



Fair for the Future Project

Political and Regulatory
Uncertainty and Risk Relating
to Fairness and the
Environment in the UK
Energy and Water Sectors

Discussion Paper
October 2018

Sustainability
first

Contents

Executive Summary

- 5 **Section 1 – Fair for the Future project: our workstream on uncertainty and risk in UK energy and water**

- 7 **Section 2 – A discussion of ‘conventional’ approaches to uncertainty and risk**
 - 8 **Working Note 1:** Political and regulatory uncertainty. An economist viewpoint, Professor George Yarrow
 - 11 **Working Note 2:** ‘Conventional politics’ – An overview of the apparatus of government and regulation
 - 18 **Working Note 3:** ‘Conventional Politics’ – An overview of capital markets

- 27 **Section 3 – Fair for the Future project: mapping political and regulatory uncertainty and risk for the UK energy and water sectors**
 - 27 Developing a framework
 - 31 Next steps

- 31 **About Sustainability First**

This initial discussion paper is an *early output* from Sustainability First’s Fair for the Future project. We would welcome feedback. If you have any comments - or would like to discuss Sustainability First’s Fair for the Future project further - please contact Sustainability First’s Director, Sharon Darcy at: sharon.darcy@sustainabilityfirst.org.uk

Photos on cover by [Simon Rae](#) and [Andreas Dress](#) on [Unsplash](#)



Executive summary

This discussion paper is the first in a series on political and regulatory uncertainty and risk in energy and water from Sustainability First's Fair for the Future project.

Uncertainty and risk impact on trust – for consumers, citizens, company managements and investor confidence – as well as impacting on customer bills. Our aim is to start to re-frame the debate on how delivery on both fairness and the environment in the energy and water sectors is impacted by political and regulatory uncertainty and risk.

Uncertainty and risk are not new to the energy and water sectors. However, new challenges which the sectors face, demand a fundamental re-think on today's treatment and handling of both - be this by government, regulators, company managements and / or their investors. To be clear, this is not simply about a nationalisation challenge. Rather, it is about a critical need to better understand - and address – the many *new* uncertainties and risks arising from a more dynamic, connected, digital and 'disrupted' world for the energy and water sectors - while at the same time delivering on fairness - both within and between generations – and also for low carbon and the natural environment.

In section 2 of this paper, we bring together three working notes on risk and uncertainty. Section 3 starts to look at how conventional approaches to considering risk and uncertainty for the energy and water sectors may need re-framing more broadly for the future.

In section 2, the first note from Professor George Yarrow unpacks at a high level the distinction between uncertainty and risk from an economics standpoint and draws out some regulatory implications.

Two further working notes from Sustainability First Associates start to set out how uncertainty and risk are treated *in today's world* for the energy and water sectors. We describe these approaches as the 'conventional politics' of handling uncertainty and risk. We briefly describe how these conventional approaches shape policy and responses by the energy and water companies today - including for fairness and the environment.

The **second note** considers how the apparatus of both government and regulation shape and manage risk in energy and water. It proposes a 'typology' of risks, discusses key players and provides a brief overview of how these risks can be triggered. It notes that political and regulatory risk is not new and at times has been high in the past. But, it also outlines how we are seeing a 'trend increase' in risk today, including with the growth in social media, coupled with some other specific risks. Change, when it comes, can also be both rapid and far-reaching. Together, these factors make for a high degree of risk in the energy and water sectors – as high as at any point in the life of the privatised utilities.

The **third note** provides an overview of political and regulatory risk from the standpoint of the capital markets. It identifies the different types of public infrastructure asset, the types of investor in these assets – plus the nature of political and regulatory risk for investors. It notes that risk is perhaps more of an issue for equity investors than for debt. It then looks at who owns public infrastructure assets today, how the owners are likely to receive regulatory risks and in turn at some implications for political and regulatory risk relating to fairness and the environment. The note also briefly touches on public sector versus private ownership and capital structures.



In section 3, we conclude by identifying a need for new thinking on uncertainty and risk in the energy and water sectors, capable of taking greater account of the many new risk factors and disruptors faced by both sectors. We believe that a wider approach to framing uncertainty and risk for the energy and water sectors will allow companies to develop agendas for both fairness and the environment which are more confident and future-facing. The paper concludes with an initial attempt at high-level mapping of political and regulatory uncertainty and risk for the energy and water sectors. Our follow-on paper will develop this initial mapping exercise further. We also note likely next steps for the Fair for the Future project on political risk-mapping – plus our intention to integrate this into our work on a ‘Sustainable Licence to Operate’ for the energy and water sectors.

Section 1

The Fair for the Future project – and our workstream on uncertainty and risk in UK energy and water

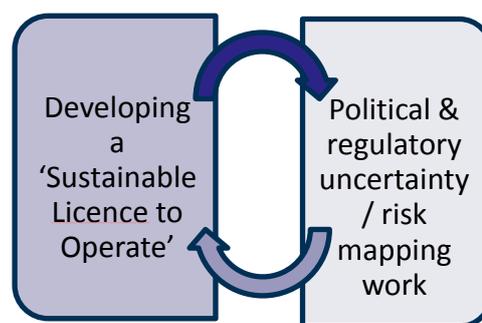
1.1. Sustainability First’s Fair for the Future project aims to enable energy (retail and network, gas and electricity) and water companies, policy makers and regulators to better address the politics of fairness and the environment, in the process getting companies to demonstrate corporate leadership by ‘doing the right thing’. Its objectives are to:

- Identify a common framework of good practice/standards for doing this; one that goes ‘above and beyond’ legal compliance and basic CSR, with a focus on the ambition companies need to measure up to in future rather than being based on what is achievable now.
- Embrace disruption so that companies are better able to anticipate, influence and cope with change proactively – including in public opinion.
- Develop a radical step change in company approaches to engagement, governance and business models.
- Enable companies to take the initiative to develop new, direct structured relationships with their consumers and wider stakeholders – that build trust.
- Build a bridge between polarised ideological debates without being partisan.

1.2. The project was kicked off in Spring 2018 and will run for three years. The project’s two workstreams are illustrated in Figure 1. Although the two work-streams clearly link and impact on each other, they are currently being conducted in parallel, to

make them ‘manageable’. The focus of this paper is the workstream on political, regulatory uncertainty and risk-mapping.

Figure 1: The two workstreams in the Sustainability First Fair for the Future project



1.3. In October 2018, Sustainability First has also produced an initial strawman ‘Sustainable Licence to Operate.’ That early outline Framework and Issues Paper is intended to help companies consider, with their stakeholders, how they may want to develop a ‘Sustainable Licence to Operate’ in their own businesses. Over the next 18 months, we will be testing the strawman with a wide range of stakeholder groups and against good practice from other sectors and from energy and water providers in other jurisdictions. We will invite key stakeholders to workshops where we will ‘kick the tyres’ on the following issues: public purpose, philosophy and public service values; making best use of capital and assets; roles and responsibilities; and, strategy and narratives. If you would like to be involved in these workshops, please do let us know.

Political and regulatory uncertainty and risk mapping workstream

1.4. This paper is focused on the Fair for the Future workstream which looks at political and regulatory uncertainty and risk



mapping. The objectives of this workstream are to:

- Ensure a more comprehensive and coherent view of political and regulatory uncertainty and risk for the water and energy sectors with respect to fairness and the environment, to see that nothing is ‘left out.’
- Understand more how the boundaries of political and regulatory risk are changing for these sectors and may interact in the future.
- Pave the way to ‘opening up’ current debates about fairness and the environment to new / more voices – so that these become a genuine reflection of wider societal sentiment / public mood. ‘Democratisation’ of this kind could help towards some political de-risking for the sectors, by creating a consensus, and potentially third party ‘endorsement’ around what a sustainable future might look like.
- Develop a common language for dealing with these risks that all sides can use when considering the practicalities of a ‘Sustainable Licence to Operate’ in the energy and water sectors and when it should be used.

1.5. This discussion paper contains three working notes which represent a very early output from Sustainability First’s Fair for the Future project on political and regulatory uncertainty and risk with regard to fairness and the environment in the UK energy and water sectors. It is intended to stimulate debate and to share our early thinking in these areas.

1.6. As a next step for this uncertainty and risk mapping work, our working group will examine different strands of evolving risk in the ‘disrupted’ world: consumer lived experience; civil society and public sentiment; and the media – old and new. This will examine in more detail changes in the public mood around ‘fairness’ and how this issue is developing from a primary focus on ‘the vulnerable’ to ‘fairness for all’ (including those who may be disengaged,

‘loyal’ and who may be in vulnerable circumstances), as reflected in the recent BEIS Consumer Green Paper.

