

Joint Oireachtas Committee on the Environment, Culture and the Gaeltacht

Topic - The maintenance and adherence to the necessary standards of services to customers in the administration and distribution of water

Our Key Messages:

1. Ireland's water and waste water infrastructure does not meet the needs of a modern economy and there are significant quality, environmental and service challenges. Irish Water has been established to put the structure and systems in place to address this challenge.
2. In 2009 the Water Services Investment Programme would have cost €6bn to implement. Indeed the overall requirement to upgrade services has been estimated at €10bn. Since 2009 we invested €1.5bn in our water services infrastructure.
3. The current delivery of water services is not fit for purpose on a consistent basis and continuing to deliver in this way will only result in a further deterioration in our water and waste water services. There are serious health, environmental and economic risks inherent in this model.
4. The establishment of Irish Water as a national Utility will secure improved water services by:
 - a. Bringing a systematic approach to how we operate and manage the services today.
 - b. Centralising and standardising procurement and other activities to deliver major cost savings.
 - c. Adopting best project management practices to reduce the capital needed for projects while accelerating their delivery on budget and to quality.
 - d. Delivering the largest metering programme ever for a water utility.
 - e. Implementing a system of charging and collect revenues from over 1.8m customers.
5. There are no quick fixes, it is going to take time, substantial investment and a long term systematic and strategic approach. This is the only viable way to resolve this problem for the country.
6. The Local Authority staff are critical to delivering services. Continuity of supply to customers cannot be put at risk as we make the necessary changes. It is not sensible or feasible to try and do this any other way.

7. The Irish Water Programme, over an 18 month period has defined and built the processes, IT systems and capability to set up Irish Water as a modern utility. The delivery of this project is to best utility standards and the investment has delivered an asset that will serve the needs of this country into the future. It will stand up to scrutiny in any objective international benchmarking.

Expanding on this:

- 1. Ireland's water and waste water infrastructure does not meet the needs of a modern economy and there are significant quality, environmental and service challenges. Irish Water has been established to put the structure and systems in place to address this challenge.**
 - a. We lose over 40% of our treated water through leakage, twice the UK average, and four times higher than the best performing European countries.
 - b. More than 25% of our waste water treatment plants failed to meet effluent standards in 2011 and we face major EU fines for non compliance on 80 plants.
 - c. Almost 40% of our waste treatment plants are operating at a rate higher than their design capacity.
 - d. Our capital city and region has barely enough water capacity for an average day and when there is demand increase or any supply failure, water shortage has to be managed in the Region. We need headroom of up to 20% to cater for this.
 - e. Almost 19,000 people have to boil water to ensure it is safe to use in January, 2014 and many more are at risk of microbiological breakthrough.
 - f. We are critically dependent on some very old and vulnerable assets which have a high risk of failure.

- 2. In 2009 the Water Services Investment Programme would have cost €6bn to implement. Indeed the overall requirement to upgrade services has been estimated at €10bn. Since 2009 we invested €1.5bn in our water services infrastructure.**
 - a. The norm has been chronic underinvestment in water services infrastructure.
 - b. The exchequer does not have the funds required to invest and investment is often adhoc and suboptimal. Local Authorities have had to cope in this environment and struggle to keep services going.
 - c. Ireland needs to access funding from international capital markets to tackle the enormous infrastructure deficit.

- d. The regulated utility model used by BGE and ESB is a proven model. In the last ten years these companies have accessed many billions of capital in the international markets.
- e. They have invested this capital to deliver modern gas and electricity infrastructure to meet the needs of the Irish economy. International benchmarks shows this has been done very efficiently.
- f. Ireland has a very good track record in terms of regulated utility infrastructure investment. We need to leverage off this and do the same for our water services infrastructure.

3. The current delivery of water services is not fit for purpose on a consistent basis and continuing to deliver in this way will only result in a further deterioration in our water and waste water services. There are serious health, environmental and economic problems being created.

- a. 34 Local Authorities managing €11bn worth of assets does not deliver the required economies of scale.
- b. Lack of standardisation in how plants are operated and services delivered leads to variable quality and added costs.
- c. There is a lack of information on the state of repair of assets, their capacity and performance risk.
- d. Investment decisions are locally focused and scarce resources may not deliver the maximum benefit.
- e. Continued underfunding in a fragmented delivery model will inevitably lead to further environmental compliance and water quality issues

4. The establishment of Irish Water as a national Utility will secure improved water services by:

a. Bringing a systematic approach to how we operate and manage the services today.

Irish Water will systematically create a database of all the water and waste water assets in the country.

It will record their current state of repair and identify where investment is needed.

It will introduce standard approaches to operating the water assets and to delivering water services in partnership with Local Authority staff.

It will identify priority areas nationally that require focus and investment to solve problems.

It will introduce conservation programmes to reduce leakage by 50% over time and reduce costs in areas such as energy, and chemicals.

b. Centralising and standardising procurement and other activities to deliver major cost savings.

Irish water will introduce a national standard procurement process including framework agreements for the provision of all materials and services.

BGE experience has shown this will deliver improvement in quality and service and will deliver significant cost savings (in the order of 10's of millions).

Through a systematic approach to operations and procurement, Irish Water will target the delivery of savings over €40m in the next 18 to 24 months.

c. Adopting best project management practices to reduce the capital needed for projects while accelerating their delivery on budget and to quality

Irish Water will introduce best practice project management to every capital project

Already a standard capital project system has been implemented by Irish Water and all existing Local Authority projects will operate under this system from 2014.

