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# **Review of Sewerage Charging Regimes**

## ***A paper for Manx Utilities***



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## REVIEW OF SEWERAGE CHARGING REGIMES

### Foreword by A L Cannan MHK, Chairman of Manx Utilities,

As part of the Government's rebalancing strategy, the funding previously supplied from Treasury for sewerage expenditure is being incrementally reduced year on year. As a direct result, Manx Utilities is now charging for its sewerage services in order to make up for the estimated eventual £9m shortfall in its budget.

In November 2013, the introduction of a new flat fee sewerage charge brought about a fairly hostile public reaction and, as a result, a new sewerage rate came into force last year. During that debate, I committed to carrying out an independent review of sewerage charging regimes in the British Isles as a basis for evaluating other charging options for the Isle of Man.

The main findings of the review are that the current property-based sewerage charging regime is commonly used in other jurisdictions and is considered a fair and practical way of funding the cost of providing essential public sewerage services. Of course, there may well be further improvements that could be considered, such as having part fixed fee and part rates charge and Manx Utilities will continue to review and assess these options as funding from Treasury is withdrawn.

The review also clarifies the 'metering' debate, which has been on and off for decades. The report concludes that domestic metering is not economically viable for our Island community, and that the significant cost of installing water meters could be better invested improving water quality standards in our marine environment.

I hope that this report will serve the community both as a comparator and as a basis for further discussion. These types of charges will never be popular but there is little alternative if we are to maintain a decent level of infrastructure on our sewerage network.



Alfred Cannan MHK  
Chairman, Manx Utilities

## 1 Introduction

This report has been prepared by Cornwall Energy to examine the current system of charging for sewerage services in the Isle of Man and across other jurisdictions in the British Isles. The report assesses the effectiveness and fairness of current and alternative methods of charging and makes recommendations on any actions that should be taken to ensure that the Isle of Man has a sustainable and fair system of charging in place.

## 2 Purpose

In February 2014, Isle of Man politicians voted in favour of introducing sewerage charges. These charges were introduced on 1 April 2014 through a £50 per household annual flat fee as part of a phased introduction, with the view to the charge doubling to £100 from 1 April 2015.

However, it was subsequently determined that a charge based on rateable value would be more appropriate; so from 1 April 2015 this was the basis for determining predominantly domestic sewerage charges. This report has considered the fairest way to charge for waste water services in future years. An important input to this report will be the outcome of a public consultation that has been undertaken by Isle of Man Government into the Domestic Rating System over the potential to reform the determination of domestic rates, which includes water and sewerage bills, to capital bandings from 2017 or 2018.

This report has been prepared to understand how sewerage bills and the approach to determining these charges in the Isle of Man compares to other jurisdictions in the water and sewerage sectors in the United Kingdom, the Republic of Ireland, and the Crown dependencies of Jersey and Guernsey (termed “British Isles” in the rest of this report). It assesses the different approaches used and reviews the suitability of viable options based on the relevant circumstances in the Isle of Man.

The report focuses primarily on sewerage bills as it is this service aspect that is in the process of being fully implemented, whereas historically, the supply of water in the Isle of Man has been charged for some time, with current and future rates already decided based on an annual formula determined by Tynwald in 2011. However, given the potential to charge for sewerage services based on metering of water into premises, we have also assessed the potential costs and benefits of water metering based on experience elsewhere in the British Isles adapted for the Isle of Man situation.

## 3 Recommendations

Based on our appraisal of the different options we propose the following recommendations:

- In the event that unmeasured charges are maintained, the move from rateable value to capital value bands to coincide with the introduction of sewerage charges and/or domestic rates reform, if implemented, would seem to be preferable. We do not recommend that charges are amended to a household occupancy basis because this methodology does not relate to income and one of the key characteristics of a usage based system should be the ability to reduce bills based on the customer’s management of its usage, which this does not allow;
- For the situation where unmeasured charges are to be moved from rateable value to capital value bands to coincide with domestic rates reform, a continuation of the current rateable value approach should be maintained until domestic rates reform is introduced;
- The economic case for introducing meters in the Isle of Man is very weak primarily as water supplies are not generally constrained and therefore have low marginal cost, meaning lower savings from leakage repairs and improved usage efficiency than in other regions of the British Isles. Furthermore there is no planned investment in new resources and efficiencies, through the merger of the water/ sewerage and electricity functions have also lowered power costs. Our analysis found strong evidence that the costs of rolling out water meters and the ongoing costs associated with metered charges would outweigh the benefits on the Isle of Man;

