



Water 2020 – water resource planning and third party options

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Executive Summary

Third party supplies represent a very small proportion of the water resources schemes put forward by water companies for the next 25 years. South East Water has asked Frontier, with technical input from Atkins, to assess the scope to adapt the water resource planning process to facilitate greater involvement of third party options.

The benefits from greater involvement of third parties can be a lower overall cost to customers of meeting demand and enabling companies to address the challenges of demand growth, the need for improved resilience and reductions from existing supplies due to environmental factors including the impact of climate change.

Consideration of third party options was a new initiative introduced through WRMP14. Its emphasis was primarily to identify alternative new sources to meet demand in areas with current or anticipated future water deficits, challenging conventional approaches to new build by exploring the scope for supplies from either existing abstraction licence holders or licensed undertakers, or for alternative, innovative technological solutions.

This report argues that the benefits from third party supply extends to the potential replacement of existing schemes with more economic alternatives even in those areas where there are no difficulties to meet demand. While the existing WRMP guidance suggests this should be done in following best practice (to investigate whether third party options might reduce a company's overall financial cost and/or environmental, social or carbon impacts of its operations), the approach to water resources planning typically focusses on *additional* schemes over and above the existing assets to meet the effects of changes in supplies and/or growth in demand.

Recent developments in the water industry have tried to address barriers to the inclusion of third party schemes in water resource management plans (WRMPs). These include the Water Act 2014, updated WRMP guidelines, and Ofwat's guidance on bulk supply and updated price control methodology in PR14.

Nevertheless, this report identifies some remaining barriers for third party supplies. These include:

- **Regulatory incentives and biases.** First, we find that the current approach still focusses on delivery of specific schemes; while investment in catchment measures has increased, there is still some concern over the confidence in delivery of improvements (although this may change as more evidence comes forward). Second, there is a potential bias in favour of schemes with more certainty and against those with less certainty but high potential for cost savings or benefits (e.g. demand management schemes). Third, current

incentives (such as the water trading incentive) may still not be sufficient to eliminate a bias in favour of ‘build’ over ‘buy’ decisions. And fourth, there may be a remaining perception of capex biases in spite of the totex approach taken by Ofwat in PR14.

- **WRMP process.** The current WRMP process places a large emphasis on reliability and risk of water resource schemes, in addition to their cost. The statutory duty to supply for water companies may bias them towards higher cost / lower risk options at the expense of lower cost / higher risk schemes. The combination of risk, lack of control and an appropriate contractual framework leads to an implicit bias against third party schemes (where cost confidence is not at issue). Perhaps more importantly, the focus of the WRMP process on addressing future supply-demand balance challenges means that the opportunity to replace existing supplies with more economic / efficient alternatives is missed.
- **Market and information failures.** There is insufficient information for water companies on costs, risks and reliability of third party schemes. In addition, third parties may lack information about prices, potential buyers and contractual conditions under which they would supply, leading to insufficient entry. In particular the risk is that information failures about the scale and nature of demand for their services are deterring third parties from investing in innovative solutions, with the result that only a limited set of existing or ‘off the shelf solutions’ would emerge.
- **Cultural biases.** Water companies may have developed structures and ways of working in the context of the incentives from the regulatory framework. Even though these incentives may have changed recently, the ‘cultural bias’ of these existing structures can survive for a time.

We recognise that the full impact of some of the recent reforms may not have been felt yet. This may be because their implementation is still at an early stage and persistence of potential cultural biases.

The report sets out some practical steps for addressing the remaining main barriers identified above. These include:

- **Review of regulatory methodology.** It would be important to evaluate whether the regulatory changes introduced in PR14 have alleviated or eliminated ‘build versus buy’ and capex biases.
- **WRMP methodology and guidelines.** The existing process could be improved by incorporating guidance to consider the potential benefit of replacement of existing schemes in WRMPs, best practice for contractual arrangements (Ofwat) and information requirements from third parties and

on the information that water companies should publish to encourage third party engagement in the planning process.

- **Create information exchange.** A possible solution would be to consider creation of a central registry or information exchange where entrants can access information about demand and other requirements by water companies.

These steps intend to address barriers and should be seen as a complement rather than a substitute to other reform ideas. Given the changes that have already been made to the regulatory methodology and the WRMP guidelines, we consider that they represent an incremental development on the existing structures and are therefore low risk and low cost.

The report does not attempt to estimate the scale of benefit from addressing the barriers. By highlighting the scale of spending on water resources (over £1.5 billion per year) and referring to evidence from previous studies, we argue that the potential benefit is material. Given that the recommended steps above do not involve material costs to implement, the potential for material benefit is sufficient to merit further consideration of these recommendations.

1 Introduction

This paper considers the scope to facilitate greater involvement of third party options in the provision of water resources in order to reduce costs, ensure more efficient allocation of available resource and improve innovation within the sector. This could be achieved through reform of the water resource planning process, the methodology for economic regulation, or other steps. The aim of this paper is to contribute to Ofwat's evidence base as part of the Water 2020 programme on upstream reform. In undertaking this work Frontier has benefitted from technical input from Atkins.

The definitions of third party options include options from other water undertakers as well as options from organisations that are not existing water companies. The analysis and recommendations in this paper covers all types of third party supply though we recognise that the issue of information failures may be particularly relevant for organisations that are not existing water companies.

Third party schemes have the potential to bring multiple benefits to the water sector. These include identifying new water resources, innovating to utilise existing resources in a more cost effective way and to introduce novel solutions to water demand management.

This report identifies the current barriers to the consideration and adoption of third party schemes and discusses how they may be addressed.

Finally, the report considers the benefits of removing barriers to third party supply. While there is material uncertainty around quantifying the benefits the evidence suggests that the scale of the benefits may be significant.

The paper is divided into the following sections:

- Section 2 provides some background on Water 2020 and upstream reform;
- Section 3 reviews how water companies interact with third parties under the current WRMP process;
- Section 4 identifies the existing barriers to third party schemes and outlines steps to address these barriers; and
- Section 5 considers the evidence on the potential benefits of third party schemes.

2 Background to upstream reform

This section outlines the background to the Water 2020 programme and the assessment of the case of upstream reform. The section covers:

- the on-going development of upstream reforms;
- previous assessments of the state and potential benefits of water trading (from existing water companies as well as third parties); and
- recent regulatory developments aimed at encouraging water trading.

2.1 Water 2020 and upstream reform

Ofwat's Water 2020 programme includes a specific workstream focussed on options for upstream reform in wholesale water and wastewater. This will consider the scope to refine the form of regulation or introduce market mechanisms to promote efficiency and innovation in water resources (& treatment) and wastewater disposal.

The objective of introducing market mechanisms is to improve efficiency and outcomes by allowing entry of new suppliers to parts of the value chain that are potentially competitive. The new suppliers may include existing water companies in other geographical areas and third parties (including existing businesses and new entrants). The potential benefits of a competitive market include efficiency and innovation that would result in turn in cost savings and enhanced resilience.

There are different options for reform and Ofwat will be consulting on these options during the course of 2015. Ofwat intends to publish an initial paper in July and a full consultation paper in November. Ofwat has encouraged companies to make submissions on specific topics. This paper contributes to this process

2.2 Previous analysis of reform of water resources

A number of studies on the scope to encourage water trading were undertaken between 2010 and 2012.

2.2.1 Ofwat study on potential benefits of upstream markets (2010)

In 2010, Ofwat conducted a study that estimated the potential benefits of upstream reform.¹ More specifically, this report focussed on the benefits of interconnection between water resource zones (static efficiency) and delivery of new resources over time (dynamic efficiency).

Static or allocative efficiency

Ofwat undertook an assessment of the potential benefits of greater interconnection of water resource zones (WRZs). Ofwat estimated the benefit of interconnecting WRZs based on the differentials in cost between new resource options in the zones. Based on the 2008 draft Water Resource Management Plans (WRMPs), it estimated the benefits of exporting water from low cost WRZs to zones with higher costs (measured by the average incremental social cost – AISC).

Ofwat estimated the net present value (NPV) of interconnection schemes between WRZs.² It identified thirty one schemes that would deliver individually an NPV of at least £1 million. The total NPV benefit of all the interconnection schemes combined was between £561 million. When extrapolated across the whole of England and Wales Ofwat estimated the benefits at £959 million.

