WATER PRICING
Seizing a Public Policy Dilemma by the Horns
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Water Pricing Approaches in the UK, Israel & Australia

Introduction

An international scan of water pricing policies and practices shows some unique approaches taken in the United Kingdom, Israel and Australia. The United Kingdom has established a detailed water abstraction charge where bulk water users are charged on an annual basis for the rights to take water. The charge is applied nation-wide and is set by the Secretary of State for Environment, Food and Rural Affairs. Israel is a nation characterized by an uneven distribution of water resources, low freshwater levels and increasing water pollution. Yet, the nation has had success in managing some of these water challenges. Australia is one of the driest countries on the planet and is often looked to by the water policy community as an example of effective water management through the use of financial and market-based mechanisms such as water pricing.

United Kingdom

The United Kingdom's Water Abstraction Charge is a set of charges, paid annually by water users, for the rights to take water. There are a number of elements to the abstraction charge (Figure 1). First, those applying for a license to use water are charged an application fee. Second, if the license requires advertising to notify other water users, an advertising fee is also charged. Both of these are fixed charges. Once a license has been granted, water users must then pay a variable annual water abstraction charge. This abstraction charge is comprised of two components.

The first component is the Standard Charge, which recovers the costs of managing and regulating water abstractions in the UK. A detailed formula is used to calculate this charge. Variables in the calculation include the volume of water in the license, the source of the water, the season in which water will be used, the region of the country in which the water will be used and the purpose for which the water will be used. The second component is the Compensation Charge, which is levied to raise revenue to remediate environmental damage in certain regions of the UK due to water use. This charge is also sensitive to water volume, the season of use and the specific use of the water. The two charges added together constitute the Annual Water Abstraction Charge.

The Water Abstraction Charge system will result in higher or lower charges depending on the unique profile of each water user. For example, water users in regions of the UK who are stressed will pay more than water users in regions where water is more plentiful. Water users who draw from "supported" or managed sources such as storage reservoirs will pay more than water users who draw from "unsupported" or unmanaged water sources. Water use in the summer season is also more expensive than water use in the winter season. Applications that result in high evaporative loss are also charged more than applications with low evaporative loss. Finally, those who use higher volumes of water will also pay more. Across the UK, the average Water Abstraction Charge can be quite different (Figure 2).

The objective of the Water Abstraction Charge is to charge water users the cost of administering, regulating and supporting water resources management. The government has decided that water users should have the primary responsibility for funding the protection and improvement of water in rivers, streams and lakes by paying for the water they take and use. While most water users are required to pay the charge, there are some exemptions. For example, water that is used in the production of electricity (below five megawatts) is exempt from the charge. In addition, water use held under a temporary license is also exempt.

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FIGURE 1: Water Abstraction Charges in the United Kingdom

Charge	Description	Nature	Calculation	Amount
Application Charge	A charge payable by any license applicant for the right to abstract or impound water, or to vary an existing license.	**Fixed Charge**	No Calculation	£135
Advertising Charge	When applicable, a charge that covers the Environment Agency's costs in relation to advertising undertaken by the Agency of any application for a license.	**Fixed Charge**	No Calculation	£100
Annual Charge (Standard Charge)	This charge recovers the costs of managing abstractions and regulating abstractions. The charge is paid annually.	**Variable Charge**	The Annual Charge for water abstraction is comprised of three components, including the Standard Charge, the Compensation Charge and the Environmental Improvement Charge. All three are combined to yield the total annual water abstraction charge for a water user. The amount paid by water users is calculated based on the volume of water in the license, the source of the water, the season at which withdrawals take place, the region in which the water is used and how the water is to be used.	Variable Charge
Annual Charge (Compensation Charge)	This charge recovers costs associated with revocation or varying an existing license.	**Variable Charge**	Users licensed for large volumes will pay a higher charge. Users in certain regions will also pay more. Certain sources of water are more expensive. Tidal waters are the least expensive, followed by natural or "unsupported" sources. The most expensive are managed or "supported" sources, such as water from a storage reservoir. Charges for summer use are higher than charges for winter use. Uses that involve high water "loss" such as evaporation will also be charged more than uses with lower water "loss."	Variable Charge (£25 Minimum)
Annual Charge (Environmental Improvement)	This charge is for remediating damaging water abstractions in certain parts of the UK. This charge was added to the abstraction regime in 2008.	**Variable Charge**	*The formula for calculating the Annual Charge is as follows:* Standard Charge = Volume in 1,000s of M^3 X Region Factor X Source Factor X Season Factor X Loss Factor Compensation Charge = Volume in 1,000s of M^3 X Season Factor X Loss Factor X Environmental Charge Annual Charge = Standard Charge + Compensation Charge	Variable Charge

Source: UK Environment Agency.

