

TRANSCO PRICING CONSULTATION PAPER PC54

Disaggregated Metering Charges

SUMMARY

Transco presently reflects costs associated with its metering services in the customer charge element of transportation charges. A rebate is available where the meter is not provided, installed and maintained by Transco. To further facilitate competition in meter ownership and meter work, Transco is now proposing to replace the current structure of charges and rebates with the following disaggregated charges in respect of meters, dataloggers and correctors owned by Transco:

Provision charge
Installation charge, and
Maintenance charge.

It is further proposed that disaggregated charges in respect of Industrial and Commercial (I&C) meters vary with the number and type of meters at each supply point.

The proposals outlined in this paper form part of Transco's proposed programme for the introduction of competition in metering and meter reading services, which would be jointly managed by Ofgem and Transco. A move to disaggregated charges might be expected to deliver several benefits, including increased transparency and shipper choice, thereby facilitating competition in metering.

Appendix 1 shows indicative charges in respect of domestic and I&C meters. The structure and level of the proposed charges are consistent with Ofgem's final proposals for securing effective competition in metering services as set out in their recent publication¹. As such, the level of charges shown in this paper assumes that Ofgem's proposals are implemented as set out by them.

The proposed charges represent a significant change to the way that shippers pay for metering services. Their implementation will require modifications to Transco and shipper systems and processes. However, subject to the outcome of this consultation, Transco expects to be in a position to implement the proposed charges from 1 October 2000.

The development of competition in metering will require considerable additional work, including development of new industry processes, contractual arrangements, information systems and the regulatory framework. Transco proposes that the scope and timing of these initiatives are informed by discussions with the industry.

¹ "Securing Effective Competition in Gas Metering and Meter Reading Services: The Director General's Final Proposals", Ofgem, May 2000

1. INTRODUCTION

At present, costs associated with meters, service pipes and emergency work are reflected in a bundled customer charge.

Ofgem has been considering how to extend competition in metering and its views have been set out in three consultation papers¹. To facilitate competition, Transco consulted in May 1998 on proposals for a rebate of transportation charges where a meter is provided, installed and maintained by an organisation other than Transco². Rebates for this category of domestic and Industrial and Commercial (I&C) supply point were introduced from 6 April 1999.

At present, the rebate for domestic meters is £10 per supply point, whilst the rebate for I&C meters is a function of supply point capacity. Transco signaled in PC25, and more recently in PC42³, that it expected to review whether it would be appropriate to introduce metering charges for I&C supply points based on the actual number and type of meters present. This paper proposes such charges.

Disaggregated charges, which would replace meter rebates, might be expected to deliver benefits, including:

- Increased transparency: shippers can see the charges for each metering service offered by Transco
- Enabling shippers to potentially choose, and pay for, only those services that they take from Transco, and
- Helping other organisations to compete with Transco to provide contestable metering services.

Transco recognises that there are a number of possible approaches to disaggregating metering charges. This paper assumes that, for existing meters, the present rental approach continues, whereby annual charges reflect the costs of providing, installing and maintaining meters. It also discusses whether the costs of installing new meters, and of exchanging existing meters, should be reflected in one-off charges. Where shippers choose an alternative meter provision, installation or maintenance provider, it is proposed that Transco's charges would reflect only those services taken from Transco.

It is also recognised that metering charges are likely to evolve to reflect developments in the metering market and changing customer requirements. For example, some customers may prefer to own, rather than rent, their meter. The approach taken in this paper is not intended to preclude such future developments or limit customer choice.

¹ "Securing effective Competition in Gas Metering and Meter Reading services, The Director General's initial proposals", Ofgas, October 1998; "Securing effective competition in gas metering and meter reading services, A report on progress and the way forward", Ofgem, July 1999; and "Securing Effective Competition in Gas Metering and Meter Reading Services: The Director General's Final Proposals", Ofgem, May 2000

² "PC25, Metering Charges", Transco, May 1998

³ "PC42, Metering Charges", Transco, May 1999

Transco further believes that the development of competition should take place in the context of a clear process management framework. Such a framework should provide for an orderly transition within realistic timescales, together with appropriate decision making machinery. It is in this context that Transco has proposed a programme of change designed to facilitate

competition in metering. The programme would be jointly managed by Ofgem and Transco and would be informed by industry discussions within the framework of the recently formed Metering Competition Focus Group.