Using proven methodologies from BGE it will reduce the projected capital cost of projects by delivering works currently estimated at €3.2bn for €2.7bn in the period to 2021 and will deliver critical projects in a shorter timeframe with streamlined processes.

d. Delivering the largest metering programme ever for a water utility

Using BGE's experience, Irish Water has mobilised the largest water metering programme ever undertaken.

Experienced contractors are delivering competitive services in a professional manner with the incredible statistic that a meter is installed every 30seconds as part of this programme.

This project is also delivering much needed employment with over 60% of all staff involved coming from the SME, unemployment, and graduate resources of this country.

The metering project is identifying a significant number of properties with high water usage, indicative of high leakage.

e. Implementing a Customer Care and Billing System for our 1.8m customers

International lenders require a regulated model where customers pay a tariff for water services before they will lend capital for investment in Ireland's water infrastructure. This is how the gas and electricity systems work today.

Irish Water will leverage off BGE's experience, systems and capability to put a customer services and billing capability in place which will bill and collect from 1.8m customers.

Irish Water will provide high quality customer services via codes of practice determined with the Commissioner for Energy Regulation.

We will ensure a customer centered approach is at the heart of water services design and delivery.

Standard terms and conditions for the Supply of Water Services to customers right across the country will be developed and maintained.

Irish Water will make sure that customers contact preferences and /or special needs are catered for.

We will manage customer complaints to ensure resolution in line with demanding regulatory standards.

High volume functions will be provided through third party services to avail of competitively priced best practice business processes and systems.

5. There are no quick fixes, it is going to take time, substantial investment and a long term systematic and strategic approach. This is the only viable way to resolve this problem for the country.

- a. We do not have sufficient money to run the water services as they should be today
- b. Irish Water has to build on the current funding model to begin to deliver real benefits quickly, but the major benefits will take a number of years
- c. It can use available money more efficiently and better target priority areas of investment, targeting priority water quality and wastewater compliance.
- d. International investors will need to see the regulated model performing first and confirm that Irish Water is collecting the revenue from customers, before they provide capital to Irish Water for investment.
- e. Only with access to significant capital can Irish Water systematically tackle and resolve the deficit in Ireland's water and wastewater infrastructure.
- f. Irish Water is committed to achieving this self funded model as soon as it possibly can.
- g. However in the short term Irish Water is committed to
 - i. Making major progress in eliminating boil water notices in 12 months
 - ii. An active programme of targeting and repairing the worst leaks on the system, along with focus on customer leaks and pressure management to begin to lower leakage levels from 2014
 - iii. A priority program to derisk key water treatment plants by targeting them with specialist teams
 - iv. An urgent treatment upgrade programme to improve the health and safety assurance on our water treatment plants

6. The Local Authority staff are critical to delivering services and continuity of supply to customers. This cannot be put at risk as we make the necessary changes. It is not sensible or feasible to try and do this any other way.

- a. Local Authority staff operate Irelands struggling water services infrastructure today and manage to keep services going with extremely limited resources.
- b. It is not possible to transform this service without the support and commitment of the LA staff. They are essential partners to Irish Water if we are to make the transformation that is needed
- c. There are limited integrated systems, little data on assets, no central procedures and so the dependence on the knowledge and experience of the individuals in the Local Authorities is critical to continue to deliver these services and start to capture the data and knowledge systematically.
- d. The optimum staffing levels will be determined and delivered over time, by agreement and in line with the experience of other water utilities in other countries. Despite recent commentary, this normally takes 10 to 12 years for example in the case of UK utilities and very significant investment in plant and control systems.

7 The Irish Water Programme over an 18 month period has defined and built the processes, systems and capability to set up Irish Water as a modern utility. The delivery of this project is to best utility standards and the investment has delivered an asset that will serve the needs of this country into the future. It will stand up to scrutiny in any objective international benchmarking.

- a. The Irish Water Establishment budget of €150m, plus contingency budgets of up to €30m, represents the up-front, one-off investment in the water industry necessary to deliver on the Government objective of establishing a national water utility and transforming the water industry.
- b. The investment will deliver eight major utility systems that are key to the systematic management and delivery of water services into the future. They will form the backbone of the capability to capture the information on the €11bn of assets, deliver the capital investment programme - saving costs and time, the centralised procurement processes - improving quality and making major cost savings, the standardising of the approach to operations, delivery of the billing and collection system and the ability to improve services to 1.8m customers.
- c. To deliver an upgrade to one just one of the eight systems delivered by Irish Water cost Thames Water £150m.

- d. The use of external service providers, (systems builders, hardware engineers, etc.) allied to BGE utility experts, to help build and integrate these systems is international best practice and was the correct strategy by BGE
- e. Leveraging BGE capability and systems saved €87m to date on this project.
- f. The CER, using expert independent expertise, confirmed in a review that 80-85% of the costs are reasonable and can be expected to result in value for money from a customer perspective. They did not have adequate time to complete the exercise at that stage. Remaining and overall costs will be examined in due course as part of the interim price control. BGE and Irish Water are confident that all investment will be shown to be appropriate and justified.

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Introduction

Water supply and waste water treatment infrastructure, more than any other type of infrastructure, determines the health of our communities, protects the integrity of our environment and unlocks our potential for economic prosperity. The purpose of Irish Water is to safeguard water as a precious natural resource and deliver water services in a way that meets the needs of all citizens now and into the future. In doing this it will deliver a standardised asset management approach across 34 local authorities, drive efficiencies, improve customer service, ramp up the delivery of capital projects and raise international capital to deliver much needed investment in the sector.

