Utility Regulator Strand 1 Submission to Water Review – September 2007

1. The Utility Regulator is happy to make the following submission to the Water Review. This submission is focused on Strand 1 of the Review's Terms of Reference. We will make a further submission on Strand 2.

Summary

2. This submission suggests to the Review six key criteria against which reform proposals could be judged:
   i. The interests of current and future generations of consumers of water and sewerage services are paramount;
   ii. Roles and responsibilities between various stakeholders must be clear;
   iii. Risks must be clearly identified and allocated, ensuring that the customer does not pay twice;
   iv. Funding for water and sewerage must be raised fairly and sustainably, which means that property value should not be the main determinant. Water pricing policies must ensure an adequate contribution to the recovery of costs of water services from industry, households and agriculture by 2010 as required by the European Water Framework Directive;
   v. Funding arrangements must enable a long-term investment programme to be planned and executed to support environmental sustainability. This means funding must be secured/ring-fenced at least 5 years ahead, within a 25 year planning horizon; and
   vi. Strong efficiency drivers are required to bear down on the cost of providing water and sewerage services. These will require:
      a. Strong efficiency incentives, set with reference to best-in-class performance, monitored effectively and independently; and
      b. A long-term investment planning structure, with clear and transparent objectives associated with investment streams.

3. In addition, we make seven recommendations to the Review:

- ***Recommendation 1:*** *The Review should focus on consumers' key "unanswered questions", and not try to replicate a 5-year policy process in a few months.*

- ***Recommendation 2:*** *In the absence of an alternative governance model, we recommend that the Minister for Regional Development should not act as NIW shareholder. This role could be undertaken by another Minister within the NI Executive, or by the Shareholder Executive.*

- ***Recommendation 3:*** *It should be made entirely clear:*
  1. *Which risks are to be borne by customers? And therefore,*
     - *What is the mechanism by which tariffs will enable costs arising from these risks to be covered? and*

- *What benefit accrues to customers to compensate them for this risk (notably in terms of lower cost of debt – see Recommendation 4)?*

2. *Which risks are to be borne by government as shareholder? And therefore,*
   - *How will government find money to cover costs arising from these risks, without impact on consumers i.e. on tariffs or the investment programme?*

- ***Recommendation 4:*** *NIW should be permitted to borrow on public markets so as to ensure it can fully fund its investment programme without unnecessarily high tariffs.*

- ***Recommendation 5:*** *Ministers should be guided by the Utility Regulator's forthcoming cost-benefit analysis in deciding whether to introduce, and the best approach to introducing, universal metering.*

- ***Recommendation 6:*** *Given the important role of tariff design in the social progressiveness or otherwise of water charges, we recommend that this topic should be included in Ministerial guidance to the regulator.*

- ***Recommendation 7:*** *The Review should emphasize the role of independent, consumer-focused regulation, in dialogue with stakeholders, to provide a long-run framework for a financially, socially and environmentally sustainable water industry.*

What are the Utility Regulator's aims?

4. We exist to ensure the provision of sustainable water and sewerage services. Our key statutory duties[1] are to protect consumers' interests, to ensure services are delivered to them as set out in law, and to ensure that delivery of these services can be financed. To achieve these goals we are required (under the Water Order and the Northern Ireland Water Limited (NIW) licence) to determine what quality standards are appropriate, what expenditure is required in future to meet these standards, and therefore (from 2010) the price levels needed to support the required level of expenditure. We are developing enforceable standards of service backed by compensation; systemic breaches of these or of other obligations may also lead to our fining NIW.

Six Key Criteria

5. We have recommended to Minister Murphy and to the Regional Development Committee the adoption of six criteria for a successful water framework. We would also commend to you the same criteria against which reform proposals could be judged, and around which we have organized our submission:

    i. The interests of current and future generations of consumers of water and sewerage services are paramount;
    ii. Roles and responsibilities between various stakeholders must be clear;
    iii. Risks must be clearly identified and allocated, ensuring that the customer does not pay twice;
    iv. Funding for water and sewerage must be raised fairly and sustainably, which means that property value should not be the main determinant. Water pricing policies must ensure an adequate contribution to the recovery of costs of water services from industry, households and agriculture by 2010 as required by the European Water Framework Directive;
    v. Funding arrangements must enable a long-term investment programme to be planned and executed to support environmental sustainability. This means funding must be secured/ring-fenced at least 5 years ahead, within a 25 year planning horizon; and
    vi. Strong efficiency drivers are required to bear down on the cost of providing water and sewerage services. These will require:
        a. Strong efficiency incentives, set with reference to best-in-class performance, monitored effectively and independently; and
        b. A long-term investment planning structure, with clear and transparent objectives associated with investment streams.

