



CECA 
Civil Engineering
Contractors Association

CECA: WATER SERVICES OPERATORS GROUP POLICY DOCUMENT

DELIVERING VALUE TO THE
WATER SERVICES SECTOR



The Water Services Operators Group are a subcommittee of the Civil Engineering and Contractors Association and a constituent body of the Construction Industry Federation.



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Statements and acknowledgements

Statement by Patrick Buckley, President of the Water Services Operators Group

The private operation and maintenance of Ireland’s wastewater and water treatment infrastructure have been strategically important elements of Irish Water’s objectives over many years. These services are provided by the professional and innovative members of the Water Services Operators Group (WSOG), who offer unique technical expertise that is vital to the quality and safety of Ireland’s drinking water and environment. Our members are solution providers and believe that by working in partnership with Irish Water, we can together construct and operate the world-class infrastructure critical to our communities, environment and economic future.

This document outlines the foundations upon which this partnership can be constructed and we look forward to working collaboratively with Irish Water as it transitions to the delivery of its Strategy 2023-2030.



Patrick Buckley, President
Water Service Operators Group



Members of the Water Services Operators Group

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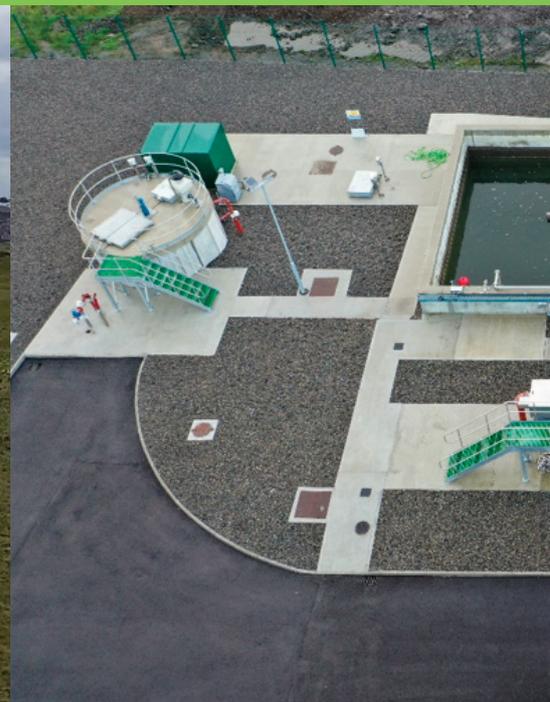
WSOG companies represented



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Section 1: The CECA: Water Services Operators Group

The Water Services Operators Group (WSOG) represents Civil Engineering Contractors Association (CECA) and Construction Industry Federation (CIF) general contracting members specialising in the operation of water treatment plants (WTPs) and wastewater treatment plants (WWTPs). Typically, members undertake all elements involved in the operation and maintenance of Ireland’s water, drainage, and wastewater infrastructural network.

Some of them also participate in the design, build and commissioning of the plants that they operate. The WSOG plays an active role in promoting the highest standards within the industry and supporting the welfare and interests of each individual member.

The following statistics highlight the extent and importance of member activities in the design, construction and operation of water and wastewater treatment assets to Irish Water and Irish society. WSOG members operate over:

- 150 WWTPs or approximately 10% of all plants in Ireland – this includes many of the largest and most critical plants in the country, representing greater than three million PE;
- 200 WTPs or approximately 25% of all plants in Ireland – again, many of these include the largest and most critical plants in the country, representing greater than 70,000 MLD of potable drinking water; and,

- employ over 600 direct employees and up to 750 when including indirect employees within their organisations. In addition to these employment figures, they further support over 500 employees in the supply chain.

There are currently over 40 apprentices being trained and in 2022 WSOG members hired over 60 graduates. They are very focused on their employee well-being and quality. For example, over 85% of members are implementing active health and well-being programmes in their companies, while the remaining are currently developing their policies.

In relation to quality standards, members are currently operating to all industry standards, including:

- ISO 9001 Quality Management System
- ISO 45001 Occupational Health & Safety Management System
- ISO 14001 Environmental Management System
- CEMARS Carbon Measurement and Reduction
- ISO 50001 Energy Management System
- ISO 27001 Information Security Management System

The members are also committed to corporate social responsibility in their communities and have supported over 100 community projects in 2022 alone, with a combined value of greater than €120,000. All of this aligns closely with the 24 objectives listed under “Sustainability and Innovation” in Irish Water’s 2023-2030 Strategy.



