

Response to Ofwat Call for Information on bilateral markets.

6 September 2019

About Energy UK

Energy UK is the trade association for the GB energy industry with a membership of over 100 suppliers, generators, and stakeholders with a business interest in the production and supply of electricity and gas for domestic and business consumers. Our membership covers over 90% of both UK power generation and the energy supply market for UK homes. We represent the diverse nature of the UK's energy industry – from established FTSE 100 companies right through to new, growing suppliers and generators, which now make up over half of our membership.

Our members turn renewable energy sources as well as nuclear, gas and coal into electricity for over 27 million homes and every business in Britain. Over 680,000 people in every corner of the country rely on the sector for their jobs, with many of our members providing long-term employment as well as quality apprenticeships and training for those starting their careers. The energy industry invests over £12.5bn annually, delivers around £84bn in economic activity through its supply chain and interaction with other sectors, and pays £6bn in tax to HM Treasury.

We welcome the opportunity to respond to this call for information as part of our ongoing active participation in relevant stakeholder processes including:

- Defra/Environment Agency (EA) National Water Resource Framework Senior Steering Group
- Water Resources East (WRE) – Water Resource Regional Planning
- Catchment Based Approach (CaBA) Abstraction Working Group
- EA Advisory Stakeholder Group on transition of Abstraction Licensing to the Environmental Permitting Regime (EPR)

Our responses to selected consultation questions are outlined below.

Response to consultation questions

Q3. The legal framework allows for a number of consequential changes to regulatory instruments (such as licences and codes) to effectively implement bilateral markets.

We welcome views from stakeholders on:

a) The key policy benefits that they consider need to be captured and the best means of doing this

Successful design, establishment and promotion of bilateral markets has the potential to achieve more economically efficient use of scarce water resource and assets by taking advantage of differences between operators and sectors whilst maintaining appropriate environmental protection.

Allowing non–Public Water Supply (PWS) water abstraction licence holders to contract directly with a water retailer would increase the 'depth' of the water market opportunities compared with those supported by the existing system and hence increase market efficiency. In some cases, depending on the specific detail, the water resource allocation arrangements necessary to underpin the bilateral market opportunity may present a challenge to the current system. Modification to abstraction licensing policy, law, and guidance may be possible in order to circumvent some of these challenges, e.g. as part of the project considering transition of abstraction licensing to EPR.

The following comments relate to the current abstraction licensing policy and the benefits of unlocking societal value using a dynamic and flexible abstraction licensing policy to support bilateral market entry.

Currently, market and near-term circumstances are such that existing thermal power stations may be potential 'sellers' of water and/or water rights for appreciable periods. However, there could be market circumstances even today when a power station subject to a restrictive Hands-Off Flow (HOF) condition would be prepared to buy access to additional water and/or water rights if that were available. Furthermore, in future, it is possible that the business risk case for a power station development would be underpinned by the potential to access water supported by transfers, reservoirs or licences from other parties when their respective market circumstances permit. Thus, bilateral markets could exist 'both ways' between PWS and power sector interests involving water and/or water rights. These bilateral markets could exist within wider multiparty, multi-sector arrangements. Ideally, the water resource allocation policy and its implementation should be such as to facilitate these dynamic, flexible arrangements.

In particular, we note and support the specific illustration which Ofwat uses in the Call for Information in which water rights owned by a power company and necessary to underpin the continued existence and operation of a power station may be used to contribute towards public water supply at times when it is rational to do so. This is an example for which there will be analogous examples from sectors other than 'power'. Moreover, the analogous trading in gas is already routinely conducted by power sector operators.