Dynamic efficiency

Ofwat identified that there may be further gains from upstream reform as a consequence of efficiency gains within firms, competition between firm and innovation. Ofwat based their estimates on evidence of the efficiency gains of innovation in other sectors and on the estimates provided in the Cave Review. They assumed that upstream reform would provide an initial increase in total factor productivity of 2 percentage points (though this incremental benefit would be eroded over time). The NPV over a 30 year period would amount to £3.6 billion.

2.2.2 Severn Trent – changing course through water trading (2011)

Severn Trent published a report in 2011 that considered the case for increased water trading to deliver benefits in terms of efficiency, water security and environmental protection.

¹ Ofwat (2010) “A study on potential benefits of upstream markets in the water sector in England and Wales”.

² Out of the 31 schemes, 14 were within company and 17 were between companies.

Background to upstream reform

The report provided six recommendations for enabling water trading:³

- Harmonisation of costs and incentives for buyers and sellers of water, eliminating penalties for any of the parties. For example, to address the regulatory constraint that the water company selling the water would only retain the additional revenues for a period of five years before the benefit was passed to customers.
- Improve availability and quality of information to reduce information disparity between parties.
- Review WRMP processes and include a mandate for water companies to consider water trading.
- Create a new upstream licence for the entry of new abstractors.
- Develop a pricing mechanism that enables efficient water trading.
- Develop common codes, contracts and systems to facilitate the assessment of the costs, benefits and risks of water trading opportunities.

The focus on the analysis undertaken by Severn Trent was on trading between existing water companies although many of the recommendations would be equally applicable to trading with third parties.

2.3 Recent regulatory developments

In recent years, there has been progress made in some of the areas identified by Ofwat and reports such as the one from Severn Trent. In particular, there have been four major developments that relate to water trading:

- **Updated WRMP guidelines by Defra and the EA.** The updated water resource planning guidelines for WRMP14 required water companies to consult with third parties to identify potentially alternative new schemes. Section 3 reviews the current WRMP process in more detail.
- **Ofwat guidance on bulk supply.** In 2013, Ofwat introduced a framework for negotiating bulk supply of water, including guidance on practice and a ‘checklist’ of areas to be covered by these agreements. This relates specifically to water trading between existing water companies.

³ Severn Trent Water (2011) “Changing course through water trading: How water trading can make a contribution to solving future water scarcity to the benefit of customers and the environment”.

- **Water Act 2014.** This Act introduced amendments to the Water Act 1989 that would facilitate water trading. In particular, it sets terms and conditions to be incorporated in water trading agreements, as well as requiring Ofwat to produce further guidance.
- **Ofwat revised price control rules.** Ofwat introduced several changes to the regulatory framework in the 2014 price control (PR14). Two of them were of particular importance for water trading.
 - First, the introduction of totex regulation attempted to correct the capex versus opex bias perceived in the industry.
 - Second, Ofwat introduced water trading incentives, allowing water exporters and importers to retain a fraction proportion of the benefits and costs of the agreements, respectively.

In the next section we describe the current WRMP process and consider how third party options can result in more efficient outcomes. Then in Section 4 we consider the barriers to the wider adoption of third party scheme, taking account of the regulatory reforms that have already be applied in recent years.

3 Review of current process for third party options

This section reviews the current process for engagement with third party options. First, it defines third party options and outlines how they can result in more efficient outcomes. Second it reviews the current process for identifying and evaluating third party options through the WRMP process.

3.1 Third party options

The previous work by Ofwat on the (static) benefits of upstream reform focussed on interconnection between companies. However, we would note this does not represent the only plausible option for reform. In fact, the greater involvement of third party suppliers may be able to deliver significant benefits, for example from greater innovation in resource or demand management technologies.

The aim of this paper is not to argue that third party options should be preferred to interconnection options between water companies. Both types of water trading may have an important role to play in delivering future benefits. At the same time we note that third party supply may have some advantages over interconnection:

- First, it may be a simpler and more cost effective way to obtain water resources. It does not necessarily require investment in interconnection assets or the operating costs associated with transferring water over distance.
- Second, it may result in a larger pool of potential entrants that, in the medium term, may be more effective at delivering the competition and innovation benefits from upstream competition.

3.1.1 Definition of third parties

Third parties may be classified in two groups: suppliers of water resources / supply solutions; and, providers of demand management solutions.

Suppliers of water resources / supply solutions may include:

- Existing licensed abstractors in area, excluding licensed undertakers. These may be industrial or agricultural users that already abstract water to support their main activities and / or hold licences that they only partly or no longer use.
- Existing licensed abstractors in neighbouring areas, including other licensed water undertakers.

- Potential new abstractors. These may be parties that could obtain an abstraction licence and who are prepared to invest in alternative supply schemes. In areas of existing water stress, where new licences are not available in the peak summer period, this could involve a third party with access to, or plans to develop a storage resource (e.g. land suitable for a reservoir) in order to provide a year round source of supply.
- Suppliers of water recycling services. For example, companies that can offer water re-use technologies and facilities.

Suppliers of demand management solutions may include:

- Developers of new technologies for reducing water demand. For example, the development of water efficient devices.
- Companies that install water efficient technologies or retro-fit properties in order to reduce consumption or water losses.
- Companies that offer other demand management activities such as customer education or water audits.
- Companies that offer innovation in leakage, pressure and network management.

3.1.2 Advantages of third party water options

Utilising a third party option may allow water companies to meet demand more efficiently in areas where there is scarcity of water. In addition, third party options may also have cost advantages in areas where there is no projected deficit. That is, third parties may provide resource schemes at a lower cost than those currently operated by the water company. In this case, the latter may be replaced and improve overall cost efficiency.

Figure 1 provides an example of the first case. The top left panel represents a water company with three existing resource schemes (I1, I2 and I3) that are unable to meet demand. The water company has a potential new resource (I4), but this has a relatively high unit cost (as measured by AISC).⁴

In this example, third parties are able to provide two additional schemes (TP1 and TP2) at a higher cost (top right) than the existing resource schemes but below the cost of the new incumbent scheme (I4). The bottom panel shows how

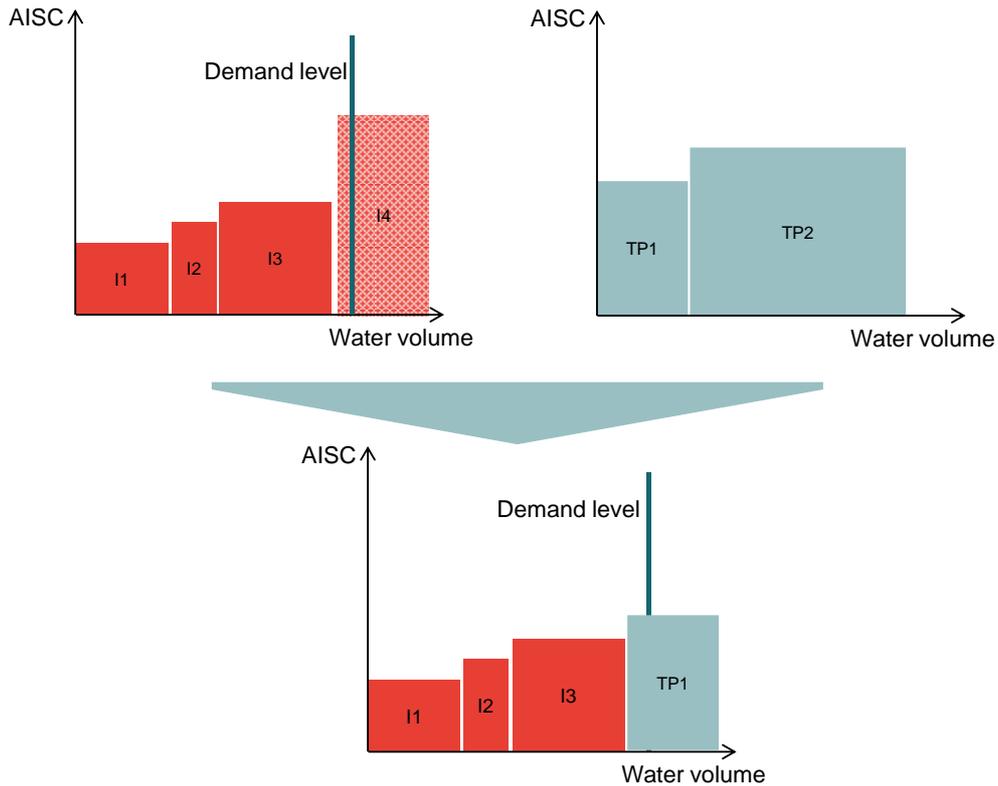
⁴ Cost is measured according to the average incremental social cost (AISC), which includes both operating and capital costs for the provider plus the environmental and social impact.