Today we would like to do three things:

- 1) Set out how Irish Water will be tackling the problems that exist in our water services and what difference this will make to people.
- 2) Set out for you the major plans that Irish Water will be engaged in during 2014 so you can understand what to expect from us.
- 3) Provide clarity on a few key issues that have arisen in recent weeks.

However before continuing it is important to remind ourselves of Government decisions that were taken in relation to Water Sector Reform:

- To establish a new public water utility building on the proven capability of BGE.
- To establish independent economic regulation of the water sector, set tariffs and protect customers interests by ensuring efficient delivery of services by the new utility.
- To create a sustainable funding model to facilitate much needed investment in water services.

1. Responding to the Current State of the Infrastructure

We find ourselves, in 2014 with an abundant natural water resource but through underinvestment and other factors we have and are facing huge challenges in delivering water services. Being without these services for an hour or a few hours or even a day is inconvenient – being without these services for a prolonged period is debilitating in every sense of the word. At this moment in time:

- Almost 19,000 people on public water supply have to boil their water because their health is at risk from the supply.
- The water supply for over 1 million people is at risk meaning the quality of their supply could be compromised at any point by lack of effective treatment.
- The lack of capacity in water services (both supply and treatment) unless addressed will be a constraint on economic development in the east of the country and in particular in the greater Dublin Area – the economic engine for the country.
- The national average for unaccounted for water is unacceptably high at over 40%. Some of the pipes carrying drinking water to our homes were put into the ground over 150 years ago.
- Over one quarter of our waste water treatment plants failed to meet effluent standards in 2011.
- The European Commission has launched a pilot infringement case in relation to 80 treatment plants - the potential cost of fines could be up to €120m – in addition to the cost of the infrastructure upgrade required to address the non-compliance.

Those involved in the management and delivery of water services have been seriously concerned about the underinvestment that has allowed this situation to develop. If this situation was allowed to continue it would store up even greater problems for the future that will be manifested right across the country.

Communities without adequate water services, where drinking water has to be boiled before it can be consumed, where rivers and beaches are frequently impacted by wastewater problems and where economic development is curtailed due to lack of services understand the need for change. Without transformative intervention, year on year, more and more communities around Ireland will fall into these categories. Irish Water, over time, will address these issues and is committed to delivering safe, clean and affordable water services to all customers. In other words we want to harness the potential of one of our most precious resources for this generation and generations to come.

Irish Water will take on this challenge and will deliver a new national utility, investing in people, processes, systems and assets, to put in place a company that delivers high performance in an efficient and progressive way. We will do this by:

- planning and investing wisely in improved national water infrastructure to meet present and future needs;
- implementing systems and processes that best manage this national water services infrastructure; and
- reduce costs by improving operational performance to the best levels of other utilities, in similar time lines

The result will be to deliver on our stated commitment to provide safe, affordable and environmentally compliant water services to customers.

The challenge is very real and will take time, but to ensure it can be met, additional investment is required.

Benefits of national utility managed water services

A national water services utility will have the scope and capabilities to develop and deliver water services at a different level;

1. **National Information systems and database rationalisations** (whether geospatial, work and asset management, customer care or project management systems) will provide new levels of water sector oversight and analysis and service delivery to customers.
2. **National policies and pricing** will deliver equity and transparency in accessing and paying for water services throughout Ireland.
3. **National allocation of scarce capital** will enable consistent application of investment priorities throughout Ireland and will deliver over time a consistency of standard in treatment plants and ensure water quality and environmental compliance across the country.
4. **National design, procurement, contract and project management** at international best practice levels, will deliver greater value for every € of capital expenditure.
5. **National scale and scope** will enable investment in work practice efficiencies and technologies capable of delivering both improved services and substantial operating cost savings.

Delivering first class water services requires first class capabilities. Such capabilities demand scale in order to justify the investment required to implement them and access to the necessary funding. The kind of water sector and water services that Ireland aspires to requires a national utility.

The Asset Management Approach

While Irish Water will bring many changes, the areas that will see a really radical change in strategy and approach is asset management and capital delivery.

Water services in Ireland have been operated by local authorities with the bulk of operational and capital funding provided by the exchequer. While local authority staff (management, professional, technical and operational) are committed, and have

consistently responded with great professionalism, especially in times of crisis, the overall service delivery was limited by:

- Fragmentation such that it was impossible to develop and retain the required water industry expertise.
- Underfunding for essential maintenance and very limited planned maintenance, resulting in asset degradation and periodic need for large investments in upgrading plants.
- Variable Operational and Customer Service.
- Lack of data on assets, their condition, capacity, or performance risk.
- Long timeframe for capital investment implementation and consequent inclination to overscope projects when the opportunity arose for a capital scheme.

Despite investing over €100M, over the past 10 years, in setting up and implementing capability in water conservation, (including metering, district meter area setup, central monitoring and skills training) very limited savings in leakage were achieved outside of Dublin. The lack of scale and specialist focus has demonstrated the need for a regional approach to conservation and intensification of activity for sustainable water savings.

The current operating model suffers from ad-hoc investment planning, without consistency of policy, uniformity of standards or risk metrics. The model relies significantly on personal knowledge and commitment of operational staff, and is not a sustainable model for cost effective service delivery. The level of investment required for water services on an annual basis simply cannot be met through the existing model, without significant cuts to other public services - for example, education and health - or significant tax increases.