FIGURE 2: Examples of Water Abstraction Charges in the United Kingdom

	All Figures for 2010/11 Year in Pounds Per 1,000 M^3		
Region	Standard Charge	Environmental Charge (Non-water Companies)	Environmental Charge (Water Companies)
Anglian	£ 26.71	£ 4.26	£ 4.26
Midlands	£ 14.95	£ 2.51	£ 2.51
Northumbria	£ 25.98	£ 0.00	£ 0.00
Yorkshire	£ 11.63	£ 0.62	£ 0.00
Southern	£ 19.13	£ 3.59	£ 3.59
South West and Wessex	£ 19.71	£ 4.80	£ 1.46
Thames	£ 13.84	£ 0.83	£ 2.75
EA Wales	£ 13.89	£ 2.42	£ 0.00

Source: UK Environment Agency.

Israel

According to the Organisation for Economic Cooperation and Development (OECD), policy developments in Israel clearly demonstrate the power of pricing to induce positive behavioural changes that can lead to more sustainable patterns of water use (OECD 2010). Israel is confronted with serious water challenges, including water shortages and increasing water pollution. Yet, the nation is a success story when it comes to water conservation, especially in the irrigation sector. Water pricing has played an important role in Israel's larger water policy approach and sectors such as agriculture have responded to higher prices by lowering the demand and increasing their water use efficiency.

About half of the nation's total water demand comes from the agricultural sector. In the past, this percentage was even higher, but a variety of factors have converged to lower agriculture's share of water use. The water quotas allotted to irrigators were reduced, the use of recycled water in irrigation has grown, government has made investments in more efficient irrigation technology and irrigation water prices have doubled in the past decade.

Israeli farmers have been forced to adapt to a situation where water has become less available and more expensive. Remarkably, the situation of increased scarcity and increased water prices has not resulted in less agricultural output. Rather, output has increased, and water is being use more efficiently. For example, the fruit sector experienced a 35% reduction in its water quotas between 2000 and 2005. During this time, the sector increased its production by 42% (OECD 2010).

The water stressed nation of Israel is an example of where pricing policies—implemented in conjunction with other management tools—have been successful in reducing water demand and improving water use efficiency and productivity.

Australia

Australia is a naturally arid continent that has also suffered from a ten-year drought. This has forced the nation to implement a number of critical reforms to its water resources management. The reforms undertaken in Australia have been marked by several characteristics. First, the suite of policy reforms was facilitated by the national government. Although state governments have constitutional responsibility for water resources, the central government spearheaded guiding legislation. A good example is the new National Water Initiative (NWI). Under the NWI, the central government rewards states that have successfully reformed water policy with various types of incentive payments. While specific water pricing, policies and schemes do differ across the country, all rest on a common set of principles.

Second, in most states pricing policies have been implemented incrementally. Water pricing is a key element of the NWI and is meant to achieve several goals including efficient water use, sustainable water use, and to raise revenue for water management programs and activities. Water for the environment is seen as an essential component of Australia's water policy. Recently, the national government introduced *Water for the Future*. This is a decade-long initiative that will see the government investing nearly $13 billion in water management policies. Some of the funds will be used to "buy back" water in the Murray Darling Basin for environmental purposes.

Third, pricing has also been pursued and applied in the agricultural sector. Despite government's strong hand in water management at both the national and state level, there has been a strong emphasis on getting irrigation detached from government subsidies and to begin functioning on a stronger commercial basis. Today in Australia there is a mix of private irrigation and semi-public irrigation schemes that are overseen by state governments. In advance of the changes, there was consultation with stakeholders, including farmers and the various irrigation districts.

Finally, Australia has revamped its system of regulation and oversight. In 1994, the principle of institutionally separating water service delivery providers from regulation was adopted. Today, government regulators monitor all water providers on a regular basis and ensure that water pricing practices are both fair and transparent.

For more information and to access the Canada West Foundation's water policy research visit: www.cwf.ca

REFERENCES

Organisation for Economic Cooperation and Development (OECD). 2010. "Water Pricing in Israel (Annex B)" in *Taxation, Innovation, and the Environment.*