippage resulting in increased costs and/or delay of customer benefits	▪ Project procurement is delayed given immaturity of DPC market and unique nature of projects with limited UK precedents	▪ Impact on resilience of SEWCUS network and delayed benefits from project provided to customers	▪ Contractual penalties for later delivery (i.e. liquidated damages)	▪ Impact on delivery of customer commitments and benefits ▪ ODI impacts and associated financial penalties
Operational performance failures	▪ Impacts on water quality or supply interruptions, taste, odour and discolouration.	▪ Impact on customer supply quality and reliability. ▪ Customer contacts including telephone complaints. ▪ ODI impacts and penalties. ▪ Reputational impact. ▪ Longer time required to identify and resolve potential issues where third party asset involved.	▪ Contractual remedies and service deductions for operational failures. ▪ Contractual claims against CAP.	▪ DCWW remains responsible for statutory obligations and will be liable for compliance with regulatory standards. Failure to meet these could impact on DCWW's wider operating licence.
Loss of wider conjunctive use system benefits through less flexible third party contract	▪ Reduced flexibility in operating regime and loss of economies of scale with wider SEWCUS network such as shared maintenance capability across SEWCUS plants.	▪ Higher operational costs ▪ Reduced operational flexibility	▪ Include maximum operational flexibility within SEWCUS contract. ▪ Require third parties to utilise existing DCWW capabilities as a service provider	▪ DCWW will still be responsible for overall SEWCUS costs and optimisation of operating regime across the SEWCUS network

We have expanded below some of these risks and technical characteristics where we see specific challenges associated with delivery under a DPC model.

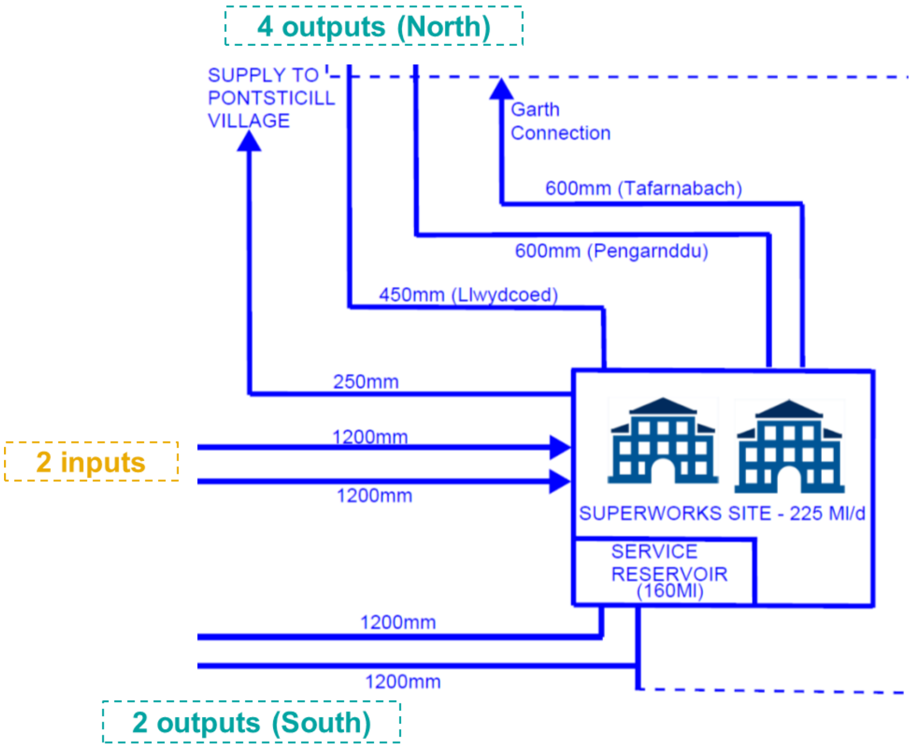
2.2 Contractual challenges that are likely to impact on customer value for money and DPC suitability

2.2.1 Interoperability

The new WTW will replace three existing WTWs. Due to the size and complexity of MTW, we expect that it will require around 25% of the maintenance and ICA technician time going forward.

The MTW will abstract water from five raw water sources which will be supplied via two raw water pipelines. It will then treat these supplies and transfer clean water to six service reservoirs across its network to supply numerous DMAs, as shown in the diagram below.