The Irish Water Utility Model will facilitate new investment, with charges independently determined through application of the user-pay model, based on usage above a free allowance, and that will reflect the greater efficiencies and reduced operational costs that a single utility can be expected to deliver. A key focus is the development of a strong asset management discipline as the basis for best value water services delivery in Ireland. At its core is achieving the right balance of capital and operational spending. This will lead to much greater consistency in service delivery to our customers at the lowest achievable cost.

Critical to this is central strategic planning based on accurate asset performance data and full control of all investment decisions, both capital and operational. International benchmarks suggest that efficiencies of up to 40% are achievable in capital investment alone from the combination of adopting the right choices and delivering them efficiently.

Taking a national view of the asset base (as opposed to 34 separate assets managed by 34 Local Authorities) means that resources are spent where the greatest benefit can be achieved. In essence this means planning investment consistently across the asset base

rather than on large scale one-off investments. Knowledge of the full asset base and understanding of how we can get it to perform to its optimum ensures consistent service levels with planned asset upgrades. Ensuring that assets perform better for longer means the benefits of investment can be shared across a wider population base and ultimately the system is more cost effective to run.

The lack of historic investment in the existing asset base is well documented. It means that failure risk is high, requiring a high level of reactive work, high rates of service failure, environmental damage, and loss of confidence by customers.

The short to medium term challenge will be to drive much higher service levels from the existing asset base. Even with much higher levels of capital investment, the transformation of the assets is a long term project.

The delivery of a high quality service, therefore, will be achieved by

- Much greater operational control – more can be done with the assets if we have the right systems are in place;
- Risk based targeted asset investment – spending money where it is needed most on a national basis.
- Taking advantage of the best technologies for process and automation.
- Standardising equipment, maintenance and operating procedures.

When fully developed, the Asset Management process will allow Irish Water to plan all capital and operational programmes, with these objectives. This will require time and effort to survey and record the condition of the assets, establish the monitoring systems and introduce workflow data capture of all maintenance and operational activities. The work of the Irish Water Programme in establishing the systems to manage assets properly for the first time, will therefore deliver major savings, as well as service benefits to Irish Water customers (See Appendix 1 for system details).

All of this will take a number of years to achieve full maturity but over time it will deliver the following benefits:

- Better targeting of investment (i.e. spending less to achieve more) – timely repairs and upgrades.
- Looking after the assets to maintain performance with targeted preventative maintenance.
- Defining policies and technical standards for plant, equipment and works.
- Focus on managing risks rather than resources i.e. risk based investment decisions.
- Taking a whole life view – balancing initial and long term spend.
- Ensuring all key stakeholders are appropriately consulted.

Using the systems put in place by the Irish Water Programme, asset specialists will develop their understanding of asset performance risk and deterioration patterns, where the frequency and cost of repairs would exceed the cost of replacement. At the same time, the forward planning team will have clear sight of capacity need and the timeframe and cost to put the additional capacity in place. In the medium term, much of the investment will have to be focused on addressing the challenge of non compliance with EU Directives.

If all projects on the Water Services Investment Programme of the Department of the Environment (WSIP) in 2009 had been implemented it would have required some €6bn in investment. If all needs were fully defined (for example solving leaking sewers and overflows) a cost of €10bn seems realistic. Since 2009 the actual investment has been of the order of €1.5bn. However with the effects of asset deterioration, more stringent standards for drinking water, new wastewater standards (Water Framework Directive) since then the scale of the challenge ahead is very evident. Until a sufficient level of investment is available we will have to make choices and target the right investments and deliver them at least cost.

So our asset management approach to capital investment needs to deliver more for less. Even if capital investment of €600M per year could be realised, it would require considerable capital efficiencies to deliver sufficient work to wipe out the deficit, plus catering for new connections and capital maintenance on the extensive asset base.

The priorities and related issues for Irish Water in taking over the water and wastewater services are:

Drinking Water Quality (Priority 1):

The first priority of Irish Water is to protect consumers in terms of health risks, seeking to eliminate Boil Water Notices and alleviating the problems of upwards of 50,000 people in areas of water restrictions, while many schemes (both large and small) need further treatment to manage the risks to quality. Immediately upon becoming the responsible authority on the 1st of January 2014 Irish Water put in place a special team to assess the issues and to progress the appropriate solutions.

At the end of January, there were 18,863 people on Boil Water Notices, 98% of them in County Roscommon:

1. The new treatment plant for Boyle will be completed by December, 2014. Killeglin is currently scheduled for completion in April 2015, with options being examined to bring the completion date forward. This will resolve the issue for 12,200 people, 64% of the total.
2. Options to fast-track the scheme at Castlerea (6,350) are being assessed urgently.

3. All of the other areas where communities are on a boil water notice relate to smaller populations and they are being addressed across the country as urgent.

Irish Water understands the high risk of further issues on vulnerable schemes and is working closely with EPA on a risk based prioritisation.

Management Programmes to de-risk water treatment will require:

1. Process audits, upgrading standard operating procedures in plants, increased-monitoring of key parameters and data transfer to central and regional control and development of specialist teams to investigate plants to ensure the best outcome from the available plant.
2. Urgent treatment upgrades for microbiological safeguard (chlorination with adequate contact time, Ultra Violet disinfection, etc). Good progress has been made on this through works arising in the EPA Remedial Action List (RAL) and this is being continued.
3. Developing Water Safety Plans (WSP's), working with EPA, local authorities and other stakeholders, to manage quality risk from 'source to tap' including monitoring and controlling inputs to sources, as well as adequate treatment processes and the integrity of storage, distribution and connections to customers. A number of these WSP's are being put in place, but it is a major task to roll out for all supplies across 950 schemes and will have to be prioritised.
4. A programme of replacement of lead service pipes to the customer stopcock, plus replacing all shared backyard lead supply pipes to terraced housing from the 1930-50's needs an intense 10 – 15 year programme.

