

Paper 5 – Irish Water Allowed Revenue and Tariff Structure

Draft – Strictly Confidential

January 2015



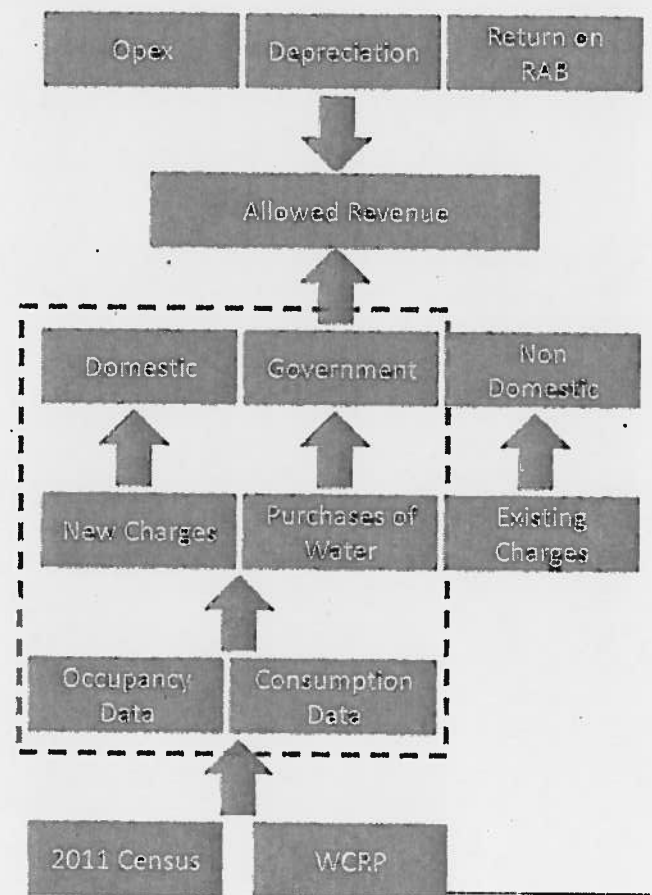
Comhshaoi, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

Section 1

INTRODUCTION

Introduction

- The Water Services Act 2014 modifies the charging regime set out by the CER in Q3 2014
 - Charges for combined (water and wastewater) services now capped at €160 per annum for single adult properties and €260 for multi adult properties
 - Unit rate set at €3.70/m³ for supply and treatment of water
- This level of domestic charging (when combined with forecast non-domestic revenue) is expected to meet the quantitative and qualitative Market Corporation tests (MCT)
- This presentation sets out how the unit rates per m³ for water supply and treatment have been arrived at as part of the regulatory and legislative process
 - Based on Census data and Water Consumption Research Project



Introduction

- The revenue and charging structure is based on robust empirical evidence
 - Irish Water costs – detailed review by regulator
 - Household occupancy – 2011 Census included detailed questions on water supply
 - Water consumption – Irish Water has carried out a study based on meter reads from c.7,500 households and c. 1,600 responses to a detailed survey
- The capped charges of €160/€260 per annum were set such that Irish Water can demonstrate that it regularly and clearly passes the MCT
- Tariff structure/funding model based on best available ex ante information
 - Degree of volume risk remains for Irish Water (as with most regulated utilities)
 - Any volume-related under/over recovery in one regulatory period to be recovered in next regulatory period
 - Does not apply to cost overruns

Introduction

		2015f	Section
Number of domestic customers (adjusted for single service customers)	A	1,367,294	2
Average domestic charge	B	€199	
Domestic billing	$C=A*B$	€271m	5
Non domestic billing & connection charges	D	€229m	4
Total customer billing	$E=C+D$	€500m	
Government purchases	F	€399m	7
Total income	$G=E+F$	€899m	5
Gov/customer split	$H=F/E$	44%	

Section 2

DOMESTIC CUSTOMER NUMBERS

Number of Households

- Not all households in Ireland are IW customers
 - Group schemes and private wells/septic tanks
 - Specific questions in 2011 Census re water supply and treatment to get accurate aggregate data
- IW customer/household numbers based on Census 2011 data
 - Growth from 2011 – 2015 estimated by IW