1.1 Definition of Meter Installation

The definition of a meter installation is presently being reviewed by the Metering Competition Focus Group. The proposals in this paper are based on Transco's present definition⁴ which describes a metering installation as equipment that provides a register of, or enables the calculation of, volume at standard conditions within specified degrees of accuracy. As such, Transco's definition of a meter installation includes any associated equipment, such as pressure controlling and volume converting equipment.

In addition, a meter installation may include additional features, such as a prepayment mechanism, that are not required for gas volume measurement but that have been provided on request.

2. PROPOSED STRUCTURE OF CHARGES

It is proposed that separate annual charges reflect the costs of providing the following services in respect of domestic and I&C meter installations owned by Transco:

Provision
Installation, and
Maintenance.

To better reflect costs and further facilitate competition, it is also proposed that separate charges reflect the costs of providing, installing and maintaining dataloggers and correctors, where fitted. Transco's present datalogger charge also reflects meter reading costs and proposals for separate daily meter reading charges are discussed in a separate paper⁵.

Transco further proposes that separate one-off charges reflect the costs of providing other customer-requested services, such as customer-requested exchanges.

Appendix 2 lists the metering services for which it is proposed to levy annual and one-off charges.

⁴ "Defining the Meter Installation", Transco, November 1998

⁵ "PC55, Charges for Daily Meter Readings", Transco, May 2000

Transco recognises the need to ensure that the structure of its charges reflects the metering services likely to be required by customers. Transco therefore expects to review the proposed structure of charges in the light of industry discussions regarding the development of competition in metering. For example, Transco is presently considering whether it would be

appropriate to develop separate charges to reflect data management costs. In the longer term, charges are likely to evolve to reflect both developments in the metering market and changing customer requirements.

2.1 Provision charges

It is proposed that annual provision charges reflect meter depreciation costs and an allowance for a return on the value of the meter.

Transco would welcome respondents views on whether costs associated with age-related exchanges (that is replacement of metering equipment for the same, or equivalent, type at the end of its useful life) should be reflected in the proposed provision charge, or in separate annual or one-off charges. Transco believes that reflecting such costs in provision charges would be more consistent with the accepted concept of an asset rental service, would be relatively simple to administer and would lead to smoother charges, since costs would be annualised over the life of the metering equipment.

However, it has been suggested that a separate charge for age-related exchanges may better facilitate competition in metering. While Transco believes that this approach would be more consistent with customer ownership of metering equipment, it is recognised that the provision charge could be further disaggregated into various components. For the purpose of this paper, it is therefore assumed that age-related exchange costs are reflected in a separate charge.

Appendix 3 contains indicative annual and one-off charges for age-related exchanges.

Transco would welcome views on whether the costs of age-related exchanges should be reflected in provision charges or in separate charges.

2.2 Installation Charges

It is proposed that installation charges reflect travel, labour and materials costs associated with fitting metering equipment at a meter point where there is no existing equipment - if existing equipment is present, it is proposed that the work is treated as an exchange and charged accordingly.

Transco proposes that installation charges reflect costs associated with any elements of the metering installation other than the meter itself, such as pressure controlling equipment, valves and filters - but not costs associated with dataloggers or correctors, since it is proposed that they would attract separate charges.

Transco capitalises direct labour and materials costs associated with installation of metering equipment. The resulting capital value is added to the asset base and is depreciated over the life of the asset. Therefore, it is proposed that installation charges in respect of existing metering equipment are expressed as an annual charge that reflects depreciation costs and an allowance for a return on the value of capitalised costs.

For new metering equipment, it could be argued that it would be more cost-reflective and pro-competitive to reflect installation costs in one-off charges. Additionally, it has been suggested

that such charges could be further split into separate elements reflecting installation labour and materials costs.

Appendices 1 and 3 contain indicative annual and one-off charges for installation.

Transco would welcome views on the most appropriate structure of charges for installing new metering equipment.

2.3 Maintenance Charges

Transco proposes that annual maintenance charges reflect travel, labour and materials costs associated with activities including:

- Planned maintenance
- Unplanned maintenance, and
- Labour costs associated with exchanging faulty metering equipment.