Drinking Water Capacity (Priority 2):

There are a series of measures in progress to ensure that we stay ahead of demand across the country but in particular in the greater Dublin area. They are:

- 1) Maximising the sustainable output of the existing plants through further investment and operational improvements;
- 2) Focused regionally managed water conservation
- 3) Delivering the benefits of customer side leakage through reduced demand and targeted policies on customer side leakage;
- 4) Strategic trunk mains to distribute the water such that resources are equally available throughout the supply and to facilitate effective pressure management.

The long-term solution of a new source of water for Dublin is now targeted to be delivered in seven years rather than the proposed ten. The water supply/demand balance should be sufficient to meet the expected needs of the customers (including growth), with a margin of safety (headroom) so that when part of the system fails to deliver, there is enough capacity in the system to ensure that customers are not affected. Most capital cities in Europe have 15-20% headroom whereas Dublin operates just about 1% ahead of demand. At the same time some vital assets are fragile from age and deterioration e.g. Vartry. When there are issues with any of the major plants supplying Dublin (as was the case recently with Ballymore Eustace) the impact on customers is far greater than it should be. At the same time, leakage is high across the service (30% + in Dublin and 40-50% across the country).

The measures needed are:

- 1** Secure the production capacity of the existing plants by process audit, improved operating procedures, extending remote monitoring (early warning) and targeted capital to relieve pinch points.
- 2** Review strategic reservoir storage (24-48 hours) to cater for peaks in demand and normal operating contingencies.
- 3** Water Conservation (Distribution) to reduce losses, based on district meter areas with flow and pressure reported to a dedicated regional team, supported by a mix of pressure management, active leak detection/repair and targeted replacement of the priority mains based on burst records (from workflow data). Targets will be based on the sustainable economic levels of leakage (function of water costs in a scheme).
- 4** Customer side water savings through leak repairs (meters are showing 5% of households with over twice normal usage) and usage savings (demand reduction), possibly supported by incentives (first fix policy).
- 5** Strategic trunk mains to be able to distribute the water equally throughout the supply at all times and to facilitate effective pressure management.
- 6** New water projects brought forward in planning to meet longer term needs, based on population growth and migration patterns, economic growth and balanced regional development. Such schemes need a significant forward view to take account of the planning stage timeframe and the challenge of funding them.
- 7** Planning for the longer term.

The water conservation strategy needs an integrated regional approach across all of the above measures, with increased intensity, and resourced in terms of management, technology and skilled crews. This must be combined with a sustainable water resources strategy, which takes full account of future growth and demographic trends as well as climate change risk to water resources.

Wastewater Treatment Compliance (Priority 3):

Wastewater treatment plants servicing the majority of our population are currently non-compliant with the Water Framework Directive. This is a significant challenge that will take many years to resolve. The Irish Water focus is to target those plants across the country that will give the greatest environmental benefit in protecting our waters, as part of a credible plan that will allow us to meet EU requirements. We need a new focus on how to upgrade existing plants wherever possible in order to avoid or postpone high cost new schemes.

Despite significant investment (over €4bn since 2000) in wastewater treatment, there are major compliance issues in relation to wastewater discharges. The ECJ has taken proceedings against Ireland with the threat of heavy fines for failing to meet the standards of the Urban Wastewater Treatment Directive. There are also other liabilities associated with sewers leaking into ground water and overflows from combined (foul and storm) sewers which in times of heavy rainfall are causing pollution.

The measures needed are:

- Operational improvement including upgraded flow and load measurement, process audits and enhanced process controls, remote monitoring to central/regional centres and having a capability to carry out assessments where plants have sufficient capacity or where compliance can be achieved with minor upgrades.
- Load Management through intensified control of trade effluent discharges to sewers (s.16 Water Pollution Act licensing), including Fats, Oils and Grease (FOG's) control, based on nationwide rollout of the approach already implemented in Dublin City and South Dublin.
- Minor capital schemes to upgrade existing plants for capacity shortfalls, including interim upgrades to defer larger investment, urgent sewer repairs, improved process control.
- Survey and modelling studies to identify sewer overflow discharges based on pollution impact and implementing control measures.
- Deliver priority new or upgraded wastewater treatment schemes, based on maximum environmental benefit and capacity provision requirements.

Wastewater Capacity (Priority 4):

There is little point in addressing the water supply issue in the greater Dublin area if the critical deficiency in wastewater treatment capacity is not also addressed. We will proceed with a phased upgrade of the Ringsend Waste Water Treatment Plant in the most cost effective manner. Irish Water will also be progressing the Greater Dublin Drainage Project for long term sustainable capacity in the region.

In order to meet the capacity needs of balanced regional development, including addressing current deficits in plants and networks, reduce flooding risks and remove excess storm water and groundwater inflows, the measures required include:

- Works expansion and new sewer networks (e.g. Leixlip, Naas/Newbridge).
- Sewer rehabilitation and, where appropriate, storm separation works.
- Planning for longer term needs, notably the Greater Dublin Drainage scheme and orbital sewer.

Planned Asset Improvement Schemes (Priority 5):

There is an urgent requirement to address the asset remediation deficit. There has not been sufficient attention paid to this type of investment in recent times and this now needs to be addressed.