IW customers	2011 - Census data	Growth Index 2015*	End 2015 - estimated
Occupied households	1,308,027	103.57	1,354,714
Billable vacant properties	182,721	95.30	174,141
Total	1,490,748		1,528,856

Single Service Adjustment

- IW's customers are distributed as follows across water only (e.g. where the household has a septic tank), wastewater only (e.g. where the household has a well) and combined services customer types:

Service type	% of total customers	Weights	Weighted %
Water only	16%	50%	8%
Wastewater only	5%	50%	2%
Combined	79%	100%	79%
Total	100%		89%

Source: Census 2011

- Based on this distribution, an adjustment factor of 89% is applied to the total number of IW customers for the purposes of revenue calculations where the unit rate for combined services is used
 - CER has determined that each single service shall be charged at 50% of the full rate for the interim regulatory period

Adjusted Number of Households

- IW customer numbers for 2015 after the application of the 89% single service adjustment factor are as follows:

IW customers	2015 - estimated	Single service adjustment factor	2015 - adjusted
Occupied households	1,354,714	89%	1,211,555
Vacant properties	174,141	89%	155,739
Total	1,528,856		1,367,294

- IW is currently undergoing a customer registration process to ascertain connection/service type and total and child occupancy
 - Where a customer does not register with Irish Water they are classified as a default customer and will be charged a default rate of €260 per annum
 - Default customers will include metered and unmetered customers

Meter Rollout Assumptions

- IW's tariff model assumes a forecast meter rollout
 - 1.06m meters installed by end 2016, which represents 72% of IW's projected meterable customer base (which excludes wastewater only customers) at that time - CER approval required for Phase II
 - Average installation rate of c. 30,000 meters per month

IW customers	2015	2016
Metered	817,735	1,058,275
Unmetered	711,121	480,108
Total	1,528,856	1,538,383
Meterable properties (excludes Wastewater Only)	1,457,742	1,466,826
% metered	56%	72%

Source: Irish Water

- A key component of the meter rollout programme is leak detection
 - WCRP has shown that 1% of households consume 22% of water due to leaks
 - First fix free policy in place to fund leaks

Distribution of Households by Occupancy

Adults	Children	Number of households	% of total
1	0	294,323	24%
1	1	37,422	3%
1	2	22,324	2%
1	3	8,391	1%
1	4	2,553	0%
1	5	710	0%
2	0	321,676	27%
2	1	93,485	8%
2	2	105,795	9%
2	3	51,512	4%
2	4	15,160	1%
2	5	3,242	0%
3	0	103,443	9%
3	1	31,060	3%
3	2	17,003	1%
3	3	6,115	1%
3	4	1,693	0%
3	5	490	0%
4	0	46,489	4%
4	1	14,672	1%
4	2	5,672	0%
4	3	1,575	0%
5	0	12,975	1%
5	1	3,944	0%
5	2	1,212	0%
5	3	420	0%
6	0	2,880	0%
6	1	734	0%
6	2	301	0%
Total		1,207,271	100%

Source: Census 2011

- This table sets out the distribution of IW occupied household customers by adult/child occupancy
 - Child is defined as person <18
 - Published Census data defines child with reference to relationship to householder
- The total differs slightly (1,207k vs 1,211k) from the total number of occupied households in slide 9 because the distribution of households by occupancy is taken from a different CSO dataset

Average Occupancy

- Total and average number of adults and children residing in occupied households that are customers of IW:

IW occupied households	2015 - estimated
Total adults	2,721,026
Total children	902,657
Total occupied properties	1,354,714
Average adult occupants per property	2.0
Average child (aged <18) occupants per property	0.7

Source: Census 2011

Section 3

DOMESTIC CUSTOMER CONSUMPTION

Water Consumption Research Programme

- The consumption pattern of c. 7,500 properties with installed meters, of which c. 1,600 responded to a survey on factors such as occupancy, were monitored as part of the WCRP
 - Small number of single occupant properties in sample
 - Marginal consumption per occupant not linear

# occupants	Average usage with metered effect (m ³ /annum)	Marginal average usage (m ³ /annum)	Profiled average usage with metered effect	Profiled marginal usage
1	80		66	
2	121	40	87	21
3	119	-2	108	21
4	141	22	129	21
5	154	13	150	21
6	196	41	171	21
7	199	3	192	21
8	194	-4	213	21
9	273	78	234	21