Figure 2 Merthyr water treatment works input and output relationships



Within DCWW there is typically one raw water input main into a WTW, although a limited number have two inputs and one site has three. The new MTW scheme will be connected to two raw water inputs from the Taf Fechan and Taf Fawr raw water sources. The designed number of outlet mains connections for MTW is 6, which is greater than is typical for our larger WTWs, which tend to have between 3 to 5 outlets.

As a result, significant and coordinated effort is required between the day-to-day production/control centre and the asset teams (operating and maintaining the site) to ensure daily output which would give additional complexities to a contractual relationship with a 3rd party.

Isolating the MTW from the wider SEWCUS would add significant complexity to the dynamic production planning between MTW and the distribution network to balance supply input and distribution demand across multiple zones.

Currently, the MTW is expected to supply water to over 400,000 people across 14 Water Distribution Zones (WDZs), see Table 2 below with an average output flow of 160Ml/day. This represents 16% of Welsh Water's total average deployable output from water treatment works.

Table 2 Water Distribution Zones to be supplied

Zone	Zone Name	Sum of Population for whole zone	Sum of Population adjusted for proportion supplied by MTW
N33	ABERDARE	25,721	25,721
N53	Barry / Sully	64,699	6,470
N46	Caerphilly	49,074	49,074
N51	Cardiff (Ely / Radyr / Llandaff)	89,348	44,674

Zone	Zone Name	Sum of Population for whole zone	Sum of Population adjusted for proportion supplied by MTW
N48	Cardiff (Heath & Llanishen)	93,824	75,059
L43	Ebbw Vale / Brynmawr	23,319	233
N26	Maerdy / Porth	45,641	22,820
N10	Merthyr / Abercynon	80,417	80,417
N16	Penarth / Barry	33,252	6,650
N23	PENDERYN	12,557	1,256
N31	PONTYPRIDD (PONTSTICILL) HIGH	24,611	24,611
L45	Rassau / Sirhowy Valley	41,632	20,816
N41	Rhymney / Bargoed	84,290	84,290
N19	Vale of Glam / Rhondda Valleys	77,508	19,377
	Forecast Cwm Taf Area Total		**461,469**

SEWCUS is unique given its conjunctive use arrangements. The new MTW will be atypical compared to many Welsh Water WTW due to the constraints around raw water supply during summer periods and its forecast need during an emergency to rapidly increase output to meet customer demand.

This rapid change is expected to be at a level of 50 Ml/day, representing 22% of the total capacity.

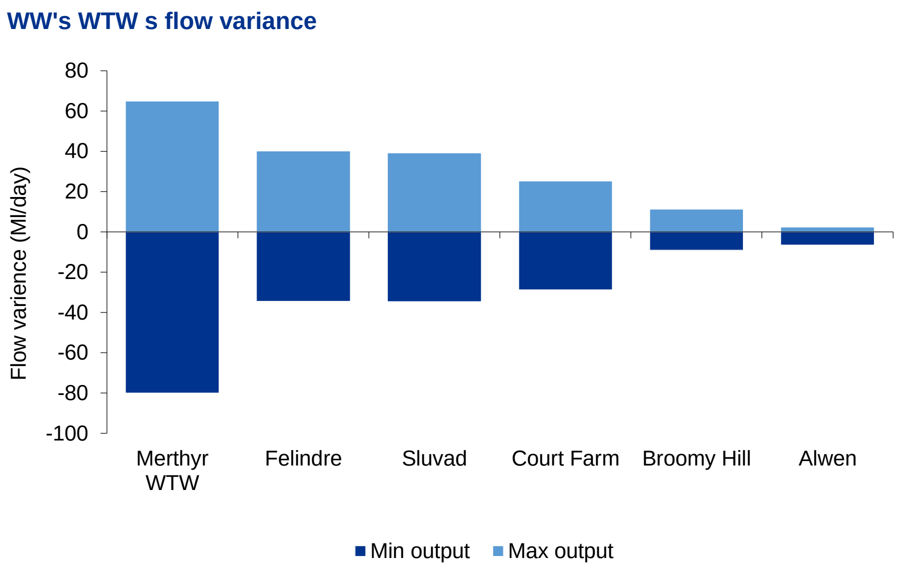
The expected variance for the MTW is much greater in comparison to the largest increase observed during 2018 at Felindre, Court Farm and Sluvad WTWs. The largest step change in production that occurred over a period of several days in 2018 was 17%.