Measures are required under the headings of:

- Critical assets 'at risk of failure' to be remediated.
- Health and Safety upgrades to improve operational safety and security.
- Upgrades to meet customer service expectations (flow, pressure, odour abatement).
- Energy saving investments to reduce energy costs.
- Asset protection against flood risk.
- Control and automation schemes and remote monitoring to centre/region.

An obvious example of a critical scheme in need of major overhaul is the 19th century Vartry Water Scheme which is in critical condition and contributes 75-80 million litres per day without which the region cannot be serviced.

Planned asset improvement will be supported by a major Geographical Information System (GIS) project (in effect a national audit) being implemented to capture data on all underground assets by 2014, with extensive asset surveys and system models.

Development Capacity Schemes (As Needed):

Irish Water must also cater for new development and major connections to the systems. This will involve water and sewer pipeline works and phased expansion in treatment capacity to maintain required headroom. Irish Water expects that this category of work will increase rapidly with a return to economic growth and will be funded substantially through Connection Charges. In recent months, the enquiries for new employment creating and housing developments are posing new challenges. It will be critical that we can invest to enable these developments.

Irish Water has taken over the water services investment programme from the end of 2013. Some 700+ schemes in the DECLG Programme were accepted as approved. All live contractor and consultant (engineering, ecology, archaeology) contracts transfer to Irish Water as is and proceed to completion. Tenders approved to contract, where contracts remain to be signed, will be progressed by Irish Water, once all tender conditions are met.

A value engineering process is applied to all projects to identify if savings can be identified, options for interim measures re-using existing assets can be implemented, recalibration of the scheme scope for growth, standardisation of elements, are all being considered.

This value engineering approach has 3 key elements:

1. Upgrade existing plants to ensure they work properly
2. Look to expand /upgrade existing plants
3. Plan for new assets beyond the limit of existing.

2. Major Plans and Developments

Over the coming months Irish Water will be undertaking a range of actions that we will keep you informed about.

Capital Investment - At this stage, the projected capital funding is €930m for the 3 years 2014-2016. This figure needs to grow to an annual €500m-600m, annually, to meet urgent needs.

Given all of the competing priorities, it was necessary to consider how to maximise output in the short term, given the need to tackle water quality, water conservation and urgent pollution issues.

Based on the asset management approach, where we focus on maximum benefit from existing assets and taking a critical look at the cost benefit balance on every scheme, we are confident that we will deliver at least 30% efficiencies on the capital spend.

An example of where an alternative approach may be possible is the Ringsend Waste Water Treatment Project where new technologies being developed and applied in other countries in recent years may have the potential to deliver major savings with less environmental impact and yet deliver the project within the current timelines. If an alternative is viable and agreed as the way forward, subject of course to all the relevant consultation, planning requirements etc., it would have the potential to deliver major savings on the current proposal which can be used to deliver infrastructure elsewhere.

Water Conservation – This is recognised as a major challenge facing Irish Water. The priority areas for leakage reduction will be those schemes where supply/demand balance is marginal and the alternative is new production capacity, with its capital and increased

operating costs. Irish Water is targeting almost €200M over 3 years in capital spending on this problem as part of the Capital Investment Plan. This will be accompanied by a much more intensive operational response, to be successful. The integrated approach will be delivered by:

- Continuing to complete the local network management schemes and certain priority pipeline replacements where repeat bursts demonstrate lack of integrity.
- Documenting the 'find & fix' resources in each area and determining a regional view of what is needed for an effective active leakage control programme (Management, resources, skills).
- Programme to replace back-yard services over 10 – 15 years, resolving both leakage and lead problems in these aged systems.
- Determining and implementing pressure management, with real-time control.
- On the basis of the metering project, identifying customer side leakage with follow up programmes, estimated to save 2-3% of production.
- Customer savings from metered billing estimated to save 10% of use.

The process of reducing leakage in the system requires intensive and sustained effort over many years, with progressive initiatives as interim targets are achieved. In 20-25 years, the UK water sector has seen leakage drop from Irish levels to close to 20% today, but only after major investment and strict regulatory targets being imposed. This target is achievable in Ireland over a reasonable timeframe (15-20 years) with sufficient financial commitment.

Irish Water Strategic Plan (25 years to 2040); To commence the process of developing the statutory 25 Year Strategy, Irish Water will shortly open a broad public and stakeholder engagement, on its first high level strategic objectives, looking forward to 2040. Irish Water must develop coherent and affordable plans to provide adequate clean safe drinking water, effective collection, treatment and discharge of wastewater, safe sustainable disposal of sludges and meet customer expectations across its entire service delivery. We will begin this process in 2014 by developing (with stakeholder consultation) a strategic vision prioritising our long term objective, with relevant environmental appraisal.

Regulatory Price Control 2014 to 2016 - In a few weeks Irish Water will make an interim price control submission to the Commissioner for Energy Regulation. This will be followed by IW tariff structure and connection charge structure submissions in March and a Water Charges Plan submission in June. The plan will be subject to required planning and environmental assessment processes.

Regulatory Price Control – Investment Plan 2016-2021; Work will begin in 2014 to prepare the regulatory submission for the first full regulatory cycle from 2016-2021. This plan will include the first asset management based plan by Irish Water, will require detailed studies

and modelling of the networks, will take account of the next cycle of River Basin Management Plans under the Water Framework Directive up to 2021 and will look to underpin the proposed socio-economic plan expected to replace the current National Spatial Strategy. This plan will be subject to all statutory environmental appraisals also.