Consumers come first

6. Like other stakeholders, the Utility Regulator has welcomed the Review as an opportunity to reinforce the important framework of controls which exist for the governance of this

[1] See Art. 6.2 of the Water and Sewerage Services (NI) Order 2006, referred to as the Water Order.

industry. We also welcome the Minister's having invited the review to report quickly on key issues, and in general to conduct a focused and condensed exercise.

7. Given your short time-frame, it seems vital to focus on the main questions that must be answered in order to build confidence in the future regime. Water reform has been a five-year process, but strangely, a number of the questions that have dominated public debate during that period have not been clearly answered. It appears to us that consumers need reassurance:
   - That they are only being asked to pay once for water and sewerage;
   - That money cannot "leak" out of the system through inefficiency, excess profits, or other means; and
   - That roles and responsibilities are clear so they can hold the right people accountable in the future for service delivery.

Recommendation 1:The Review should focus on consumers' key "unanswered questions", and not try to replicate a 5-year policy process in a few months.

Clear allocation of roles

8. Directly related to putting consumers first is the question of roles and responsibilities. The clear separation of functions into ministerial shareholder – a business function; ministerial policy- a political function; the supply of services – a business function; environmental regulation – a supervisory function; economic regulation – a supervisory function; and the consumer council – consumer representation; is crucial to bring clarity to the roles of these various key stakeholders.

9. Such clarity will be of prime importance in holding management accountable. For instance, if NIW managers are told to take cost out of the business – but also given to understand that headcount reductions are to be avoided if possible – they can hardly be blamed for making slower progress. In that scenario, it will be much harder for us as regulator, and for the Assembly and the public at large, to clearly identify responsibility and demand remedial action. The same would be true if restructuring were held back by a demand to protect shareholder value. It is crucial that ministerial objectives are explicit with a focus on specifying outcomes.

10. Equally, the restructuring of NIW is an extensive programme requiring behavioral change in the workforce. Public messages from democratically accountable stakeholders that change should be slowed or avoided are likely to damage morale and willingness to change, and so ultimately damage consumers' interests.

11. This issue is of particular importance, given that the Minister for Regional Development currently holds two roles: as shareholder and as policy maker. Some level of conflict of interest is inherent in this model.

12. The effects of such conflict are already apparent to some extent. For instance, NIW has been set by its shareholder a number of objectives. These include both "achieve the maximum affordable improvements in environmental compliance in both wastewater treatment and drinking water quality"; and also "enhance shareholder value and provide returns that match or exceed the industry/regulatory cost of capital". These two objectives would appear to be in tension, and can be reconciled only by downgrading one's ambitions for "affordability".

13. In support of the Shareholder Objectives, a Remuneration Policy has been adopted which sets as main principles: the need to attract, retain and motivate high-quality senior staff; and performance-related pay; as well as compliance with the Combined Code. So far, this seems internally coherent and aligned to the Shareholder Executive model. However, the remuneration policy also states:

> "The reward policy needs to recognise the stage at which NIWL is at now, and for the next few years, relative to the United Kingdom utility sector. The remuneration package needs to take account of the need to incentivise directors to achieve rapid transformation but recognise that it would be difficult to justify remuneration levels equivalent to those currently available in organisations performing at the levels to which NIWL aspires."