1.7. The issues addressed in this paper – and in the Fair for the Future project - are complex, dynamic and difficult. We are, therefore, taking an iterative approach to this work; testing it with key stakeholders and refining our thinking as we go. We would like to emphasise that these early working papers are very much shared in this spirit. **We would welcome your comments and feedback.**



Section 2 - A discussion of ‘conventional’ approaches to uncertainty and risk in energy and water

Summary

- 2.1. The three working notes in this section offer separate perspectives on the treatment of political and regulatory uncertainty and risk in energy and water:
 - An economist’s viewpoint
 - A governmental and regulatory view
 - A capital markets view
- 2.2. Key points are as follows.
- 2.3. Political and regulatory uncertainty and risk relating to fairness and the environment in energy and water are both important ‘public interest’ issues. However, uncertainty and risk aren’t the same things.
- 2.4. If you can’t rely on stable and consistent patterns of expectations about the conduct of others, this can give rise to uncertainty which in turn can make it difficult to co-ordinate social and economic activities. Uncertainty can erode trust in the process, undermining the legitimacy of decision making. In energy and water, this can result in consumers less willing to engage in demand reduction/demand side response and collaboration/production - and citizens more willing to look for alternative approaches to service delivery. It can deter investors and distract management teams.
- 2.5. Risk, on the other hand, can be determined reasonably objectively. In this way, it can help drive markets and lead to innovation. In general, markets price risk well (i.e.

charge little for it). Equity markets in particular, however, tend to deal with uncertainty poorly (i.e. charge a lot for it). Ultimately, uncertainty can therefore lead to upward pressures on the cost of capital (and therefore a higher financing cost). This can in turn act as a ‘dead-weight’ on consumer bills.

- 2.6. Political and regulatory uncertainty and risk in terms of fairness and the environment are not new to energy and water companies. While these vary across the sectors and value chains, they have been ‘part of the operational environment’ for decades. However, although political interest in the sectors has always ebbed and flowed, there is something of a sea-change. In some parts of the sectors, there is a greater existential threat from competition. In others, there is a weakening commitment to market solutions. These are fundamental generational shifts, not seen since the privatisations and restructuring of the early 1990s.
- 2.7. Technology and societal disruptions, as well as the threat of re-nationalisation, are challenging the current approaches of ‘conventional politics’ to dealing with uncertainty and risk. To date, these technical, rigid and fact-based approaches have largely been focused on setting the cost of capital and agreeing capital expenditure programmes. However, in our interconnected, dynamic and ‘disrupted’ world of multiple and shifting feedback loops and 24/7 decision-making, a new way of looking at risk and uncertainty in the energy and water sectors is needed.
- 2.8. To develop this, we must first of all understand how political and regulatory uncertainties and risks regarding fairness and the environment are dealt with in today’s world of ‘conventional politics’. The apparatus of government and regulation -



and the response of the capital markets - are the key traditional tools for appraising and handling risk.

- 2.9. Government and regulatory machinery can both cause and manage a range of uncertainties and risks. These include: existential risks; sector wide risks; contagion risks; and local/company specific risks. If the triggers for these risks are not sufficiently addressed, and the risks mitigated, they can escalate - turning micro-issues into macro-issues – be this rapid, or perhaps unseen over a long period.
- 2.10. Capital markets are another key player in shaping responses to political and regulatory risk in today's 'conventional politics'. Uncertainty and risk are viewed and managed in different ways by different types of investor: equity/debt; and public markets/private markets/public sector. Each type of capital and ownership structure has pros and cons in terms of causing and managing uncertainty and risk.

things have become 'more uncertain,' but does not go much further than that in its submission.

- 3.2 This working note is intended to introduce a particular perspective from economics on regulatory uncertainty, not to develop it in any major way. The emphasis is on information conditions: what we know now and what we know now about what we might know in the future. The nature of the things we know or might know about is unexplored at this stage. It could be a particular decision, or it might be a pattern of conduct.
- 3.3 A sound-bite summary of where this leads could be: *"uncertainty is a state in which we don't know what to expect"*.
- 3.4 The note looks at (1) political and regulatory uncertainty and then (2) regulatory uncertainty. Our aim is to offer a high-level framework by which to consider uncertainty in the Fair for the Future project. Later, we will turn to some of the practical ramifications of uncertainty for government, regulators and regulated companies.

Working Note 1 - Political and regulatory uncertainty: an economist view, Professor George Yarrow

Overview

- 3.1 Currently, political/regulatory uncertainty is a major issue for UK economic policy. To understand it, we need to rely on some precision in use of language. Otherwise it can become, and often does become, just another abstract term with no very concrete meaning. For example, a company argues for a higher cost of capital allowance because

The difference between risk and uncertainty

- 3.5 There is an extensive economics literature on the difference between risk and uncertainty. A popular formulation is that risk refers to probabilities of future outcomes that can be determined reasonably objectively (e.g. numbers exhibited by rolling of dice) whereas uncertainty refers to situations in which an 'objective' basis for assigning probabilities is lacking.

Political and regulatory uncertainty

- 3.6 The above distinction takes us only a little way forward since the vast majority of major economic decisions are, on this basis, taken under conditions of uncertainty. Those responsible for decisions have only partly



informed notions of greater or lesser likelihoods and it is, in any case, possible to turn this into a theory of subjective probability that looks very much like a theory of decision making in the face of risk.

- 3.7 The slight advance in making an objective/subjective distinction is that it draws attention to subjective likelihoods being influenced by a much wider range of factors. Thus, we find that Keynes, starting from the notion that pretty much everything is uncertain, lays considerable emphasis on psychological factors in decision making (e.g. animal spirits in investment decisions).
- 3.8 The greater potential advance lies in gaining a better understanding of the detail of this more ‘behavioural’ economics; it is certainly something that should be factored in to any appreciation of the determinants and effects of political/regulatory uncertainty.
- 3.9 To be clearer about the sorts of issues and factors of interest under discussion, we could compare three situations in which the words ‘policy/regulatory uncertainty’ might appear:
- An upcoming price determination for a network utility.
 - Brexit.
 - Determination of bank rate by the Bank of England.
- 3.10 The first point to note is that the starting gate for analysis is not a state of zero knowledge. In each case we know that there are impending policy decisions, and we probably have reasonably good (albeit never certain) sight of the time periods involved. We don’t, however, know what the decisions will be (although it seems reasonable to say that the second of the three contexts comes with the greatest uncertainties).
- 3.11 We also know is that we will know more about the decision after it is made than we

know now. That may sound trite, but it is of critical importance. In effect, we know that our ‘information sets’ (which summarise all we know and believe) will change, and that the changed information set will determine how we see the future thereafter.

Something will be learned – and although we don’t know what it is (otherwise it wouldn’t be learning), we do have a reasonable idea of the time period over which it will be learned.

- 3.12 This gives us a first implication. Knowing that there are things that we don’t know now but we will discover soon, has obvious implications for decisions that can be expected to have significantly longer-term consequences. Brexit is an obvious case in point. Airbus, Jaguar, Rolls Royce etc al have complained about the effects of Brexit uncertainty on their investment appraisals. It is easy to see that commitments to major investments today might be unwise when it is known that, relatively soon now, decisions that might undermine the business case for making them might be made.
- 3.13 The tendency is to hold back on at least some of the decisions until more is known. The strength of the pressure to hold back tends to be greater the higher the future value of the information that might be discovered (by waiting). This directs attention to the exercise of assessing that value, and there are a range of factors to explore in this area.
- 3.14 The one that we will focus on in this introductory note is the degree of predictability of the policy decision. All economic contexts change over time and businesses operating in competitive markets know this and adapt to the changes. This is due to the routine, background flux of economic life. The additional aspect of political/regulatory uncertainty is that an identifiable policy process can, via its decisions, become responsible for a



substantial fraction of the impacts on individual economic agents. At bottom, it is a sort of monopoly problem: a single agent can have substantial effects on things.

- 3.15 As economic contexts evolve (shaped by exogenous factors such as weather and conflicts and others in ways that cannot be predicted), it is to be expected that political and regulatory decisions will adjust to reflect the new realities. Given knowledge of the changed circumstances, if it is possible to predict how subsequent political/regulatory decisions will be adjusted in response to the changes in economic context (think of these as ‘behavioural responses’), then it can be said that regulatory process has not added much to the background flux. In the limit, there can be regulatory certainty (known responses to changes in circumstances), even though the decisions themselves will change.

Regulatory certainty and uncertainty

- 3.16 It is when the political/regulatory responses to changed circumstances are unpredictable or arbitrary that problems emerge: the policy process adds to the background noise. We then see regulatory uncertainty.
- 3.17 Regulatory certainty/uncertainty is a measure of the contingent or conditional predictability of regulatory decisions.
- 3.18 For at least some sectors of the economy, Brexit is a major source of regulatory uncertainty. We know that we will know more in a few months’ time (information conditions will change), but the process that will lead to the decisions is highly unpredictable in its operation (unprecedented circumstances, difficult parliamentary arithmetic, etc). Information on the state of the economy and how the background economic context is changing

also gives us relatively limited information as to how decisions might go.