This is fully in line with recent DEFRA calls to promote multi-sector collaborative solutions to water resource management challenges at national, regional and catchment level.

i. Continuing Use of Water by Thermal Power Plant

The Defra multi-sector initiative is consistent with the role of those thermal power plant envisaged within, for example, National Grid's Future Energy Scenarios (FES)¹ which increasingly consists of delivering an efficient, reliable and affordable means of bridging the gap between intermittent renewables generation and time-varying demand along decarbonisation pathways for several decades to come. Continued use of water for the cooling of power plant provides thermal efficiency benefits and hence associated environmental benefits compared with the use of thermally inefficient air-cooled power plant. It also offers an operational resilience benefit in high temperature events when air-cooled plant may be forced to de-rate or exit the market completely. Thus, it is reasonable to anticipate that part of the UK generating fleet of the future will continue to make use of lowland rivers in England as their primary water resource although there is no 'sector plan'. These plant will deliver and be rewarded for electricity (energy product), capacity (insurance/resilience product) and 'grid services' (ensuring electricity supply quality products). Plant will need to be able to generate at short notice at any time and potentially for extended periods depending on market and weather conditions, etc. They will therefore require reliable access to sufficient quantities of water to fulfil their commercial and resilience obligations meaning that future bilateral and multilateral market arrangements will need to be agile and flexible in order to allow the appropriate optimisation of water rights use and physical water use to occur. Some of the future riverine plant may be equipped with Carbon Capture Usage & Storage (CCUS) technology and thus have significantly greater specific water requirement (m³/MWh) than today's plant.

Given the very high cost of assets and the commercial exposure, plant owners will need to control the water rights that support their plant. Investors in such plant will require satisfactory management of the water access risk. These rights are also a vital underpin for the option of development of a new water-dependent power plant at the location or major investment in the existing power plant. However, there will be times at which a given power plant is not running, be it for commercial or operational reasons, and therefore will not need to utilise its water right in the short-term for power generation purposes. At such times the water right could potentially be used to support other uses such as the production of water for PWS.

¹ and consequent market signals on services and capacity sought by Grid e.g. System Operability Framework (SOF) and Networks Options Assessment (NOA)

ii. Better Enabling Societal Economic Efficiency of Water Use

Given the nature of the electricity market, it is also possible that there would be circumstances in which a power plant operator may choose to make water available for PWS purposes either directly (through routing water to a specific drinking water treatment plant asset) or indirectly (through allowing increased use of existing PWS abstraction licences with a corresponding reduction in the use of power station abstraction licences).

These circumstances can be expected to arise because of the differences in the underlying characteristics of the PWS and electricity markets. In particular, times of PWS 'stress' (i.e. multi-season drought in which the 'stress' event is extended with slow onset) are completely different from electricity market stress events (which are envisaged as relatively short-term events). In other words, the proposals would open further opportunity to arbitrage between the two markets.

iii. Societally Efficient Investment

The water sharing opportunity, either through arrangements based on water rights or supply of physical water, has the policy benefit of allowing water/water rights 'earmarked' for the power sector also to make a contribution to PWS resilience by establishing a dynamic water sharing agreement. By this means, water which would otherwise have supplied the power plant is made available for other use within the catchment. This has clear benefits compared with making the same provision through, for example, a physical pipeline, in that there is no development, consenting and construction of a pipeline required. It also provides water of the physical, chemical and biological characteristics of the water of the catchment and can reduce or avoid issues associated with the blending of water of different qualities and the transfer of Invasive Non-Native Species. It may also defer or avoid the development of a high cost, low utilisation peak supply PWS 'insurance asset', for example a desalination plant, which the current Water Resource Management Plan (WRMP) process appears not to 'value' in an appropriate way (since it assumes 100% utilisation which may occur in a developed drought event but does not occur over the asset life). It may defer or avoid the development of a reservoir. It may defer or avoid use of a drought permit or drought order and hence reduce or avoid the consequences for the aquatic environment. It may be used to support an existing or planned reservoir.

iv. Resilience of the Public Water Supply Rather Than Individual Project Resilience

We take the view that individual, relatively small trades or projects developed as bilateral market opportunities should not be subject to individual resilience tests in themselves. Rather, given the extent and interconnection of water industry networks, the resilience of the network is the appropriate test that should be applied to the network operator. The diversity of individually vulnerable supply options, including those developed through bilateral markets, nonetheless makes a valuable contribution to this.

v. Removal of Specification of 'Use' in Water Right Definition (Licensing)

In order to promote water sharing opportunities more effectively through bilateral (and more complex) market arrangements, we favour removing the specification of the 'use' (i.e. purpose) linked to a given water right. This would ease the development and pre-approval, where necessary, of water sharing agreements covering a variety of 'uses'.