3. Information and Responses to Recent Issues

Irish Water took over responsibility for water services six weeks ago. Our goal is to be a professional organisation that is responsible, expert, efficient, operated with integrity and with the best interests of our customers at its core.

To achieve that we need to do a number of things:

- 1) In response to the significant demand for information about Irish Water we are committed to proactively publishing on our website all relevant information about water services in Ireland.
- 2) We will be developing an integrated communications plan to inform and involve all citizens in understanding water services and engaging in managing water demand. Building this understanding of what water services are and what they do for individuals and communities is essential.
- 3) Following on from today's briefing we will be inviting all members of the Oireachtas to meet with Management team members of Irish Water and be briefed in more detail on the points we have raised here today.
- 4) We have put in place an information service for Oireachtas and Council members to ensure that your information requests are responded to in a timely manner. We will be supplying details of this service to all Oireachtas Members this week.

The Irish Water and Local Government Partnership

There has been much speculation regarding the nature of the relationship between Irish Water and Local authorities.

We should be very clear on this point, the transformation of the Irish Water Industry can only be achieved in partnership with Local Government. This partnership is managed through Service Level Agreements and Annual Service Plans. We are not starting from a green field site. The local government sector has been providing water services for over 100 years but the sector has been subject to chronic underinvestment for much of that time.

We are transforming the water services sector, building from the current model, not replacing or duplicating it. Continuity of water services is the absolute priority. It is critical

that during the transformation, homes, communities, businesses and industries continue to have water services provided every day.

The system consists of 50,000km of underground pipes, 10,000 over ground facilities (including 2000 treatment systems) across the length and breadth of the country. Without the corporate knowledge and expertise of the existing local authority work force transformation would not be possible. Efficiencies and savings to the exchequer will be delivered with the model that is being proposed under Irish Water, estimated at €2 billion between now and 2021. Crucially the service will not be put at risk as part of this process.

The optimum number of staff required to deliver services, after a managed transformation, will be determined by the business needs (including most importantly public health) under scrutiny of the Regulator, who will take full account of comparators with other similar utilities. There will be no allowance for surplus staff.

Staff reductions can be achieved through natural attrition, given that the age profile of the workforce is estimated to be 50% over 50. In addition, the government may decide to introduce Voluntary Redundancy Schemes if necessary.

The planned transformation of a major industry over a 12 year (Service Level Agreement (SLA)) period, with large dispersed assets and a major investment deficit built up over many years, is fully consistent with similar transformations in the sector in Britain. In the first ten years of change in the sector from 1990 staffing reductions of 21.5% were achieved in 10 Regional Water Companies.

The SLA duration allows for the investment to be delivered, the systems and processes to be built up, and savings to the exchequer, while maintaining continuity of service throughout. Regard must be had to the level of water services, local authority staff provide across the country. Working on underfunded assets and often in difficult conditions, they can be relied on to cope with emergencies caused by extremes of weather responding professionally in the public interest.

Staffing levels in Local Government, at the commencement of the Service Level Agreement, are some 25% lower than at peak and for the current state of the assets are limiting the capacity of the local authorities to carry out essential maintenance in some areas. The current staff levels were required to maintain continuity of service in the initial phase.

However Irish Water by adopting a high performing utility model concentrating on asset management, delivering continuous operational efficiencies and by working through the SLA agreement and its provisions will generate significant savings to the Exchequer over the next 8 years and beyond.

Irish Water in partnership with the Local Government Sector is determined to deliver a fit for purpose water service to protect public health, enhance our environment and support economic prosperity.

The Irish Water Programme has delivered long-term customer benefits

The cost of building Irish Water will deliver enormous benefit to the Irish Water customer. In record time, the Irish Water Programme has built and delivered the systems to run an asset base valued by local authorities at €11bn, that has over 10,000 above ground assets (2000 of which are treatment plants) and in excess of 50,000km of underground pipes.

The Irish Water Establishment budget of €150m, plus possible contingency budgets of up to €30m, represents the up-front, one-off investment in the water industry necessary to deliver on the Government objective of establishing a national water utility and transforming the water industry. This investment will deliver two types of benefit:

1. Significant quality improvements in terms of customer service quality and network quality, integrity and efficiency; and
2. Substantial Operating Expenditure (Opex) and Capital Expenditure Efficiencies (Capex) efficiencies into the future.

Moving from 34 Water service providers to one utility will generate savings across the system. At this point we can provide estimated figures regarding savings to be made up to 2021. A key Irish Water objective is the achievement of water services efficiencies of circa €1.1bn in the period to 2021 (Capital Expenditure efficiencies €500m and Operating Expenditure efficiencies €600m).

Regarding the Capital Expenditure efficiencies of €500m, Irish Water projects that it can deliver the current day equivalent of circa €3.2bn of water infrastructure for a cost of €2.7bn over the period to 2021. Irish Water will deliver more investment for less expenditure. This will be achieved from a number of factors such as standardising asset design specifications to drive tender price reductions, centralising procurement spend and implementing best practice project management to reduce the risk of cost overruns.

Savings will be made in the operating expenditure. €600m will be saved by delivering significant procurement, volume, billing and other efficiencies. Irish Water will make savings based on changing the way we procure goods; will lower operational costs through better overall management of the resources within the system, increased energy efficiency, and other initiatives.

Some example of the savings that could be made - between 2014 – 2019 there is a savings opportunity of circa €48 million in energy consumption; circa €58 million of a saving from the procurement of repair and maintenance activities and circa €15 million in the procurement of chemicals. Therefore by investing in building the systems to centralise procurement, there is an opportunity to save over €120 million on those three areas alone.