14. It is not made clear why the existing weak state of the business makes it less important to attract, retain and motivate high-quality staff. To us, the opposite would appear to be true: the need for rapid reform calls for the strongest possible leadership. The reference in the second sentence to the need to "justify" remuneration levels implies the political frame of reference that the shareholder brings to bear. We believe the FSA's Code of Best Practice in the Combined Code on Corporate Governance, which NIW is required to have "particular regard to " as a condition of their licence, should be the key measurement against which NIW's remuneration policy, and the actions of its remuneration committee are judged. The main principles on remuneration within the Code of Best Practice state:

    B1: Levels of remuneration should be sufficient to attract, retain and motivate directors of the quality required to run the company successfully, but a company should avoid paying more than is necessary for this purpose. A significant proportion of executive directors' remuneration should be structured so as to link rewards to corporate and individual performance."

    B2: There should be a formal and transparent procedure for developing policy on executive remuneration and for fixing the remuneration packages of individual directors. No director should be involved in deciding his or her own remuneration.

15. This emphasis the importance of setting ministerial objectives and objectives for customer service for establishing minimum acceptable outcomes that must be met. This then facilitates the payment of bonuses only when and if the minimum acceptable standards are exceeded.

16. To some extent, this conflict of interest appears inherent in the GoCo model of governance. Given the important role of Ministerial guidance in balancing various policy objectives, the conflict can only grow more acute over time. We recognize that governance is left until strand 2 of your Review so will confine ourselves here to commenting that other models (such, for instance, as a mutual structure) could eliminate this conflict.

17. Working with the GoCo model, the conflict could be substantially mitigated by handing the shareholder role to another party. This could be another department within the Executive. Alternatively, the Shareholder Executive can have an important role. The Shareholder Executive has been extensively consulted by DRD in creating the GoCo, and providing such advice is one of its important functions. However, we understand that the Shareholder Executive not only advises, it also manages the Government's day to day shareholder relationship with a number of Government owned businesses. We would recommend that this executive task should be handed over to the Shareholder Executive (including responsibility for shareholder policies like those discussed above).

Recommendation 2: In the absence of an alternative governance model, we recommend that the Minister for Regional Development should not act as NIW shareholder. This role could be undertaken by another Minister within the NI Executive, or by the Shareholder Executive.

Clear allocation of risks

18. Risks which exist include operational/managerial risk; financial risk; compliance risk; government interjection/delay risk and force majeure risks. The parties to whom risks must fall include, the shareholder, the consumer, the company and the government. In applying good governance there must be clarity around the allocation of these risks, so there is accountability so the standard and efficiency of the service to the consumer is protected.

19. It is essential to clarify what risks face NIW, and who is to carry those risks. This is necessary not only to avoid nasty surprises in future, but also to ensure that NIW's financial structure does not unduly remunerate it or its owner for risks borne by others. These issues go directly to the question of how NIW is to be financed and we therefore address them here; we apologise that we unavoidably stray into Strand 2 issues that the panel will address later in the year.

20. The operational risks associated with NIW do not appear to be less than other water/sewerage companies, and may be significantly higher owing to the rapid transformation expected of the company in the next few years (which brings execution risk). These underlying risks cannot be dispelled by financial structures, only allocated.

21. In England and Wales, these risks are borne primarily by shareholders, since the regulator will not allow prices to rise to recover costs associated with poor management[2]. The price at which debt can be raised and the share price make transparent the market's view of risk:

[2] Indeed, Ofwat has not even allowed prices to rise to recover all uncontrollable and unexpected costs.

the likelihood of risks crystallising, and the magnitude of consequent exposures. This market view is derived from the interactions of independent views developed by many separate analysts (including notably the credit rating agencies) who are skilled in this analysis and have incentives to get it right. This therefore appears a robust model of pricing risk.

22. As NIW will not be privatised, this model is not an option. Three alternative models seem available.

Risk-allocation models

23. The first would be to allocate risk to taxpayers. This would be the effect of remunerating the capital employed in NIW with a "green book" cost of capital, rather than a risk-weighted cost of capital. This approach suffers from several significant drawbacks.
    - Taxes need to be at a level to bear the risks over the long term, but there is no mechanism for costing risks accurately in this model. In practice, risk exposures would be assessed through internal debates (and gaming) between government departments and the company. As a mechanism, this is unlikely to be effective;
    - In addition, risks in their nature are likely to crystallise sporadically: they require provision to be made in the "fat" years, Pharaoh-like, so as to cover costs in the "lean" ones. UK public finances do not generally work this way;
    - The combination of bad forecasting and a lack of mechanisms for multi-year budgets is likely to mean that the public budget is exposed to unmanageable volatility. This could mean volatility of tax rates, but in practice is more likely to mean unexpected reductions in resources for other kinds of public spending, or stop-go spending on the water industry itself.