Planned maintenance costs include costs associated with regular activities such as battery and oil changes, where appropriate. Unplanned maintenance costs include costs associated with attending to and repairing faults.

It is also proposed that maintenance charges reflect operating costs associated with exchanging faulty metering equipment.

PGTs and suppliers have a number of statutory and other liabilities in respect of meter equipment maintenance, such as those under Schedule 2B of the Gas Act. A precondition for the development of competition in maintenance services should be the development of a contractual framework to indemnify meter owners against any loss resulting from the actions, or inactions, of maintenance providers.

2.4 Other Charges

At present, costs associated with providing services such as meter repositioning, discontinuance and accuracy tests are reflected in one-off charges. These charges are published in Transco's Engineering Charges Statement.

Transco believes that one-off charges better reflect the costs of providing such services, are more transparent and facilitate competition by allowing other service providers to compete and charge on an equal basis. Therefore, it is proposed that the principle of separate charges for one-off services is retained.

2.4.1 Customer-requested Exchanges

For consistency, it is proposed that costs associated with customer-requested exchanges are also reflected in one-off charges.

Transco first proposed such charges in PC42. Following consultation, Transco modified its proposal such that no charge would be made for exchanging a prepayment meter for a credit meter, so as not to discourage prepayment meter users from potentially moving to a cheaper tariff. Ofgem subsequently vetoed the proposal on the basis that, in its proposed form, it may have been unduly discriminatory. Transco therefore proposes that in future such a charge is made for all types of customer-requested exchanges.

Appendix 3 contains indicative charges for customer-requested exchanges.

2.5 Meter Types

It is proposed that metering charges vary with the number and type of meters present. This approach is consistent with the structure of the proposed metering price control, whereby allowed revenue would vary with the number of meters at end user sites, weighted by type of meter.

2.5.1 Domestic Meters

At present, there are two types of domestic meter:

- Credit meters, which can be either diaphragm (such as U6) or ultrasonic (such as E6) meters, and
- Prepayment meters (PPMs)

Existing domestic consumers have been able to choose, through their shipper or supplier, whether to have a prepayment or a credit meter, however they have not been able to choose the type of credit meter fitted. Therefore, for existing domestic consumers, it is proposed that credit meter charges reflect the weighted average costs of U6 and E6 meters.

However, as competition develops, it is possible that consumers will be able to choose the credit meter type that they wish to have installed. Therefore, respondents are invited to comment on whether it is appropriate to introduce separate charges for new domestic meters, reflecting the costs of different credit meter types.

It is proposed that prepayment meter charges continue to be based on forward looking Electronic Token Meter costs.

2.5.2 Industrial & Commercial Meters

There are over one hundred different types of Industrial and Commercial (I&C) meter. The diversity of I&C meter installations is further increased by the range of pressures at which such installations may be supplied.

It would therefore be unduly complicated to develop separate charges for each type of meter installation. So, for simplicity, it is proposed that I&C meter installations are grouped according to one of three measurement mechanisms: diaphragm, rotary and turbine and that a fourth group reflects costs of meter installations connected to high pressure systems operating at pressures above 7 bar. It is further proposed that each group is subdivided according to

meter capacity - since meter capacity is believed to be the main driver of I&C meter costs for a given group.

Appendix 1 shows indicative charges for domestic and I&C meters.

Transco would welcome views on the proposal that charges should vary with the number and type of meters present, in particular whether:

Separate charges should reflect the costs of different domestic credit meter types, and I&C meter charges should vary according to meter type and capacity.

3. LEVEL OF CHARGES

This section describes the proposed methodology for determining the level of metering charges. It is consistent with the approach used to determine prepayment meter charges in PC42 and consists of three main steps:

Compile base data
Estimate forward looking costs, and
Scale costs to generate charges in line with allowed revenue for metering activities.

Ofgem proposes to introduce an amendment to Transco's PGT Licence requiring it to publish an explanation of its meter charging methodology. Transco expects that the approach set out in this paper will form the basis of that publication.

3.1 Base Data

Transco has compiled meter cost data from a variety of sources including workload statistics, manufacturers prices and Transco's own Activity Based Costing (ABC) model.