Source: IW WCRP

Consumption by Quartile

- Behind the average consumption per occupant there is significant variability between high users and low users
 - IW has categorised users by consumption quartile
 - Set out below is the data for 2-adult households
 - Consumption is lower on average than expected and more varied than expected

Adults	Children	Low m ³ pa	Medium m ³ pa	High m ³ pa	Very High m ³ pa	Average m ³ pa
2	0	43	75	104	168	100
2	1	51	94	120	171	115
2	2	70	112	145	199	131
2	3	80	126	155	212	143
2	4	109	153	187	252	176
2	5	126	176	222	273	198

Source: IW WCRP

Total Domestic Consumption

- Forecast domestic consumption in 2015 by customer type:
 - Based on the Water Consumption Research Project
 - Data will be kept under review as more meters are installed

Customer type	Forecast total volume (m ³)
Water only	24,065,648
Wastewater only	6,624,923
Combined	108,873,433
Total	139,564,004
Single service adjustment factor*	89%
Adjusted total	124,815,604

Source: Irish Water

* Applying this adjustment factor to total volumes across service types means that we can calculate revenue by multiplying the adjusted total volume by the unit rate for combined services.

Section 4

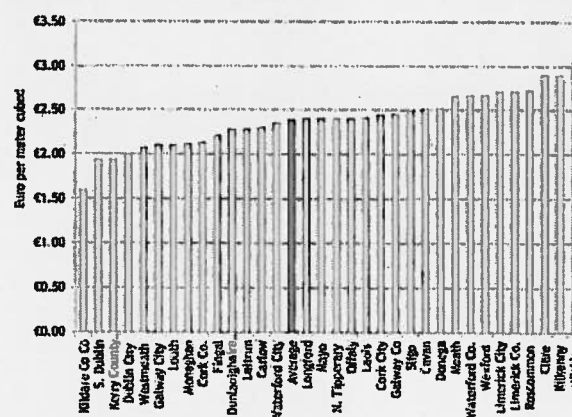
CHARGES FOR NON DOMESTIC CUSTOMERS

Current Non Domestic Charges

- Non domestic water charges were in existence prior to the establishment of IW
 - Each Local Authority set its own charges
- Existing non-domestic tariffs consist of standing and variable charges, with both type of charges varying across the different authorities.
 - Standing charges depend on the size of connection
- A summary of non-domestic variable charges is shown in the table
 - No uniform rate for non-domestic customers
- CER has decided that “existing charges for non-domestic water and/or wastewater will necessarily by default continue to apply for the foreseeable future, until the CER is presented with the necessary information so that it is in a position to consider the manner and method by which charges are calculated”

£ per cubic metre	Water	Wastewater	Combined
Min	0.80	0.80	
Max	1.50	1.93	
Average	1.13	1.26	2.39

Source: CER document – CER14084



Source: National Competitiveness Council, Costs of Doing Business in Ireland 2014

Connection Charges

- As submitted to the CER in Q2 2014, IW intends to implement a new connection charging policy which will apply to customers connecting to the water and wastewater networks. Prior to the establishment of IW, connection charging policy was set out by DECLG and implemented by LA's
- Under the previous system, charging for connection varied between LA, depending on the cost of their capital programme for water services, the cost of operating their treatment plants and the cost of administering the metering/billing elements
- IW has identified a number of key principles on which to develop a transparent, equitable, national connection charging policy. These principles are consistent with Irish Water's statutory obligations, including the need to balance the performance of its functions in a commercially viable manner with the public utility nature of these functions
- The new national connection charging regime is to be agreed with the CER in 2015