- 3.19 By contrast, the Bank of England Monetary Committee sails smoothly on. Bank rates will change over time and we are not sure now when it will change in the future. However, we know much more about how the BoE might respond in the event of a change in circumstances, such as an uptick in the inflation rate. The decisions are therefore reasonably predictable in a contingent/conditional sense and so the uncertainty is ‘bounded’. If the background circumstances can be assessed, the Policy Committee’s decisions are highly predictable. Regulatory uncertainty is low.
- 3.20 The price determination example in the triad usually lies somewhere in between these two.

Implications

- 3.21 This is just a start and there are obvious, immediate extensions of such thinking. Consider, for example, the question of the time at which decisions are taken. In a study of small engineering firms for the Cabinet Office, one of the complaints of businesses was that they did not know when regulatory decisions (in that case relating to environmental control) would come to be made. Thus, in addition to not knowing what the decision would be, they also had to contend with the question of when they would know. This adds to the other ‘known unknowns’.
- 3.22 This is less of an issue for price determinations, precisely because regulators tend to establish reasonably firm timetables (and methodologies) for the relevant process. They thereby reduce regulatory uncertainty. Other areas of regulation, however, are not so formalised; businesses may struggle and political interventions do not typically occur in any very ordered way.



Examples might include: where governments or regulators ‘test’ the limits of their vires (price caps etc) and where the degree of regulatory independence may be uncertain, or at least untested.

3.23 At a much more general level still, it can be seen as essential for economic coordination that market participants be able to form contingent expectations of the behaviour of others. Thus, I reasonably expect that on a normal day, if I go to the bus stop and wait a few minutes, a bus will turn up (an expectation about the behaviour of others). If, however, there is a severe snow storm in progress, I will adjust that expectation in the light of the observed contingency. But if there is a supply disruption and I have no sight of the factors that might have caused it, I tend to become ticked off: my ability to form expectations about the behaviour of others is degraded, and I know that it is degraded. I don’t know what to expect.

3.24 This kind of reasoning relates to issues of reputation, trust and, above all, arbitrariness. We trust individuals and institutions when their conduct conforms to established patterns of (contingent) expectations of how they will behave. The contingencies may be unpredictable ex ante, but once they are familiar to us – and/or are effectively communicated/signalled - the actual conduct causes no revision to the structure of the expectations. On the other hand, conduct that deviates from those patterns – or conduct that is not articulated/communicated in an effective way - can give rise to mistrust. In the absence of further information, the deviations are considered arbitrary, and arbitrariness is an enemy of stable expectations.

3.25 When there are no clear or meaningful consequences for those whose conduct goes against established patterns of expectations – to those who ‘break the rules’ that others

abide with – mistrust can be further exacerbated.

3.26 In any system, the general capacity to co-ordinate social and economic activities via reliance on stable and consistent expectations about the conduct of others is a sort of public good. The performance of the whole system suffers if that capacity is low. In this sense, therefore, there is a fairly direct route from a notion such as political/regulatory uncertainty to ‘the public interest’.

Working Note 2 - ‘Conventional politics’ – an overview of the apparatus of government and regulation

Overview

4.1 Political and regulatory risk relating to fairness and the environment have each been a factor in the energy and water sectors since privatisation. But risk and uncertainty are currently as high as at any point in 25 years, driven by many underlying factors, and, from some perspectives, ‘in-view’ for some time. This includes the perceived failure to deal with the root causes of the 2008 financial crisis and the European Referendum vote, commitment to binding climate targets without clarity on trajectories, and, a series of high-profile business failures, such as Carillion and some rail franchises. Increased risk and uncertainty manifest themselves, for example, in the increased interest in nationalisation and in the desire for greater local-level and community approaches -



alongside an increasing polarisation and fragmentation in decision- making.

- 4.2 On top of this there has been a re-emergence among UK political parties of a proactive social agenda: in part driven by the stagnation in real wages, the ‘gig’ economy, increasing inequality and a series of election outcomes reflecting a sense of disenfranchisement (Brexit, the 2016 US presidential election, growth in anti-immigration popularism across Europe).
- 4.3 Although these risks will ebb and flow, the growth in social media and the ‘post truth’ paradigm among other things suggests that there has been a ‘trend increase’ in risk; politicians feel the need to intervene/interfere earlier and more frequently to avoid issues and stories escalating and going viral. Public affairs departments of utilities feel the need to be actively ‘out there’ - with more immediate facts and rebuttals, which in turn creates its own dynamic.
- 4.4 Regulatory risk tends to vary more with the cycles of price reviews/other regulatory interventions. But it can also reflect perceived political risk: when political risk is high the regulator may also become potentially more risk averse. And, again, if there has been a trend-rise in political risk then one could envisage a similar tendency for regulators seeking to ‘head-off’ political interventions. And even where they do not, regulators will still factor into their own thinking and decision-making a real (or perceived) political desire for ‘regime change’ or a risk of policy interventions such as new duties. Nor are these actors – government and regulators alike - immune to the persistence or pressure of social-media. Finally, in some cases, ministers have very deliberately sought to manage political risk by explicitly out-sourcing such risk to regulatory bodies – examples outside the

utilities include flood defence decisions and parole board decisions.

- 4.5 It is important to stress with regard to political risk that the energy and water sectors are far from homogenous. Even within water there are companies (such as Welsh Water) which have a measure of insulation against some aspects of political risk by virtue of their business model. There may also be some protection for small water-only companies (there is, for example, willingness to pay evidence: customers value small companies more and are more-prepared to identify with and support them). Within energy, retail, distribution and wholesale companies face very different political challenges. And, the tendency to trust in local companies and organisations is reinforced, for example, by the growth in distributed energy generation, community heat and supply and the growing possibilities around small-scale storage.
- 4.6 This note identifies the main types of political and regulatory risk and uncertainty relating to fairness and the environment in the sectors, analyses the main players in terms of the apparatus of government and regulators, and sets out the main channels through which political and regulatory risk may impact on the sectors and/or may become magnified.

Main typology of risks/uncertainties

- 4.7 Political and regulatory risks and uncertainties for energy and water companies can be put into four categories:
- **Existential risks and uncertainties** across a sector or subsector. At present, these are demonstrated most notably for investors and managements in the threat of nationalisation for monopolies under economic regulation (water, energy system operators and potentially energy networks).



For parts of energy at least, the fourth industrial revolution could become an existential risk (e.g. blockchain/ digitisation for retail utilities and distributed storage for some forms of wholesale supply). As a result, the regulatory and legislative underpinning for/reaction to such technological change could become extremely important and even existential in its own right. If expectations about future conduct are unclear, these existential issues can clearly lead to uncertainty.

It is unlikely that action by any single energy or water company on its own can have much impact on existential risks or these types of uncertainty.

- **Sector wide risks/risks to large parts of a sector.** These arise at present mainly from the economic regulation cycle, from legislation/one off regulatory decisions (e.g. changes in licence conditions, large shifts in policy/spend towards renewables), and at present from what may be perceived as being a wider trend away from low-intervention laissez-faire models; as evidenced by the energy price cap, pressure from the DEFRA Secretary of State and Ofwat on water company financing models etc.

The energy and water ecosystems (ie the industry together with government and regulators) need to ensure that everyone has access to energy and water. The BEIS Consumer Green Paper emphasises “fairness for all”, which Ofgem’s response to the Green Paper echoes. These two requirements not only imply a need to protect customers with vulnerabilities but also other customers, whether engaged or not, at least to the extent of not unduly discriminating against them. The increased fragmentation of how energy and, possibly in the future water, is provided will make this more complex. If companies do not

address this issue themselves, then there is a risk to large parts of the sector. Government and regulators may intervene in a heavy-handed way that not only fails to address the issue properly, but may also be expensive to the industry, and ultimately consumers.

In some parts of energy there is also a potential risk from Brexit (e.g. some energy supply arrangements such as trade over interconnectors may be disrupted, which could in turn increase risks around security of supply. Note, though, that energy in Northern Ireland may be an exception – without a Brexit deal this could become existential.)

These risks can be either political or regulatory or both. For example, in some cases the regulator may seek to read the political runes and get ahead of the game to cover their back – and some regulators will seek to diffuse issues before they become political. Such ‘double guessing’ can, however, be a risk in its own right.

- **Contagion risks:** may exist within sectors, e.g. from one water company’s underperformance to another water company; or between sectors, e.g. Carillion has raised wider scepticism about private companies’ delivery and concern about poor rail services and a broken business model may lower trust in the existing model for other utility sectors. Such contagion can elevate ‘local’ risks (below) to sector wide risk. Recent experience suggests that when change comes, it can both be rapid and unexpectedly far-reaching.
- **Local/company specific risks.** These can arise from specific aspects of a price review settlement and/or regulatory/legislative decisions (e.g. government pulling out of Carbon Capture and Storage, CMA investigations, the impact on Drax –



including a 40% fall in share price - of unintended consequences from taxation changes). More frequently, however, they arise from 'local' issues: e.g. serious pollution incidents, poor response to a crisis (e.g. supply interruption).