The 'use' is relevant to a test on the technical efficiency of water use (e.g. m³ water used/unit product) which sits better with the permitting of an activity (e.g. power production, type of farming, etc.) rather than with the water right itself. The water right need only specify the consumptiveness (in terms of the gross abstraction and return arrangements) which is needed in order to allow determination of environmental protection (and currently provides the basis of subsistence charges for the right)².

² This will require some consideration for the water industry in which there is no direct linkage between a given abstraction licence and a specific discharge through a sewage treatment works given the clean and dirty waste

vi. Clarification of the Requirements of the Aquatic Environment in order Better to Define the Opportunity for Water Sharing

Currently, the interpretation of the requirements of the aquatic environment determines the volumes of water available to be issued as water rights by the Environment Agency (EA). Within the existing Abstraction Licensing Strategies, the available abstraction is generally determined as a perturbation of the Environmental Flow Indicator (EFI)-curves linked to time of year, environmental sensitivity, etc., in accordance with UKTAG research, although in some areas more bespoke arrangements are defined which recognise the particular characteristics of the specific catchment. The EA is currently considering the opportunity to introduce more flexible interpretations of environmental requirements in a multi-stakeholder research initiative. We welcome this initiative, which may offer useful societal opportunity at typical river flows by allowing short-term, small-scale ‘trading’ between the environment and other uses. For example, relaxing an EFI-linked HOF-type restriction applied rigidly on a daily basis in favour of an equally protective restriction applied on a weekly basis may offer considerable opportunity for activity with a weekday/weekend profile.

The occurrence of a shortfall in supply compared with potential demand creates opportunity for modified water sharing in which engaged parties can seek more economically efficient solutions consistent with appropriate environmental protection. The development of drought is one such circumstance. Currently, water companies develop drought management plans which may draw on drought permits and drought orders in order to manage the resilience of PWS. Drought permits and orders are essentially trades from the environmental allocation to PWS use. Having these in place within a drought plan may undermine the potential for exploration of other ways in which PWS drought resilience could be delivered through water sharing agreements between PWS and other sectors. Such means may allow a better societal outcome to be obtained. We therefore suggest that, in future, the potential for such better outcomes be explored before drought orders are granted, for example through a water company drought management plan or generalised WRMP process.

vii. Form of Water Sharing Agreements (including Bilateral Markets)

We favour the development of this opportunity through use of a suitable Water Sharing Agreement (WSA) involving a group of abstractors and would-be users. A bilateral market is its simplest form. If necessary, given the form of agreement, the environmental acceptability of the arrangement is assessed and agreed by the EA prior to entering into force. It would then be for the parties to the agreement to demonstrate adherence to the contract terms (e.g. through suitable reporting of abstraction and discharge actuals, analogous to current abstraction licence reporting) which have been established, so as to assure environmental protection. This removes any need for EA approval of each individual ‘trade’ within the scope of the WSA, leaving it to the contracting parties to interact together subject to the terms of the WSA. This would be expected to deliver greater flexibility and dynamic redistribution of water and/or water rights than would be possible in arrangement frameworks in which explicit approval by the EA for each ‘trade’ were required. We do not encourage an approach in which the EA is a contracting party or arranger of contracts, though we recognise that the contractual arrangements will need to make clear to the EA’s satisfaction both how the EA should pursue non-compliance and how appropriate environmental protection is to be assured.

It would be perfectly possible for such a WSA to range in complexity from simple bilateral involving two locations to multi-lateral, multi-sector involving multi-locations, though designing for appropriate environmental acceptability presents an increasing challenge with increasing complexity. Such agreements make a contribution to economic efficiency by delivering multiple types of products (energy/water volume, quality and resilience) across multiple ‘sectors’ (e.g. power, PWS, Environment) and begin to blur the boundaries of traditional silo approaches in an innovative way.

b) The key policy risks that need to be mitigated, and the best means of doing this

water networks. The return requirements could be achieved through imposing a suitable and verifiable duty on the waste water network operator (e.g. through the Drainage and Waste Water Management Plan.)