24. Stop-go spending has indeed been the situation of the (tax-funded) Water Service for a number of years, and this has led to infraction concerns, planning blight, poor quality service and other problems.

25. A second approach would be to set NIW tariffs based on a risk-weighted cost of capital. In "fat years" such an approach would lead to surpluses that need to be set aside to cover costs arising when risks crystallise.

26. This is to some extent the approach adopted with respect to the current GoCo. However, we have some reservations about current arrangements:
    - There is no market mechanism to assess the risk exposures associated with NIW. Such assessment is implicitly being carried out by benchmarking to other water/sewerage companies, or to other potential HMG investments[3]. Such benchmarking may not be accurate given the unusual situation in Northern Ireland, although it may be better than administrative assessments.
    - We would also note that the level of reserves expected to be carried by NIW under its Strategic Business Plan is quite low. Most of the implicit reserve is to be taken by the

[3] We are not entirely clear which of these two benchmarks has most influenced DRD and HM Treasury thinking.

shareholder as dividend, but in reality this money is being spent year-by-year, not saved. Our concerns about volatile impacts on the public purse therefore seem to arise here also.

- There has been strong rhetoric that the dividend must be paid, and that if it is not, other DRD programmes will bear the financial consequences. We are therefore concerned that, in practice, the crystallisation of risk would lead to pressures either to increase consumer prices or to cut back on necessary and approved investment plans. As regulator we would expect to resist such pressures robustly, but it would appear preferable to adopt a model that excludes foreseeable problems of this kind.

27. If this model is to be adopted, it must be carried out consistently. It would be more consistent to follow the lead set by the Water Industry Commission for Scotland, with surpluses being set aside in a fund for use in "lean years". (Although in the Northern Ireland context, risks may well crystallise before a significant fund could be built up, and some government commitment to provide funds in the short term may also be needed, without penalising customers through trimmed investment or higher bills.)

28. A third model would be to allocate risks to customers. Under this plan, if NIW's costs turned out to be higher than planned, tariffs would rise. The prime advantage of such a model is that it would enable low-cost borrowing. Such low-cost structures are already in place in water (Welsh Water – risks are allocated to debt investors) and in Northern Ireland (the Moyle electricity interconnector and Scotland-Northern Ireland gas Pipeline (SNIP).

29. Were NIW able to raise debt in public markets, public trading of bonds could provide much of the market-based assessment of NIW-specific risk that is absent from the first two models. We discuss further below why low-cost borrowing is important.

30. This model also has the advantage that it overcomes informational and forecasting issues. Quite limited ex ante forecasting of risks and costs is required (so long as the company has strong enough reserves to carry any deficits until revenues catch up with costs).

31. The main drawback of such a model is that the risks are not allocated to the party best able to manage them, which is normally the best way to create aligned incentives. Whoever bears risk in principle, in practice the regulator has an important role. Even if a risk is in principle borne by the shareholder, if a regulator lets prices reflect an allowance for that risk crystallising or being inefficiently managed, the risk is effectively passed to customers. However, the regulator's role is slightly different depending on who carries risk. For shareholder risks, the task is to identify the existence of a risk and its broad magnitude, to exclude it from prices; whereas for company-carried risks the regulator needs to assess in detail whether actual costs reflect fully efficient management. The former seems harder than the latter and so – despite the best regulatory intentions – we might expect overall a somewhat less efficient industry to emerge in the absence of shareholder pressures on management.

32. As noted, we have some concerns that in reality customers bear considerable risk in the model currently in place. As regulator, we have indicated willingness to allow some debt arising from non-payment of customer bills to be passed into the regulatory capital value. We took this stance because the alternative seems likely to be not so much a reduced dividend, as reduced capital investment, and this seems even less in customers' interests. However, it would be better to clarify the treatment of risk so that:
    - Either, customers clearly bear this risk and benefit from a low cost of capital in consequence; or
    - a financial buffer is created to credibly underpin shareholder exposure to this risk.