In general, capital costs are based on contract prices or other information supplied by manufacturers. Revenue costs have been built up from actual or estimated job times and frequencies, direct labour rates and support and sustaining costs determined in accordance with the methodology described in PD10⁶.

3.2 Forward Looking Costs

The base data is then fed into a model that estimates the forward looking costs of providing metering services for a range of meter types, and for dataloggers and correctors. This model enables Transco to estimate costs for different types of metering assets on a consistent basis.

Appendix 4 includes examples of the calculations performed by the model in respect of prepayment meters.

⁶ "PD10, Balance of Transportation Charges", Transco, May 2000

3.3 Scaled Charges

Finally, the costs produced by the model are scaled in order to generate charges in line with the target revenue for metering activities.

In Transco's view, the most cost reflective way of scaling charges would be by way of a straight equi-proportional uplift. However, Ofgem has indicated that the prepayment meter charge should be no more than £15 above the charge for domestic credit meters and that costs in addition to this should be reflected in Transco's charges for other metering services.

Transco remains concerned that the continued cross subsidy of prepayment meter users is neither cost reflective nor pro-competitive. However, for the purpose of informing debate on the merits of disaggregation, the indicative charges shown in this paper have been scaled such that the prepayment meter charge is capped at a level that is £15 more than the charge for domestic credit meters. Domestic credit and I&C meter charges have been scaled equi-proportionally in order to ensure that forecast income is in line with allowed revenue. Appendix 5 describes the methodology used to scale charges.

Table 1 Effect of Prepayment Meter Subsidy

	PPM Charge Not constrained	PPM Charge Constrained
Prepayment Meter	£78.72	£28.62
Domestic Credit Meter	£10.18	£13.62
I&C Meter (1)	£154.82	£207.02

(1) Average charge for all I&C meter types

Transco would welcome views on whether the prepayment meter charge should be set at a level that is £15 above the charge for domestic credit meters.

4. IMPLEMENTATION

The proposed structure of charges would represent a significant change to the way that shippers are charged for metering services. As such, their implementation will require modifications to Transco and shipper systems and processes.

The introduction of competition in metering will require considerable additional work, including development of new industry processes, contractual arrangements, information systems and the regulatory framework. Transco proposes that the scope and timing of these developments are informed by discussions with the industry.

Therefore, subject to industry support for the general approach, Transco proposes that the first stage of implementation would be the development of invoices showing disaggregated metering charges. Transco expects to be in a position to implement the proposed charges from 1 October 2000.

QUESTIONS FOR CONSULTATION

Transco would welcome views on the proposed structure of disaggregated metering charges, in particular:

Whether the costs of age-related exchanges should be reflected in provision charges or in separate one-off charges

On the most appropriate structure of charges for installing new metering equipment

Whether charges should vary with the number and type of meters present, in particular whether:

Separate charges should reflect the costs of different domestic credit meter types, and

I&C meter charges should vary according to meter type and capacity

Whether the prepayment meter charge should be set at a level that is £15 above the charge for domestic credit meters.

APPENDIX 1 - INDICATIVE ANNUAL CHARGES

A1.1 Low, Medium and Intermediate Pressure Metering Installations (– 7 bar)

A1.1.1 Domestic Size Meters (1)

	Diaphragm (e.g. U6)	Ultrasonic (e.g. E6)	Weighted avg (U6/E6)	Prepayment Meter
Provision	£5.83	£11.14	£6.11	£15.52
Installation	£6.55	£6.55	£6.56	£3.32
Maintenance	£0.82	£3.20	£0.95	£9.78
Total	£13.20	£20.89	£13.62	£28.62

A1.1.2 Industrial & Commercial Diaphragm Meters

Capacity (m ³ per hour)	~ 11 to < 21	~ 21 to < 29	~ 29 to < 51	~ 51 to < 79	~ 79 to < 121	~ 121
Provision	£29.44	£74.86	£100.23	£168.75	£299.43	£331.15
Installation	£20.41	£28.88	£35.84	£116.74	£119.79	£153.37
Maintenance	£0.91	£1.16	£1.35	£2.70	£3.17	£3.55
Total	£50.76	£104.90	£137.43	£288.19	£422.39	£488.06

