

WHITE PAPER:

TWO SIDES OF A COIN

A STRONG AND SUSTAINABLE SUPPLY CHAIN AND
EFFICIENT CHARGES FOR UTILITY CUSTOMERS

Energy & Utility Skills and Balfour Beatty, working
on behalf of the Energy & Utilities Skills Partnership



**ENERGY & UTILITIES
SKILLS PARTNERSHIP**
SUSTAINABLE TALENT FOR ESSENTIAL SERVICES
AND SUSTAINABLE INFRASTRUCTURE

A strong and sustainable supply chain and efficient charges for utility customers.

The Balfour Beatty paper raises highly pertinent points and honest views at a time when changes can be made. Gone are the days of assuming that if one key supplier steps away or closes down, that another will be around the corner. These are important commercial partners operating highly competitive businesses in a European and global infrastructure environment that is courting them with multiple contract choices. It is incumbent on policy makers, regulators and the water companies to recognise their vital contribution and involve them closely to help mitigate their sense of risk and sustainability.

In thinking of the future success of the water sector delivery model, it is vital to remember the significant role that is played today by the supply chain, and in particular these large contractors. These significant businesses operate many of the assets of our water companies and bring great innovation and cost saving.

The major water utility contractors operate portfolios across multiple markets and often multiple countries. It is vital that the whole water industry takes into account the confidence and financial sustainability of the supply chain when it is strategic planning, in just the same way as the privatised sector does for city investors and the wider financial community.

Investors and the major contracting businesses choose regulated water, based on its ability to be a stable and predictable investment, with fair and consistent returns. They are not obliged to operate in the water market, and are at liberty to leave or adjust their risk premia, should other sectors or countries prove to offer lower risk, better returns or be more viable in the long-term.

For example, the current political and regulatory volatility in regulated water in England and Wales, combined with a volatile contracting market in the post-Carillion era, is making these contractor-owning groups reflect carefully on the attraction of water. To lose their patronage of our sector would directly impact the sector's planned delivery outcomes, and the loss of such a knowledgeable and embedded workforce would certainly impact productivity and raise sector costs.

As highly competitive and multi-national businesses that are operating many of the operational day-to-day aspects of water infrastructure, they have no choice other than to work in the most sustainable and stable commercial environments. It is vital for customers' bills and service levels that they see water as one.

The siloed approach to thinking through delivering infrastructure policy, means that sectors like the water industry are ultimately fighting for its share of the talent to deliver highly ambitious leakage strategies, metering, maintenance and other core functions, at exactly the same time that energy, rail, telecoms and the wider construction industry is seeking exactly the same people at similar pay grades with broadly equivalent skills. It's been a simple problem to fix for many years and all the main bodies exist to remedy it, but for some reason the responsible authorities are simply unable to work together to see that fresh drinking water, sanitation, power, heat, light and other essential services are mission critical for the whole UK. The main contractors already know that no-one, including governments and regulators, are thinking in the round, and that ultimately each company will end up calling on its supply chain to fill the gaps. Had it been planned, and contractors involved from the start, the solutions would already be rolling out in to the market place.

The Energy & Utilities Skills Partnership is bringing together the asset owners with its contractors and key supply chain partners to work together on attracting new talent, building inclusion, increasing diversity, optimising productivity and retaining corporate memory and competence. It will help, and it is already having a tangible impact, but unless the sector looks at its own operating model and thinks on behalf of these pivotal partners, other countries or business competitors will do so.