The operation of the MTW by a third party will have a direct impact on Welsh Water's ability to manage rapid changes within the system as the new MTW would be managed by an independent third party control room. The need to work with two different control rooms particularly out of hours and during an emergency could lead to a higher probability of error or miscommunication between the two control rooms. There will also be a need to develop complex contractual arrangements between Welsh Water and the third party in order to account for changing capacity requirements and availability levels under varying conditions. Similarly, interoperability of IT systems will also need to be ensured under a DPC model further adding to the contractual complexities associated with the scheme.

2.2.2 Demand risk

MTW will form part of the SEWCUS network which when it has replaced 3 sites will comprise of 9 other Water Treatment Works. The deployable output from MTW is expected to vary significantly as part of ongoing real time network optimisation as well as raw water availability. This will result in the deployable output for MTW fluctuating between a maximum deployable output of 225Ml/d down to a minimum of 80Ml/d and is expected to exhibit much greater variability than that of a typical DCWW WTW, see Figure 3 below which demonstrates flow variations seen at some of our existing sites.

Figure 3 WTW Flow Variance across WW Compared with the new MTW (Ml/day)



Given the technical characteristics of the asset (i.e. significant volume variance and the fact that the scheme's performance is heavily dependent on volume) the demand risk will need to be transferred to CAP under a DPC contract. This risk transfer is expected to be expensive and also increases the probability of a CAP default. It is unlikely that a third party will accept this level of demand risk in its projected revenues and a fixed capacity charge will very likely be required to ensure the plant is financeable under a typical PFI structure and there is some level of revenue certainty. As such, the costs associated with maintaining the asset ready and capable of delivering its full deployable output is likely to be expensive if a standalone third party is responsible for operating the asset.

The MTW's forecasted demand will average 160 Ml/d and will range from a maximum between 170-225 Ml/d and a minimum between 80-122 Ml/d. These estimates represent a wide variation in deployable output that MTW will produce. Therefore to manage these variabilities we will need to develop a matrix approach to assess and price the daily weekly and monthly output requirements as part of the contractual arrangements with the 3rd party.

The resilience afforded by the SEWCUS network means that there can be rapid variations in flow should one of the key water treatment works fail. For instance, Sluvad or Court Farm demand can change by up to 95 Ml/day of which 50% is likely to be supplied by the MTW. In addition, a failure of Felindre would result in a need to increase network inputs by up to 50 Ml/day.

The raw water supply will be strictly controlled and dependent on the weather conditions. The aim of this scheme will be to maximise the available raw water supply and output into the distribution network in a way that minimises power costs when compared with the alternative supplies and therefore delivers efficiency for customers. The MTW deployable output will be limited by strict reservoir control curves, which limit the volume of water that can be abstracted when the reservoir is no longer overtopping.

The MTW will need to be able to operate in a far wider deployable output range than current WTWs. In Table 3 below, the range of outputs from minimum to maximum and average can be seen. When compared with the new MTW it can be seen that the forecast flow variation will be far greater at the new site when compared with the existing sites.

Table 3 Current raw water availability and network configurations (Ml/day)

Ml/day	Min	Max	Mean
Current output variability			
Pontsticill	30	90	62.5
Cantref	16	22	21
Llwynon	20	73	45
Other WTWs*	52	98	74
Forecasted output variability for MTW			
MTW	80 - 122	170 – 225	160

*Other WTWs data is based on 2018 output data for Broomy Hill, Alwen, Sluvad and Court Farm sites.
Source: Welsh Water analysis

2.2.3 ODI impacts

DCWW has put forward a number of ODIs that will result in a financial penalty in the case Welsh Water is unable to deliver the operational performance standards it has committed. MTW will have a significant impact on operational performance standards given its size and scale in the context of the wider DCWW network. DCWW would be liable for any financial penalties for non-delivery against ODI commitments. The potential financial impact of DCWW's ODIs that could be impacted by a large WTW such as MTW is shown below.