A1.1.3 Industrial & Commercial Rotary Meters

Capacity (m ³ per hour)	< 28	~ 28 to < 57	~ 57 to < 113	~ 113 to < 170	~ 170 to < 226	~ 226 to < 396
Provision	£158.34	£170.02	£170.02	£211.89	£316.69	£385.71
Installation	£112.17	£140.33	£267.08	£425.89	£457.80	£717.64
Maintenance	£62.56	£62.58	£63.21	£63.27	£63.48	£63.74
Total	£333.08	£372.92	£500.31	£701.05	£837.97	£1167.09

Capacity (m ³ per hour)	~ 396 to < 509	~ 509 to < 792	~ 792 to < 1,358	~ 1,358 to < 1,810	~ 1,810
Provision	£439.00	£1,012.49	£1,206.61	£2,243.21	£3,270.93
Installation	£920.50	£1,000.75	£1,043.23	£1,473.98	£2,272.59
Maintenance	£64.77	£68.67	£102.00	£104.93	£124.48
Total	£1424.26	£2,081.91	£2,351.84	£3,822.12	£5,667.99

(1) Meter capacity less than 11 cubic metres per hour. It is proposed that charges in respect of existing domestic credit meters reflect the weighted average costs of U6 and E6 meters. Respondents views are invited on whether charges for new meters should reflect the costs of different meter types - see section 2.5

A1.1.4 Industrial & Commercial Turbine Meters

Capacity (m ³ per hour)	< 283	~ 283 to < 509	~ 509 to < 792	~ 792 to < 1,216	~ 1,216 to < 1,952	~ 1,952 to < 3,027
Provision	£284	£289	£405	£407	£533	£727
Installation	£690	£823	£1,082	£1,344	£1,606	£2,504
Maintenance	£175	£175	£476	£504	£524	£532
Total	£1,149	£1,288	£1,963	£2,255	£2,663	£3,763

Capacity (m ³ per hour)	~ 3,027 to < 4,894	~ 4,894 to < 8,119	~ 8,119
Provision	£921	£1,270	£2,248
Installation	£3,245	£3,681	£5,597
Maintenance	£657	£708	£708
Total	£4,823	£5,659	£8,553

A1.2 High Pressure Metering Installations (>7 bar)

Capacity (m ³ per hour)	< 10,192	~ 10,192 < 14,906	~ 14,906 < 25,878	~ 25,878 < 36,866	~ 36,866 < 63,524	~ 63,524
Provision	£925	£1,154	£1,413	£2,351	£2,807	£4,282
Installation	£6,737	£7,536	£9,354	£9,994	£11,592	£16,822
Maintenance	£9,201	£9,201	£9,201	£9,201	£9,201	£9,201
Total	£16,864	£17,891	£19,968	£21,547	£23,599	£30,305

A1.3 Correctors

Provision	£96.23
Installation	£44.98
Maintenance	£75.98
Total	£217.19

A1.4 Dataloggers (1)

Provision	£48.10
Installation	£99.11
Maintenance	£204.96
Total	£352.17

Charges have been scaled to generate total metering revenue of £407.5 million as described in Appendix 5

For the purpose of this paper, it is assumed that the prepayment meter charge is constrained such that it is not more than £15 above the U6/E6 charge

Assumes separate charges for customer-requested and age-related meter exchanges, and new meter installations (see Appendix 3)

(1) Reflects metering costs only. Meter reading costs and charges are discussed in a separate paper (PC55, Charges for Daily Meter Readings).

APPENDIX 2 – METERING SERVICES

A2.1 Annual Charges

- Provision
- Installation (1)
- Maintenance

A2.2 One-off Charges

A2.2.1 Existing one-off charges

- Alter meter position
- Discontinuance (removing and/or clamping)
- Hire of Transco operatives
- Repair damaged meter
- Fit security collar
- Ofmt (meter accuracy) test
- Fit meter box or housing
- Replace meter box or housing door

A2.2.2 Proposed one-off charges

- Installation (2)
- Customer-requested exchanges (3)
- Age-related exchanges (4)

- (1) For existing metering installations
- (2) For new metering installations
- (3) Where a shipper requests that a different meter type is fitted, for example where a Domestic Credit Meter is exchanged for a Prepayment Meter
- (4) For replacement meters of the same, or similar, type.