Nick Ellins **Chief Executive, Energy & Utility Skills**

BALFOUR BEATTY THOUGHT LEADERSHIP PAPER: TWO SIDES OF A COIN

Key Points and recommendations

1. Procurement processes must deliver sustainable margins in order to ensure a stable, resilient supply chain which can invest in skills, innovation and equipment.
2. Tier 1 businesses are already beginning to 'no-bid' certain contracts because the poor commercial terms being offered are unsustainable. If this becomes a trend, we believe it will become a problem for the water sector.
3. Greater certainty is needed before the supply chain will invest in research, development and innovation.
4. Contracts which share risk and reward fairly are more likely to provide an environment in which innovation can flourish than traditional procurement routes which see the supply chain bear the risk and the client take the reward.
5. Failing to address the skills gap in the water sector will hold the industry back and put at risk the delivery of the network customers need and deserve at a price they can afford.
6. The water sector has a particular skills challenge in that other areas looking for people with the same skills can offer higher salaries and the cachet of working on high-profile schemes, such as HS2 and Hinkley Point C, or secure well-paid roles in other sectors such as financial services.
7. With demand for workers outstripping supply, wages are likely to be driven up, which will have a knock-on impact on construction costs. This further impacts the ability to deliver schemes to budget and puts already stretched margins under strain. Ultimately, it is the customer who will carry the burden.
8. Given the significant infrastructure pipeline, contractors are making conscious decisions about where they deploy their people. Those schemes which allow contractors to make a reasonable margin are likely to be prioritised.
9. The funding certainty provided by the AMP cycle has not yet fully addressed the stop-start nature of contracting. Indeed, the cyclical nature of the AMP approach means that skilled staff can be lost as one AMP ends and before the next begins. We must find a way to smooth the peaks and troughs that lead to this situation and welcome work already being done in this area.
10. There is currently little effective collaboration amongst companies on some of the key challenges they all face, for example, ageing assets and leakage. This is something which should be addressed.

A sustainable supply chain

Balfour Beatty believes that delivering efficient charges for customers requires, amongst other things, a sustainable supply chain. This is necessary for two key reasons:

1. **Stability.** This is critical in order to avoid the disruption which drives cost increases as was seen in the aftermath of Carillion's collapse in early 2018. This had an impact which was spread well beyond the immediate sector. The company left almost £1bn of debt, over £500m of pension deficit and around 30,000 unpaid subcontractors, as well as delayed schemes and a significant financial impact on the taxpayer. It drove a 20% "domino" increase in the number of UK construction companies becoming insolvent¹, with small and medium-sized subcontractors feeling the greatest impact.
2. **Investment** — in skills, innovation and equipment. A sustainable supply chain, with long-term relationships with those commissioning infrastructure and a visible, reliable pipeline is one which is able to invest in the things which will keep costs down in the future. There can be no investment if contracts are characterised by a short-term outlook.

Both of these points relate to procurement processes. Contracts must deliver sustainable margins in order to ensure a stable, resilient supply chain which can invest in skills, innovation and equipment.

¹ Moore Stevens, October 2018

However, although there are notable exceptions, the current relationship between some water companies and the supply chain can be transactional and adversarial, with too great a focus on driving down bids for the initial capital cost and little understanding of the actual cost of delivering schemes. The result of this aggressive procurement approach is that contracts that are drawn up and awarded without a proper scrutiny or understanding of what work should cost, so that risk is neither properly appreciated nor appropriately allocated. Disputes, which ultimately stand in the way of productive, collaborative long-term relationships, are commonplace. Contractors have the choice between taking on work that may well turn out to be loss-making, or walking away. Unless the changes that have begun in some parts of the public sector, through moves such as the Outsourcing Playbook², are adopted by the water companies, Balfour Beatty believes the industry faces an increasingly uncertain future. Contractors are operating on an unsustainable business model – and have been doing for some time. The financial crisis followed by austerity, teamed with the industry's structural issues, have resulted in a construction sector which has, for over a decade, made only very slender profit margins³. Indeed, last year, the top 10 UK contractors made a combined margin of less than half a per cent on turnover of £31bn⁴. Meanwhile, labour and material costs have risen, particularly since Britain voted to leave the EU in 2016, leaving the industry squeezed on both sides. This is no longer sustainable.

We believe that, while in the past, contractors have been forced to accept contracts which are undeliverable at the tendered price, this is increasingly less likely to be the case. Unlike during the height of austerity when many loss-making contracts were signed, there is now a full pipeline of work including ambitious, high-profile schemes including HS2 and Hinkley Point C. Contractors are more able to choose what they bid. This means that, of course, they will choose contracts where they are able to make a reasonable margin.

Tier 1 businesses are already beginning to 'no-bid' certain contracts because the poor commercial terms being offered are unsustainable. If this becomes a trend, we believe it will become a problem for the water sector:

Of course, there will always be other, smaller companies willing to take on the work in spite of the unfavourable commercial terms. However, even this requires demobilisation, remobilisation and a learning curve which drives cost inflation due to inefficiency in the sector.