Recommendation 3: It should be made entirely clear:

1. *Which risks are to be borne by customers? And therefore,*
    - *What is the mechanism by which tariffs will enable costs arising from these risks to be covered? and*
    - *What benefit accrues to customers to compensate them for this risk (notably in terms of lower cost of debt – see Recommendation 4)?*
2. *Which risks are to be borne by government as shareholder? And therefore,*
    - *How will government find money to cover costs arising from these risks, without impact on consumers i.e. on tariffs or the investment programme?*

Role of debt

33. A general principle exists which is that the current generation pay for maintenance of the infrastructure, capital works are financed by Capital markets – debt and equity, (government in our case) with customers paying for the cost of borrowing.

34. As noted, the best allocation of risk partly hangs on how important it will be to enable low-cost borrowing.

35. Utility assets are usually financed through debt, although a "pay as you go" approach is also possible. Debt financing broadly allows lower bills in the short-to-medium term. It leaves a legacy of debt to a future generation, but it might be expected that owing to economic growth these future consumers will be more able to cover this cost.

36. We understand that HM Treasury rules only permit a public corporation such as NIW to borrow from government, and this borrowing is treated as government expenditure[4]. In this regime, we would expect NIW's ability to borrow to be constrained, relative to borrowing on public markets. (We understand, for instance, that Scottish Water's gearing is substantially lower than that of most privately owned water and sewerage companies.) Such a restriction on borrowing could have negative effects: either by requiring NIW to implement a

[4] Although the Review panel is well supported by civil servants, its members may nevertheless find useful as we have the summarised description of the UK framework for government-owned businesses, which can be found at http://www.shareholderexecutive.gov.uk/framework.asp. It will be noted that in the Republic semi-state businesses (including several utility companies) are organised quite differently and are able to borrow commercially.

sub-optimal capital investment programme; or by leading to higher tariffs so as to enable more pay-as-you-go investment.

37. For these reasons, we would recommend enabling NIW to borrow on public markets. We are not clear how strongly the application of HM Treasury rules to NIW has been tested or contested, and are therefore unclear whether this recommendation implies also changing the governance model.

Recommendation 4: NIW should be permitted to borrow on public markets so as to ensure it can fully fund its investment programme without unnecessarily high tariffs.

38. This recommendation is intimately linked to Recommendation 3, since unless it is quite clear who will pay for the crystallisation of operational risk, we would expect some reluctance from financial institutions to lend to NIW. Such institutions may well fear that the answer to that question could turn out to be receivership, with lenders carrying the costs.

39. There has been some controversy about whether existing NIW assets should attract a cost of capital charge. It is alleged that NI customers have already paid for these assets through rates, and should not have to pay twice. We have already suggested that the "paying twice" argument is one to which the Review should give close attention. We would like to point out, however, that if the approach to this issue involved writing down the financial value of NIW's assets very substantially, this could seriously jeopardize its ability to secure an investment-grade credit rating and to raise debt on public markets.

Fair charges and the role of metering

40. We have deliberately used a subjective term, "fair", because it appears to us that consumers' subjective view of how they are charged for water and sewerage is of great importance.

41. The setting of water tariffs is at the heart of getting it right for the consumer. Not only do we need to get the answer on whether to meter or not right, we must also review the merits of the various water tariff structures. Crucial to this will be defining pricing principles, which could be designed to accommodate subsidies for low-income consumers.

42. Charges based on the capital value of a consumer's home bear only limited relationship to the actual costs imposed by that consumer on the water network, or to the quantities of water consumed. Subjectively, we see little prospect of consumers accepting capital-value based charges as "fair".

43. Metering is not a panacea to this question of "fairness" in its subjective element. We are somewhat concerned that some consumers may believe that metered charges will necessarily be lower – while in reality, of course, the impact will vary considerably between different customers. Clear public information is required, based on robust analysis.

44. As you know, we are undertaking a substantive review of the costs and benefits of water meters. Regrettably the results of that work will not be available until after the Review concludes: we intend to publish a consultation on this subject around the end of 2007, and come to a view in spring-summer 2008 on the cost-benefit of metering and the correct approach to adopt. In the interim, we hope that the seminar we intend to organize will assist the Review.