APPENDIX 3 – ONE-OFF CHARGES FOR INSTALLATION AND EXCHANGE

Consistent with the present methodology used to determine existing one-off charges, the following indicative charges reflect average labour, travel and materials costs, including an allowance for support and sustaining costs.

A3.1 One-off Charges for Installation (£)

	Charge
Domestic credit meter	£45.15 per meter (comprises £8.05 in respect of materials and £37.10 in respect of labour)
Prepayment meter	£57.94 per meter (comprises £8.05 in respect of materials and £49.89 in respect of labour)
Industrial & Commercial meters, correctors and dataloggers	Time & materials (1)

A3.2 One-off Charges for Customer-requested Exchanges

	Charge
Domestic meters	£45.96 per meter
Industrial & Commercial meters, correctors and dataloggers	Time & materials (1)

A3.3 One-off Charges for Age-related Exchanges (2)

	Charge
Domestic meters	£37.10 per meter
Industrial & Commercial meters, correctors and dataloggers	Time & materials (1)

(1) Consistent with other one-off charges, it is proposed that customer-requested and age-related exchanges, and installation, of Industrial and Commercial meters, correctors and dataloggers are charged on an individual basis

(2) For comparison, the equivalent annualised cost of age-related exchanges would be about £1.80 for domestic credit meters and about £3.50 for prepayment meters.

APPENDIX 4 - METHODOLOGY FOR DETERMINING FORWARD LOOKING METERING COSTS

This appendix illustrates the proposed methodology for estimating the forward looking costs of metering services.

The calculations in this appendix show how prepayment meter costs have been estimated. Equivalent calculations estimate the forward looking costs of providing, installing and maintaining other domestic and Industrial and Commercial meter types, dataloggers and correctors.

A4.1 Annual Charges

A4.1.1 Provision Costs

It is proposed that provision charges reflect depreciation costs and an allowance for a return on the value of the meter asset, and that costs associated with age-related exchanges are reflected in separate charges (see section 2.1).

The depreciation charge and level of return are sensitive to assumptions regarding purchase price and asset life. Consistent with a forward looking methodology, the proposed charges reflect the latest metering contract prices and asset lives. Transco presently depreciates most meters over twenty years. However, Electronic Token Meters (on which the calculation of prepayment meter costs is based) have an electronic prepayment mechanism that reduces the useful life to ten years or less. Therefore, Transco now depreciates prepayment meters over ten years.

$$\text{Annual cost} = \frac{\text{Meter asset cost}}{1 - \frac{1}{(1+ir)^t} \times \frac{1}{ir} \times \sqrt{(1+ir)}}$$

where ir = interest rate (7%), and
 t = asset life (10 years)

$$\begin{aligned} \text{Annual cost} &= \frac{\pounds 143.89}{1 - \frac{1}{1.07^{10}} \times \frac{1}{0.07} \times \sqrt{1.07}} \\ &= \frac{\pounds 143.89}{7.27} \\ &= \pounds 19.81 \end{aligned}$$

A4.1.2 Installation Costs

It is assumed that installation charges reflect travel, labour and materials costs associated with elements of the metering installation other than the meter itself (and other than any dataloggers and correctors, where fitted).

It is further assumed that charges in respect of existing metering equipment are expressed as annual charges and that costs in respect of installing new metering equipment are reflected in one-off charges.

$$\begin{aligned}
 \text{Annual cost} &= \frac{\text{materials cost} + (\text{labour time} \times \text{capitalised labour costs})}{1 - \frac{1}{1.07^{10}} \times \frac{1}{0.07} \times \sqrt{1.07}} \\
 &= \frac{\pounds 8.05 + (1.17 \times \pounds 19.38)}{7.27} \\
 &= \pounds 4.23
 \end{aligned}$$

Capitalised labour costs include additional costs over and above direct labour costs, such as employee-related and transportation overheads, but exclude support and sustaining costs (1).