Figure 4 ODI penalties

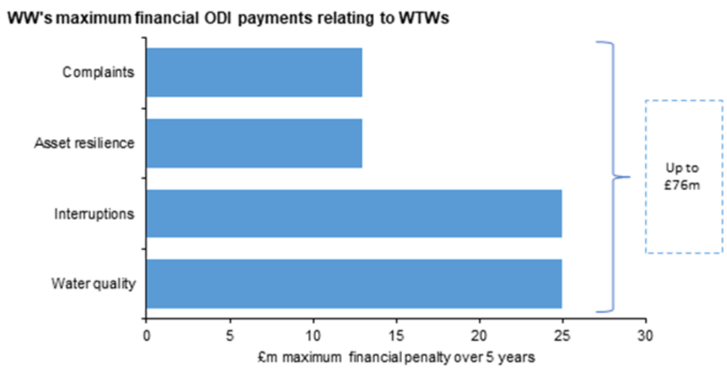


Figure 4 above indicates that the aggregated level of ODI penalties associated with water quality, interruptions to supply, customer complaints and asset health can have a significant financial impact on DCWW. The size of MTW serving over 400,000 customers and its criticality to the operation of the SEWCUS network means that its performance can have a significant impact on ODI performance. These penalties could equate to a £76m penalty over a five year period and transferring the ODI obligations associated with this may be challenging through the DPC contract framework.

We expect that any 3rd party investor would require additional returns in order to finance the risk associated with ODI obligations and which would lead to greater costs to customers under a 3rd party delivery model.

The ODIs for AMP8 and AMP9 are yet to be defined but it is assumed a similar level will apply to those in AMP7.

2.2.4 Costs

The MTW will be connected to the SEWCUS from which it can draw benefits relating to the economies of scope and scale of the entire system. This would be lost under the DPC delivery model. We have identified two primary cost drivers that we expect to realise efficiencies from 1) shared overhead services and 2) maintenance activities within the system.

The shared overhead services can drive cost efficiencies based on a common set of processes or operations by multiple assets within the system. The shared services will include IS support costs, standby costs, control room management, process scientist support, remote operation of site out of hours, and other IT and telecommunication costs.

The maintenance cost efficiencies will be driven through the use of maintenance teams across multiple sites. At Welsh Water there are currently 62 water treatment works which are divided between 5 areas. As a result, on average, there is a one maintenance team for around 12 WTWs. However, if the MTW will be set as a discrete asset outside of this system, there will not be an opportunity for this combined service and therefore maintenance cost efficiency to take place.

2.2.5 Phased scheme delivery

The construction of the MTW scheme is expected to last approximately 7 years from project contract award beginning in 2023 and the asset is expected to be completed by 2029. The long duration of the construction period will reduce the type of finances available for the project (or require construction period revenues to the capital providers) making the DPC less likely to deliver benefits to customers in the form of financial cost savings.

The scheme comprises a treatment works, a storage tank, raw and treated water pipelines and pumping stations with inherently different functionality calling for a tailored payment mechanism for each scheme component and commencing at different points in the project programme (i.e. on commissioning of the storage reservoir and on commissioning of the Water treatment Works which are expected to be around 5 years apart).

In addition at the point of contract award in AMP7, only funding for the AMP7 spend has been approved and it will be challenging to contract for the following AMP8 period at the point of contract award planned in 2022.

Separate payment mechanisms for the different asset components would introduce more complex contractual arrangements for setting performance targets and efficiently calibrating incentive payments to limit risk of overpayments by customers under a DPC delivery model.

In addition, connecting the new WTW will require a 6 month handover period over where existing treatment works will be decommissioned and new works brought on-line. This will need to be governed by detailed contractual arrangements agreed upfront at tender award which is challenging to put into a contract given the complex interactions between the existing and new operational sites and in the context of running a live operational network in parallel.

2.2.6 Water quality standards

MTW will need to comply with increased level of water quality requirements to ensure that the network's high water quality standards are maintained and customer issues of taste, odour and discolouration are addressed. These standards are critical to delivering some of the benefits anticipated from Merthyr and delivery against these would have to be incentivised in the contract which could lead to additional risks or cause higher running costs necessary to ensure compliance with standards. We note that interviews with other UK PFI procuring authorities have suggested increases in operating costs and increased manning levels at treatment sites results from enhanced water and wastewater quality standards and associated performance deduction regimes.

The comparison of required regulatory standards for a typical water treatment works scheme to those set for MTW is set out in the table below and the standards can be seen to be tighter than those typical operators may be comfortable delivering against.