Balfour Beatty believes that if the priority were to become value rather than lowest-price-wins, the result would be improved outcomes benefitting the customer.

Innovation

Innovation is rightly one of four key themes within Ofwat's Price Review 19 (PR19), which addresses the future challenges the water industry is facing. Innovation will be the way in which the sector will mitigate continued significant increases in water prices over the long term for the customer. It offers the best way of ensuring that the £50 billion of investment planned by water companies between 2020-2050 is spent as effectively as possible, while delivering the 21st-century water infrastructure the country needs.

However, the water sector has been slow to modernise and adopt new technology. While innovative approaches such as Building Information Modelling (BIM), the use of drones and Design for Manufacture and Assembly (DfMA) are being used on new infrastructure schemes including new treatment works and state-of-the-art schemes such as the Thames Tideway Tunnel, the approach with regard to existing infrastructure remains largely reactive and manual. Some water companies are adopting technologies such as predictive analytics to understand and optimise the asset, identify potential assets failures and ensure repairs are undertaken quickly, allowing engineers to access real-time information on hand-held devices. However, in many areas, companies remain reliant on members of the public reporting leaks, or on the age of the asset to drive decisions on maintenance – both of which are inefficient.

Balfour Beatty believes there are several areas where change must happen more quickly:

- While there are many areas where innovative solutions could be developed to reduce inefficiencies and optimise existing assets, certainty is needed before the supply chain will invest in research and development and innovation.
- The existing system can stifle innovation as competition between companies restricts the market for the businesses that bring forward innovation but do not want to offer them exclusively to one company.

² The Outsourcing Playbook, HMG, February 2019

³ Construction News 100

⁴ Building, <https://www.building.co.uk/top-150-contractors-and-housebuilders-split-fortunes/5094846.article>, July 2018

- Contracts which share risk and reward fairly are more likely to provide an environment in which innovation can flourish that traditional procurement routes which see the supply chain bear the risk and the client take the reward. Water companies will only see the innovation they hope for if the contract accurately represents the nature of the risk distribution required. Examples of this exist in the water sector; but are the exception rather than the rule. In these cases, success is characterised by collaborative agreements; risk sharing; Early Contractor Involvement (ECI); and Target Price Contracts with pain gain mechanisms.
- There is currently little effective collaboration amongst companies on some of the key challenges they all face, for example, ageing assets and leakage. This must change. We welcome initiatives by Ofwat to assist in this area, such as Regulators' Alliance for Progressing Infrastructure Development (RAPID).

The sector must go beyond its traditionally risk averse approach and the tried-and-tested, towards a genuine innovation mind-set. It must move more quickly to a position where there are full 3D models of the network with embedded sensors which predict asset failures before they happen and enable less digging and disruption. However, moving to a data-driven model will require a significant cultural shift.

Skills

The water industry directly and indirectly employs over 210,000 people in the UK⁵. However, in common with other parts of the construction and infrastructure industry, it is currently experiencing skills shortages driven by a range of factors, from the cyclical nature of investment, a failure to develop specialist talent since the 1990s and an ageing workforce. Indeed, it is well-documented that thousands of those working in the construction and infrastructure industry, including the water sector, are ageing and expected to retire from their positions in the next decade: estimates are that 63,000 vacancies will need to be filled across the industry by 2027⁶.

Little progress has been made in the past few years in increasing the flow of people into the sector. The entire construction and infrastructure industry is facing the same issue, with not enough young people studying the right subjects or choosing careers in the sector. However, the water sector has a particular challenge in addition to this, in that other areas looking for people with the same skills can offer higher salaries and the cachet of working on high-profile schemes, such as HS2 and Hinkley Point C or secure well-paid roles in other sectors such as financial services. Similarly, in terms of those already working within the sector, there is growing competition for skilled individuals from other engineering fields, as significant investment in national infrastructure and an unprecedented number of high-profile schemes puts pressure on a talent pool that is already too small.

With demand for workers outstripping supply, wages are likely to be driven up, which will have a knock-on impact on construction costs. This is already happening across the construction sector⁷. This further impacts the ability to deliver schemes to budget and puts already stretched margins under strain. In some cases, a shortage of skilled labour puts the deliverability of schemes at risk. Ultimately, it is the customer who will carry the burden.