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Section 2: Introduction

This document outlines the views of the CECA WSOG on the important benefits and value of continuing to deliver water and wastewater infrastructure and operational services under the design

build and operate (DBO) model. The document also outlines recommendations on how the DBO model could be further improved to deliver more value to Irish Water and the Irish State.

Section 3: Communication and partnership

The CECA WSOG would welcome the opportunity to engage with all relevant stakeholders, in particular Irish Water, to discuss how it can support their important work and responsibility of water and wastewater services in Ireland.

The CECA WSOG would also like to recognise Irish Water’s accessibility and responsiveness over the last number of years to requests from the CECA for meaningful engagement and meetings.

Our water and wastewater infrastructure and services will be critical to delivering on Housing for All and climate action objectives. The members of the CECA WSOG recognise that they have a strategic role to play in this and also understand the importance of working in partnership with Irish Water and other key stakeholders in Government to deliver value to the State.

While the members want to be part of constructing and operating Ireland’s future water and wastewater infrastructure, many of the members are seeking and finding more attractive commercial opportunities in both domestic and export markets. Therefore, it is critical

that a partnership approach is taken in the delivery of Ireland’s infrastructure and that Irish Water continues to be a commercially attractive partner. Unfortunately, moving away from the 20-year DBO model is likely to significantly undermine this.

Therefore, partnership is about a fundamental understanding of all parties’ interests and the impact that policy decisions may have on the industry and our members. But it is also about project delivery through collaboration and effective risk management.

We strongly believe that it is in both parties’ interests to continue to communicate effectively and strengthen our relationship through designated points of contact to explore the challenges we face, including Irish Water’s decision to alter its position regarding the procurement of DBO type contracts.

In this light, the CECA WSOG would support the development of a regular forum where Irish Water and our members could discuss the various issues and challenges associated with the delivery of water and wastewater services under the DBO model.



Section 4: Overview of the DBO model

The use of DBO contracts began in the US in the 1990s. Municipal authorities realised that DBO contractors were better placed to manage the risks associated with construction and operation of treatment facilities, while the facility could remain in the ownership of the municipality or water authority. In Ireland DBO contracts have been procured for the past 20 years or so for the construction, operation and maintenance of the larger public WWTPs and for some public and group water scheme drinking WTPs. Twenty-year operation service periods have been generally used for DBO contracts and continue to be recommended in the World Bank and Asia Development Bank guides. As outlined in Section 1, WSOG members operate more than 150 WWTPs, including some of the largest public plants, and over 200 of the most critical WTPs under the 20-year DBO model. This includes the majority of the top 20 largest plants, including Ringsend in Dublin and other plants in main Irish cities and towns.

Section 5: International context

DBO contracts are now being widely used worldwide to construct and operate facilities in the water services sector. In addition to conventional wastewater and drinking water treatment plants, DBO is now increasingly used for sludge management (e.g. gasification, pyrolysis, incineration), water re-use and desalination facilities. In 2018, the Asian Development Bank (ADB) published their "User's Guide to Design-Build-Operate Contracts for Water and Wastewater Greenfield Infrastructure Projects", with an Operation Service Period of around 20 years. In August 2019, the World Bank (WB) published a Guidance Note for Design, Build and Operation (DBO) of Water and

Wastewater Treatment Plants in their recognition, of an "increased demand from Borrowers to develop projects on a design, build and operate basis".

(<http://pubdocs.worldbank.org/en/936071500059812029/GuidanceNoteWastewatertreatment.docx>). Both Guides recommend the use of the DBO model when the Employer is primarily concerned with having a Contractor committed to deliver and operate a fit for purpose facility under a long-term performance-based contractual arrangement. Since 2019 Ofwat 9(See Appendix-9-Direct-procurement-FM.pdf (ofwat.gov.uk), the UK water utility regulator, requires water companies in England & Wales to consider a competitively tendered DPC contract for projects > St£100m. A DPC contract involves a third party to design, build, operate and maintain and sometimes finance infrastructure.