Table 4 Welsh Water's quality standards against the Regulatory Prescribed levels within the Water Supply (Water Quality) Regulations Wales 2016

Parameter	DCWW requirements for MTW	Regulatory standards for a typical water treatment works*
Iron	10 μg/l	200 μg/l
Aluminium	10 μg/l	200 μg/l
Manganese	<2 μg/l	50 μg/l
Geosmin	<5 ng/l	Taste and odour not detectable (no standard value varies by person)
MIB (2Methyl Isoborneol)	<2.5 ng/l	Taste and odour not detectable (no standard value varies by person)
Turbidity	less than 0.1 NTU	1 NTU at the WTW and 4 NTU at customer tap
Colour	<4 Hazen (95%ile) <8 Hazen (99%ile)	20 Hazen
Trihalomethanes (total)	<25 μg/l	100 μg/l, with DWI target less than 50 μg/l at the customer tap
Total organic carbon	<1 mg/l (95%ile) <1.5 mg/l (99%ile)	No abnormal change
pH	Target 8 (+/- 0.5)	6.5 to 9.5

*Prescribed concentration or value in the WQ Regulations

3. Financial considerations

DCWW is wholly owned by Glas Cymru Holdings Cyfyngedig; it has no shareholders and is a company limited by a guarantee. The appointed business has a dividend policy[1] that stipulates that all financial surpluses are reinvested for the benefit of customers as there are no shareholders to pay dividends. This dividend policy was approved by Ofwat in December 2015 and was formally adopted by the Welsh Water Board in March 2016 and is reported in Annual Report and Accounts.

Delivering the MTW project under the PR19 regulatory framework by DCWW would therefore provide benefits to customers in the form of a 'customer dividend'. The entire return on equity generated is retained by the business as a result of DCWW's unique ownership structure. A return to equity for a company with shareholders would normally flow through to distributable reserves and as dividends to shareholders. As DCWW do not have shareholders the delivery of MTW project under the PR19 regulatory framework would provide additional benefits for customers in comparison with WaSCs and WOCs.

These benefits were previously not captured under the VfM assessment which assumed that the revenue DCWW would collect from customers under the PR19 framework to construct and operate MTW is the sum of returns on the RCV (i.e., WACC*RCV), depreciation of the RCV and PAYG. Profits

[1] PR19 Putting the sector back in balance: Dividend Policy and performance related pay (2018) Dŵr Cymru Welsh Water

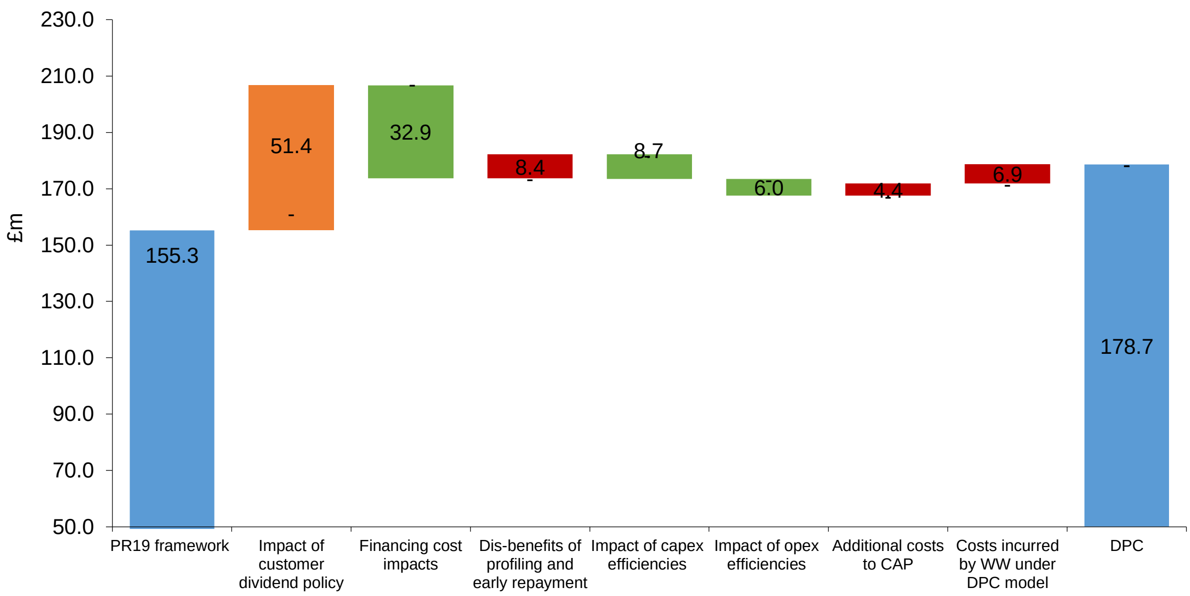
retained for customer dividends are captured in the cost of equity element of the returns earned on the RCV.