Once a single large or a few smaller 'local' issues have impacted on a company their exposure to such issues can become magnified. Arguably, for example, Thames Water may currently be unusually sensitive to local issues given recent fines and criticism of its performance during the recent cold weather.

These risks are not as independent as one might think. For example:

- a) When there have been a series of 'local/company specific risks' which have not been well handled these can raise the energy and water sectors up the political attention spectrum. This in turn empowers those who want to see change in the industries and can create the climate in which even existential risks can emerge (see water at present).
- b) Equally, in a climate where a sector is under the political spotlight, local issues may achieve a prominence and require management to a scale which is out of proportion to their true content.
- c) Existential risks (and contagion from outside the sector), as well as a series of mishandled local risks, can increase the likelihood of regulator and/or government interventions within the current paradigm – thereby creating sector wide risks.

Key Players

4.8 Economic Regulators: Ofgem and Ofwat.

These bodies operate economic regulation

and input to competition enquiries (Ofgem also has some delivery responsibilities). For monopoly activities, price reviews shape capital/operational/totex programmes and set cost of capital/price increases.

4.9 The economic regulators have displayed a strong a priori belief in market-led approaches/competition, and this is further enshrined in statutory duties. They have an evolving mandate and are increasingly undertaking work to promote customer scrutiny along with an interest in outcomes / principle-based regulation and, in Scotland in water, ethical regulation.

4.10 The economic regulators deliver against formal government guidance/parliamentary legislation and this is not entirely static – e.g. the addition of resilience to Ofwat's remit in the Water Act, or the requirement for environmental programmes from both water and energy. Although they have statutory independence, Ofwat at least has been willing to take a steer from government about a move away from pure market-based approaches (e.g. in regard to offshore financing) and both Ofwat and Ofgem continually talk to government. In energy, the trend has shifted from asserting independence, to trying to work with government 'in common cause,' to having to step 'in line' with what government may be advocating. This was reinforced by the recent appointment of a chair, who had been the minority opinion in the CMA energy retail reports, supporting a more interventionist model.

4.11 **The CMA:** Route of appeal (in most cases) against decisions made by economic regulators (focussed or unfocussed). Decision maker on mergers and allegations of collusion. Recent CMA decisions, while maintaining the market-based approach, have been interpreted as suggesting a less purist approach (e.g. to comparative competition) than the economic regulators



have adopted: examples include the Bristol Water and Pennon/Bournemouth merger decisions in water (and perhaps focused CMA reviews on energy regulatory settlements). There have also been more duties imposed by government on the CMA.

4.12 Environmental regulators/statutory

consultees: Environment Agency/ Natural England/CCC (for energy)/Defra and BEIS for resilience/security of supply (note that these departments do have regulatory responsibility, which is largely separate from their political/policy role). On specific issues these players are more important than might at first appear. There would be regular interaction for example between the EA and Ofwat during a price review, around the setting of the ‘National Environment Programme’. In a drought or potential ‘lights out’ energy supply problem, the regulatory roles of Defra and BEIS can leach into major political intervention. Health and Safety regulators (HSE, DWI) remain important and safety is taken as a given by customers and the public. Risks associated with successful handling of low-probability high-impact events are considerable for government, regulators and companies alike.

4.13 Lead Government departments/

ministers: Defra, BEIS: these lead on primary and secondary legislation and some aspects of regulation – e.g. water and energy security. They also set the ‘tone’ for price reviews and potentially more widely through formal guidance to regulators, and through ongoing engagement. While past governments, notably Conservative ones, have maintained market-led approaches and the purity of economic regulation, the current administration appears to favour more interventionist approaches. Examples include:

- They appear happier in ‘picking winners’ (e.g. nuclear, fracking) and moving away from other potentially lower cost or

innovative technologies (e.g. onshore wind, CCS);

- They are willing to legislate where they perceive the market has not delivered social objectives (e.g. energy price cap); and
- They have been willing to take aim at water company governance and financing structures. By contrast, even though the water industry at least saw a massive increase in gearing and private equity ownership through the Blair/Brown era, there was little government action in this area apart from the introduction of a special administrator regime.
- Through the industrial strategy BEIS have set a post Brexit UK growth agenda. Utility investment and innovation are being encouraged – but distributional impacts will also need some consideration.

4.14 **HM Treasury:** Leads on tax and public spending changes – including issues such as carbon taxation/rebates and windfall taxation. The Treasury also plays a much broader role, as a strong advocate of minimalist regulation and utility price reductions, and (less well realised), in decision making for many major infrastructure deals – even when financed outside the public sector. Traditionally the Treasury has been a strong defender of the market-based approach and was a motive force behind the privatisation and PFI agendas. Of course, anything that involves even the potential for public spending (e.g. nuclear clean up, the Thames Tideway government guarantee) will command significant Treasury interest; furthermore, decisions can be distorted by the strong desire of the Treasury to keep things off the balance sheet.

4.15 **Number 10:** In normal times No. 10 will have little involvement with the energy and water sectors. However, they retain a



significant interest in: the outcome of price reviews; will intervene (and even when they don't the fear of their intervention will drive political risk through departmental positions) when specific issues hit the headlines (e.g. the 2007 Severn Trent water outage); will have strong views on some high-level issues (e.g. nuclear); and, on rare occasions, will drive wider policy (e.g. the prime minister's October 2017 conference speech references to the energy price cap).

4.16 **Local, regional and devolved bodies**

Outside the land-use planning system and local resilience, local government has latterly played a relatively weak role with respect to the utility companies. Today's funding pressures mean that local authorities increasingly focus on core activities. Yet, with social concerns rising (as referenced for example in the Industrial White Paper) and with the growth of the City regions / mayors, this picture is changing. Distributed energy generation, local heat, local energy companies etc may also provide more opportunities for local approaches. As retention of business rates becomes more powerful in local government funding, issues such as utility connectivity have in a number of areas become a direct concern for local authorities at a senior level. Finally, with both local authorities and social landlords setting up local energy companies, other local actors may start to become more engaged.

4.17 The resurgent role of devolved and sub-regional government is also creating new challenges for the energy and water sectors. Different approaches to social and environment policy are evolving across Scotland, Wales and England. This creates a more complex landscape – including for comparison purposes - be that for national government, for regulators or for the utility companies. Powerful mayors in England, and the creation of the northern partnership,

may also start to add new complexity for utilities operating in England.

4.18 **Employees** – utility approaches to employee and trade union inputs will need greater attention in terms of today's wider political and regulatory environment in which the energy and water sectors operate.

Commentary

4.19 It is important to recognise that in being averse to political risk, these players can increase the political risk for regulators. So, for example, Number 10 and lead department ministers will distance themselves/press for intervention when one company 'becomes the story'. Examples include the strong opposition from faith and voluntary groups to United Utilities' implementation of the 'rain tax'.

4.20 Regulators will also seek to distance themselves from or appear punitive towards companies which become the story (e.g. to Thames Water's reaction to the recent freeze). We have not seen much direct proactive work by regulators to reduce risk in the sector, although recent focus on resilience and on utility governance could perhaps be seen as a move in that direction.

4.21 Although formally there is separation between government, the operation of the Environment Agency/Natural England as regulators and statutory consultees, and the economic regulators this should not be seen as inviolable. There are frequent interactions between these players below the surface (for example in setting the environment programme and resilience standards in water price reviews - where Ofwat, Defra, and the EA will be meeting continually through the price review) and considerable pressure from ministers where utilities become the story. This is much less the case



with the CMA, and in areas where ministers have a quasi-judicial role – e.g. in regard to appeals against regulator decisions – although even here Government have moved towards new duties on the CMA.

4.22 A good example of both of the above can be seen in recent developments in water. A combination of Labour party moves towards backing nationalisation, and poor publicity from recent fines, perceived poor customer service and reaction to the recent freeze has led the Secretary of State to seek to be seen as tough on dividend/financing policy. Ofwat have been very keen to be perceived as supportive/taking the initiative.

More Arm's Length Bodies

4.23 More arm's length bodies that can help shape political and regulatory risk include:

- Main opposition party/Lib Dems/Greens (until/unless of course they form a government). However, high prominence policies from the main opposition party in particular can drive Government reaction – see above.
- Parliament: Defra, BEIS select committees, Environmental Audit Committee. These have particular influence when there is a prospect of primary legislation and/or when there is a strong committee chair.
- NAO/Public Accounts Committee.
- Individual MPs.

4.24 While having little direct power, these groups can create political risk through creating media and wider political pressure and conditioning the climate against which government and regulators form their views.