Overall the international trend is that Design and Build (DB) contracts only (no operational element), are becoming less prominent in the water services sector. For example the report entitled "*5 Trends in Public-Private Partnerships in Water Supply and Sanitation Public Private Partnership*" (worldbank.org), under trend one it states: "*Build-Operate-Transfer (BOT) and Design-Build-Operate (DBO), particularly in desalination and wastewater treatment plants, have become a solid business line in many emerging countries (especially in the Middle East, China, Mexico and Brazil) – with strong competition from a large and growing number of international players as well as regional players from developing countries.*

These projects do not usually involve the challenges of the private sector managing an existing public workforce or an interface with household customers, but they bring the benefits of private investment, expertise and technology and sustainable operations."

Twenty-year operation service periods have been generally used for DBO contracts and continue to be recommended in the World Bank and Asia Development Bank guides

Section 6: Advantages of the DBO Contract Model

Irish Water's 2023-2030 Strategy sets out its objective under the areas of sustainability and innovation. WSOG members believe that the 20-year DBO model is aligned with these objectives and is internationally recognised as offering the following advantages for projects involving the provision of treatment facilities.

6.1 Visible pipeline of work

The 20-year operate model is an attractive commercial opportunity to the WSOG members. This is because it is a highly effective counter cyclical mechanism to support cashflow in the water and wastewater industry during periods where the capital pipeline may not be as certain or visible. It provides the certainty for the members to invest in their people, technology and business systems. On the other hand, shorter periods only undermine this certainty and make tendering for one- to three-year operate models unattractive for contractors.

6.2 Quality in award

A major factor in the evaluation of DBO tenders is around quality, i.e., the whole-life cycle costs and performance of the built and operated treatment plant. This provides Irish Water with a greater certainty of the final capital cost of the facility, and the operating and maintenance costs during the operations period. The competitive tendering process and the incentive for efficiency by the contractor will ensure that factors such as the use of power,

chemicals and labour are addressed in the most effective way to the benefit of Irish Water. If these are removed from the tender process it will undermine the commercial viability of the project, despite the duration, and may force contractors to seek opportunities elsewhere.

6.3 Innovation and technology

The DBO model is specifically designed to support the adoption of innovative solutions, including the latest process technology because it is based on the concept of whole-life costs. Irish Water benefits from having treatment facilities with the most up-to-date technologies and thus delivery of high-quality effluent.

6.4 Access to talent and expertise

Irish Water will have access to our members' highly educated and skilled employees who operate many of the complex process technologies, such as sequencing batch reactors (SBRs), granular activated sludge (NEREDA), anaerobic digestion and combined heat and power (CHP), and thermal drying in compliance with health and safety and environmental compliance requirements. For example, our members are continuing to provide non-DBO-related expert technical support services to many local authorities/Irish Water to help them operate their treatment facilities. Shorter operational periods as outlined above will undermine investment in these skills and the ability to recruit and retain talent.

6.5 Green procurement and sustainability

As the DBO model is focused on the whole life cost of the contract it drives efficiency and innovation. The DBO contractor, in the preparation of its bid, is incentivised to provide systems, processes and technology which will deliver the lowest whole-life cost. In the past, due to the length of the O&M periods, these efficiencies were gained through energy reduction, chemical reduction, sludge reduction and enhanced automation and operator interfaces thus reducing labour costs. This key focus on whole-life cost aligns with Irish Water's Sustainability Strategy for net zero carbon by 2040. Shortening or removing operational periods will serve to disincentivise contractors to innovate sustainable solutions in the upgrade of existing or construction of new facilities.

6.6 Environmental quality and standards

Payments under the DBO model are linked to the quality of flow/load/sludge volume, which incentivises the optimisation of key inputs such as skills and talent, maintenance, and efficiencies around the consumption of energy and chemicals. The focus on standards and skills is reflected in the fact that there are less than 5% of complaints in a typical year across WWTPs and WTPs in WSOG members' care.

6.7 Risk associated with future demand, water and influent quality/volume

Under the DBO model, these type of risks are allocated to the contractor, which they account for in the competitive tender process. Any move to shorter or no operational periods will result in this risk being borne fully by Irish Water should any of these risks materialise. These costs cannot be omitted by Irish Water when carrying out comparative studies.

6.8 Protection of the taxpayer

The DBO model ensures that operational risk is appropriately allocated between Irish Water and our members, thus reducing the exposure of the Exchequer, and thus the taxpayer, to increased costs.