€'m	2015f	2016f
Non domestic revenue incl. connection charges	229	240

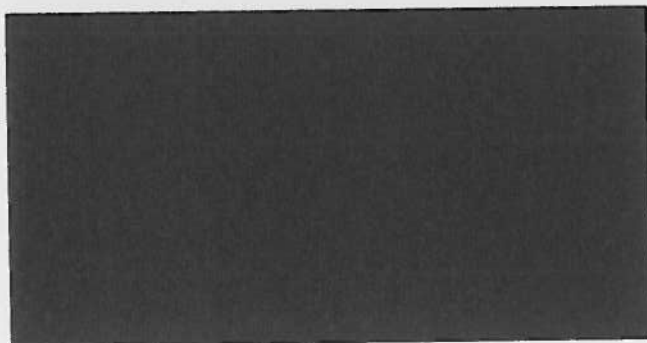
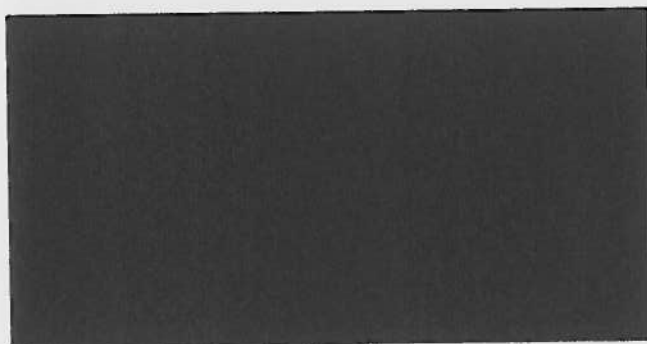
Source: Irish Water Business Plan

Section 5

DOMESTIC CUSTOMER CHARGES

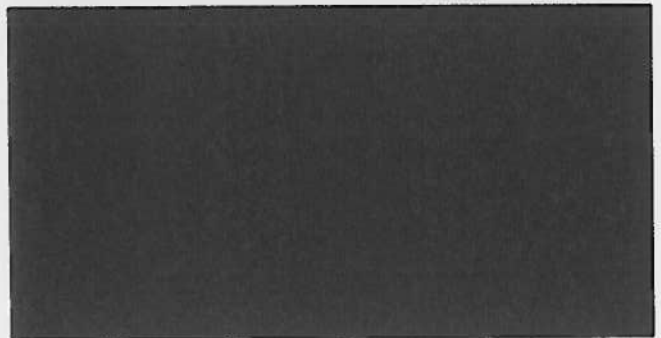
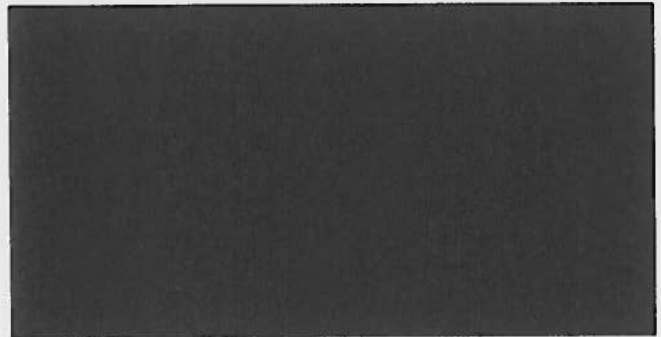
Expected Original Metered Charges

- The charging regime announced by CER in September 2014 was based on an allowance structure arrived at before the data from the WCRP was available
 - Average charge of €240, household allowance of 30,000 litres and child allowance of 38,000 litres
 - The lower than expected volumes and higher than expected variability of consumption revealed by the WCRP, when combined with a household allowance, resulted in a significant number of households with very high and very low expected metered bills
 - Charging regime considered to be overly complex
 - Changes required to charging structure to simplify charges and increase certainty



Revised Charging Structure

- Amended charging regime announced in Q4 2014
 - No changes to underlying costs as approved by CER other than re rates payable by water sector to Local Authorities
- For the period 2015-2018:
 - Each household will receive an allowance of 21m³ per child per annum
 - Reduced based on data from WCRP
 - No household allowance
 - Reduces number of households with very low bills
 - The annual charge for single adult households capped at €160, charge for households with 2 or more adults capped at €260
 - If a household does not complete an application to IW, it will be charged a default rate of €260 per annum



Capping & Rebates

Capping. While metered customers will have their bills capped at the maximum levels of €160/€260 there are two key measures to ensure that customers are aware of the level of consumption above the cap

- Metered bills (as set out in Appendix I) will clearly show the total volume of water consumed and the consumption above the cap
- Significant number of customers who are over the cap will be able to get below the cap with a small reduction in consumption as per table opposite

- 
- Need to ensure that meters are installed and leaks are identified and addressed as part of introduction of fair usage policy