Directly quantifying the benefits linked to 'customer dividend' with regard to the delivery of MTW, such as building up a reserve, improved credit rating, reduced costs of financing and funding of related capex in the VfM is challenging.

One method to quantify the bill reduction and the decrease in the total required revenue under the PR19 framework as a result of the 'customer dividend' is to estimate the cost of equity element of the returns on the RCV. Ofwat's consultation on putting the sector back in balance[2] estimated the cost of equity as 7.13% on a nominal basis and 5.13% on a CPIH real basis. We established the 'customer dividend' benefit in the form of a revenue reduction by multiplying Ofwat's real cost of equity by notional equity and then by the RCV.[3] The resulting annual cashflow was then subtracted from the total required revenue under the PR19 framework as a direct reduction to customer bills assuming that none of the dividend is reserved for future capex.

The result of this analysis is presented in the waterfall graph below. The blue bar labelled 'PR19 framework' on the left hand side represents the total cost to customers of MTW under the PR19 framework if the 'customer dividend' benefit shown in the orange bar is redistributed fully to customers in the form of bill reduction.

Figure 5 Customer dividend benefit using returns to equity - PR19 vs DPC



Considering 'customer dividend' benefit in the costs to customers under PR19 framework make the delivery of MTW under a PR19 framework more beneficial than the DPC route. The customer dividend benefit entirely offsets the material financing and efficiency benefits assumed under the DPC model.

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[2] Putting the sector back in balance (2018) Section 4.1.1

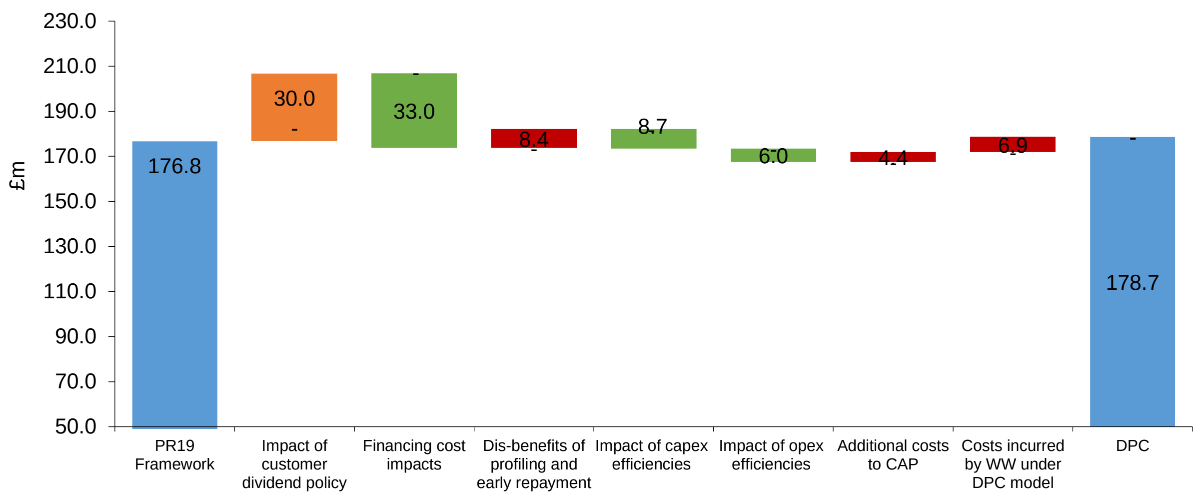
[3] Estimated customer dividend = CoE * (1 - gearing)* RCV

As described by Ofwat in the putting the sector back in balance consultation document,[4] appointed companies are typically cashflow negative and must refinance investment in the RCV. Therefore one can argue that a portion of the equity return captured in the analysis above would be retained by DCWW in the business and only a proportion of the equity return would be redistributed to customers in the absence of shareholders.

In the consultation document Ofwat describes that average dividend over the 2011-17 for the European market is in the range of 40-70%. Ofwat notes that as water companies are considered income stocks they are therefore likely to be at the upper end of this range. This is equivalent to a nominal base dividend yield of 5% or 3% in CPIH real terms.