6.9 Accelerated construction schedules

The model is also designed to accelerate the delivery of treatment facilities in the State due to fewer contractual interfaces and the ability for value engineering to be used in their construction. This means that the infrastructure is built faster, at a higher quality and long-term viability than traditional contractual models.

6.10 Long-term viability

A key feature of the DBO contract is the asset replacement fund, which provides funding for the replacement of assets with a greater than five-year service life in accordance with the asset. Optimal planned maintenance of plant and equipment is ensured, which reduces reactive maintenance requirements and provides a safeguard that plant and equipment will continue to meet requirements for the duration of its service life.

6.11 Bulk purchasing power

DBO contractors have significant purchasing power with suppliers of goods and services, and the DBO contract is designed to optimise energy consumption, chemical consumption, and sludge management costs. It is unlikely that Irish Water would see much, if any, tangible benefit from reducing the operational period.



Section 7: Disadvantages to shortening the operational period

DBO contracts with shorter operation service periods of between one and seven years have been procured in Ireland in recent years. These shorter contracts have significantly reduced advantages and indeed, introduced some significant disadvantages compared to 20-year contracts.

7.1 Commercial attractiveness and viability of members business

At a critical time for the delivery of essential infrastructure for housing and the increasing challenge of the commercial environment presented by public procurement, our members are calling on Irish Water and the Government to work in partnership with us to ensure we can deliver on these objectives.

WSOG members want to support Irish Water's 2023-2030 Strategy by working in a collaborative way and managing the transition to shorter operating periods over the duration of this strategy. This will align with the strategy under its supply chain, sustainability and innovation objectives. It will offer more business certainty for members and give them the time to transform their business model and to continue to invest in people, processes and innovative technology. Any changes to the 20-year DBO model without transition and engagement

The 20-year operation period provides the necessary certainty to support investment in the recruitment, retention and training of our people and offers them a clear career progression pathway

with the industry will likely lead to significant losses for our members who have invested and planned their businesses on this type of model. These losses could be significant enough to force some members into insolvency or severely damage the long-term health of their balance sheets.

This will make it more difficult for them to compete for future Irish Water projects and other National Development Plan projects, thus forcing them to seek better commercial opportunities elsewhere.

The taking in charge by Irish Water of factors like power, chemical and labour supply will disincentivise the investment by WSOG members in all types of operative models. It will only exacerbate the problem as members will no longer see an attractive commercial opportunity in this work.

The 20-year operation period provides the necessary certainty to support investment in the recruitment, retention and training of our people and offers them a clear career progression pathway. Unfortunately, a one- to-three-year O&M contract period will not provide the same certainty, and will make it very

difficult for the members to recruit and retain the calibre of talent necessary to safely operate facilities. In addition the current concept of rolling one-year extensions further adds to the challenges presented to the WSOG members in adequately resourcing and retaining staff on these contracts. It will simply not be possible to train new apprentices and graduates, which will in turn affect Irish Water's access to this talent. Moving too rapidly to a shorter operating period will undermine Irish Water's 2023-2030 strategy objectives under supply chain and growing market capacity. WSOG members are looking for alternative opportunities, because projects tendered on a one-year operation period are commercially unviable for all the reasons set out above.

7.2 Employment rights

There are, of course, potential implications under the EC (Protection of Employees on Transfer of Undertakings) Regulations 2003 that must be considered. The TUPE Regulations protect the rights of the employees where an undertaking is transferred from one entity to another.

These Regulations need to be considered carefully as to the rights of a DBO contractor's operatives where the DBO contractor is to be replaced at the end of the contract either by another contractor or Irish Water.

Either way, under the TUPE Regulations, the DBO contractor's operatives may have the right is to be transferred to the new employer, whether that is another contractor or direct operations of the facility by the employer, with their accrued years of service, their existing terms and conditions of employment, and also with the benefit of any collective agreement to which they may already be subject.

7.3 Quality

As set out in the World Bank and Asian Development Bank guides referred to above: *"Overly short operation service periods will deprive an employer of the benefit of this mechanism if the operation service period is shorter than the lifespan expectancy of the majority of the electrical and mechanical equipment. In such case, the contract may come to an end before it can be fully demonstrated whether the assets delivered by the contractor are robust enough to withstand the passing of time and operation"*.

This is because, shorter operational periods tend to reduce the focus on the quality of the tender during the evaluation and focus more on the price of the capital cost of building the plant. Unless this is managed and structured effectively by the client with a 70:30 weighting in favour of whole life quality over price, it can materially undermine the concept of life cycle costing and sustainability.