- Manx Utilities may wish to base charges on the services customers receive and the costs associated with these. This could include offering reductions in bills for customers who do not benefit from surface water drainage and determining charges for dealing with waste from cesspits/septic tanks based on the costs of doing so rather than on the average sewerage bill;
- Manx Utilities should consider introducing a separate charge for non-domestic customers for trade effluent discharges. This should account for both the amount and strength of trade effluent discharged, using the Mogden formula as the basis for determining these charges; and
- Manx Utilities' current bills and service levels appear commensurate with other sewerage service providers across the British Isles. Manx Utilities should engage with its customers over future bills and service levels to determine customers' preferences for how expenditure should be prioritised. This should include a particular focus on bathing water and river water quality and whether Manx Utilities should look to deliver the tightened European Commission standards. Any engagement with customers around the introduction of metering should explore whether customers might prefer for the costs to be spent elsewhere, such as delivering these tighter environmental standards or reducing leakage.

## 4 Approach

Our analysis involved five stages:

- **comparison of charging regimes**—the charging arrangements of sewerage service providers in the United Kingdom, the Republic of Ireland, and the Crown dependencies of Jersey and Guernsey are summarised and compared to Manx Utilities' charging arrangements for both mains and cesspit/septic tank collection services;
- **options assessment (qualitative)**—a long list of options is reviewed and narrowed down to a more realistic short list to carry forward for more detailed consideration;
- **quantitative benchmarking**—this exercise involved a comparison of Manx Utilities' sewerage bills with those in other jurisdictions in the British Isles. This involved the comparison of average bills as well as how unmeasured charges are made up of fixed and variable aspects;
- **appraisal of the costs and benefits of water metering**—we were specifically to evaluate whether evidence on the costs and benefits of metering water usage from elsewhere in the British Isles may indicate that charging for water and sewerage services based on metered water usage may be applicable in the Isle of Man; and
- **recommendations**—following our detailed appraisal of the options we set out potential next steps for Manx Utilities in determining its future method for charging.

In this report we draw heavily on the approach and findings of *The independent review of charging for household water and sewerage services*<sup>1</sup> (“the Walker review”) and Ofwat’s *Exploring the costs and benefits of faster, more systematic water metering in England and Wales*<sup>2</sup>. Although these reports are from 2009 and 2011 respectively they still represent the best source of evidence on different charging approaches, including the costs and benefits of metering.

However, both of these reviews focused on charging in England and Wales whilst recommending that the case for metering is dependent on regional circumstances.

Our report therefore considers the applicability of the findings of these two reviews for the Isle of Man and adapts the recommendations and analysis of both accordingly. For example, the Isle of Man does not have water resource pressures such that the potential benefits of reduced water use, both in terms of the environment and long run cost savings through deferred capital investment, are lower than would be the case in southern and eastern England, where resources are constrained.

<sup>1</sup> The independent review of charging for household water and sewerage services, Anna Walker, 2009, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69459/walker-review-final-report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69459/walker-review-final-report.pdf)

<sup>2</sup> Exploring the costs and benefits of faster, more systematic water metering in England and Wales, Ofwat, 2011, [http://www.ofwat.gov.uk/future/customers/metering/pap\\_tec201110metering.pdf](http://www.ofwat.gov.uk/future/customers/metering/pap_tec201110metering.pdf)

Furthermore, Manx Utilities estimate that 80% of its costs are fixed, as minimal capital investment is currently planned and operating efficiencies are realised through the merger of water/sewerage and electricity functions. Therefore the potential short-run cost savings through reduced delivery and treatment of water are again reduced.

## 5 Findings

### 5.1 Summary of sewerage charging regimes—domestic

Table I summarises the domestic sewerage charging regimes across the seven jurisdictions using six key criteria.