Review of current process for third party options

a water company may use the most efficient of these schemes to fill the gap between supply and demand.

The benefit in this simple case is the difference in cost between the chosen scheme (TP1) and the incumbent scheme in the case where third party schemes are not available⁵.

Figure 1. Third party supply in - areas with water deficit



3.1.3 Comparing costs of existing and new schemes

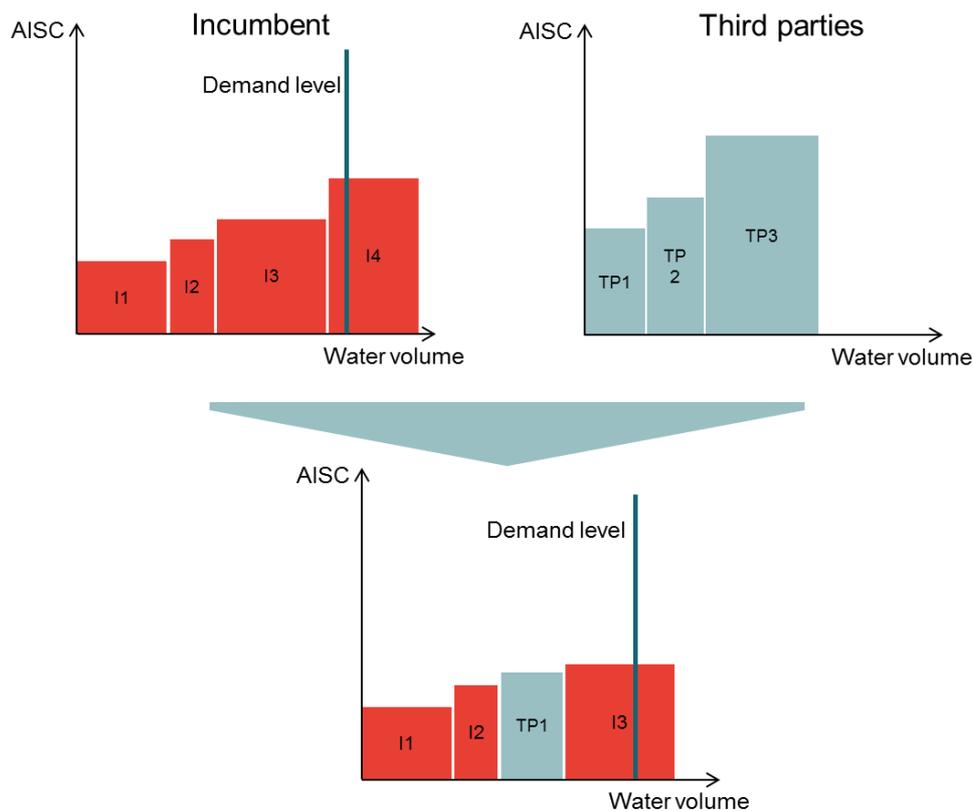
Third party supply has also the potential to deliver cost efficiencies⁶ in areas without water scarcity. **Figure 2** presents an example of a water company with

⁵ In practice the water resource planning calculates a least cost programme over a 25 year timeframe and the benefit would be calculated as the reduction in the NPV of meeting demand over that period.

⁶ Or other improvements such as environment & social benefits. It is possible that a third party might offer a scheme that would be more expensive financially but offers greater benefit to the environment, wellbeing, ecosystem services etc.

four resource schemes (I1 to I4) that give sufficient resources to meet demand (top left). The top right panel shows that there are three third party schemes in a position to deliver water, some of them at a lower cost than some of the schemes used by the water company. It would be possible then to combine these schemes to deliver the same volume at a lower cost. In this particular example, efficient water resource planning would incorporate scheme TP1, discontinue scheme I4 and reduce the amount of water supplied by scheme I3 (bottom panel).

Figure 2. Third party supply in areas without water deficit



The possibility of replacing existing schemes with new ones provided by third parties could represent an important driver of efficiency in the upstream sector.

However, when comparing the cost of existing and new schemes, it is necessary to recognise an important difference:

- When choosing between an incumbent and third party scheme to meet **new demand**, the comparison is between the costs that would be incurred for the third party scheme and the costs that would be incurred for the incumbent scheme.
- When choosing between an incumbent and third party scheme to meet **existing demand**, the comparison is between the costs that would be

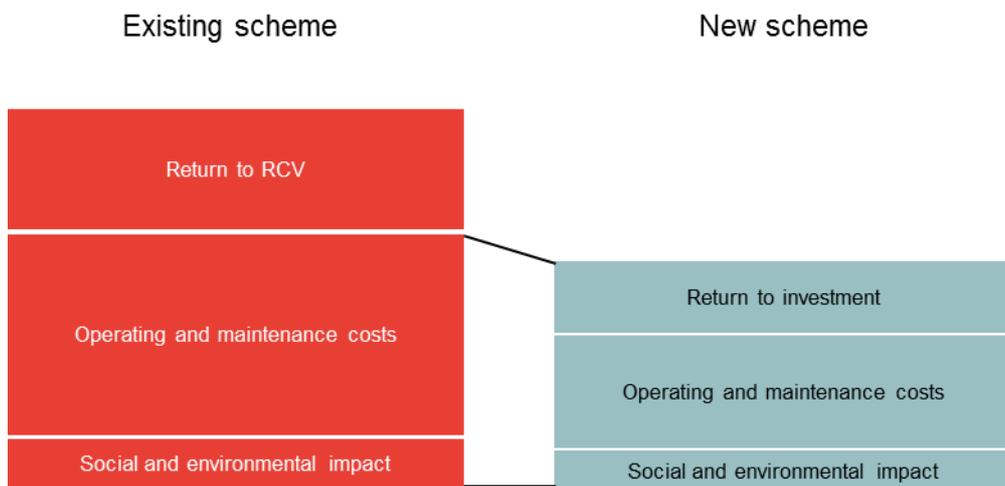
Review of current process for third party options

incurred for the third party scheme and the costs that **would be avoided** for the existing incumbent scheme.

This difference could be significant as the existing schemes will capital investments that are ‘sunk’ and that therefore would not be avoided if the scheme is discontinued. Therefore, the appropriate cost comparison needs to exclude the return on this sunk investment. That is, a new scheme is cost efficient if the incremental cost is below the operating, social and environmental costs of the existing scheme.

Figure 3 illustrates this point. The total cost of the new third party scheme including future opex and maintenance and the return on the investment would need to be below the future opex and maintenance costs of the existing scheme. The return on RCV, which represents the ongoing cost of the sunk investment, is not avoided in this example. It should be noted that there are a number of potential models for upstream competition and some of these may expose some of the return to RCV to a degree of risk. These models would alter the comparison between new and existing resources though there would remain a distinction between sunk and forward looking costs. The assessment in this paper does not depend on adoption of any particular model for the treatment of the RCV.

Figure 3. Comparison of costs between existing and new schemes: an example of an efficient new scheme



Given the differential in cost comparison a third party option may still be able to compete effectively against an existing resource if one or more of the following circumstances apply.

Review of current process for third party options

- The existing scheme is facing a major refurbishment programme in the near future. This capital maintenance expenditure would be avoided if the scheme were to be replaced by a third party option.
- The existing scheme has significantly higher operating expenditures, for example, if it involves complex treatment processes that the third party option does not require.
- The third party option is itself based on existing infrastructure and therefore does not require substantial forward looking capital expenditure. This outcome may be plausible in areas of stable or falling water demand, where other water users may also have spare capacity.

Overall, the sunk cost advantage of existing schemes does not eliminate the possibility of efficient competition from third party options.

3.2 Current WRMP methodology

Water companies are required to produce a WRMP every five years to set out how the company proposes to balance demand and supply over a 25 year horizon and progress made against the plan is then reported annually. Defra and the Environment Agency (EA) publish guidance on the methodology for the WRMP. Relevant extracts for the Water Resource guidelines and the WRMP technical guidance are provided in Annexe 1.