Section 8: Transition period

WSOG members believe that many of these disadvantages could be mitigated and managed if Irish Water was to work in collaboration with members over the duration of the 2023-2030 Strategy. As stated above, this will allow the industry to transition to the new model, while offering Irish Water the benefit of the current model and support of its strategic objectives.



Section 9: Improvements to the DBO model

During this transition phase, WSOG members believe that the DBO model can be further improved to deliver even better value to Irish Water and the State, and support the 2023-2030 Strategy under supply chain.

9.1 Price variation mechanisms

It is critical that fair and effective price variation mechanisms are introduced on future operation contracts along with measures to support those already in contract. The industry has not experienced such material price inflation and supply chain disruption in over 40 years resulting from Brexit, Covid-19, closure of construction projects and the Ukrainian war. Geopolitical forces are likely to continue for the foreseeable future, which may lead to more permanent structural supply chain disruptions and the associated cost increases for energy, fuel, chemicals, materials and equipment.

9.2 NEC form of contract

The members support the use of the new engineering contract (NEC), which promotes greater collaboration, risk management and incentivises performance. The use of the NEC by experienced practitioners will lead to better outcomes through the optimal configuration of risk and z-clauses based on the complexity and information available for each project.

9.3 Risk allocation

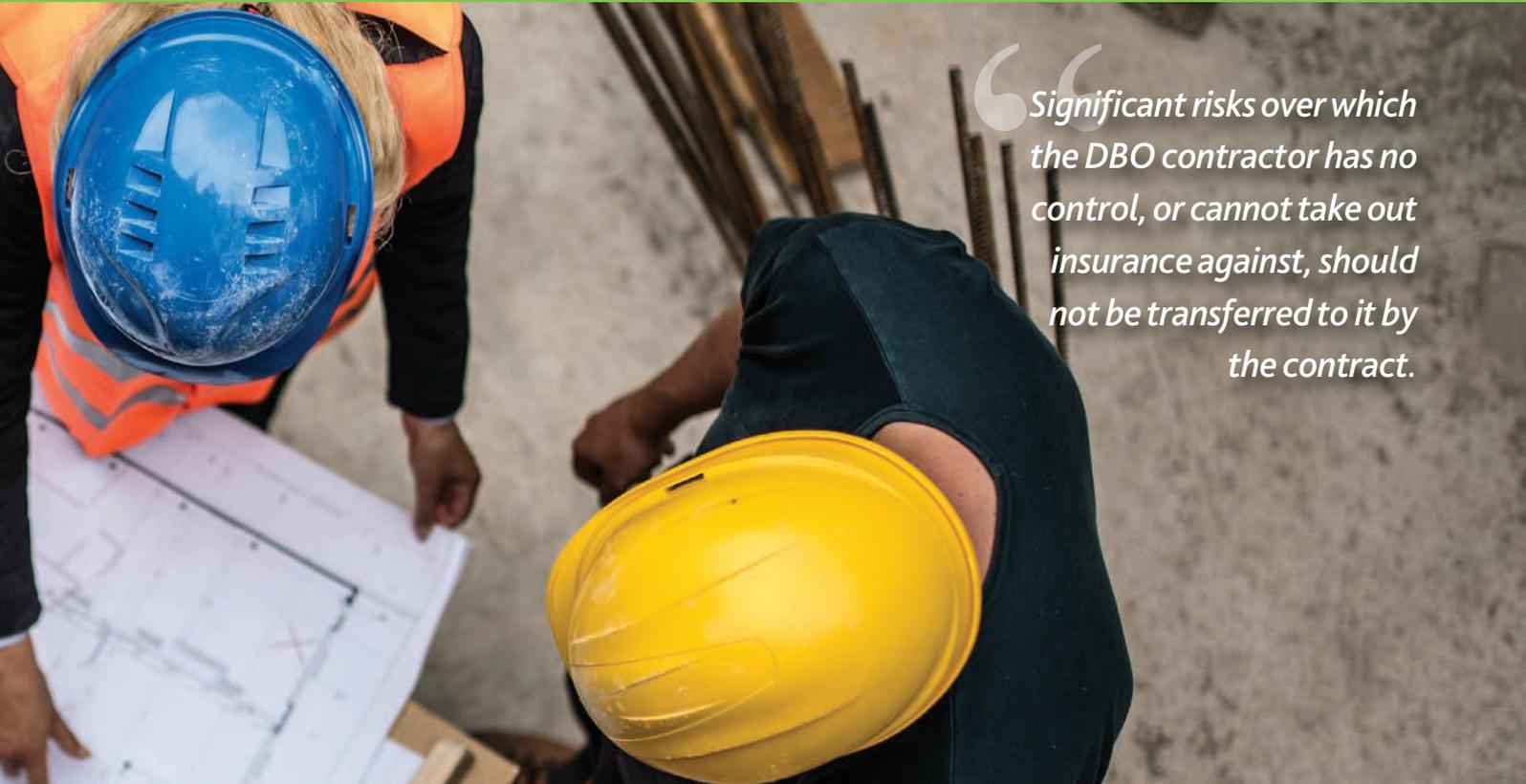
One of the key factors in determining the effectiveness of a DBO contract in terms of value is how risks are allocated between the employer and the contractor. A sensible, balanced risk sharing between the DBO contractor and the employer results in the lowest whole-life cost for completed projects.