45. At this early stage we view metering as having an important role to play, because of the following factors.

Demand response

46. Economically, Northern Ireland can profit substantially from creating some discipline on demand. NI consumption is very high, around 20% higher than the England and Wales average – see Table 1. It is hard to see any compelling reason for this difference, except that water and sewerage in NI are, at the margin, free.

Table 1[5]

Water and Sewerage (WaSC) Company	Total Properties Connected Year End 05/06 (000)	Volume of Water Delivered (Ml/d)	Volume of Water Delivered per Property (l/d)
Anglian	1,982.9	991.6	500.1
Dwr Cymru	1,347.6	666.1	494.3
United Utilities	3,135.6	1,527.4	487.1
Northumbrian - NE	1,150.9	598.6	520.1
Northumbrian - E & S	773.9	422.9	546.5
Severn Trent	3,350.0	1,616.5	482.5
South West	752.2	381.7	507.4
Southern	1,038.0	504.3	485.8
Thames	3,716.1	2,168.4	583.5
Wessex	558.6	311.0	556.7
Yorkshire & York	2,156.7	1,057.1	490.1
WaSC Min	558.6	311.0	482.5
Avge for WaSCs	1,814.8	931.4	513.2
WaSC Max	3,716.1	2,168.4	583.5
WaSC Range	559 - 3,716	311.0 - 2,168.4	482.5 - 583.5
Northern Ireland Water	786	486.9	619.4

Source: June Returns (Table 1, Line 1; and Table 10, Line 20)

[5] We have set out these data and the reference in full as they are slightly different to the figures I gave orally when we met. This was owing to a calculation error on our part, for which we apologise.

47. We would expect to see demand response to price signals also in Northern Ireland, since we are aware of international research that suggests this is a general phenomenon. We have conducted limited research on this, but are aware of the following

    - www.fwr.org/wrcsa/790100.htm . This South African study suggests a price elasticity of demand about -0.17 i.e. a 10% price increase leading to a 2% reduction in demand. The study also refers to a range of other studies producing findings in averaging around 0.15-0.2. Interestingly the elasticity appears greater for outdoors usage than indoors. These findings are from warm climates (SA and Perth, Australia) and intuitively one might expect even more in a more temperate and wetter climate. These are short-run elasticities. Crucially, the study also suggests long-run elasticity is higher, at -0.6, which seems to us quite significant for a basic service like water. A more recent report from the same source is at http://www.fwr.org/wrcsa/1296104.htm

    - We have also seen the following report from Cyprus. http://www.cyprus.gov.cy/moa/wdd/wdd.nsf/All/DCF9C5CFB5B6DFB1C225718F00385A0B/$file/8_SMetaxas.pdf. This is interesting because it is recent (2007), and looks over multiple countries and years. It suggests price elasticity averages around -0.3; that sensitivity is higher for larger users than smaller ones; and that rising block tariffs increase the elasticity of residential demand

    - This report from California suggests that "price is a moderately effective instrument in reducing residential demand". http://rubicon.water.ca.gov/pedreport.pdf

48. In the language of economics, then, water demand is "price inelastic" – we see less demand change than price change. For an essential good, this is what we would expect. However, elasticities around -0.15 to -0.3 or even higher seem to us quite marked. This seems a higher level of price response than we see in energy, for instance[6].

49. The environmental significance of creating some discipline on demand will be evident. We will leave the interpretation of the Water Framework Directive to lawyers, but it appears that in accepting it, the Council of Ministers and so the UK government has given a clear steer towards demand-related charging. Because of the environmental aspect to this issue, we find selective metering a particularly unattractive option since it tends to lead to only low-users getting meters and so receiving an appropriate price signal.