**Table I Comparison of approaches to charging for domestic sewerage services**

|                     | Rateable value | Capital value | Occupation | Usage | Service rebates | Taxation |
|---------------------|----------------|---------------|------------|-------|-----------------|----------|
| Isle of Man         | Y              |               |            |       |                 |          |
| England & Wales     | Y              |               |            | Y     | Y               |          |
| Guernsey            |                | Y             |            | Y     |                 |          |
| Jersey              |                |               |            |       |                 | Y        |
| Northern Ireland    |                | Y             |            | Y     | Y               |          |
| Republic of Ireland |                |               | Y          | Y     | Y               |          |
| Scotland            |                | Y             |            | Y     | Y               |          |

Our key findings from the comparison of domestic sewerage charging regimes across the British Isles are:

- Jersey is the only jurisdiction still to fund sewerage services through taxation, although this is currently under review;
- Jersey is also the only jurisdiction that charges for sewerage services using a different approach to charging for water services, whilst Republic of Ireland is the only jurisdiction with a jointly determined water and sewerage charge
- providers in England and Wales, the Isle of Man, Northern Ireland and Guernsey make a variable unmeasured wastewater charge based on the value of the customer’s property. In Scotland, charging is also based on the value of the customer’s property, but property values are banded in line with Council Tax and charges are applied depending on the band;
- there has been a trend away from rateable value—none of the jurisdictions, other than the Isle of Man, with more recently introduced charges (Guernsey, Northern Ireland and Republic of Ireland) use rateable value;
- the Republic of Ireland is the only jurisdiction where unmeasured sewerage charges are based on the number of occupants, although this charge will soon be replaced with charges derived from universal metering of water;
- Manx Utilities is the only company that does not offer the option of metered charges for domestic customers;
- no jurisdiction has full universal metering currently, although the Republic of Ireland is in the process of moving towards this objective. Southern Water is nearing the end of its programme of introducing universal metering for all its water customers in England;

- Scottish Water is the only company that charges for a meter to be installed;
- all sewerage charges for customers on a meter are based on water use with an assumption made about the amount of water returned to the public sewer system, although there is not one consistent assumption. In most cases a reduction is applicable if the customer can prove that the amount of water returned to the public sewer system is less than the assumed amount;
- in the larger jurisdictions (England and Wales, Scotland, Northern Ireland and Republic of Ireland) rebates are offered to customers who can demonstrate that they do not benefit from all aspects of a sewerage service, for example if surface water from the property does not drain to the public sewer; and
- Guernsey Water are the only company that charge customers with cesspits/septic tanks both the full wastewater charge as well as an additional charge for tank emptying, whilst Manx Utilities are the only company that charges customers with cesspits/ septic tanks based on the average sewerage bill.

5.2 Summary of sewerage charging regimes—non-domestic

Table 2 summarises the domestic sewerage charging regimes across six jurisdictions using six key criteria.

**Table 2 Comparison of approaches to charging for non-domestic sewerage services**

|                   | Rateable value | Capital Value | Usage | Trade effluent | Taxation |
|-------------------|----------------|---------------|-------|----------------|----------|
| Isle of Man       | Y              |               | Y     |                |          |
| England and Wales | Y              |               | Y     | Y              |          |
| Guernsey          |                |               | Y     |                |          |
| Jersey            |                |               |       |                | Y        |
| Northern Ireland  | Y              |               | Y     | Y              |          |
| Scotland          | Y              |               | Y     | Y              |          |

*Note: Republic of Ireland has been excluded as it is currently determining how to charge for wastewater services for non-domestic customers*

Our key findings from the comparison of non-domestic sewerage charging regimes across the British Isles are:

- Guernsey is the only jurisdiction that meters all business customers, although the majority of non-domestic customers across all jurisdictions are charged for foul sewage on a metered basis. These are based on water supplied with an assumption about water returned to the sewer;
- unmeasured non-domestic customers are all charged based on rateable value;
- non-domestic customers discharging trade effluent in England and Wales, Northern Ireland and Scotland are subject to a separate charge for this. These charges are determined according to the amount and strength of the discharge, using the Mogden formula<sup>3</sup> (or a derivation of it);
- variable charges for non-domestic customers (either based on rateable value or water use) are usually the same as for domestic customers. However, standing charges are often higher;
- there is not a standard approach for charging for drainage services; and
- discounts are often available to non-domestic customers who meet various criteria.