The overall methodology of the WRMP supports a wide range of options being considered. Reflecting government priorities set out in the Water Resources Management Plan Direction 2012, the WR Planning Guidance for WRMP14 for the first time required companies to investigate possible options and solutions from third parties bidding to provide options for customer-side, production-side, distribution-side or resource management measures. The Guidance required companies to compile a contact plan for engaging with third parties. In addition, their published Water Resources Management Plan should provide the details of their approach to consider the responses received and to assess the cost for the options presented in their plan. The contact plans typically set out:

- When and how companies were to consult with third parties;
- The information sought from third parties;
- How the information would be assessed; and
- How decisions on third party options would be communicated.

The WRMP guidance also supports the evaluation of the case to use third party schemes to replace existing schemes, stating that “for a water company in surplus, it is best practice for it to assess whether it can reduce the overall

Review of current process for third party options

financial cost, and the environmental, social and carbon impact of its existing operations by implementing new options” (see Annexe 1).

In principle therefore, these recent reforms to the guidance provide a sound basis for the inclusion of third party options in water resource planning. In the subsection below we consider the effectiveness of the process during the 2014 WRMP.

3.3 Implementation during WRMP14

3.3.1 Engagement

Third party options were considered consistently against other options identified in the WRMP unconstrained list. Companies adopted a range of approaches to engagement with third party suppliers. These approaches included the following:

- Formal contact through the normal WRMP consultation programme.
- Direct contact with neighbouring water undertakers. For example, in the South East of England, a significant route was through the Water Resources in the South East (WRSE) programme.
- The water company contacting other abstraction licence holders within the region.
- Advertising through Official Journal of the European Union (OJEU) for third party interests in providing supply or demand side options, followed by an RFP for specific detail on engineering, costs, reliability etc.

3.3.2 Assessment of options

Typically, the criteria used by companies to assess options followed a similar approach to screen their own options. The criteria included economic, environmental and social costs; technical feasibility; and operational risk. In particular, it included information such as:

- description of the scheme including information on the source of supply and water quality;
- conceptual design outlining the main operational features;
- schematic showing links or dependencies to other options;
- output in terms of amount of water available, both peak and average, and the period of the year when it is available;
- lead time to investigate and implement the option and earliest start date;

Review of current process for third party options

- costs: capex, opex; environmental and social;
- risks or uncertainties associated with the option; and
- factors or constraints specific to the option.

The process was adopted for the first time in WRMP14 and there were understandably some limitations in the both the approach and the information provided. For example, some companies focussed their advertising for specific services, such as provision of a bulk supply of raw or treated water. At the same time, it is reasonable to conclude that many third parties had limited understanding of the context and requirement of water companies (scale, timing etc).

Although most companies worked with third parties to try to develop understanding of particular schemes being proposed, there remained a significant gap in relation to the scheme level detail provided for appropriate comparison with other schemes being considered. Typically, schemes were tested by companies through a proof of concept approach to understand the additional engineering requirements, feasibility and additional costs beyond those identified by the third party to deliver such schemes into the company networks. Suppliers of schemes considered feasible were then asked to provide more detailed proposals so that schemes could be compared with those already identified within the Water Resources Management Plan.

Third party schemes often had key informational gaps around the granularity of commercial costs of options and engineering detail. In some cases, the scheme information was limited to only operational costs. As a result, this undermined the confidence of water companies to rely on such schemes to meet their statutory obligations.

3.3.3 Outcomes of the consultation

Table 1 highlights examples of the outcomes of the third party consultation for various water companies during the elaboration of their WRMPs.

Table 1. Examples of third party responses during WRMP14

Company	Response
Thames Water	10 schemes - bulk transfers of raw or treated water by tanker, by river / canal; bulk transfer of treated water by pipe; mobile desalination plant and leakage innovations. Of these, the WRMP indicates ongoing development of two schemes in particular: inter-basin transfer via the River Severn to Thames and development of leakage innovations.
Southern Water	2 schemes although neither were considered large enough to be feasible.
Anglian Water	Potential schemes to trade or transfer wastewater and raw water from food processing plants. The schemes initially identified were constrained by local environmental requirements (Habitats Directive) but investigations with the industry are ongoing.
Welsh Water, United Utilities Water, Yorkshire Water	No respondents.
Wessex Water	No request was made, as the company did not anticipate a supply deficit.
Water only companies	Largely focussed on trading between neighbouring companies. Very limited response from third parties after direct contact with licence holders

Source: water company WRMPs

The level of response reflects both the availability of third party options and the processes put in place by water companies. The table shows that the response was higher in areas with water deficits, particularly in the South and East.

Although limited, the approach put in place served to identify potential opportunities for third party suppliers. A notable gap in the process (beyond the cost and feasibility data issues discussed above) is that the majority of companies that focussed on gathering information on third party schemes did so to meet planned deficits. As a result, the opportunity for innovation around the provision of more economic supply options compared to companies' existing assets is likely to have been missed.

In addition, the focus on 'schemes' potentially misses the opportunity for value creation further up the wholesale supply chain. For example, investment in catchment measures could provide benefits in terms of reduced outage, reduced treatment requirements or risk and reduced customer impact. Typically these might include schemes to manage nutrient pollution, release of sediment and specific pollutants such as metaldehyde. Such schemes could also lead to wider benefit in ecosystem services thereby providing broader benefits compared to conventional supply-side or demand-side schemes.

4 Barriers to third party schemes

This section considers the potential barriers to the wider use or consideration of third party schemes. Third parties currently represent a very small fraction of total water supply. There are several barriers to provision by third party schemes that lead to this outcome. Section 4.1 reviews the most important ones. Subsequently, section 4.2 discusses potential steps to address these barriers.

4.1 Identifying barriers

Barriers to water trading with third parties have been considered in detail in previous work. Moreover, steps have been taken to address many of these. Section 2.2 above reviews some of the progress made in recent years. As mentioned earlier, Ofwat, drawing on earlier work published by Defra, identified 29 different barriers to water trade in 2012. While Ofwat and others have taken steps to address these barriers, at least partially, many still remain.

This section focusses on remaining barriers and, specifically, the ones that apply to third party schemes. While there has been relevant progress to date to address barriers to trade between water companies, there has been relatively less success in involving third parties.

We recognise that the full impact of some of the recent reforms may not have been felt yet. This may be because their implementation is still ongoing. Additionally, it can take time for organisations (water companies, third parties and regulators) to fully assimilate new arrangements and incentives and to elaborate a response to them.

4.1.1 Regulatory incentives and biases

The regulatory framework may create biases in the water industry that impede the adoption of third party schemes. Irrespective of whether these biases are objective or perceived, they nevertheless constitute a barrier to water trading.

One of the main existing biases involves the build versus buy decision. In this case, water companies may prefer to provide their own water resource schemes and discourage the ones offered by third parties. A possible reason for this bias would be perceived capex bias induced by water regulation (that is, companies would prefer to incur capital expenditure over operating expenditure). In addition, other regulatory features may incentivise build over buy options. This may be the case if companies perceive that third party schemes do not provide them with the control and ability to manage risks required by existing regulation.

Following work undertaken by Defra and subsequently by Ofwat, the regulatory approach to interconnectivity and trading between water companies has been changed to remove this perceived regulatory bias. Moreover, Ofwat introduced in

PR14 a water trading incentive, allowing water exporters and importers to retain a fraction of the benefits and costs of the agreements, respectively.

The introduction of a totex approach in PR14 further contributed to reduce the importance of this bias. Under this approach, both capital and operating expenditure are treated equally and added to the total expenditure (totex). The water companies can recover their costs either via ‘fast’ (pay as you go) or ‘slow’ money, irrespective of whether the original expenditure was on capital or operating costs. The reforms to date are significant and could play an important role in overcoming the biases in the regulatory system. However, it may take time for companies to adjust their processes and internal behaviours to the new incentives and structures – e.g. some companies may operate separate structures and budgeting for operational and capital expenditure activities. Therefore, it will take time to assess the effectiveness of these reforms.

Nevertheless, there may remain some barriers within the current regulatory methodology. These include:

- The current approach still focusses on delivery of specific schemes. This may miss the opportunity for value creation further up the wholesale supply chain. For example, investment in catchment measures could provide benefits in terms of reduced outages, reduced treatment risk and reduced customer impact.
- A bias in favour of schemes with more certainty and against those with less certainty but high potential for cost savings or benefits (e.g. demand management schemes). While it is certainly desirable to have low risk in water resourcing, the current process may give this feature a disproportionately larger weighting. There are different elements of the overall regulatory approach (for example, the regulatory compliance arrangements, outcome incentives and customer impacts) that impact on how companies weigh certainty of outcome against cost efficiency in water resources.
- Despite the existing water trading incentive, it is possible that current incentives are still not sufficient for ‘buy’ decisions or to engage in innovative ventures with third parties that may generate additional revenues.