Significant risks over which the DBO contractor has no control, or cannot take out insurance against, should not be transferred to it by the contract. If such significant risks are transferred, the DBO contractor has no alternative but to make financial provision in its tender pricing to protect its position should that risk materialise over the course of the contract. Both the World Bank and Asian Development Bank guides referenced above highlight the importance of this in obtaining value from a DBO contract.

9.4 Incentivised performance, compliance and payment

The payments deduction mechanism for underperformance incentivises the DBO contractor to meet these requirements and to optimise the process performance to ensure compliance.

It is important, however, that such payment deductions are proportionate



“Significant risks over which the DBO contractor has no control, or cannot take out insurance against, should not be transferred to it by the contract.”

and great care should be given to ensure that the key performance indicators are both reliable and easily verifiable, and applied fairly where there is a contractor’s non-excusable breach of a performance guarantee. Disproportionate, unduly harsh, or unfairly applied deductions will have the opposite effect on the contractor’s performance than that originally intended.

By contrast, when a plant is not being operated under a DBO contract, any additional costs incurred arising out of failing to meet the performance standards must be met by the employer. This results in higher operating costs for the period of underperformance (rather than lower operating costs in a DBO contract when payment deductions are applied).

In addition to the operating costs, the employer will also have to bear the cost of rectifying the cause of the failure, including any clean up or equipment servicing or replacement; whereas, the DBO contractor is generally required to bear such cost under its contract.

9.5 CRU OPEX efficiency challenge

For the second Interim Revenue Control 2 (IRC2), the Commission for Regulation of Utilities (CRU) excluded DBO costs from the “opex” efficiency challenge set for Irish Water. DBO contracts were considered already committed and the CRU considered that Irish Water had little scope within which to drive efficiencies. The CRU has included DBO costs in Irish Water’s efficiency challenge for RC3 given that Irish Water

reported savings during the IRC2 period. Also, the CRU now considers that since a small number of DBOs are due to expire during the RC3 period, this provides Irish Water with opportunity to drive further efficiencies. The efficiency challenge in the RC3 period is for a 2% year-on-year cost reduction in the first two years (2020 and 2021), increasing to 4% in 2022, and finally to 6% year-on-year for the final two years of the period (2023 and 2024).

As under their contract for WWTPs, the DBO contractor is required to manage and treat the flows and loads arriving at the treatment plants to meet the treated effluent standards, the first area that should be looked at to meet the CRU’s efficiency challenge is better management of the flows and loads in the network, particularly from stormwater and trade effluent discharges. Better management of stormwater flows, including attenuation during rainfall events, will reduce fluctuations in flows arriving at the treatment plant and therefore reduce the costs incurred by the DBO contractor, especially where pumping is involved. Better regulation and monitoring of trade effluent discharge flows and loads will reduce overall biological loading of the treatment plant and the peak loads in the influent, thereby reducing aeration and sludge management costs.

The WSOG is willing to engage with Irish Water to support the planning process for the RC4 period during 2023 and to work collaboratively to demonstrate required savings and efficiencies.

The Water Services Operators Group are a subcommittee of the Civil Engineering and Contractors Association and a constituent body of the Construction Industry Federation.



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