<sup>3</sup> The Mogden formula is a method for determining trade effluent charges agreed between the GB water industry and the Confederation of British Industry. The calculation accounts for the volume and strength of effluent discharged as well as the level of sewage treatment required to treat the effluent. Further details of the calculation are available here <http://www.ofwat.gov.uk/nonhousehold/yourwaterbill/hownonhousehold/trade/mogden>

### 5.3 Options assessment (qualitative)

In order to review the potential options for charging in the Isle of Man we identified the following range of criteria against which we assess each option:

- Equitable - do those who earn more, pay more; does it address the affordability concerns of low income households?
- Usage - do those who make more use of the system, pay more?
- Sustainable - does the option incentivise the efficient and sustainable use of services?
- Practical - can the option be easily implemented at a reasonable cost? and
- Transparent - is the approach clear and simple for customers to understand?

In order to compare the relative merits of the different options, we assessed each option on a four point scale against each criteria (yes, mostly, partly, no). We undertook a multi-criteria decision analysis (MCDA) of the different options by weighting the different criteria, with the highest weighting placed on the equitable and usage criteria, as follows:

- Criteria weighting—equitable/usage = 3, sustainable/practical = 2, transparent = 1; and
- Grade scores—yes = 3, mostly = 2, partly = 1, no = 0

Scores are determined by multiplying the grade score by the criteria weighting. For example, an option being assessed as ‘mostly’ meeting the equitable criteria would score 6 (2\*3 = 6). For each option the overall score is determined by summing the score for each criteria.

The results of this are shown in Table 3.

**Table 3 Multi-Criteria Decision Analysis of charging methodologies**

| Option                     | Equitable | Usage  | Sustainable | Practical | Transparent | MCDA Score |
|----------------------------|-----------|--------|-------------|-----------|-------------|------------|
| Rateable value (base case) | Mostly    | Partly | No          | Yes       | Yes         | 18         |
| Capital value              | Mostly    | Partly | No          | Partly    | Yes         | 14         |
| Universal water meters     | No        | Yes    | Yes         | Partly    | Mostly      | 19         |
| Selective water meters     | No        | Mostly | Mostly      | Partly    | No          | 12         |
| Optant water meters        | No        | Mostly | Partly      | Mostly    | Yes         | 15         |
| Sewage use meters          | No        | Mostly | Mostly      | No        | Yes         | 13         |
| Household occupants        | Partly    | Partly | No          | Mostly    | Yes         | 13         |
| Service-based charges      | No        | Mostly | Partly      | Mostly    | No          | 12         |
| Taxation                   | Yes       | No     | No          | No        | Yes         | 12         |
| Flat fee                   | No        | No     | No          | Yes       | Yes         | 9          |

Based on our analysis the options that score most highly and therefore would appear to be worth further consideration are:

- rateable value;
- capital value;
- universal water meters; and
- optant water meters.

Based on our comparison of approaches across jurisdictions and our analysis of different potential options we reviewed the appropriateness of the current approach in the Isle of Man and identified viable alternative options.

The current charging approach in the Isle of Man is one of the most fair with respect to income (excluding taxation). Although the approach of using rateable value has often been criticised as it is based on data from a long time ago (1969 in Isle of Man's case) it is also used in other jurisdictions. The approach of basing charges on property value more generally is commonly used.

There has tended to be a trend away from the use of rateable value for newly introduced charges, either to capital value or to alternative approaches. This would tend to accord with the findings of the Walker review that concluded that the main reason for England and Wales continuing to base charges on rateable value is the effect of changing the approach. With a consultation being undertaken on the Isle of Man on the potential to reform the approach for estimating domestic rates there is the potential for water and sewerage charges to change at this point.

The current approach in the Isle of Man has an indirect relationship with usage—assuming properties with a higher value tend to be bigger and therefore have a greater surface area causing a greater amount of surface water to drain to public sewers. Also, it can be assumed that the larger the house, potentially the greater occupancy and therefore greater usage.

However, there is only a weak relationship between charges and usage in the Isle of Man as, for example it is the only jurisdiction where customers do not have the option to switch to a metered charge. It is also one of only two jurisdictions (Guernsey being the other), out of the six that charge for sewerage services that does not offer reductions to the sewerage charge if a customer can demonstrate that it does not benefit from one of the sewerage services (foul sewage or surface water drainage).

## 5.4 Quantitative benchmarking

### 5.4.1 Average bills

Following the comparison of average household sewerage bills we undertook a review of the main cost drivers affecting household bills. We compared Manx Utilities' situation with other sewerage providers to determine whether the sewerage bills on the Isle of Man appear proportionate with those in other jurisdictions.