4.1.2 WRMP process

WRMP processes and guidelines have been reformed to include the consideration of third party schemes. The new requirements have been implemented for the first time during WRMP14.

The inclusion of third party considerations in the elaboration of the WRMP is certainly a step forward. However, its current implementation and the interaction

Barriers to third party schemes

with other features of the regulatory framework, such as the duty to supply, may still be a considerable barrier.

The current WRMP process places a large emphasis on reliability and risk of water resource schemes, in addition to their cost. The statutory duty to supply for water companies may bias them towards options with high costs and low risk at the expense of others with lower costs and higher risk.

Alternative approaches to planning, scheme identification and options appraisal, risk and resilience are being explored through initiatives such as Water Resources in the South East (WRSE) and Water Resources in East Anglia (WREA). In particular, these will explore key option and strategy characteristics around cost, uncertainty, risk, and timing of implementation to develop more robust approaches to decision making. Third party engagement (and options) will be key features explored through both initiatives. In parallel with these, UKWIR is leading research and development into risk based planning and robust decision making exploring how we deal with scheme and plan risks and uncertainties.

Water companies are mandated to request information from third parties to elaborate their WRMP. However, the experience in most recent WRMP suggests that the information on cost provided by third parties was not as detailed as the information that water companies have at their disposal from their own schemes. Therefore, water companies are not able to compare them on equal terms and often cannot give third party schemes proper consideration. There is a risk that information failures are limiting the set of schemes that are emerging, with a focus on schemes that are already developed and costed.

The Water Resources Planning Guidelines require very complex and detailed appraisal processes in order for companies to demonstrate that their preferred plan meets Government Directions, priorities and statute. In addition to cost information, water companies need information about the impacts, risks and benefits for each third party scheme to ensure they can be compared on a like for like basis with other schemes identified. However, third party options are typically newly identified schemes and this information is limited or not fully reliable, prompting water companies to decide against them. Water companies face important penalties if they do not meet their duty to supply. Therefore, inadequate information about supply risks of third party schemes poses a significant barrier.

Furthermore, companies require a certain degree of control over the management of water resources. Insufficient information about risk and degree of control of supplies to customers may be the main causes of the build versus buy bias described above.

It would be possible for water companies to address these issues by adequately designed commercial contracts with third parties. However, the current perception is that these contracts may not fully address their concerns. Efforts by

Barriers to third party schemes

Ofwat to provide guidance on pricing and other contracting issues have to date focussed on interconnectivity and trading between water companies and, therefore, is unlikely to have been sufficient to incentivise engagement with third party schemes by water companies (although the principal constraint thus far has been insufficient detail being provided).

As discussed in Section 3, third party schemes can provide benefits by identifying new sources as well as replace existing ones with schemes that may be more efficient in terms of cost and environmental impact. The implementation so far of the new guidance has focussed on the former case, potentially ignoring significant efficiency gains. The current WRMP guideline supports the evaluation of replacing existing schemes (see Annexe 1). However, the supporting technical guidance does not set out the best practice processes for evaluating options to replace existing supplies in the same detail as exists for evaluating options to meet a planned deficit.

4.1.3 Market / information failures

There are two types of information failure that act as barrier for third party supply:

- Information for water companies. This includes lack of transparency of supply costs and water availability (source of supply, scale and timing of implementation etc). In addition, there may be limited information about risks on costs and reliability. This presents an information asymmetry for water companies, since they possess more and detailed information for their own schemes, creating or increasing a potential bias for building over buying.
- Information for third parties. Third parties may lack information about prices, potential buyers and contractual conditions under which they would supply. This may lead to insufficient entry. In addition, potential entrants may have limited information about the requirements and constraints that water companies have on their water resourcing activity. Lack of guidance and of an established process may result in them providing insufficient information to water companies and, therefore, diminishing their chances of becoming a supplier although the proof of concept approach described above would support ongoing engagement with third parties to develop the necessary scheme information where proof of concept is favourable / positive.

4.1.4 Cultural biases

Organisations often develop behavioural patterns that stem from genuine reasons. However, it is possible that when those underlying reasons change, the behaviour remains as a cultural bias.

Barriers to third party schemes

Water companies may have developed the biases described above as a reaction to incentives from the regulatory framework. For example, water companies may have developed a preference for in-house solutions because they have experience and track record in delivering those schemes; by contrast, the lack of accurate and reliable information about the risks of third party schemes will establish an implicit bias.

Even though these incentives may have changed recently, the cultural bias can survive for a time. Therefore, there may be a case for positive action to try to overcome these.

4.2 Steps to address the barriers

This section sets out some practical steps for addressing the main barriers identified above. We emphasise again that these barriers were identified based on current outcomes. It is possible, however, that they do not account for the impact of recent reforms. Once the effectiveness of existing reforms becomes clearer, it will be possible to make some more specific recommendations.

We would also note that here are other options for addressing the barriers to the greater involvement of third parties in water resources. These could include the introduction of models for more market-based competition for water resources and / or reform of the regulatory methodology for water resources.

An evaluation of all of the different options is outside of the scope of this paper. This paper focusses on reform options that build on the recent changes to the regulatory and WRMP methodologies and therefore represent incremental steps in the reform process. Such options are likely to be low cost and low risk in comparison to other options. As a result they provide an important benchmark for the comparison of more radical options, as policy-makers would want to assess whether the potential benefits of more radical options offset any additional cost or risk.

At the same time, it may not be appropriate to treat the different options for reform as substitutes. Some options may work well together. In addition, there may be a timing dimension to the possible reform options. For example, the steps outlined below may be effective in promoting entry from new and innovative players in the water resource sector. This may then facilitate further reforms in that part of the value chain in the future.

4.2.1 Review of regulatory methodology

It will be necessary to evaluate whether the regulatory changes introduced in PR14 have alleviated or eliminated ‘build versus buy’ and capex biases.

The existing water trading incentive is 5% of the costs for importers. It is not clear at this stage whether this level will be enough to overcome incentives for

Barriers to third party schemes

‘build’ over ‘buy’. In addition, the introduction of further incentives during PR14 such as ODIs may counteract the effects of the water trading incentive by discouraging innovation, as companies may be exposed to the risk of ODI penalties in relation to innovative options that are less certain.

Similarly, it is not clear whether the new framework based on totex with ‘slow’ and ‘fast’ cost recovery will result in the removal of any bias between capex bias and opex. Its success in creating a level playing field between the different types of expenditure will depend on the interplay between a number of factors.

- First, the interaction between current and future totex allowances. The totex approach does not distinguish between types of expenditure within the period. However there could be interactions (or companies may believe there are) between decisions in this period and allowances in future periods. For example, a capex solution in this period may improve the company’s position in cost benchmarking analysis and so result in a more favourable allowance in the next period.
- Second, the distinction between opex and capex is still important in other contexts. For example a company may be discouraged from an opex solution instead of a capex solution as it could result in a deterioration in some financeability metrics.
- Third, companies may have operational structures that separate opex from capex and it may take time for these structures to be adapted to a totex environment.

To address this Ofwat could undertake a review of the impact of the new regulatory methods. The review could explore whether the incentives in the methodology are at the appropriate level but also, even then, whether it may take time to completely feed through into company decision making. Ofwat could consider the case for publishing examples of company innovation in relation to the new methods in order to facilitate the adoption of innovation and best practice.

4.2.2 WRMP methodology and guidelines

There is still potential for improvement in the WRMP process to encourage the consideration of third party schemes and their adoption if these prove economically efficient. The existing guidance could be improved by incorporating the following points:

- **Guidance on inclusion of existing schemes in WRMPs.** As discussed earlier, water companies have implemented so far the third party requirement primarily in cases when new schemes were needed to meet demand. There is a case for including further guidance that provides clearer

Barriers to third party schemes

best practice for considering schemes that may replace existing ones when efficiency gains are possible.