Rebates. If a household does not have a meter on 1 January 2015, after it is metered, if consumption for the first metered year is less than the capped charge, the household will be due a once-off rebate on the difference between the capped charge actually paid during the unmetered period and the amount which would have been paid based on metered usage

Split of Allowed Revenue

- The amount of revenue that IW needs to recover from domestic customers and subvention **combined** in 2015 is calculated as follows:
 - Based on CER September 2014 IPC decision – adjusted for commercial rates exemption announced Nov 2014

2015		€m
Total allowed revenue (as determined by CER)	A	899
Less: non-domestic billed revenue	B	(229)
Revenue to be recovered from domestic customers and Government (post-rebates)	C=A-B	670
Forecast customer rebates	D	10
Gross revenue to be recovered from domestic customers and Government (pre-rebates)	E=C+D	680

Split of Unit Rate per m³

- The full, unsubsidised cost per m³ can be calculated as the total revenue to be recovered from domestic customers and Government divided by the forecast total domestic consumption
 - This produces an 'unsubsidised' rate per m³ of €5.42 for combined services
- This rate per m³ is split into a product subsidy and customer charge based on the following constraints
 - Government support clearly <50% of total revenue
 - Capped charges of €160 and €260
- Given the domestic revenue requirement and the charging structure outlined above, and based on forecast domestic consumption, IW calculated that a unit rate to be charged to domestic customers of €3.70/m³ for combined services is necessary to satisfy all constraints
 - Product subsidy therefore €1.72 per m³

		Estimates based on IW analysis	
Allowed revenue	A	€899m	
Non-domestic revenue	B	€229m	
Remaining revenue requirement	C=A-B	€670m	
		Water	Wastewater
Revenue requirement split 50/50 between services	D=C/2	€335m	€335m
Estimated consumption (m ³)	E	132,879,532	115,449,322
Cost per unit by service type (€/m ³)	F=D/E	€2.52	€2.90
Cost per unit for combined services (€/m ³)	G	€5.42	
Customer charge (€/m ³)	H	€3.70	
Product subsidy (€/m ³)	I=G-H	€1.72	

Source: Irish Water

Subvention vs Customer Revenue

- In order for IW to be in a position to pass the qualitative component of the Market Corporation Test, no more than 50% of its total income can be provided by Government
- Headroom below 50% is required to allow for fluctuations in actual customer revenues compared to forecasts and to demonstrate that the test is **clearly** passed
- These constraints produced a maximum 2015 subvention amount of €399m, resulting in a gross domestic revenue requirement of €271m
- It is important to note that Government subvention is used only to reduce domestic charges – Government subvention is >50% of domestic revenue <50% of total customer revenue

	€m
Forecast gross non-domestic revenue (Incl. connection charges)	229
Gross domestic revenue	271
Subvention	399
Total	899
Subvention as a % of total	44%

Source: Irish Water Business Plan

Section 7

SPLIT OF GOVERNMENT PURCHASE OF WATER

Purchase of Water by Gov

- The terms and conditions whereby Government will provide operating funding to IW is set out in a Funding Letter which sets out
 - Purpose, quantum and conditions of funding
- IW to bill Government on a quarterly basis for the purchase of water based on metered usage and assumed usage for non-metered customers
 - Product subsidy on all litres
 - Purchases for usage above the cap
 - Child allowance volumes (21m³ per child per annum)
- IW has cash flow risk related to volume risk where actual households/children/consumption is less than expected
 - Regulator will allow recovery in future periods as a k factor adjustment

Illustrative 2015 Invoice to Gov

Subvention item	Entry type	Service type	Volume (m ³)	Unit rate (€/m ³)	Value (€)
Product subsidy	Metered	Water only	79,088	97.80	7,735,174
		Combined	378,397	92.52	35,010,979
	Unmetered	Water only	96,816	94.10	9,110,780
		Wastewater only	49,638	93.43	4,637,446
		Combined	463,211	88.95	41,200,424
	Default	-	457,350	91.55	41,869,201
				1,524,499	
					210,746,289
Purchases above cap	Metered	Water only	79,088	30.85	2,440,064
		Combined	378,397	29.39	11,119,920
	Unmetered	Water only	96,816	23.41	2,266,132
		Wastewater only	49,638	21.98	1,090,791
		Combined	463,211	22.26	10,311,624
	Default	-	457,350	25.52	11,669,371
				1,524,499	
					128,601,629
Children's allowance	Metered	Water only	79,088	13.98	1,105,741
		Combined	378,397	11.67	4,416,539
	Unmetered	Water only	96,816	13.98	1,353,308
		Wastewater only	49,638	13.90	689,895
		Combined	463,211	11.67	5,405,369
	Default	-	457,350	12.15	5,558,937
				1,524,499	
					60,238,008
Total payable					399,585,926