50. If clearer marginal price signals achieved demand response, significant cost reductions could also be achieved. NIW expects to spend over £500m during 2008-2014 to accommodate growth in demand for water and sewerage. We would stress that for various reasons there is no linear relationship between demand reduction and reductions in growth-

[6] See "The Dynamics of UK Regional Energy Demand", Michael Smyth, International Journal of Energy Research vol. 20, 93-106 (1996). This study looks at total energy use, not just networked energy. It suggests NI demand elasticity for energy as -0.07 for the long-run and 0.02 for the short run. However, it suggests this is partly a consequence of prices in NI being historically high, and UK price elasticities are stronger (-0.11 and -0.21).

related capex[7]. Nevertheless, there appears to be an opportunity to make significant savings if volumes of water and sewerage can be reduced significantly. These would at least partly offset costs of metering.

Costs of metering

51. It also seems to us that some of the estimates in circulation of the costs of metering are too high. We understand that Ofwat accepts an average difference between measured and unmeasured tariffs of £43; and that NIW have suggested a per-customer cost of £50.

52. We have reviewed the metering element of NIW's Integrated Financial Model from which this assessment would appear to be drawn and which is structured broadly following Ofwat's analytical approach. This suggests the cost-breakdown as shown in the second column of Table 2.

53. However, we see a number of weaknesses in this approach:

- NIW attribute as metering costs items like billing/credit management, and payment in arrears. These are not, however, metering costs. They arise from a choice of tariff and billing methods i.e. sending bills in arrears and quarterly. NIW assumes that Northern Ireland would adopt this "energy-like" billing approach when we adopt metering – as England and Wales has – but although this billing approach becomes possible when you have meters, it is not compulsory.

  The main advantage of meters is to ensure the bill is related to usage. The bill could still be annual rather than quarterly; could still be in advance (with a true-up the following year). Payment in arrears could also be avoided, as in energy, by a widespread switch to direct debit. We are not arguing here the merits of various billing and tariffing approaches, merely pointing out that the decision about billing/tariff is a separate decision to whether to install meters, and costs related to it should not be included as metering costs.

- Most customers are un-metered, and so pay for leakage, while the minority of metered customers can avoid this cost. If all customers were metered, the costs of leakage would be borne by all customers.

- NIW's estimate of installation costs depreciates the full works over 10 years (the life of the meter). However, three-quarters of the installation cost represent creation of the metering chamber, and this has a much longer lifetime, perhaps 40 years. Therefore the depreciation period should be longer, leading to a lower annual charge. In addition, all new builds since 1992 have had these chambers installed and this would reduce the costs of universal metering.

[7] Because volume growth arises partly from population growth, which would be unaffected by metering; because sewerage capex is driven by storm water as well as by waste water, and anyway treatment costs are more influenced by strength of influent than by volume; and because the costs of network reinforcement or replacement are "lumpy", and do not grow smoothly with volumes.

- NIW's estimate of meter reading costs is rather higher than in energy. This seems strange when the meters are readily accessible at the property boundary (unlike energy meters which are generally on the house wall or indeed inside the property). It seems to arise because NIW are modeling selective metering - given universal metering we would expect meter-reading costs no higher than in energy.

54. Taking these factors together, the third column sets out a view of the likely annualized costs per customer of universal metering (and not billing or tarification decisions).

Table 2

Cost driver	**NIW IFM (selective metering)**	**Meter-only costs, universal metering**
	£	**£**
Meter reading (per property/year)	5.00	4.00
Operation and maintenance(per property/year)	1.25	1.25
Bills & credit management (per property/year)	12.00	-
Leakage rebate and payment in arrears (per property/year)	16.00	-
Installation costs per meter	50 to 200#	50 to 200#
Installation cost annualized	13*	5-7**
Total annualized cost	47.25	£10.25-12.50

Dependant on type of stopcock
* Assume average £130 cost, lifetime 10 years, no financing costs
** Assume average meter cost of £40, lifetime 10 years; and chamber cost of £90, lifetime 40 years. No financing costs

55. We would stress that this is a relatively crude analysis. It is not based on any developed analysis of NIW's technology options, and also does not take account of economies of scale in procurement and installation of universal (rather than selective) metering. However, the cost of metering that it suggests is broadly in line with that in gas and electricity (which vary roughly £8-£30), and so intuitively seem useful. We intend to produce a more developed analysis in our metering review later this year.

Recommendation 5: Ministers should be guided by the Utility Regulator's forthcoming cost-benefit analysis in deciding whether to introduce, and the best approach to introducing, universal metering.