Potential Political Risk Triggers

4.25 The risks outlined above, and the behaviours of the identified key players are translated into risks for the companies both directly – e.g. through a regulatory judgement – but also indirectly through third

parties/media. Not all of this will be foreseeable. A few of these are listed below:

- Political set pieces: elections/manifestos, PMQs, party conferences, referenda etc;
- Publicity associated with key points in price reviews, and annual price uplift with inflation;
- Announcement of annual results/dividends;
- Merger/takeover announcements and decisions;
- Bankruptcy: e.g. of small to medium sized retail energy firm;
- Potential for Judicial Review (e.g. on price review settlement, compliance with environmental legislation), set piece prosecutions/fines (e.g. Thames Water) EU infraction etc;
- Political reaction to operational issues (e.g. United Utilities cryptosporidium incident, Thames response to big freeze);
- Weather/ resilience: e.g. drought, cold, calm cloudy day for electricity security of supply, floods etc;
- Labour/Lib Dem/select committee interest;
- Media/NGOs etc;
- Key publications: e.g. CCC adaption subcommittee, NAO;
- Pressure from the City/institutional investors;
- Legislation (where relevant);
- Individual major infrastructure announcements: e.g. Thames Tideway tunnel, Swansea bay, CCS;
- Rating agency decisions/major stock market movements;
- Academic work: e.g. JRF on fuel poverty, Greenwich university;
- Viral social media/'fake news;' and
- Periods of wider political weakness: e.g. with a minority administration struggling with Brexit, or with a PM weakened by external events (e.g. the Iraq inquiries).



Working Note 3 – ‘Conventional politics’ - an overview from capital markets

Overview

5.1 It has long been recognised by investors that the key risk in owning public infrastructure assets (i.e. to equity) is political/regulatory. In the UK, this was brought home to investors in the 1990s with several swings in regulation which led to wild gyrations in share prices. This showed investors that the regulatory system had yet to settle. Also, the windfall tax of 1997 demonstrated that political uncertainty could rear unexpectedly and that today’s shareholder could be held liable to perceived sins of the past.

5.2 This note identifies the different types of public infrastructure asset, the types of investors in these assets and the nature of political and regulatory risk for investors. It then looks at who owns public infrastructure assets today, how the owners are likely to receive regulatory risks and some of the implications that this may have for political and regulatory risks relating to fairness and the environment. It briefly touches on public sector versus private-ownership but this is not the main subject of this note. It ends with some comments on capital structures.

Types of public infrastructure asset

5.3 Before considering the different needs of various investors it is worth noting the wide range of asset type that fall into the public infrastructure asset space.

a) Regulated networks: these span electricity, gas, water, telecoms (BT openreach), and rail. As natural monopolies they are invariably subject to regulation. The

purpose of the regulation is to act as a proxy for competition and thereby ensure that companies carry out their regulated activities efficiently. Prices to users of the networks are controlled by the regulator and customers benefit overtime from the efficiency gains that the companies are encouraged to make. A key feature of the regulation is that these networks are viewed to have perpetual life-spans; the regulation is designed so that the networks renew themselves over time. More recently, the RIIO concept in energy and the outcomes focus in water has permitted the regulators to specify some favoured outcomes in terms of ‘public purpose’ (e.g social, environmental).

b) Regulated power generation: to drive investment into cleaner technologies governments, including the UK, have put in place mechanisms to subsidise renewables and other forms of low carbon generation. A couple of key features are important. First, important elements of the legal framework for these mechanisms derive from EU legislation. Second, the subsidy mechanisms are usually time-limited. Third, access to the subsidy is increasingly via competitive auction. Fourth, the fourth industrial revolution has the potential to destroy significant shareholder value: more so if there is no properly reasoned and resourced policy framework in the area.

c) Standalone regulated asset: we are increasingly seeing the right to build/own a regulated asset effectively put out to tender by regulators. We have seen this trend with off-shore transmission connections, for example, and it is now being expanded to include large new additions to existing networks such as the potential Hinkley Point C transmission connection project. Similarly, in gas, there is long-standing competition in the construction of assets and connections.



- d) Competitive Assets: competition is limited these days to a few areas such as thermal power generation. The key element here is that revenues are largely determined by the market rather than via government backed contract or by regulation.
- e) Competitive consumer: the end customer segment in electricity, gas, telecoms, and (partially – for non-residential business consumers) water is competitive, with customers able to choose from various suppliers. These businesses tend to be asset light and low margin. A key feature is that the barriers to entry have fallen in recent years and yet despite this the tendency for the government to regulate has increased. Blockchain could, however, potentially change some of the dynamics here.

Types of investor in public infrastructure assets

- 5.4 Given the wide variety of asset types, it is not surprising that there is also a wide range of differing investor models. High-level investors can be divided into some broad categories, for example: equity and debt; public and private markets.
- 5.5 However, there are clearly significant variations within these categories. Setting the right 'framework' for investors to operate in, so that their interests are aligned as closely as possible with consumers and wider stakeholders, is therefore important. This issue will be explored in more detail in our Fair for the Future project 'Sustainable Licence to Operate' workstream. The following comments are therefore made to provide some contextual background only.

Equity/debt

- 5.6 All companies are funded through a mixture of debt and equity. Equity usually confers ownership rights, bears the higher risk in the case of insolvency, and is time-unlimited (unless the shares are sold). Returns to

equity investors come from retained earnings which can either be paid out as dividends or kept to grow the business. As the business grows so should (normally) the value of the shares.

- 5.7 Debt on the other hand will usually be time-limited via a redemption date and does not normally confer ownership rights. However, in the case of liquidation, debt holders will have a superior call on the assets of the business. Returns to debt are provided via the interest coupon paid by the company.
- 5.8 It is worth noting is that debt financing is generally cheaper than equity financing. There are two main reasons for this. First, that equity carries more risk in the case of financial distress. Second, that returns to equity are paid out of post-tax retained earnings, whereas interest to debt is paid out of pre-tax profits. This provides a tax shield benefit for debt over equity.
- 5.9 Because the debt and equity investors derive their returns in different ways they view risk differently. For the debt investor the issue is overwhelmingly one of security of cash-flow. As the debt investor gains very little if any benefit from the growth of the business what they are interested in is the ability of the company to meet the interest payments and eventually payback the debt principle. Therefore, debt investors focus on the cash-flow generated by a business and how it is allocated. It should be noted that cash-flow is often very different from reported profits.
- 5.10 Equity investors, on the other hand, earn their return from both the dividend paid to them and also the capital growth of the business as reflected in the share price. Share price growth plus dividend payments is known as the total return to equity.
- 5.11 These differences between debt and equity are reflected in how businesses are



financed. For example, a fast-growing business that is looking to invest heavily will tend to be largely equity financed. This is because the company wants to focus its cash-flow on growth and the growth itself is likely to be relatively risky so needing the risk bearing equity to support it. On the other hand, a mature low growth business needs less of its cash-flow to support growth and therefore will tend to fund itself via debt - which is cheaper than equity.

5.12 There can also be differences between which part of the company is more highly leveraged – the holding company or the operational company (the latter tends to be the case in water). Some consider that Ofgem’s arrangements on tax clawback have meant that in energy, companies don’t have the same incentives to gear up as they have historically in water. Ofwat is currently undertaking significant work to ensure that any financial outperformance as a result of higher gearing (that may be seen as ‘unearned’ benefit) is shared with customers. The water regulator’s work on corporate governance is examined in more detailed in our strawman ‘Sustainable Licence to Operate.’

Public and private markets

5.13 Public markets refer to where a security is traded on a public exchange (eg London Stock Market). A listing comes with a wide variety of rules and obligations on the issuer, including specific forms of financial reporting. Investment banks will make markets in the listed security creating liquidity and their analysts will provide research on the security. Any investors can buy and sell the security via the exchange which tends to lead to a diversity of ownership.

5.14 Private markets are essentially the mirror image. The security is not listed and will usually be held by a single or small group

of investors. When investors wish to trade the security, they sell bilaterally to another investor not via an exchange. The rules of financial disclosure are different and (to an extent) less onerous than for listed companies.

5.15 The issue of public/private markets tends to apply to equity rather than debt. Unless debt is either bank debt (eg an overdraft) or a parent company loan, then it will almost certainly have been issued in the form of a corporate bond. Most corporate bonds are tradable via an exchange and therefore have a diversity of ownership. Large value bonds tend to be issued with a risk rating provided by one or more of the rating agencies.

5.16 Private ownership of equity in corporates on the other hand is common. The perceived advantages of this form of ownership are several. First, management are answerable to a single or small group of shareholders who can rigorously align management incentives to their interests. Second, it allows for more aggressive capital structures to be adopted, particularly the use of holding company structures. Third, considerable management time and cost are saved by not having to apply listing rules and being answerable to dozens of investors.