A4.1.3 Maintenance Costs

The proposed maintenance charges reflect planned and unplanned maintenance costs. For the purpose of calculating forward looking prepayment meter maintenance costs, Transco has assumed that battery changes are carried out during visits made for other purposes. Battery change costs therefore reflect materials costs and the time taken to change the battery, but not travel time.

Unplanned maintenance costs reflect average labour and materials costs, including support and sustaining costs, multiplied by the expected frequency of maintenance visits per meter. To calculate forward looking prepayment meter costs, Transco has excluded costs associated with some existing maintenance activities, including costs associated with the tilt/tamper mechanism.

Planned Maintenance

$$\begin{aligned}
 \text{Annual cost per battery} &= \frac{\text{Battery cost} + (\text{labour time} \times \text{direct labour costs} \times (1 + \text{uplift \%}))}{\text{Asset life}} \\
 &= \frac{\pounds 4.85 + (0.37 \times \pounds 14.26 \times 2.99)}{10} \\
 &= \pounds 2.06
 \end{aligned}$$

$$\begin{aligned} \text{Number of batteries} &= \frac{\text{Asset life} - 1}{\text{Battery life}} \\ &= \frac{10-1}{2.5} \\ &= 3 \text{ (rounded down to the nearest whole number)} \end{aligned}$$

$$\begin{aligned} \text{Annual cost} &= \text{£}2.06 \times 3 \text{ batteries} \\ &= \text{£}6.19 \end{aligned}$$

Unplanned Maintenance

$$\begin{aligned} \text{Annual cost per visit} &= \frac{\text{Materials cost} + (\text{labour time} \times \text{direct labour costs} \times (1 + \text{uplift \%}))}{\text{Asset life}} \\ &= \frac{\text{£}0.50 + (0.69 \times \text{£}14.26 \times 2.99)}{10} \\ &= \text{£}2.99 \end{aligned}$$

$$\begin{aligned} \text{Annual cost} &= \text{£}2.99 \times 2.1 \text{ visits per meter (2)} \\ &= \text{£}6.28 \end{aligned}$$

A4.2 One-off Charges

A4.2.1 New Metering Installations

$$\begin{aligned} \text{Charge} &= \text{materials cost} + (\text{labour time} \times \text{direct labour costs} \times (1 + \text{support \& sustaining uplift})) \\ &= \text{£}8.05 + (1.17 \times \text{£}14.26 \times 2.99) \\ &= \text{£}57.94 \text{ per meter installation} \end{aligned}$$

A4.2.2 Customer-requested Exchanges

$$\begin{aligned} \text{Charge} &= \text{materials cost} + (\text{labour time} \times \text{direct labour costs} \times (1 + \text{support \& sustaining uplift})) \\ &= \text{£}1.00 + (1.05 \times \text{£}14.26 \times 2.99) \\ &= \text{£}45.96 \text{ per meter exchange} \end{aligned}$$

A4.2.3 Age-related Exchanges

Charge = labour time x direct labour costs x (1+ support & sustaining uplift)

$$= 0.87 \times \text{£}14.26 \times 2.99$$

$$= \text{£}37.10 \text{ per meter exchange}$$

(1) Support and sustaining uplift equals 199%, consistent with the methodology described in PD10, *Balance of Transportation Charges*.

(2) Reflects a forward looking estimate of maintenance visits, excluding some existing maintenance visits, such as those associated with the tilt/tamper mechanism.

A4.3 Datalogger Charges

The proposed methodology results in datalogger installation and maintenance costs that are above than those presented in PC47.

	PC47	Proposed Methodology
Provision	48.10	48.10
Installation (1)	50.44	99.11
Maintenance (2)	102.21	204.96

(1) PC47 costs reflected replacement, rather than installation, costs. Installation costs are greater than replacement costs because additional work and materials are required, for example to install the telephone line

(2) PC47 maintenance costs were based on a “top down” analysis of 1998 ABC costs and assumed 2.5 maintenance visits per annum (including the annual maintenance visit). Consistent with the methodology used to estimate forward looking maintenance costs for other metering assets, the proposed methodology reflects actual job times and frequencies. This analysis suggests that the number of maintenance visits is less than assumed in PC47 (about 1.5 visits per annum, including the annual maintenance visit), but that the average time per visit, including travel time (2.47 hours in respect of the annual maintenance visit and 3.23 hours in respect of faults), is greater than that implied by ABC costs.