Using Ofwat's dividend yield assumption represents a more conservative approach for establishing the 'customer dividend' benefits under the PR19 framework. Under this alternative approach we estimated the 'customer dividend' benefit in the form of a revenue reduction by multiplying the notional level of equity against the RCV and multiplied that by the real dividend yield.[5] These returns are subtracted from the total required revenue. The results of this analysis is presented in the waterfall graph below.

Figure 6 Customer dividend benefit using Ofwat base dividend - PR19 v DPC



Including the benefits of customer dividends by using Ofwat's base dividend estimate under the PR19 framework makes the DPC model less beneficial for customers. The impact of the customer dividend policy is approximately equivalent to the financing cost benefits under the DPC model.

To conclude, irrespective of the specific method applied for the calculations, taking into account DCWW's ownership structure and customer dividend policy in the VfM assessment for the delivery of MTW shows the delivery by DCWW under the PR19 framework to be more beneficial to customers than the DPC.

[4] PR19 Putting the sector back in balance: Dividend Policy and performance related pay (2018) Dŵr Cymru Welsh Water

[5] Estimated customer dividend = RCV * (1 - gearing)* dividend

4. Conclusion

The MTW scheme is less suitable for delivery under a DPC model. The MTW fails both the technical suitability as well as the financial considerations test for delivery through the DPC route.

The technical characteristics of the scheme would make it more challenging to contract with a third party provider under a typical project finance structure and are also likely to reduce the benefits and remove economies of scale as part of operation of the wider conjunctive network.

In addition, the unique ownership and financing model adopted by DCWW means customers are likely to be worse off as a result of equity returns being retained by a third party rather than being re-invested in the network. This more than offsets any potential benefits a DPC model may achieve.

Appendix – PFI precedents and insights

Experience and insights from water and wastewater UK PFIs in the context of Ofwat's DPC proposals that has influenced our views.

There are limited examples of water and wastewater project finance investments in the UK water and wastewater sector. Examples in England[6], Northern Ireland and Scotland do exist and where the water and wastewater companies remain in government ownership.

In Scotland, there are 9 separate wastewater PFIs but no examples of clean water PFIs. Northern Ireland Water established both water and wastewater PFIs. Recently, both Northern Ireland Water (NIW) and Scottish Water (SW) has acquired its PFI projects, Project Alpha and Project Grampian respectively and which were sold by the previous owners, Kelda Group Limited.

Both Northern Ireland Water and Scottish Water have stated that they expect to deliver better customer value for money through acquisition of these projects and will realise cost savings against the costs they were paying under the PFI contracts. This would suggest that the value for money they expect to realise has not been delivered as planned and it is in fact more beneficial to customers to bring these contracts in-house. A report published by Scottish Water[7] in 2009 suggests it would plan to bring back all of its PFI contracts in the case government borrowing is available and to realise benefits for customers.

Whilst it is recognised that private investment was necessary to more rapidly improve compliance with emerging European environmental directives in both Northern Ireland and Scotland through its water and wastewater PFI contracts in the absence of available government funding, the value for money case was considered marginal and the counterfactual used in these examples is a public sector benchmark which is not comparable to privately run companies such as the English and Welsh water companies which have been managed under price cap regulation since privatisation in 1989. In discussions with both procuring authorities and PFI operators, a number of issues are citied which impact value for money and potentially reduce benefits to customers and include[8].

1. The introduction of enhanced service levels required to provide headroom and in order to mitigate against failures where the procuring authority retains its statutory obligations and which leads to more costly outputs.
2. Increased manning levels at sites to mitigate risks of performance deductions associated with contractual penalties for non-performance.
3. Reduced flexibility impacting scope for efficiency gains under the contract where incentives are not always completely aligned.
4. Legal, advisory and management costs associated with defending contractual claims and disputes and potential litigation.
5. Prolonged and protracted negotiations as part of procurement process.
6. Reputational impacts such as those experienced at Seafield where odour has been a long running issue for local residents and has impacted on SW's reputation and where the PFI operator is not incentivised to invest alternative more commercially beneficial initiatives such as anaerobic digestion4[9].

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[6] **Note:** the only significant examples in England and Wales are under the MOD Aquatrine contract and are therefore potentially less comparable as they are generally much smaller dispersed assets and the procuring entity is not a water company and the assets are located on private MoD estates.

[7] Scottish Water, Second Draft Business Plan Appendices, 2009.

[8] Discussions held with private PFI operators and PFI procuring authorities.

[9] Scottish Herald, 27th March 2011