Where available, average bills are based on companies' own figures, such as for companies in England and Wales. However, where this was not available we have estimated average bills based on information in relation to the determinants of bills, such as average capital value for Northern Ireland and average household occupancy in Republic of Ireland.

Manx Utilities' average bill in 2015-16 is £100. However, with sewerage bills currently being phased in, this does not represent an accurate picture of future charges. Manx Utilities forecasts that charges in 2019-20 will be about £225 (2019-20 prices include inflationary impacts). In order to provide a more accurate comparison we use this figure deflated to 2015-16 prices (£200). With the majority of companies across the British Isles expecting charges to rise by RPI only over the next few years, this comparison is also therefore a good comparison of expected bills at the end of the decade.

The benchmarking of sewerage bills across the British Isles demonstrates that charges for Manx Utilities customers of double current levels would currently appear in line with those levied elsewhere in the British Isles as Table 4 shows.

**Table 4: Average household sewerage bills (2015-16) across sewerage providers**

| Sewerage provider               | Average bill (£/year) |
|---------------------------------|-----------------------|
| Irish Water                     | 113                   |
| Guernsey Water                  | 115                   |
| Severn Trent Water              | 155                   |
| Thames Water                    | 171                   |
| Scottish Water                  | 186                   |
| Northumbrian Water              | 198                   |
| <b>Manx Utilities</b>           | 200                   |
| Yorkshire Water                 | 201                   |
| <i>E&amp;W National average</i> | 203                   |
| United Utilities                | 212                   |
| Anglian Water                   | 225                   |
| Wessex Water                    | 225                   |
| NI Water                        | 243                   |
| Dwr Cymru (Welsh Water)         | 255                   |
| Southern Water                  | 262                   |
| South West Water                | 310                   |

Overall, we conclude that the levels of service and charges that Manx Utilities is delivering appear appropriate when benchmarked against other providers in the British Isles. For example:

- Manx Utilities forecast average bill is lower than the average bill across the British Isles;
- Isle of Man has a lower population density than all sewerage providers, which is generally a driver of higher bills;
- Isle of Man has a greater number of bathing waters per property than South West Water. Bathing waters per property has been identified as one of the main drivers of South West Water’s high sewerage bills; and
- Isle of Man is generally receiving levels of environmental service commensurate with those across England and Wales.

The one exception to this relates to the quality of bathing water in the Isle of Man. Currently these are monitored against a less stringent standard than EU requirements that are delivered in other jurisdictions.

#### 5.4.2 Septic tank charges

Septic tank waste collection services are provided by a range of sewerage service providers around the British Isles. Where other providers offer the service, they will collect the waste and deliver it to a treatment facility operated by a sewerage service provider, including the costs of treatment in their charges to customers.

Manx Utilities is not obligated to provide septic tank emptying services but chooses to do so at a cost currently based on the wastewater charge (i.e. £100 for 2015/16) rather than the costs associated with providing this service. Charging approaches of other sewerage providers means that customers could pay

more or less than the average sewerage bill with charges usually levied on a per load basis. The one exception to this is in Guernsey where customers have to pay the wastewater charge as well as a fee to have their cesspits/septic tanks emptied, although this charge is only £6.50 per load emptied.

As with surface water drainage there may be additional administrative costs associated with variable charges though these would not be significant and again the main impact would be a redistribution of charges. It is not clear the impact this would have on other customers' bills.

#### 5.4.3 Fixed and variable rates

The Sewerage Act 1999 (as amended) allows Manx Utilities the ability to charge on the basis of a fixed standing charge and a variable rate basis. However, as Table 5 shows, currently Manx Utilities is one of only four providers that does not have a fixed element of its unmeasured charge i.e. the charge is fully determined by rateable value.

Most companies that have an unmeasured charge based on either rateable or capital value determine these charges based on a fixed element, payable by all unmeasured customers, and a variable element based on rateable or capital value. Of the nine companies that do have a fixed element, the majority (six) include fixed elements that represent around 20-30% of the average unmeasured bill, thus charges are primarily based on rateable value. The remaining minority (three) have fixed elements that represent over 50% of the average unmeasured bill, such that the value of the property only makes up a small part of the bill.