Additionally, the proposed methodology includes a share (£31.11) of the datalogger administration costs identified in PC47.

In Transco’s view, the proposed methodology, which is consistent with that used to determine the level of all other metering charges, better reflects the forward looking costs of providing datalogger services.

APPENDIX 5 - SCALING

Ofgem proposes that metering charges are subject to a separate price control with effect from 1 April 2000. From this date, Transco will be required to ensure that forecast income from metering charges is in line with the maximum revenue allowed by the new price control.

This appendix explains how Transco proposes to scale annual metering charges so that forecast income is in line with allowed revenue.

A5.1 Determine Target Revenue for Annual Metering Charges

Target revenue for metering activities = £417.5 million, less

Correction (k) factor attributed to metering = £10 million

Revenue from datalogger charges = £0.9 million, and

Revenue from corrector charges = £2.0 million, and

Revenue from one-off charges = £13.9 million

Therefore, target revenue for annual metering charges = £390.7 million

A5.2 Determine Domestic and I&C Cost Pools

Target revenue is then allocated to domestic and Industrial and Commercial cost pools in proportion to 1999 ABC costs, plus an asset-based adjustment (consistent with the methodology outlined in PD10⁶).

	1999 ABC Costs (£m)	Asset-based Adjustment (£m)	Target Revenue (£m)
Domestic	179.4	148.0	327.4
I&C	40.0	23.3	63.3
Total	219.4	171.3	390.7

A5.3 Determine Charges for each Meter Type

Charges for each meter type could then be calculated by scaling forward looking costs (determined by the methodology outlined in appendix 4) in proportion to weighted meter numbers. For example, for domestic credit and prepayment meters, the calculation would be as follows.

	Forward Looking Cost (A)	Number of meters (B)	Weighted meters (C = A x B)	Target Revenue (D)	Scaled Charge (D/B)
Domestic credit meters	£4.72	18,900,000	88,700,000	192,100,000	£10.18
Prepayment meters	£36.50	1,700,000	61,500,000	135,300,000	£78.72
Total		20,600,000	150,200,000	327,400,000	

⁶ "PD10, Balance of Transportation Charges", Transco, May 2000

However, Ofgem has indicated that they consider that a prepayment meter (PPM) charge that is £15 above the charge for domestic credit meters reasonably reflects the additional costs of PPMs. Taking into account this constraint, and assuming that the subsidy of PPM users is reflected in other charges in proportion to unconstrained revenues, the revised scaling can be expressed in terms of the following simultaneous equations:

1. PPM revenue + DCM revenue + I&C revenue = £390.7 million, or
 $\text{charge}_{\text{PPM}} \times \text{number}_{\text{PPM}} + \text{charge}_{\text{DCM}} \times \text{number}_{\text{DCM}} + \text{charge}_{\text{I\&C}} \times \text{number}_{\text{I\&C}} = \text{£}390.7 \text{ million}$

2. $\text{charge}_{\text{PPM}} = \text{charge}_{\text{DCM}} + \text{£}15$

3. $\frac{\text{I\&C revenue}}{\text{DCM revenue}} = \frac{63.3}{192.1}$, or

$$\frac{\text{charge}_{\text{I\&C}} \times \text{number}_{\text{I\&C}}}{\text{charge}_{\text{DCM}} \times \text{number}_{\text{DCM}}} = \frac{63.3}{192.1}$$

where $\text{number}_{\text{I\&C}} = 400,000$

Solving these equations results in the following scaled charges:

	Scaled Charge
DCM	£13.62
PPM	£28.62
I&C	£207.02

A5.4 Determine Provision, Installation and Maintenance Charges

Finally, the relative levels of provision, installation and maintenance charges for each meter type are calculated by dividing the scaled charges in proportion to the forward looking costs of providing each service (determined by the methodology outlined in Appendix 4).

For example, for prepayment meters, the calculation is as follows.

	Forward Looking Cost	Scaled Charge
Provide	£19.81	£15.52
Install	£4.23	£3.32
Maintain	£12.47	£9.78
Total	£36.51	£28.62