There are several policy risks that need suitable mitigation. Those discussed below primarily concern the various roles of the EA, including delivering appropriate environmental protection, being the competent authority for River Basin Management Planning and promoting economic efficiency of water resource use consistent with sustainable abstraction.

viii. Abstraction Licensing – change of use

In a bilateral arrangement, the original 'donor' water right will likely be for a use other than PWS. Thus, currently, in an arrangement other than relinquished abstraction³, some modification of the 'donor' water right would be necessary and possibly modification of a 'receiver' water right is also likely to be necessary. Any modification would need to be delivered through a licence application for varied or additional use, even if no increase in licensed quantity is sought. We suggest that preferably the current requirement to specify a specific 'use' within a licence defining a water right is removed (see above) or, failing that, the requirements of such an application should be reviewed.

We question whether it is appropriate to continue to focus on 'use' in quite this way – the transition of abstraction licensing to the Environmental Permitting Regime (EPR) may offer an opportunity to review this with a view to streamlining the determination of innovative multi-party water sharing arrangements, of which those underpinning a bilateral market arrangement provide a simple case.

Specification of 'use' (= 'purpose') provides the basis of the 'need' and 'efficient use' tests discussed below. It also provides the basis of classification of the expected consumptiveness of the activity from which the charging follows and, in the case of licences which do not contain explicit discharge requirements, it provides the basis for assessment of the potential for depletion of river flows.

We consider there would be advantage in removing the focus on 'use' for abstraction rights determination purposes in favour of the quantities and locations of the return of water associated with the abstraction (of which there could be several). These, along with the quantity and location of the abstractions, are the key properties necessary for assessing environmental acceptability. The information necessary for determining appropriate EA water rights related charges could be inferred from this information set.

Recommendation: Removal of the explicit specification of 'use' in favour of information on quantities and locations would streamline application assessments and render some variation applications unnecessary (e.g. for changes in bilateral arrangements where quantities and locations remain unaffected but the detail of activity using the water changes)⁴.

ix. Abstraction Licensing –Duration

Currently, new licences and new substantive licence variations are time-limited, with the review date linked to a catchment common end date. Typically, a licence or variation may have a life of 12 years upon being granted, though there is provision for application for licences of longer duration subject to an increased burden of evidence on the applicant. The possible loss or adverse restriction on a licence that underpins an existing, or a planned new or substantively modified water-dependent asset (such as a treatment plant or transfer infrastructure) is a major risk that must be managed during project development and in the agreement of bilateral arrangements. It is a potential barrier to bilateral market entry. Although it is often stated there is presumption of renewal on application for extension of a time-limited licence, legally this does not appear to be the case, with the same tests being made on an

³ Relinquished abstraction arrangement occurs when the 'donor' party voluntarily elects not to abstract, allowing water to remain in the river when otherwise it would not, allowing a downstream 'receiving' party to take advantage of it through their own existing licence.

⁴ This will require some consideration for the water industry in which there is no direct linkage between a given abstraction licence and a specific discharge through a sewage treatment works given the clean and dirty waste water networks. The return requirements could be achieved through imposing a suitable and verifiable duty on the waste water network operator (e.g. through the Drainage and Waste Water Management Plan).

application for extension that would be made on a new licence application. The transition of water abstraction licensing law into EPR is to remove the time-limit from all licences, replacing it by a review process within EPR, the details of which are yet to be established, itself posing a significant uncertainty.

Recommendation: We urge that the EPR abstraction activity review process be constructed in such a way as to allow the commercial and societal risk resulting from review uncertainty to be managed effectively during project development, having regard to the expected lifetime of new physical infrastructure. We also urge that, prior to transition to EPR, this is considered in processing applications for new or substantively varied licences under the existing Water Resources Act regime.

x. Abstraction Licensing – Tests on Application for a new Licence or non-trivial Variation

In existing law (Water Resource Act 1991 as amended), a variety of tests are triggered including the three listed below, the stringency of which is increased if the licence sought is for a long duration (say >12 years) and this is likely when the licence relates to a new capital asset or a major investment in an existing asset :

- need,
- efficient use,
- environmental acceptability.