**Table 5 Fixed and variable elements of unmeasured sewerage bills**

| Sewerage provider  | Fixed charge (£)                        | Variable charge (£ per £RV unless stated) | Average unmeasured bill (£/year) <sup>4</sup> | Standing charge as % of average unmeasured bill |
|--------------------|---|---|---|---|
| Manx Utilities     | 0                                       | 0.6129                                    | 200   | 0%  |
| Guernsey Water     | 34.40                                   | 0.68 per unit of the property's TRP*      | 160   | 23%   |
| NI Water           | 0                                       | 2.148/£k capital value                    | -   | 0%  |
| Anglian Water      | 259.50 (up to RV £1,000)                | 0.1425                                    | 273   | 95%   |
| Dwr Cymru/Welsh    | 169.25                                  | 1.1130                                    | 295   | 57%   |
| Northumbrian Water | 127.80                                  | 0.5997                                    | 212   | 60%   |
| Severn Trent Water | 0                                       | 0.9741*                                   | 166   | 0%  |
| South West Water   | 124.75 (up to £50RV)<br>143.35 (>£50RV) | 3.0326                                    | 499   | 29%   |
| Southern Water     | 56.00                                   | 1.343                                     | 287   | 20%   |
| Thames Water       | 53.25                                   | 0.5446**                                  | 178   | 30%   |
| United Utilities   | 0                                       | 1.49                                      | 223   | 0%  |
| Wessex Water       | 52                                      | 1.5015                                    | 255   | 20%   |
| Yorkshire Water    | 48.86                                   | 1.5826                                    | 229   | 21%   |

\*TRP is Tax on Real Property

\*\* unweighted average across charging zones

Based on the comparison of Manx Utilities with other sewerage providers in the British Isles, we believe that the use of variable charges by rateable value only is both reasonable and in line with its charging objectives. We also note that service providers charge for water and sewerage services on a consistent

<sup>4</sup> Estimates of average unmeasured bills were not readily available. We have used Ofwat figures from 2013-14 and assumed the same ratio of average unmeasured bill to average bill to update for 2015-16. Where companies have increased their meter penetration over the last two years, such as Anglian Water, this is likely to under-estimate the average unmeasured bill.

basis: those who are charged for their water on a metered basis pay for their sewerage based on a proportionate return of that volume of water for sewage treatment. Those who pay for water on an unmetered basis pay for their sewerage services also on an unmetered basis. Therefore the decision to allow for metered sewerage charges depends on whether there is a benefit overall from instituting metering for water consumption.

One issue with Manx Utilities' current approach is that properties with very low rateable values are paying very low charges, potentially below the cost associated with billing these properties. For example, there are domestic properties paying sewerage charges with rateable values of £20, meaning the bill is little more than £10. Based on the approach of other companies, Manx Utilities may wish to consider introducing a fixed element to any unmeasured sewerage charges that may be applied.

#### 5.4.4 *Capital value bands*

The only company that currently uses capital value bands to determine charges is Scottish Water. Our review of how Scottish Water varies its charges by band was compared to the approach proposed for Isle of Man in the domestic rates reform consultation. Moreover it shows that for the lower bands, up to property values of about £400,000, the relative charges proposed for Isle of Man is similar to that used by Scottish Water. However, beyond this point Scottish Water's approach is much flatter than the proposed approach in Isle of Man.

### 5.5 *Options appraisal*

#### 5.5.1 *Property valuation approaches*

Of the two property value based charging approaches, the use of capital value bands rather than rateable value, appears to be the fairer long-term approach as:

- it has a better correlation with income;
- it allows for charges to be based on more up-to-date information and be updated more easily; and
- is less sensitive to changes in house value due to bands.

Dependent on the outcome of the consultation on domestic rate reform on the Isle of Man, we believe Manx Utilities may wish to consider the merits of charges based on capital value bands introduced progressively. Should a phased approach prove desirable, introducing it over two years, combined with the phasing in of sewerage charges, gives an opportunity to make the switch with less incremental adverse customer reaction. However, this would require the data on capital bands being available in time to determine charges for April 2016 which may not be possible. Introducing it alongside domestic reform would also be a viable option.

#### 5.5.2 *Case for metering*

In December 2009 the Walker review published the findings of its review into charging for household water and sewerage services in England and Wales. This review recommended that the future charging system should generally be based on the volume of water used and therefore on a metered system.