The nature of political and regulatory risk for investors

5.17 It is often stated that “markets hate risks and uncertainty”. This is nonsense: without risk there would be no need for markets. The equity market in particular thrives on risk. However, there is a very big distinction between risks that can be analysed and priced effectively and uncertainty that cannot.

5.18 The conventional wisdom is that equity faces markedly more risk in utilities than debt: indeed, this accounts for the greater



returns usually required. However, recently, and importantly, there are signs that debt is perhaps less immune to political risk than had been thought – and debt investors increasingly react. Moody’s among the rating agencies have driven down the ratings of regulated debt. Debt is also a consideration in price controls.

5.19 Much risk however still concentrates on ownership. For example, the regulated networks face great risks when they are going through their periodic price reviews. Since these reviews determine the level of profits that the company will earn for 5 or 8 years, they are of the upmost importance to investors. However, investors understand this process as price control reviews are carried out using a set of established principles. The outcome is unlikely to be arbitrary or wholly un-expected and there are appeal mechanisms just in case. So, whilst price control reviews represent a very big risk for investors, it is a risk that investors have previously been able to analyse and price effectively. Ofwat’s recent shift in terms of gearing (from being neutral/tacitly promoting increases in gearing to penalizing high gearing) materially changes treasury models and has been considered by some as being ‘not predictable’.

5.20 Some regulatory/political actions however come out of the blue or cannot be analysed and priced effectively. A good example of this would be the German government’s decision to cancel the agreement to extend the lives of their nuclear power stations. This was announced over-night and caused a massive shock to the value of those assets and therefore the value of the companies which owned them. Another example would be the commitment of the UK’s Labour Party to re-nationalise utility assets. The issue here is that Labour have so far failed to specify which assets maybe affected and critically how the price for buying back the assets will be set. It is

therefore impossible at this stage to assess and price the risk effectively.

5.21 Therefore risks (including political / regulatory) that are understandable and can be mitigated by appropriate management action will be seen as a normal part of doing business. Investors can analyse and price these risks effectively and hold management teams accountable for how they deal with them. Uncertainties that appear out of the blue or are seen as arbitrary, however, cannot be priced effectively and it is extremely difficult for management teams to mitigate them. For investors, a company faced with this latter type of uncertainty becomes a form of gambling not investment.

5.22 Political and regulatory risk has overwhelmingly fallen on equity rather than debt investors. Regulators and governments have tended to calibrate actions such as not to threaten companies’ ability to meet their debt obligations. Creating a credit default risks putting a company into liquidation and there are few examples across the whole of Europe of governments going that far. The equity value of a company on the other hand can be driven down to very low levels without sparking a liquidation. So regulatory/ political shocks tend to be absorbed by equity rather than debt.

5.23 Rating agency methodologies can also shape and reflect political and regulatory risk in the sectors. These tend to be a very mechanical process allowing for limited discretion and are primarily focused on cashflows.

Public infrastructure ownership today

5.24 At the top of this section of the note we identified the five main types of public infrastructure assets. Here we will look at who owns them and how the owners are likely to receive regulatory risk.



5.25 The first point to be made is that the state still owns much of the critical network infrastructure in the UK through Network Rail, and the road network. However, in gas, electricity, and water - with the exception of Welsh Water and Scottish Water - the assets that were privatised in the 1990s, remain in private ownership. By the mid 1990s 14 regional electricity companies, 12 large water companies, the electricity transmission networks, and gas transmission and distribution, were all part of separate and listed companies.

5.26 This ownership structure did not last very long, and three distinct phases in the evolution of ownership followed. The first phase took place from around 1997 to 2002, a period which saw overseas utility companies, mainly American, acquire UK network companies. The rationale at the time was that the UK had led the way in developing incentive-based regulation. American buyers in particular were keen to acquire this experience and also tap into the efficiency gains that new regulation had unleashed. However, most American buyers soon became disillusioned as they realised that lessons from the UK were of limited value back home and that they had over-paid in the first place.

5.27 The second phase, ran from the late 1990s to 2008, seeing in the creation of the conglomerate utility model. In this period, it became the perceived wisdom, especially in Continental Europe, that utility companies needed scale and diversity. Companies such as E.ON, RWE, ENEL, Iberdrola, and to a limited extent SSE in the UK, set out to expand vertically and internationally. The belief being that utilities needed to be involved in all aspects of the energy value chain and we therefore saw utilities that had previously been considered generation companies acquiring networks. This model came under considerable strain post the

financial crises and most of these structures have now been unpicked.

5.28 The third phase is by far the most important and began around 2000 and continues to this day. This phase is the transfer of assets from the public market to the private markets. Indeed, there are now only 3 listed water companies (out of a total of 9 English water and sewerage companies) and only those gas and electricity networks owned by SSE, Iberdrola, and National Grid remain part of a listed company. In every sale of a UK energy or water network company since 2004, private market bidders have acquired the asset.

Types of owners

5.29 There are three broad categories of ownership.

5.30 First, the key private market investors have been sovereign wealth funds and infrastructure funds. These are typically overseas investors who are looking for long term investments that give a higher risk adjusted return compared to government bonds. Their investment time horizon is typically over 5 years (often much longer) and they typically have a fairly passive investment stance in regard to the management of assets once the initial investment has been made. Typically, they will be looking for returns on equity in the 6-10% range. While such investment has been welcomed – indeed even sought – in the past, there may be scenarios now (notably post Brexit) where foreign ownership may attract a degree of political ‘heat’ that has not been seen before.

5.31 The second category, who also focus largely on the private market side, are the investment banks, hedge funds, and private equity funds. These funds often play a key role in the acquisition of an asset but are unlikely to remain long term holders of the



equity. Typically, they will look to sell down their stakes - usually to the longer-term investors mentioned above - within 3 to 5 years. These players may earn their returns in a variety of ways including deal fees, debt structuring, as well as the return on their equity. These investors tend to be hands-on with management with a laser focus on cash-flow generation and allocation and will be looking for returns well in excess of 15%. When exiting, these investors will typically sell on to type of infrastructure fund described above.

- 5.32 The third category is pension funds. UK pension fund investors, however, have regulatory restrictions on owning non-listed assets and are therefore fairly small players in owning privately held UK infrastructure. However, they are the majority owners for those companies still listed on the stock exchange. One feature of UK pension funds it is worth noting, is that for a variety of reasons they have become much more focused on income rather than growth in recent years. Therefore, the dividend paying capacity of the listed utilities has become the overwhelming investment theme. As a consequence of this, we have seen some of the listed utilities such as SSE pulling out of business such as thermal generation that provide more variable income streams to focus on regulated generation and networks. Overseas pension funds (eg OMERS) make up a significant share of equity ownership in private owned water companies, with some acquisitions coming through mergers.

Private side structure

- 5.33 As mentioned above, in every transaction for the last 15 years or so UK regulated networks have been bought by private side investors. In effect this simply means that private buyers value these assets more highly than do investors from the public markets. The reasons for this are complex and may vary deal by deal. But one

of the key elements is undoubtedly the ownership structure that the private side can implement. Typically, this will involve establishing an operating company and holding company structure. The key thing here is that the Holding Company (Holdco) can be leveraged with various forms of structured debt. The leverage held in the operating company (Opco) is, to a degree, policed by the regulator, but Holdco debt is not. The combined effect of this can be debt to RAB levels of c.90% across the structure. In contrast the listed companies cannot really do this so tend to have debt/RAB ratios of c.65%. This extra leverage allows the private side to increase their return on equity.

- 5.34 Another feature of the private side is tax structures. As most of these owners are foreign they can structure the flow of cash back home in the most tax efficient way. Also, some countries offer tax incentives for overseas investment. These tax structures can add several 100bps to returns and are again not typically available to listed companies.

Some implications of private and listed ownership

- 5.35 The simple implication is that the vast bulk of UK electricity, gas and water networks are now owned by private side investors, who are largely based overseas. The ownership structures they adopt are often complex and are inevitably highly leveraged. These also mean the assets are overwhelmingly debt financed. In turn this means that management teams will be highly focused on cash-flow generation and allocation. These structures typically have little in the way of equity buffers to absorb shocks. This can be a particular problem when the investment banks, private equity funds are the dominant shareholders - perhaps less so when infrastructure funds take-over.



5.36 Classically, the private side have focused on network ownership but in recent years they have also moved into regulated generation assets and now provide the biggest single shareholder base for UK renewables. Typically, large utility companies act as the developer of the asset which is then sold on in whole or part to private investors.

5.37 The private side have largely shunned investing in thermal generation with its exposure to volatile market prices. Private investors, albeit of a very different type, have been behind the proliferation of energy supply companies. However, given the start-up nature of these business the private investors tend to be early stage Venture Capital type investors.

5.38 The listed utilities carry more equity and are also typically more diverse in their operations so are able to absorb individual shocks better. However, listed utilities in Europe have been one of the worst performing asset classes in recent years and the companies have been significant net sellers of assets, whereas the private side have been net buyers.