- **Understanding risks and resilience of third party options.** This step would involve exploring the potential implications of those risks identified with third party schemes and how they might be dealt with through best practice guidance on contractual arrangements. This guidance would also need to cover the implications of the genuine additional risks are real and the impact on resilience obligations.
- **Best practice for information requirements from third parties.** Further guidance on the information that needs to be submitted by interested third parties. It should cover at a minimum cost detail that can then be used by companies for their options appraisal and investment modelling (AISC estimates will be insufficient on their own), scale, availability, reliability, timing of implementation, detailed scheme feasibility assessment (environment, planning etc) and other risks and benefits.
- **Guidance on information that water companies should publish to encourage third parties.** This guidance would need to cover areas such as:
 - The information published and where to find it. Key information should be published in the WRMP, although in many cases the documents are so large, complex and unwieldy that third parties cannot be expected to understand them. Summary information might include planned deficits in a given water resource zone, timing and current scheme costs. This information would provide third parties with basic facts about potential demand for water.
 - When and how it should be published. This could include guidance on the advance period that may be required by third parties, the chosen media or how regularly should requests be published.

4.2.3 Create information exchange or marketplace

Third party entry may be facilitated by understanding the scale of potential demand, both locally and at the national level. A possible solution would be to consider creation of an information exchange or marketplace where entrants can access information about demand and other requirements by water companies in the short and longer term, and where companies can identify potential schemes or innovative water demand management options.

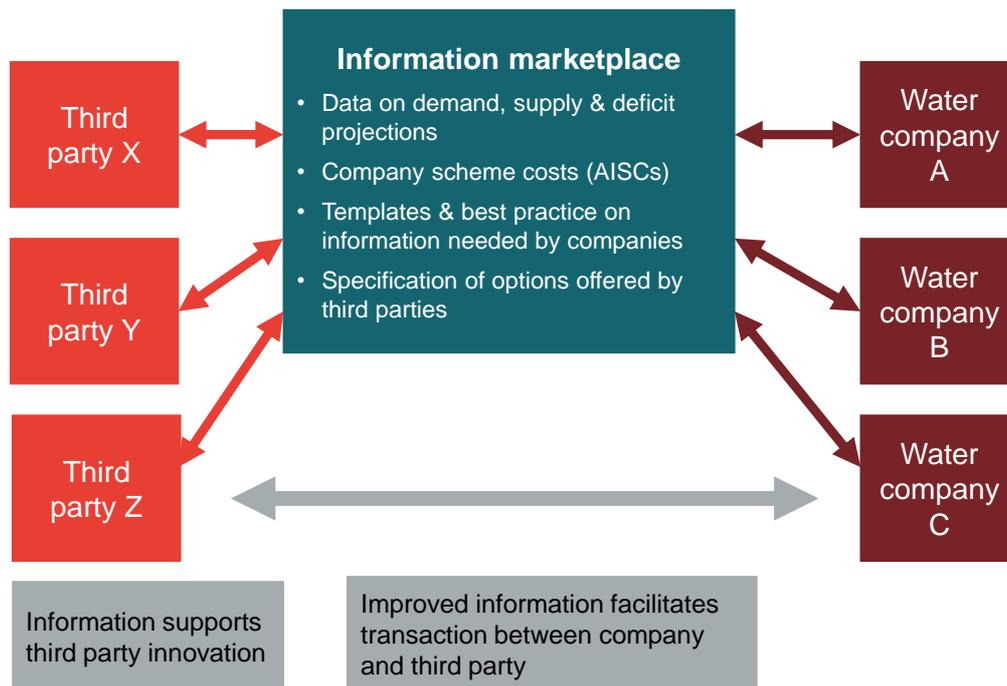
An example of this information exchange is shown in **Figure 4** below. The information exchange would hold, in an accessible format, information on the following areas:

- data on water company projections for demand, supply and deficits;

Barriers to third party schemes

- data on the costs of the companies' proposed supply / demand schemes;
- best practice guidance and templates on the information that companies need in order to evaluate third party options; and
- the facility for the third party to provide information and specifications of schemes for demand programmes that they are offering.

Figure 4. Example of information marketplace



The immediate benefit would be to reduce the uncertainty for third parties and to eliminate many of the search costs on both sides. It creates a shop window for the market and provides greater visibility to new entrants in relation to the opportunities that may exist. It may be particularly beneficial to third parties with opportunities to develop new water saving technologies or processes where information on the potential size and value of the market is needed to justify the investment in innovation (see text box below).

Search costs for a potential entrant

A third party entrant may have developed (or be considering an investment in developing) a new product for the water resources activity. This could be a water saving device, a water re-use technology, etc. If the product could potentially be of use across the country, the entrant currently faces a number of information hurdles or search costs in order to bring the product to market. These include:

- Understanding the market and funding for the product. The entrant needs to understand whether the demand and payment for the product comes from final customers, the water company or both.
- Understanding the potential size of the market. What is the level of demand from water companies and how does that vary with the unit price?
- Process for generating sales. This covers the knowledge of who to approach and the level and type of information that the water company would need in order to make a decision.

The fact that the entrant may not have access to the basic information around the scale of the potential opportunity could be deterring the entrant from making the investment in the product itself or in acquiring the information.

The need for regulatory intervention to address this information failure may be a limited one. Once established the benefits, if realised, should ensure that the marketplace is commercially viable and therefore should not require on-going regulatory support or involvement. In economic terms the market failure stems from the lack of information and once established it should be self-sustaining. For example, any initial funding required to 'kick-start' the information exchange could be raised from companies. This would be for a limited period and should not be a significant amount.

Clearly the parties involved may be concerned about revealing commercially sensitive information. However, much of the company information about supply and demand projections is already publicly available (though not in an accessible format) through the WRMP process. The same is true in relation to the costs of new resource schemes.

More generally it should be in the commercial interest of both companies and third parties to share sufficient information to identify efficient opportunities and innovations. To the extent that incentives on water companies could be enhanced this would be addressed through the review of the regulatory methodology outlined above.

Barriers to third party schemes

As the Figure illustrates the role of the information exchange would be to provide the basis for the parties to enter into commercial negotiations and agreements. The intention would not be for the organisation to plan or broker solutions directly. It would be preferable that the commercial incentives on the parties are sufficient to identify the efficient options.

5 Assessing potential benefits

5.1 Introduction

This section considers the potential scale of benefits that could arise from addressing the barriers that were identified in Section 4.

Steps to facilitate greater involvement of third parties in water resource activities could result in the emergence of lower cost, or better value, resource options that can be utilised by water companies. This would represent an improvement in **allocative efficiency** and would result in benefits to customers in the form of:

- prices that are lower than they otherwise would be; and / or
- improvements in the level of service received.

These steps, by promoting the entry of third parties, could also result in greater innovation in the sector. This **dynamic efficiency** benefit would stem from the fact that the available list of resource options would be less dependent on a planned approach focussed on the water company but instead driven more by a dynamic process with more players. For example, this could generate greater innovation in demand management options (low use devices, water re-use, etc).

Estimating the scale of the potential benefits is inherently uncertain and driven by the underlying assumptions in the calculations. For this analysis our aim is to review the evidence to illustrate that the potential scale of the benefits could be material. This is a proportionate approach given that the steps advocated in Section 4 above do not involve material costs to implement. Therefore the potential for material benefit should be sufficient to justify further consideration of these steps.

The section considers:

- the potential benefits from greater efficiency in new resource options;
- the potential benefits from utilising third party options to replace existing resource schemes; and
- general evidence from the literature on the benefits of reform in network industries and in improved supply chain management in commercial sectors more generally.

5.2 Efficiency in new resource options

The greatest scope for benefits, in percentage terms, from facilitating the involvement of third parties is likely to lie in the delivery of new resource options.

As outlined in the previous sections the WRMP process is designed to select a least cost programme to meeting future demand deficits. If the set of schemes being considered in the planning is constrained (e.g. because of poor information about third party schemes) then the overall result of the process would be sub-optimal.

Previous studies have identified substantial potential benefits from addressing constraints in the WRMP process.

- The Ofwat (2010) modelling of interconnection between water resource zones identified benefits of close of £1 billion.
- The original EA / WRSE modelling identified that improved utilisation and sharing of resources in the South East of England could reduce future resource expenditure in the region by £500 million.

The results from studies such as these can be sensitive to the modelling assumptions. However, they serve to illustrate the point that the potential benefits could be material. In addition, third party options would not necessarily incur the costs of investment in interconnection pipelines or the additional operating pumping costs of transferring water over substantial distance⁷.

5.3 Efficiency in existing resource activity

The second area where greater involvement of third party options could generate benefits is through replacing less efficient existing resource options. As outlined in Section 4 the current WRMP process is focussed on least cost planning for meeting new demand deficits and does not have a formalised method evaluating the replacement of existing schemes.

The regulatory methodology (through the totex approach) does provide companies with an incentive to consider replacing expensive existing resources. However, the effectiveness of this incentive could be enhanced through enhancement of the WRMP process and through an ongoing review of the incentives in the regulatory methodology.