In Balfour Beatty's view, these are the key areas that need addressing:

- Given the significant infrastructure pipeline including HS2, Hinkley, Heathrow, and the Highways Regional Investment programme, contractors are making conscious decisions about where they deploy their people. Those schemes which allow contractors to make a reasonable margin are likely to be prioritised. The contracting models being used therefore have a significant impact on the skills shortages the water sector is facing and companies must ensure they have a procurement model which strengthens, rather than weakens the sector.

⁵ <https://www.euskills.co.uk/about/our-industries/water/>

⁶ Energy and Utilities Skills, November 2018

⁷ Randstad Construction, Property & Engineering, June 2019

- The funding certainty provided by the AMP cycle has not yet fully addressed the stop-start nature of contracting. Indeed, the cyclical nature of the AMP approach means that skilled staff can be lost as one AMP ends and before the next begins. As these people find secure work elsewhere in the construction and infrastructure industry, it can be difficult to attract them back to the sector. We must find a way to smooth the peaks and troughs that lead to this situation and welcome work already being done in this area.
- We must do more to attract talented people into the sector, working with Government to improve the Apprenticeship Levy and with schools, colleges, universities and parents to showcase the industry. Those graduating with degrees in electrical and civil engineering have a range of potential employers and sectors competing to employ them. Similarly, once the potential of innovation is fully embraced by the water sector, it will become ever more important to attract people into the industry with new skillsets, including machine learning and data analytics. However, these people will be targeted and tempted by other areas of the economy as well as other parts of the construction and infrastructure industry. We must demonstrate that this is an immensely fulfilling field, where those working in it have the satisfaction of seeing their work realised and providing an enduring legacy for many years.
- The sector must focus on recruiting and retaining a more diverse workforce – one which is more representative of the customer base water companies serve than the current workforce which is less diverse than the wider UK workforce, and indeed the population more broadly, on every measure⁸.

Concerted, coordinated action is needed to tackle these skills shortages head on.

Conclusion

An efficient, innovative water sector needs a resilient supply chain. This, in turn, requires new contracting models and an understanding that traditional, aggressive procurement approaches have damaged the supply chain. Conversely, failing to address these issues will hold the industry back and put at risk the delivery of the network customer's needs and deserve at a price they can afford.

Balfour Beatty is working closely with its water industry clients and with other key stakeholders to encourage a long-term approach which delivers for the end-user. But the whole industry must take strategic, coordinated steps and a holistic view of the situation to safeguard future innovation and efficient charges.

⁸ BEIS Labour Force Survey, 2017/2018

Energy & Utility Skills, the expert voice on workforce issues across the sector, has been the driving force behind the creation of the Skills Partnership. Energy & Utility Skills is the provider of choice for guidance, employer solutions, setting, registering and assessing competency standards and bespoke consultancy. It helps employers attract new talent, develop their workforces and assure a high level of competence across their businesses. For more, visit <https://www.euskills.co.uk/>

The Energy & Utilities Skills Partnership is a collective of 29 leading sector employers that are working together to secure the continual seamless delivery of the wider sector's services across the UK. For more, visit <https://www.euskills.co.uk/about/energy-utilities-skills-partnership/>

Balfour Beatty whose first contract was awarded in 1909 is a leading international infrastructure group. With 15,000 employees across the UK, Balfour Beatty finances, develops, delivers and maintains the increasingly complex infrastructure that underpins the UK's daily life.

Balfour Beatty's Gas and Water teams work across the UK and Ireland, supporting a stable and safe supply of these vital services. Our water operations cover the whole lifecycle of networks, including clean and waste water mains, metering, treatment facilities and other essential infrastructure.

Working closely with our supply chain, we employ industry-leading approaches such as BIM and offsite construction to bring cost and time efficiencies to projects.

Balfour Beatty has a long history of working in the water sector; but we also work across a number of related, regulated sectors which gives us both a wide range of experience in this area, teamed with the ability to cross-pollinate ideas from others.

Balfour Beatty



Contact

Energy & Utility Skills Limited
Friars Gate,
1011 Stratford Road,
Shirley, Solihull B90 4BN
0845 077 99 22
enquiries@euskills.co.uk

© Energy & Utility Skills Limited 2019