Public sector versus private ownership

5.39 This is not the place to explore issues around public sector ownership in detail, and an analysis of this clearly needs to go wider than capital markets. But a few points can be made on the general issue:

- a. Network utility assets can be run successfully under either state ownership or private ownership. Quality of management and clear and appropriate incentives are as important, if not more so, than ownership.
- b. Under either ownership structure strong independent regulation is required to ensure that productivity and customer service are prioritised and the right balance is struck between investment,

customer service and bills. Independent regulation may be more difficult to structure and maintain under state ownership.

- c. Private sector capital can fund large scale investment in the networks. The debt taken on is funded by consumers and does not form part of the public sector debt.
- d. Cost of financing could be reduced under state ownership although this is likely to be marginal at best and under certain circumstances the reverse might be the case.
- e. Under state ownership funding would be in competition with other calls on the state and the debt would form part of public sector debt.
- f. Political control, and perhaps accountability, would naturally increase under state ownership.
- g. For assets that are effectively expected to exist in perpetuity it might well be that it makes sense for them to periodically move between the public and private sectors. So, for example, in periods where high levels of investment are required the private sector maybe the best owner. When less investment is required, and the emphasis is more on lowering bills, then the state might be the appropriate owner. However, this would clearly lead to transaction costs and may be a significant distraction for management teams.
- h. If assets are to be transferred to the state or vice versa, it is essential that the price paid for the assets is reasonable and fair.

Capital Structures: Debt and Equity Funding

5.40 The capital structure of the privatised network companies has been the subject of much evolution and rising political and regulatory scrutiny. The methodology adopted by the regulators has been a key driver in this. UK regulators decided from the beginning to use a nominal rather than actual capital structure when setting price controls. The regulators set a capital



structure for an “efficient company” and set the price control for the whole sector based on this. Companies were at liberty to diverge from the efficient company model as they saw fit.

5.41 The amount of debt in the regulators model grew over time from c.30% debt to Regulatory Asset Value (RAV) to the 60-65% used today. Overtime it became clear that the companies could sustain higher levels of debt and specifically the amount of debt compatible with an investment grade credit rating increased. The regulators were happy with this because as noted earlier debt is generally cheaper than equity and therefore a higher debt level lowered the Weighted Average Cost of Capital (WACC) and therefore the cost of financing for customers.

5.42 However, a problem arose with this approach when private market owners sought to take debt levels well beyond those indicated by the efficient model. Many water companies, and especially the privately held ones, have used leverage levels even at the Opco level of 80% and more. They have then leveraged further at the Holdco level. This has led to one concern and one problem. The concern is that these companies are not carrying enough equity to absorb shocks. The problem is one of incentives.

5.43 The issue on incentives is that the additional returns that have been derived from leveraging up the financial structure have often dwarfed those available for outperforming the operational targets set by regulators. It has been the ability to gain from financial engineering that has largely driven up the prices paid for assets. Regulators have increasingly felt that such incentives were distorting management actions both in the negotiations of the price control and during the actual period of the control.

5.44 Regulators could have reacted to this issue by setting allowed returns based upon actual capital structures rather than use the efficient company model. However, this would have led to them setting individual WACC for each company. Instead, both Ofwat and Ofgem partially tackled the problem by using an actual cost of debt (via a market index) so companies would have less incentive to game the cost of debt negotiations.

5.45 Now, as part of PR19, however, Ofwat are proposing a more significant change. In a recent directive to companies they have stated that the financial benefits accrued from capital structures that differ from the efficient company model must be shared with customers. Ofwat will allow companies to propose their own sharing mechanism but have made it clear that at least 50% of the benefit should go to consumers.¹ This is a potentially radical departure from current practice and might significantly alter the incentive companies currently have to leverage up.

5.46 However, it is worth noting that this sharing mechanism will only apply to the Opco; companies may therefore just move debt up their structure into the Holdco. Another risk is that companies may become unnecessarily conservative in their capital structures, thereby forgoing possible efficiencies.

Should regulators care about capital structure?

5.47 In a way this is a moot question as regulators clearly do care about capital structures. At the same time, although they have felt embarrassed by the returns some investors have achieved via leverage, it is not clear that consumers have suffered. In its

¹ <https://www.ofwat.gov.uk/wp-content/uploads/2018/07/Benefit-sharing-decision-statement-FINAL-for-publishing.pdf>



paper 'Putting the sector back in balance' published on 3 July Ofwat makes the case for intervention on fairness grounds but interestingly it does not identify specific incidents where consumers have seen a dis-benefit from company capital structures.

5.48 Essentially, their argument is that higher debt levels (ie above the efficient company model level) raises both risk for consumers and returns for investors and that this is unfair. However, if Ofwat was seriously worried about the risk faced by consumers then surely they would have simply banned leverage above a certain level. In the US, most State regulators do exactly that and typically police capital structures at the Opco level - and to an extent the Holco level - deeming that high leverage is unacceptable.

5.49 So it would appear that Ofwat are not acting to protect the consumer from unacceptable levels of risk, or from some clear detriment, but rather to address an issue of fairness. Effectively they are saying that the returns to equity derived from high levels of leverage are "un-earned" and therefore should not accrue, at least in whole, to investors.



Section 3 - Developing a framework to map political and regulatory uncertainty and risk in the UK energy and water sectors

Overview

6.1 In this section of our discussion paper we examine why a new approach to uncertainty and risk may be needed in terms of fairness and the environment in the energy and water sectors and suggest a possible way forward that would be more comprehensive, coherent and flexible.

Why do we need a new approach to political and regulatory uncertainty and risk?

6.2 To date, much of the debate about political and regulatory uncertainty and risk in respect to fairness and the environment in energy and water has been narrowly framed as a technocratic discussion around capex and cost of capital. The apparatus of government, regulation and capital markets have dealt with risk and uncertainty in a relatively 'closed' environment. Although consumer engagement mechanisms have started to bring in new voices, this interaction has largely been part of a 'managed' process.

6.3 The environment in which the energy and water sectors operate is changing significantly. Technology change/ digitisation and societal change and new consumer/citizen expectations are challenging existing ways of doing things. Technical framings around capex and cost of capital are now being challenged by the politics of the 'disrupted' world. A wider range of people can now share their views

and opinions in a far more open way and can demand personalized services that meet their own individual needs. Consumer lived experience and changed expectations on quality of service, civil society and the public mood (on, for example, the environment, resources and health concerns) - and of course the media – old and new – are now actively shaping uncertainty and risk in the sectors.

6.4 The apparatus of government and regulation are struggling to catch up in a world where old boundaries between consumers, citizens, companies, sectors, capital and institutions are breaking down. In addition, the 'rethinking capitalism' debate and the pace of change needed to respond to climate change are leading to deep questions about future roles and responsibilities if outcomes for people and the environment are to be seen as 'fair.'

6.5 In addressing political and regulatory uncertainty and risk in respect to fairness and the environment, there are multiple and instantaneous feedback loops in both energy and water. Boundaries are dynamic and blurring, and different people want and expect different things. New approaches to addressing risk are needed.

A possible framework for mapping uncertainty and risk

6.6 Amidst this complexity, to ensure that, consumers, people and the environment are fully factored in, we are developing an '**Uncertainty and Risk Mapping Framework for Fairness and the Environment.**' We hope that this will lead to the following outcomes:

- A comprehensive, coherent & flexible framework for addressing key political & regulatory uncertainties and risks relating to fairness & the environment for use by energy / water companies, government, regulators, markets & civil society.



- More clarity on responsibilities and accountabilities for dealing with uncertainties and risks in these areas for different actors to address any gaps/overlaps.
- Common definitions and language for dealing with these uncertainties and risks to enable a more open and inclusive debate.
- Indication of the scale and cost of key material political and regulatory risks relating to fairness and the environment - once the framework has been agreed – using examples from UK energy and water sectors.

6.7 Diagram 1 overleaf provides a high-level illustration of what this uncertainty/risk mapping framework could look like. However, we recognise this is still a 'static' interpretation of uncertainty/risk in the sectors.

6.8 For illustration ONLY, Diagram 2 therefore seeks to portray some of the shifting and increasing complexity faced by energy and water companies – and what a more 'dynamic' inter-play of the same uncertainties/risks may look like in the 'disrupted' world - where individuals, consumers, citizens and communities sit at the heart of decision making. This is an attempt not just to capture the complexity of multiple and shifting feedback loops but also to portray how energy and water services need to revolve more clearly around consumers, people and the environment (short and long-term) if these are to be seen as legitimate and if the demand side is to be realised.