However, despite recommending the transition to metering as the fairest method for charging, it also stated that it was not recommending universal compulsory metering. Instead it recommended that "in areas where the wider cost benefit analysis (incorporating environmental and carbon emission costs) indicates that it would be beneficial, systematic, area wide metering schemes should be rolled out."

Following this recommendation Ofwat undertook an assessment of the costs and benefits of different paces of introducing metering. Ofwat's analysis showed that a continuation of the current approach to introducing metering (primarily optant metering) was not cost-beneficial but also recommended that the case for metering was dependent on local circumstances.

Set out below is the evidence in relation to the costs and benefits of metering, using Ofwat's analysis as the basis, and updating the figures to reflect relevant characteristics of the situation in the Isle of Man.

The main costs associated with metering are one-off costs to install and replace meters, including acquisition, parts and labour costs, and the ongoing costs associated with reading meters and account management.

The main benefits associated with metering are the ongoing cost savings of supplying less water due to reduced water consumption and supply pipe leakage.

We assessed three scenarios over 40 years to calculate the net present value of each. We looked at options relating to both universal and optant metering as well as standard (“dumb”) meters and Automated Meter Reading (AMR) meters. We do not view optant AMR meters as a viable option as the benefits of AMR meters in terms of ongoing meter reading efficiency are only realised where meter penetration is high. If optant metering is introduced then standard meters would seem the appropriate choice to begin with but Manx Utilities may wish to pursue a long-term strategy to replace these meters with AMR meters once the penetration rate increases sufficiently, say above 50%.

The results of the analysis are shown in Table 6.

**Table 6 Costs and benefits of different metering scenarios**

| Scenario (£mn)                             | Present Value Costs | Present Value Benefits | Net Present Value | Benefit:Cost Ratio |
|--|---------------------|------------------------|-------------------|--------------------|
| Universal standard meters (90% in 5 years) | 15.0                | 5.5                    | -9.5              | 0.37               |
| Universal AMR meters (90% in 5 years)      | 13.6                | 5.5                    | -8.1              | 0.40               |
| Optant standard meters (90% in 40 years)   | 8.7                 | 2.5                    | -6.2              | 0.29               |

The results above demonstrate that, consistent with Ofwat’s findings, the costs of implementing metering far outweigh the benefits. This is because the annual financial cost savings only roughly equate to the additional annual costs, therefore the one-off costs are not being recovered through ongoing cost savings.

Optant metering appears preferable to universal metering as the longer time period over which meters are introduced means costs are deferred and are therefore lower. However, this option has the worst benefit: cost ratio as it does not benefit from the roll-out efficiencies that universal metering does

If universal metering is introduced then AMR meters appear a preferred option to standard meters. This is due to the ongoing financial and social cost savings in relation to meter readings. In addition it would offer potentially improved benefits through the realisation of faster, more accurate meter readings, although this benefit has not been quantified in our analysis. This finding is consistent with the decisions of both Irish Water and Southern Water which both opted for AMR meters as the chosen meter type for their universal meter rollouts.

In order to understand the robustness of these findings we undertook sensitivity analysis looking at a ‘best-case’ scenario.

Table 7 shows that these assumptions make no impact on the results

**Table 7 ‘Best-case’ costs and benefits of different metering scenarios**

| Scenario (£mn)                             | Present Value Costs | Present Value Benefits | Net Present Value | Benefit:Cost Ratio |
|--|---------------------|------------------------|-------------------|--------------------|
| Universal standard meters (90% in 5 years) | 13.4                | 6.8                    | -6.6              | 0.51               |
| Universal AMR meters (90% in 5 years)      | 12.1                | 6.8                    | -5.3              | 0.56               |
| Optant standard meters (90% in 40 years)   | 7.7                 | 3.1                    | -4.6              | 0.40               |

### 5.5.3 Sewage service-based charges

Determining charges based on the different sewerage services that customers benefit from (foul water, surface water drainage and trade effluent) and the costs associated with them means customers could be charged to an extent on the use made of the system without the prohibitive costs associated with metering.

Rather than incurring significant additional costs the main impact of implementing these charges would be a redistribution of charges. We estimate that surface water drainage rebates could add around £4 to the average annual sewerage bill whilst charging non-domestic properties for dealing with trade effluent discharged could reduce bills for other customers by around £20 per year.