Billing efficiencies will result from Irish Water taking over responsibility for billing non-domestic customers during 2014 and providing it fully from 2015 onwards at a cost that is much less than currently applies in local government.

Together with increased revenues, efficiencies will deliver overall savings to the Exchequer of at least €2bn.

It has been estimated that the benefits of using in-house skills in BGE rather than a greenfield operation amounted to a saving of some €29m, with a further €58m saving on software licences alone through the use of BGE systems i.e. a total of €87m saving by leveraging BGE skills and systems and without taking account of the lesser risk associated with this approach.

The High Performance Utility Model

Irish Water has been set up as a high performing utility to transform the delivery of water services at a critical juncture. Every euro spent by Irish Water will be benchmarked and checked externally by the CER to ensure that it is good value for the customer; we are taking over water services at a time when the system is suffering from critical underinvestment but we have put in place the systems, people and processes to ensure that over time those issues are resolved.

In relation to the people aspect, an essential part of ensuring high levels of achievement is incentivisation through the pay model. In the model that has been introduced, a portion of salary is deliberately set at risk. In other words, if targets are not hit, the person loses out on that segment of their salary. This new approach has been pioneered by Bord Gais and sees each salary broken into two parts –

- A base pay level
- A performance related element which is 'at risk'

The total of these two elements add up to the external market pay level for any given job.

The model:

- Will drive efficiencies in the company

- Provide for a pay freeze until 2016;
- Has eliminated increments;
- Required all pay ranges to be externally benchmarked;

Metering Programme

Our metering programme is ambitious to say the least. No other utility company that we can find has attempted to undertake metering on the scale that we have. The objectives for us in metering are to deliver on target with safety a priority, to maintain the quality of our work and to minimise the disruption to our customers.

We have over 115,000 meters in the ground already and are meeting the 27,000 meters per month installation target which is a enormous achievement. We are installing at a rate of 2 boundary boxes per minute; we have less than 2% customer complaints. This is a very early example of what a national water utility can deliver having been established using the systems capable of supporting such ambitious targets.

Metering provides detailed information on customer demand and will help to direct investment appropriately. It provides us with one of missing pieces of the jigsaw - customer side usage - and will ensure that scarce water resources are not wasted and are available in the interests of the common good. The metering project is also uncovering badly corroded service connections which are leaking heavily and provides the opportunity to deal with this problem in partnership with local authorities.

Conclusion

Investment in Water Services infrastructure is a catalyst for prosperity, health and sustainability. Every generation has tried to play their part within the resources available at the time and every subsequent generation has benefited from the effort. Now, our water services are in serious need of transformation.

We must take with us the lessons learned from over a century of delivery of water services but we must move forward to a new way of managing assets, delivering, developing and paying for our water services. Irish Water working with the local authorities and the people of this country has been given this task and we will do our utmost to meet the challenges presented.

Appendix 1

The following is a description of some of the major systems that have been put in place for Irish Water.

1. Asset Management system and capability

The asset management system will allow us to capture and analyse data from across all water assets. The system we have built creates a central repository for a huge range of data on assets and allows us to analyse and understand the condition of the assets. This rich data sources becomes the driver for risk based decision making for the capital investment plan. It is an incredibly powerful tool and it means that every euro we spend on the asset base, delivers a maximum return. By capturing this enormous volume of data in one place, we can analyse the information across the entire country for 10,000 over ground facilities (2000 of which are treatment plants).

2. Customer Care, Billing and Meter Data Management capability

We will have an enormous customer base of 1.8 million. We have built a system that will optimise the customer experience – from the first point of contact into the call centre we can responding in real time to queries about service disruption; customers will be able to access their own information online. When you consider that we will be issuing approx. 7.5 million bills to 1.8 million customers in a given year; this means we will reading the customer meter; processing and distributing a bill; providing associated customer care and processing payments etc. This would be impossible without the technology to support this level of activity. We are confident that the systems we have built to manage customer care will mean that despite the huge volumes of customer contact expected, we will deliver to the expected standard. We could not do this without the system that we have built.

3. Mobile Work Management and Scheduling systems and capability

Linking into the customer system, is the work flow management system. This system allows us to take a call from a customer about a disruption in service, organise the workforce to inspect and resolve the issue and advise the customer on completion in real time. We have built the systems with the capability to do this for 1.8 million customers. We expect to manage thousands of work orders in a single year – it would be impossible to manage this work efficiently without the appropriate technology.

4. Geographic Information System and capability

For the first time we will have a system that maps the entire underground network of water services in Ireland. We estimate that there is 50,000Km of pipe and the information that exists around the location and state of the underground pipes is patchy at best. This system will help us make decisions regarding water conservation and where best to invest and ultimately it allows us to manage the water network through scada and telemetry you can reduce the pressure and divert water.

5. Financials and Procurement systems and capability

Bringing together all of the procurement across water services into one system will deliver enormous savings. Currently €350m million worth of goods and services are procured across 34 Local Authorities.

6. Middleware Systems Integration

Building system integration into the utility from the start is an opportunity that could only be exploited in the context of the start up of a new organisation. Middleware systems are a hub that provide a communications interface between all of the systems and basically facilitate the smooth flow of information between systems. If for any reason in the future systems need to be upgraded, we can simply unplug one system and plug in a new system without the usual intergration problems. This has the potential to deliver enormous savings and creates a flexible, scaleable system and will avoid expensive upgrade costs around interface in the future.