To assess the potential scale of benefits from improvements in this area we start with the total expenditure on water resources in England & Wales. For consistency with the WRMP approach we have focussed on NPV figures over a 25 year period.

Table 2 shows the NPV of expenditure over a 25 year period. It covers operating expenditure and capital maintenance expenditure and is based on

⁷ We note that interconnection schemes can deliver additional benefits in terms of supply resilience.

company data from the regulatory accounts for 2013/14. This has been extrapolated over 25 years and discounted at the cost of capital (3.6% real)⁸.

Table 2. Expenditure on water resources

	2013/14	NPV over 25 years
Resources	£460 million	£7,790 million
Resources, raw water distribution and treatment	£1,670 million	£28,240 million

Source: Regulatory accounts, Frontier calculations

The expenditure figures are shown for resources expenditure only and for resources, raw water distribution and treatment combined.

- The resources only figure is relevant in the case of third party options that provide raw water but still uses the water company's raw water distribution and treatment assets.
- The combined figure is relevant in the cases either a) where the third party provides treated water or b) where the third party provides a demand reduction or leakage reduction option that reduces the need for treated water supply.

As the table shows the NPV of expenditure for resources is just under £8 billion and the NPV of resources and treatment is over £28 billion.

The potential for efficient entry for existing resources may be more restricted than in the case of new resource requirements. As outlined in Section 3 the reason for this is that the capital investment in the existing resources is a sunk cost and therefore the third party entrant needs to be able to compete against the ongoing operating and capital maintenance expenditure of the existing asset⁹.

To reflect this consideration, and to provide an illustration of the possible benefits, we have calculated the potential NPV benefit resulting from a modest improvement in efficiency of between 1% and 4%. This is shown in **Table 3** below.

⁸ The figures have not assumed any ongoing improvement in efficiency net of real price effects. An annual improvement of 1% in efficiency would reduce the NPV figures to £7,050 million and £25,550 million respectively.

⁹ For this analysis we are assuming that the return on any RCV that might be allocated to the existing resource would continue to be recovered.

Assessing potential benefits

The choice of these efficiency improvements rates is for illustration purposes and reflects the fact that the scope of third party competition in existing supplies may be limited. The percentage improvements are consistent with the rates assumed to result from the introduction of a more competitive process in earlier work by Ofwat and in the Cave Review. It suggests that the benefits could range from less than £100 million to around £1 billion in this area.

Table 3. Benefit from efficiency improvements in existing resources

Efficiency improvement	1%	2%	3%	4%
Resources	£78 million	£156 million	£234 million	£312 million
Resources, raw water distribution and treatment	£282 million	£565 million	£847 million	£1,130 million

Source: Frontier calculations

5.4 Benefits from innovation and dynamic efficiency

A further area of benefit arises from the spur to innovation that arises from supporting the involvement of more players in the upstream markets. This benefit would stem from the fact that the range of resource options and demand management technologies would be less dependent on a planned approach revolving around the water company itself but would instead rely more by a process involving many companies and potential entrants.

Previous studies have highlighted the impact of market reform on innovation.

- The Ofwat study on potential benefits of upstream markets (2010) surveyed the literature on the link between market reforms and innovation. It concluded that although reforms can lead to a reduction in measured R&D in some sectors it is associated with more commercial applications and improvements in productivity.
- The Cave Review of Competition and Innovation in Water Markets recommended a number of steps to introduce greater upstream competition. It considered that the main driver of the benefits it estimated arose for improvements in innovation.

A number of the steps recommended in this paper are aimed at improving the information flows between the water company and the potential third party supplier. There have been a number of studies that have assessed the benefits of improved relationships between companies and suppliers. These are summarised

briefly in Annexe 2. The studies are specific and the results should be treated as purely illustrative but it shows that reform of supply chain management has delivered cost savings of 5% to 10% in some industries.

6 Summary of recommendations

This report has considered the scope to facilitate greater involvement of third party options into water resources. The benefits from greater involvement of third parties can be a lower overall cost to customers of meeting demand and enabling companies to address the challenges of demand growth, the need for improved resilience and reductions from existing supplies due to environmental factors.

Recent developments in the water industry have tried to address barriers to the inclusion of third party schemes in water resource management plans (WRMPs). These include the Water Act 2014, updated WRMP guidelines, and Ofwat's guidance on bulk supply and updated price control methodology in PR14. At the same time the report identifies some remaining barriers for third party supplies. These include:

- regulatory incentives that still focus on the delivery of specific schemes and a potential bias in favour of schemes with more certainty;
- the WRMP process places a large emphasis on reliability and risk of water resource schemes – and the combination of risk, lack of control and an appropriate contractual framework leads to an implicit bias against third party schemes;
- insufficient information for water companies on costs, risks and reliability of third party schemes; and
- potential cultural biases, where water companies may have developed structures and ways of working based on the previous regulatory framework – even though these incentives may have changed recently, the 'cultural bias' of these existing structures can survive for a time.

We have identified some practical steps for addressing the main barriers identified above. These reflect the fact that the effectiveness of recent reforms to regulation and WRMP guidance is not yet fully clear.

- **Review of regulatory methodology.** It will be important to evaluate whether the regulatory changes introduced in PR14 have alleviated or eliminated 'build versus buy' and capex biases. The existing water trading incentive is 5% of the costs for importers. It is not known whether this level will be enough to overcome incentives for 'build' over 'buy'. In addition, it is not clear whether the new framework based on totex with 'slow' and 'fast' cost recovery will result in the removal of any bias between capex bias and opex. To address this Ofwat could undertake a review of the impact of the new regulatory methods. The review could explore whether the incentives in the methodology are at the appropriate level but also, even then, whether it

may take time to completely feed through into company decision making. Ofwat could consider the case for publishing examples of company innovation in relation to the new methods in order to facilitate the adoption of innovation and best practice.

- **WRMP methodology and guidelines.** There is still potential for improvement in the WRMP process to encourage the consideration of third party schemes and their adoption if these prove economically efficient. The existing guidance could be improved by incorporating the following points:
 - further guidance that provides clearer best practice for considering schemes that may replace existing ones when efficiency gains are possible;
 - understanding risks and resilience of third party options and best practice guidance on dealing with risks through contractual arrangements;
 - best practice for information requirements from third parties, including details on cost, scale, availability, reliability, timing of implementation, and so on; and
 - guidance on information that water companies should publish to encourage third parties.

- **Create information exchange or marketplace.** Third party entry may be facilitated by understanding the scale of potential demand, both locally and at the national level. A possible solution would be to consider creation of an information exchange or marketplace where entrants can access information about demand and other requirements by water companies in the short and longer term, and where companies can identify potential schemes or innovative water demand management options.

Annexe 1: Extracts from Water Resource Planning guidance

June 2012 WRMP Guiding Principles

“The Water White Paper made clear the importance that the UK Government attaches to the sustainable use of water resources, and set out a number of market and other reforms to help achieve this. The Welsh Government will be publishing a Water Strategy for Wales for consultation in Winter 2012. The key policy priorities that both Governments expect water companies to address in their plans are all aimed at providing secure, sustainable and affordable supplies of water to customers. They include:

1. taking a long term perspective, beyond the 25-year planning horizon, to make companies’ systems more resilient to future uncertainties, such as the impacts of climate change, and to allow efficient, sustainable water resources planning to meet the needs of customers and the environment;
2. taking better account of the value of water by reflecting its scarcity and the environmental and social costs of abstraction in order to make the water sector’s activities more sustainable;
3. considering all options to balance supply with demand, including water trading, cross boundary solutions and third party supplier solutions, and providing up to date information about the availability of water to third parties (including any future entrants to the market), in order to reduce costs, ensure efficient allocation of available resource and improve innovation within the sector; and
4. reducing the demand for water by managing leakage and providing services to help customers use water efficiently where there is a reasonable prospect that the benefits of doing so will outweigh the costs.
5. ensuring the views of customers are properly taken into account on service levels and costs.

We have introduced greater flexibility and transparency into the planning process, so that, in turn, the water sector can respond more flexibly and efficiently to challenges and opportunities. For example, we have made provision for third parties to —bid their own solutions into companies’ plans. And we have made it easier for companies to adapt their solutions over time to take advantage of new opportunities (including trading and third party schemes) without triggering a formal review of their plans, subject to materiality.”