Thus, identifying and addressing means of streamlining and de-risking the abstraction licence application process whilst delivering appropriate environmental protection and respect for protected rights would be valuable in promoting meaningful exploration of potential innovative water sharing arrangements such as would underpin a bilateral market opportunity.

Need

Where the licence application is essentially for a 'merchant' provision, with any associated assets being developed at the developer's/proposer's/licensee's risk, we do not see the 'need' test (in the sense of testing the role of the provision within a WRMP supply-demand balance') as necessary or appropriate.

Recommendation: The 'need' test should be omitted in abstraction licensing. Any societal need test for the proposed provision for PWS at the location more properly belongs (to the extent it need be tested at all) in network access provisions.

Efficient Use

The efficiency test remains reasonable if interpreted as testing that the amount of water sought is appropriate for the proposed activity but not testing the societal need for the proposed activity.

If the variation were to allow supply of raw water for third party use (e.g. in a drinking water treatment plant elsewhere for subsequent use within PWS under a bilateral market agreement) the efficiency test belongs more properly with the third party.

If the variation were for a drinking water treatment plant of output capacity X MI/d, it would be reasonable to assess whether the quantity of raw water sought Y MI/d, (Y>X) was appropriate for the technology choice for the drinking water treatment plant.

However, we question whether the 'efficient use' test needs be present in the abstraction right test at all for 'uses' in installations covered by provisions of the Industrial Emissions Directive (IED). Water use efficiency is covered within the resource use aspects of IED permitting, with Best Available Techniques (BAT) assessments also being relevant. Currently, installations with the sole activity of treating water for producing drinking water for public supply are not covered by the IED and thus some equivalent provision may be needed within the EPR-abstraction activity linked to activities not covered by the IED.

Recommendation: Removing the 'efficient use' test within abstraction licensing where it can be covered adequately by IED permitting would be a useful regulatory simplification, which could streamline the determination of innovative water sharing approaches.

Environmental acceptability

Ofwat notes that bilateral markets would incentivise trade from a water-rich to a water-poor area.

However, there may be keenest interest for dynamic market-driven water sharing opportunities within a water-challenged area, since these would not require out of catchment infrastructure to be in place.

In their Abstraction Licensing Strategy documents (e.g. Thames Corridor, 2019) the EA notes that where the catchment is 'over-abstracted', trading only up to 'recent actuals' would be permitted in the water body and where 'over-licensed', trading up to the full licence quantity might be possible but restrictions would be imposed once actual abstraction reached sustainable limits. This position could lead to a real or perceived barrier to trading. In addition, any perception that the EA would seek to improve the sustainability of abstraction in over-licensed or over-abstracted areas by 'clawing back' a proportion of the proposed 'trade' or subsequently seeking to curtail the 'donor' right on the grounds that the donor had no 'need' for the traded water, would act as a major barrier to setting up such an arrangement.

Regardless of trading, the EA is undertaking the Restoring Sustainable Abstraction programme aimed at making the licence position at individual CAMS area level consistent with delivering the flows deemed necessary to provide appropriate environmental protection. Although to date many of the licence changes have been voluntary, the Defra response to the March 2019 consultation on improving water management introduces measures that may increase the use of curtailment powers, albeit from 2028 onwards, although the preference would be to seek licence reductions on a voluntary case by case basis.

Taken together, these policy approaches could severely limit the scope for bilateral or multilateral water sharing agreements of all types, including bilateral markets involving PWS, and thus deter the exploration of such options. Given the likely economic benefit, we would urge Defra/EA to consider policy measures to maximise market opportunity in order to improve the economic efficiency of water use and improve multi-sector resilience to water shortfall more cost-efficiently while retaining appropriate environmental protection, recognising the variation of abstraction actuals in various sectors which respond to market circumstances over a wide variety of timescales. In the power generation sector these timescales extend from half-hours (trading unit for electricity) to decades (linked to the life-cycle of power station assets) which do not align with the EA's approach to its Abstraction Licence Strategy (ALS) (with environmentally protective HOF typically applied in relation to gauged daily flows, though sometimes with a few days' smoothing) and 'recent actuals' scenarios being six year periods.