Source: Irish Water

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Illustrative 2016 Invoice to Gov

Subvention item	Tariff type	Service type	Volume		Unit rate (£/m ³)	Value (£)	
			Customers (m ³ /customer)	Volume (m ³)			
Product subsidy	Metered	Water only	119,934	98.22	11,780,024	0.90	10,631,636
		Combined	573,821	92.91	53,316,364	2.23	118,630,226
	Unmetered	Water only	57,068	97.15	5,544,147	0.90	5,003,671
		Wastewater only	49,948	93.82	4,686,300	1.32	6,197,683
		Combined	273,041	91.88	25,086,579	2.23	55,818,259
	Default	-	460,205	93.51	43,034,320	1.95	84,120,632
			1,534,017		143,447,735		280,402,106
Purchases above cap	Metered	Water only	119,934	31.01	3,718,983	1.85	6,880,119
		Combined	573,821	29.54	16,948,245	3.70	62,708,506
	Unmetered	Water only	57,068	23.53	1,342,618	1.85	2,483,842
		Wastewater only	49,948	22.09	1,103,231	1.85	2,040,978
		Combined	273,041	22.38	6,109,338	3.70	22,604,552
	Default	-	460,205	27.21	12,523,892	3.31	41,450,570
			1,534,017		41,746,307		138,168,566
Children's allowance	Metered	Water only	119,934	14.05	1,685,297	1.85	3,117,799
		Combined	573,821	11.73	6,731,396	3.70	24,906,164
	Unmetered	Water only	57,068	14.05	801,796	1.85	1,483,322
		Wastewater only	49,948	13.97	697,763	1.85	1,290,862
		Combined	273,041	11.73	3,202,524	3.70	11,849,341
	Default	-	460,205	12.22	5,622,332	3.25	18,277,494
			1,534,017		18,741,108		60,924,982
Total payable							479,495,654

Source: Irish Water

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Appendix I


ILLUSTRATIVE CUSTOMER BILLS

Sample Metered Bills

Domestic Water Services Bill

Jane Smith
Sample St
Sample Area
Sample Town
Sample County
Ireland

Supply address: Sample Street, Sample Area, Sample Town, Sample County, Ireland



Bill Information


Account No. 12345678
WPRN 12345678
Bill issue date 08/08/2015
Bill period from 01/04/2015
Bill period to 30/09/2015
Number of days 91
Bill frequency Quarterly
Tariff type Metered

Sign up for online account management and view your bills online

Account summary	Amount	Number of occupants
Last bill total	€ 64.11	From 01/04/2015 to 30/09/2015 (91 days)
Less total payments since last bill	€ -64.11	Number of adults 2 Number of children 2
Add total charges for this bill	€ 64.82	
See back of bill for details		
Total due	€ 64.82	

Pay by 22/08/2015

Payment terms are 14 days from bill issue date



UISCE
Domestic Water

Bill Reference: 12345678
Bill Period: 01/04/2015 to 30/09/2015 (91 days)
Bill Amount: € 64.82

Need help?

1 cubic metre (1m³) is 1,000 litres
Your consumption in more detail

Metered consumption for this period

Meter reading	To	From	Volume
12345678	11480.00	11480.00	0.00m³
Total metered consumption			0.00m³

Unmetered water allowance

Allowance brought forward	Allowance used this period	Allowance carried forward
0.00m³	0.00m³	0.00m³
Total allowance		0.00m³

Your charges in more detail

Volume	Rate	Amount
0.00m³	€ 15.00	€ 0.00
Total charges		€ 0.00

Your charges for this period

Volume	Rate	Amount
0.00m³	€ 15.00	€ 0.00
Total charges		€ 0.00

SEPA Direct Debit Mandate

I hereby authorize the payment of my bills by direct debit to the account of the water supplier.

Name: _____
 Address: _____
 Signature: _____
 Date: _____

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