“The UK Government expects each water company operating wholly or mainly in England, to demonstrate that its preferred solution is best value for water company customers and the environment. In developing a preferred option, a company must demonstrate it has considered:

1. interconnections between its own water resources zones - increasing interconnection between a company’s own resource zones where it is cost effective will mean companies can use water resources more flexibly, efficiently and reduce the need for new resources and infrastructure;
2. water trading - through bulk supplies between water companies (neighbouring or not);
3. abstraction licence trading within catchments - this provides a water company with an option to purchase or sell licences to help meet its supply needs or to sell surplus water to other abstractors;
4. supply/demand options provided by other water companies or by third parties - allowing others to provide demand and/or supply options in the plan increases the scope for lower costs and innovative solutions. Options proposed/provided by other water companies or third parties will need to be included in the options appraisal alongside other feasible options.

The technical guideline sets out the minimum a company must demonstrate it has done to investigate such options. Any company proposing to develop a new source of supply will have to show that it has fully assessed the costs and benefits of water trading with neighbouring companies, increased connectivity, abstraction licence trading and options provided by third parties.

Water companies can expect to be challenged on the evidence for their approach throughout the planning process. The Secretary of State may direct a company to change its plan if she believes that water trading options, or supply/demand options proposed by other parties, have not been sufficiently considered.

An important part of this assessment will be evidence that the company has provided sufficient information to other water companies and third parties to enable them to put together realistic options for inclusion in the plan. In order to ensure that trading is effective, companies must make available information about water surpluses and deficits throughout the planning process. They must keep this information up to date so that trading can continue as a dynamic process throughout the implementation phase.

Should the technical guideline be unsuccessful in promoting efficient water trading for the next round of water resource management plans the Government will consider whether more prescriptive guidance is needed in future, for example rules on the information to be provided to other parties, a standard methodology for assessing bids and rules on pricing.”

Annexe 1: Extracts from Water Resource Planning guidance

WRMP Guideline August 2013

“It is also best practice for the company to investigate whether new options can reduce the overall financial cost, and the environmental, social and carbon impact of its existing operations. The preferred programme of options should provide details of the costs and savings to existing sources if this assessment has been made, and the impact on existing operations.

Options if a company has a deficit in its water supply and demand balance

A company should provide details of its preferred programme of options to restore its supply demand balance under a dry year (annual average) scenario (and a dry year (critical period) scenario if applicable). In doing so the company should demonstrate it has incorporated the views of Government and its regulators that are expressed in the Guiding Principles. In doing so it is expected the company will demonstrate its preferred solution is best value for water company customers and the environment.

It is also best practice for the company to investigate whether new options can reduce the overall financial cost, and the environmental, social and carbon impact of its existing operations. The preferred programme of options should provide details of the costs and savings to existing sources if this assessment has been made, and the impact on existing operations.

A water company with a deficit should contact neighbouring water companies and third parties when putting together its unconstrained options list (see appendix 9) to see if they have water available that could be provided by a bulk supply, the opportunity to develop joint resources, or other options to restore the supply demand balance. The company should appraise these options consistently with its own options to reduce any deficits that have been identified.

Options if a company has a surplus in its water supply and demand balance

For a water company in surplus, it is best practice for it to assess whether it can reduce the overall financial cost, and the environmental, social and carbon impact of its existing operations by implementing new options. New options may also help to achieve Government aspirations.”

What option to implement in the final plan? – The principles

“A water company should make sure when considering a new option that:

...It has appraised certain options that Government specifically wants – for example demand management, interconnection, water trading, and resource sharing.

The benefits of implementing the option are greater than its costs, if a company does not have a deficit and is carrying out a new option as it considers it is ‘doing the right thing’. For such options to be included in price limits they must be cost beneficial and have the support of customers. The company should detail separately for such options the benefits (including demonstrating the value of adhering to a Government policy) and the value of any customers’ willingness to pay, as well as the costs.”

Specific options that should be considered in the unconstrained list:

“Third parties, whether appointed water companies or other organisations, can bid in options for customer, production, distribution or resource management measures. A company should state how it has sought and fully investigated bids by third parties in its assessment of unconstrained options.”

Appendix 13 - Options proposed by third parties

“During the pre-consultation stage, a water company should investigate possible options and solutions by third parties. Involving such parties maybe cost beneficial and help a company implement its plan. Any options proposed by third parties must contain sufficient information and be robust to withstand challenges by the company and regulators.

Third parties, whether appointed water companies or other organisations, can bid in options for customer-side, production-side, distribution-side or resource management measures.

The company should consider these options consistently with its own options in the unconstrained list. The company should put together a plan for how it will contact third parties. The regulators will use the third party contact plan as part of the assessment of whether a company has provided clear evidence of how it has considered and costed all options.

Due to issues of commercial confidentiality it might be necessary for the plan owner to use an independent party to evaluate fully the third party’s proposal.

The third party contact plan is for the water company to design. A good plan would include details of:

1. when and how a company will contact third parties and how this fits with the development of its unconstrained options list;
2. the information it will require from third parties, balancing the information needs of the company and the commercial information it can reasonably request from third parties;

3. the information the company will provide to third parties in order for the third party to put together an option that would meet the company's requirements;
4. how and over what time period the company will assess any options proposed by its third parties and how the assessment compares to the assessment of its own options;
5. how and when feedback on any options proposed by third parties will be provided and how any changes required to be included in the feasible list will be communicated. Where third party options are not progressed to the feasible options list, the company should explain why.

The third party contact plan should also apply to options which are proposed by third parties which have not been solicited through the company making the initial contact. Where third party bids are not progressed to the feasible options list, the company should explain why both in its draft plan and directly to the third party.

The contact plan is required during the pre-consultation phase and water companies should publish a view of 'need'. For example, the company should, as a minimum, publish indicative supply demand balances for each of its water resource zones that are in deficit, making clear the geographic boundaries of those zones. The information should be useful for potential third parties to consider whether they can propose options to resolve the supply demand deficit."

Annexe 2: Evidence on efficiency savings in other sectors

Other sectors, such as the retail industry, have long studied the benefits of long-term relationships between manufacturers and suppliers and the importance of exchanging information. For instance, the fashion industry coined the term Quick Response (QR) in the following way:

“QR, in principle, requires the traditional buyer–supplier relationship, which is too often motivated by opportunism, to transform into a more collaborative partnership. In this QR partnership, the objectives of the vendor are to develop the customer’s business. The benefit to the vendor is the likelihood that it will be treated as a preferred supplier. At the same time, the costs of serving that customer should be lower as a result of a greater sharing of information, integrated logistics systems and so on” (Fernie, 2009).¹⁰

The core features of this approach – collaborative partnership and greater sharing of information – have relevance for the relationship between water companies and third parties.

Table 4 provides a summary of various studies quantifying these benefits across various retail industries. The studies and the impacts are specific to the sectors concerned again highlight the scale of benefits from more effective working between a company and its suppliers.

¹⁰ Fernie, J. (2009) “Relationships in the supply chain” in J. Fernie and L. Sparks (eds) *Logistics and Retail Management: Emerging issues and new challenges in the retail supply chain*, 3rd edition.

Table 4. Comparison of scope and savings from supply chain management and innovation

Supply chain study	Scope of study	Estimated savings
Kurt Salmon Associates (1993)	US dry grocery sector	<ol style="list-style-type: none"> 1. 10.8% of sales turnover (2.3% financial, 8.5% cost) 2. Total supply chain \$30 billion, warehouse supplier dry sector \$10 billion 3. Supply chain cut by 41% from 104 days to 61 days
Coca-Cola Supply Chain Collaboration (1994)	<ol style="list-style-type: none"> 1. 127 European companies 2. Focused on cost reduction from end of manufacturers' line 3. Small proportion of category management 	<ol style="list-style-type: none"> 2.3 – 3.4 percentage points of sales turnover (60% to retailers, 40% to manufacturer)
ECR Europe (1996)	<ol style="list-style-type: none"> 1. 15 value chain analysis studies (10 European manufacturers, 5 retailers) 2. 15 product categories 3. 7 distribution channels 	<ol style="list-style-type: none"> 1. 5.7 percentage points of sales turnover (4.8% operating costs, 0.9% inventory cost) 2. Total supply chain saving of \$21 billion 3. UK savings £2 billion

Source: Fiddis, C (1997) *Manufacturer–Retailer Relationships in the Food and Drink Industry: Strategies and tactics in the battle for power*, FT Retail & Consumer Publishing, Pearson Professional, London

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