Should the proposed 'trade' be perceived as potentially increasing the amount of water that would be 'used' associated with a given abstraction right compared with 'recent actual'⁵ water use of that right, there may be concerns triggered under interpretations of Water Framework Directive (WFD) 'no deterioration' provisions. The detail of the risk regarding 'no deterioration' is very much dependent on local circumstances, including the catchment being regarded as over-licensed or over-abstracted.

However, we would urge the EA to consider further, given the likely economic benefit that would result, how the market water sharing opportunity could be maximised consistent with the requirements of the WFD. In the WFD, the 'hydrological regime' is only a supporting element for 'good' ecological status in rivers (requiring conditions consistent with occurrence of the appropriate biology) in contrast to the

⁵ 'Recent actual' is an historic abstraction scenario for a period selected by the Environment Agency for use in its Abstraction Licence Strategy (ALS). The period is changed from time to time and between locations as the Environment Agency updates the individual ALS.

requirements for 'high' ecological status (which requires the quantity and dynamics of flow to reflect nearly totally undisturbed conditions).

In this regard, we welcome the recent EA stakeholder programme seeking to establish more flexible interpretations of necessary flow requirements than would follow using the current UKTAG EFI approach which underpins ALS. Moreover, the meaning of 'use' of a right should be generalised from simply being regarded as occurring when water is pumped. 'Use' of a right should be recognised to include the considerable economic and societal value obtained in 'resilience' across the power sector, the PWS sector, the agricultural sector and others derived from the potential to abstract water, even if in a particular period water is not actually pumped. This value would be realised through water sharing agreements, of which a bilateral market opportunity is an example.

Additionally, a water right may reasonably be held in order to provide valuable future development opportunity or resilience regarding increasing need. Historic scenarios based on data on actual water pumped (e.g. 'Recent Actuals') do not necessarily fully reflect the socio-economic value of issued water rights. Thus, 'Recent Actuals' is not necessarily a sound baseline with respect to determine 'no deterioration' aspects of the environmental acceptability test.

Recommendation: Where the law permits, environmental acceptability should be determined having regard to the wide range of social and economic value which can be realised from water sharing agreements, including through bilateral markets. Historic scenarios based on data on actual water pumped (e.g. 'Recent Actuals') do not necessarily fully reflect the socio-economic value of issued water rights.

xi. Development of Relevant Opportunities within the Relevant Regulatory Cycles

Currently, water resource option appraisal takes place within a number of regulatory cycles linked to the water industry and environmental protection. Whilst this provides a well understood framework for multi-sector stakeholder co-operation and scrutiny, it may lead to barriers to options development for sectors outside of Water Industry Regulation, whose business drivers may be different and linked to very different cycles (or no cycles at all) e.g. the generation of electricity is not economically regulated. Provision should be made to allow options occurring outside of the Water Industry cycles to receive due consideration. Relevant cycles include:

- Water Resource Management Plans (five-year cycle)
- Regional Water Resource Planning (first cycle in place currently but logically linked to precede Water Resource Management Planning by the order of two to three years)
- Water Industry Asset Management Plans (five-year cycle linked to follow WRMP)
- Drainage & Wastewater Management Plans (currently non-statutory, but the possibility of moving to a statutory basis was discussed in Defra's March 2019 consultation – potentially logically linked to WRMP in relation to implications for water resources)
- River Basin Management Plans (six-year cycle driven by Water Framework Directive)
- Environment Agency Abstraction Licensing Strategies (six-year cycles varying around the country).

c) Whether there is a degree of prioritisation to the risks and benefits, and if so what needs to be captured as a priority and what might be better left for a more informed decision once some bilateral trading has become established?

In order to provide the confidence to all parties to invest resource into exploring options for bilateral and multilateral innovative arrangements, progress on all of the above issues is necessary. Prioritisation of the issues in any given situation is likely to be related to the precise circumstances of the relevant catchment(s).

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