Socially progressive metered tariffs

56. We are aware of some concerns that metered tariffs are necessarily socially regressive. This appears to us simply untrue. We hope in our metering seminar to get you "from the horse's mouth" information about latest thinking in England and Wales on this topic.

57. For the time being, we would suggest the review group examine available analysis of a data set collected by Anglian Water. This data set helpfully covers not only a comprehensive set of water-related variables but also a range of socio-economic characteristics for each household. Work by the Policy Studies Institute[8] assessed the distributional impacts of ten different hypothetical tariff designs. It was found that it was possible to design revenue-neutral metered tariffs that would cause only a small percentage of low-income households to lose and most to gain.

58. In Northern Ireland, where there appears to be willingness to inject public money, it seems to us clearly possible to introduce metering and associated tariffs in a way that is socially progressive. However, this would imply that better-off consumers may face larger bills than otherwise.

59. We would wish to repeat here the suggestion that tariff design is a separate topic to whether to install meters, although clearly related. Universal metering would open new options, but not compel us to take them. Some approaches to tariffs (such as payment in arrears) create costs in themselves, as will more frequent billing. Tariff design deserves careful analysis in its own right, not just as an adjunct to the metering debate.

60. We are particularly sensitive to this point since under the existing NIW licence, approval of the company's annual tariff statement lies with ourselves. At present it is unclear what policy framework we should deploy in carrying out this role, and we would regard this as a relevant topic to be covered by Ministerial guidance.

Recommendation 6: Given the important role of tariff design in the social progressiveness or otherwise of water charges, we recommend that this topic should be included in Ministerial guidance to the regulator.

Long-termism and efficiency drivers

61. Part of the value that the Review can add is by explaining clearly to stakeholders the reality of running a large civil engineering concern. Large engineering projects cannot be run efficiently on a stop-go basis, or with a planning horizon extending only a few years out. An efficient water company needs a solid strategy based on strong data. This must integrate:

[8] Dresner, Simon and Ekins, Paul (2006) 'Design of environmentally and socially conscious water metering tariffs for the UK', Journal of Environmental Planning and Management, 49:6, 909 - 928.

desired outputs; what assets will be needed to deliver these outputs; the condition of assets and the need for maintenance; what work-streams are required to deliver the required assets in the required condition; what is the funding requirement for those work-streams; and therefore what tariffs and management programmes are necessary. The assets involved have very long lives, and management programmes (whether construction or procurement) also generally stretch over a number of years.

62. Stop-go funding or a lack of future visibility means procurement and asset management strategies cannot be optimised, so total costs will be higher. It also hampers planning for growth, which can lead to planning hot-spots or non-compliance with environmental standards.

63. We recognize that a number of other submissions to your Review have invited you to take a view on the extent of efficiencies that can be captured and other aspects of NIW's Strategic Business Plan. While it will no doubt be possible to benchmark to other reform programmes, it seems to us of prime importance that your report should not allow any confusion about what can be achieved by a short Review like your own. In other words, you need to underline the importance of robust planning processes over years, carried out transparently in dialogue between the undertaking and independent regulators (both economic and environmental).

64. You are aware that as economic regulator we are already reviewing NIW's Strategic Business Plan (SBP), and will publish our findings by the end of the year. Our intention is that as a result of our work, we will move forward with a clear strategic plan that is:
    - clearly base-lined, i.e., all key metrics are appropriately defined and have a base-line against which we can monitor progress;
    - monitor-able, i.e., NIW's information systems are aligned to the plan;
    - ambitious, i.e., we have satisfied ourselves that efficiency targets are as ambitious as reasonable, in the light of benchmarking and our knowledge of the company's capabilities;
    - financially sustainable, i.e., incorporates a credible buffer against risks.

65. Should we find that the existing SBP does not meet these criteria, we will expect the company to modify its plans. We will not approve tariffs from 2010 that are inconsistent with our base-line SBP.

Recommendation 7: The Review should emphasize the role of independent, consumer-focused regulation, in dialogue with stakeholders, to provide a long-run framework for a financially, socially and environmentally sustainable water industry.