Diagram 1: High level 'static' framework for mapping political and regulatory uncertainty/risk regarding fairness and the environment in energy & water

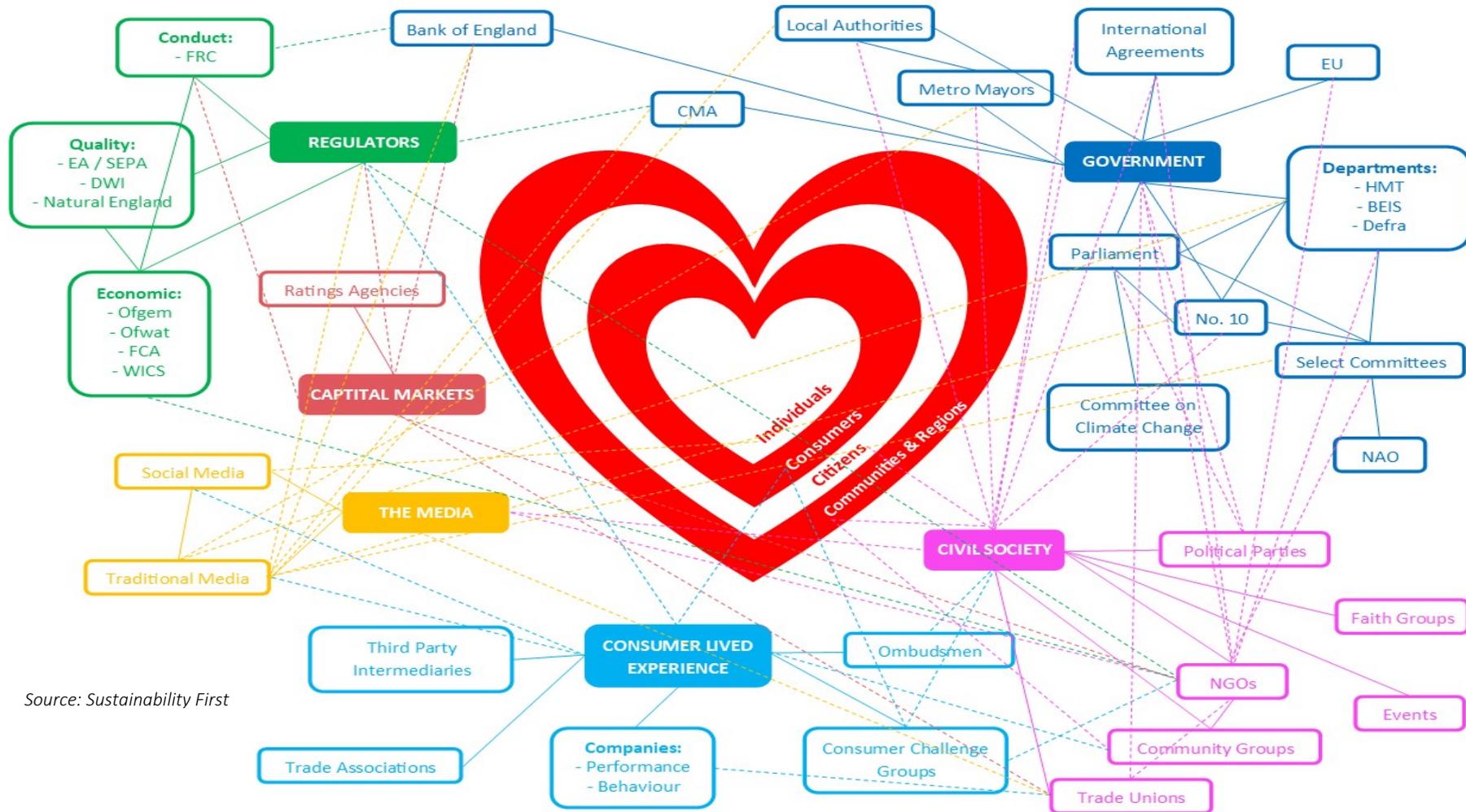
Energy & water companies need a comprehensive & coherent view of uncertainty/ risk across the following dynamic & interconnected 'strands'						
	Conventional politics (Limited engagement, rigid, technically focused / fact based)			Politics of the 'disrupted' world (Open, shifting, influenced by tone / opinion)		
'Strand' of uncertainty / risk	Apparatus of government	Regulation (eco, env, quality & safety)	Capital markets	Consumer lived experience	Civil society & public mood	Media – old and new
How is political and regulatory uncertainty / risk shaped?	<ul style="list-style-type: none"> Elections Referenda Legislation Strat. Direction Statements CMA HMT No. 10 Parl. Scrutiny NAO 	<ul style="list-style-type: none"> Statutory duties Price reviews Licence conditions Yardstick comp. Market-led approaches Outcomes / principles Enforcement 	<ul style="list-style-type: none"> Volatility Alternative opportunities Ownership structures Gearing Mkt. sentiment Responsible / ethical investment 	<ul style="list-style-type: none"> Company performance Co. behaviour (inclu. response to crisis) Prices Choice / lack of Community engagement TPIs / endorse. 	<ul style="list-style-type: none"> Events in sector (eg weather) External events (eg Carillion) Ideology / beliefs Moral / ethical boundaries NGOs Inequalities Vulnerability 	<ul style="list-style-type: none"> Headlines Trending / going viral 'Blue planet' effect – plastics & micro-plastics 1.5⁰ world Identity / personality
How is political and regulatory uncertainty / risk handled / mediated?	<ul style="list-style-type: none"> HMT Green Book Impact Assessments Interventions (eg price caps) Innovation funds 	<ul style="list-style-type: none"> Compliance Totex & cost of capital Customer / NGO scrutiny Reputational regulation Innov. initiatives 	<ul style="list-style-type: none"> Ratings agencies Returns Risk premiums Cost of capital Reporting season 	<ul style="list-style-type: none"> Reputation Good-will Brand allegiance Complaints 	<ul style="list-style-type: none"> Trust Politics of fairness Holding to account Interest in ownership Champions 	<ul style="list-style-type: none"> Naming and shaming Likes / followers Outrage Influencers

Source: Sustainability First



Diagram 2: High level 'dynamic' map of political and regulatory uncertainty/risk regarding fairness and the environment in energy and water (illustrative only)

Company needs to have overview of dynamic landscape of risk in world of multiple feedback loops



Source: Sustainability First



Next steps for mapping uncertainty and risk for the Fair for the Future project

6.6 As noted, Diagram 1 offers an initial framework through which the Fair for the Future project is exploring uncertainty for the water and energy sectors in order to develop a more holistic approach to mapping risk.

6.7 Section 2 of this paper has considered as our start-point the ‘conventional politics’ of risk (as per the left-hand columns of Diagram 1): government; regulation; and the capital markets.

6.8 As a next step, our risk-mapping work-stream will now explore the uncertainties and risks associated with the politics of the ‘disrupted world’: consumer lived experience; civil society & public sentiment; media – old and new (as per the right-hand columns of Diagram 1).

6.9 We anticipate that this exercise will:

- Further develop the initial ‘typology’ of risks (pages 12-14 of this paper) – across common themes - and develop a common language – and thereby help to map and link different strands of risk.
- Explore the changed public mood around ‘fairness’ – currently evolving from a primary focus on ‘the vulnerable’ towards ‘fairness for all’. This includes those who may be ‘disengaged’ / ‘loyal’, as recently signalled by the government in their BEIS Consumer Green Paper.

6.10 This work will be pulled together in our second paper on risk, to be published in early 2019. Thereafter, on an incremental basis, the risk-mapping workstream will consider what further work will helpfully feed into the Fair for the Future workstream to frame a ‘Sustainable Licence to Operate’.

6.11 Our further work on risk may therefore potentially include:

- Some basic scenario-testing – designed to explore the dynamic and inter-connected nature of some of the uncertainties and risks faced by the water and energy sectors (as illustrated in Diagram 2).
- Consider whether work on information asymmetries on uncertainty and risk would be helpful.
- An exploration of how in practice companies might take forward these more holistic/dynamic views of political and societal uncertainty and risk – and better integrate these into their business plans. This will include high-level thinking on how far such risks might be open to some form of eventual quantification or ‘weighting’ – so that actions to shape better outcomes on fairness and the environment can be better prioritised/targeted.

6.12 Through this incremental risk-mapping process for the Fair for the Future project we aim to re-frame today’s narrow conventional treatment of uncertainty and risk for the water and energy sectors. And, armed with more holistic understanding, we hope to see companies become more confident in developing their own future-facing agendas for both fairness and the environment.

About Sustainability First

Sustainability First is a think tank and charity that promotes practical, sustainable solutions to improve environmental, economic and social wellbeing. We are a trusted convenor on energy and water issues and have a strong track record of bringing stakeholders together in multi-party projects in the public interest. Find out more about our work here <http://www.sustainabilityfirst.org.uk>

The Fair for the Future project is sponsored by Anglian Water, Cadent, National Grid, Northern Powergrid, npower, Portsmouth Water, South East Water, Thames Water, UK Power Networks, Western Power Distribution and Ofgem. Ofwat are in the core project group.