PRICING STRATEGY FOR RAW WATER USE CHARGES

Date: 2016
CONTENTS

• Introduction
• Objectives of the pricing strategy
• Principles for water pricing
• Changes from the previous version of the pricing strategy
• Amendments to the pricing strategy
• Implementation of the Pricing Strategy
• Q&As
BACKGROUND (1/2)

• Pricing Strategy provides the pricing framework for the use of raw (untreated) water from the water resource and from government waterworks and the discharge of water into a water resource or onto land

• NWA makes provision for the review of the strategy from time to time
  o Current version was published in March 2007
  o There have been significant developments and a number of challenges in the sector since then, warranting a review of the strategy

• Challenges that this pricing strategy seeks to address are the following –
  o Recovery of costs for water resource management and sustainable infrastructure asset management
  o Protection of poor against unaffordable tariffs as a result of infrastructure development
  o Funding of catalytic water infrastructure to support social or economic development
BACKGROUND (2/2)

- Strategy seeks to facilitate reform as well to provide transparency and predictability on how water will be priced
  - It is intended to support the goal that water is efficiently and effectively managed for equitable and sustainable growth and development
- Issues that will be investigated further and/or requiring policy changes include –
  - Revision of price capping to the agricultural sector
  - Water for fracking, acid mine drainage and bio fuels
  - If any, these will be incorporated into subsequent revisions of the pricing strategy
OBJECTIVES OF THE PRICING STRATEGY

- Ensure that costs of achieving and maintaining RQOs are sufficiently recovered through water use charges
- Ensure that there is adequate funding for the effective operation, maintenance and development of waterworks
- Provide an enabling framework for the provision of financial assistance and the use of water pricing to support the –
  - Redress of racial and gender imbalances in access to water
  - Redistribution of water for transformation and equity purposes
- Facilitate financial sustainability of water management institutions
- Promote / facilitate water use efficiency
- Establish a platform for an independent regulator for improved economic regulation across the entire water value chain
PRINCIPLES OF WATER PRICING (1/3)

Pricing Strategy aims to provide a greater degree of transparency on how raw water is priced in the country and the following principles apply –

• **Hybrid tariff approach** – Provides for a combination of nationally and water management specific charges to facilitate development of affordable tariffs to all users. Elements of water charge will be –
  - Levied on basis of a national charge for a particular sector(s)
  - Based on Scheme or catchment level charge

• **User pays and recovery of costs** – Provide for full recovery of costs associated with management, use, conservation and development of water resources and associated administrative and institutional costs
  - Users must pay for costs of water use given the need for targeted subsidies where users are not able to afford costs resulting from full application of these principles
• **Polluter pays** – Polluters must pay for costs of their water discharge or pollution

• **Differential charges and capping of water use charges** – Allows for differential charges and capping of water use charges to designated water use sectors to support the achievement of key national objectives
  - Food security
  - Racial and gender equity
  - Job creation
  - Economic development

• **Fiscal support** – DWS will provide fiscal support for core national and public interest functions which cannot be recovered fully through water use charges

• **Ecological sustainability** – Facilitate funding to ensure provision of water for ecological reserve and sector’s contribution to maintaining ecosystems
PRINCIPLES OF WATER PRICING (3/3)

• **Accountability** – Funding will be allocated to specific water management institutions
  ○ Transparency and accountability for funds that are generated from raw water sales
• **Efficiency** – Provides for an economic regulator to ensure that water management charges are maintained at affordable levels
• **Multi-year tariffs** – Provides for multi-year tariff determination to facilitate longer term planning and greater levels of certainty for water institutions and users.
Changes to the Water Use Categories (1/2)

- Provides for six water use categories from the previous four
  - Better representing water user groups
  - Allow for more clearly targeted charges
- Main changes in these categories are –
  - Split of formerly Domestic and Industrial category into two separate groups, Municipal and Industrial / Mining
  - Addition of High Assurance Use, representing users with an assurance of supply of 99.5%
  - Introduction of a category for hydropower to be able to charge for water use by small scale hydropower plants
Changes to the Water Use Categories (2/2)

- **Hydropower**
  - Non-consumptive use based on a combination of fixed and variable charge

- **High Assurance Use**
  - Includes strategic water use for power generation (steam and cooling processes)

- **Stream Flow Reduction Activities**
  - Includes afforestation

- **Agriculture**
  - At 62% of water use, irrigation accounts for the largest water use category

- **Municipal**
  - Accounts for 24% of water used
  - Covers a major portion of the water need to the country’s poor

- **Industry and Mining**
  - Fracking, Biofuel, Solar production and other sectors of Strategic Importance
Changes to the Water Use Charges (1/2)

- **Future Infrastructure Build Charge (FBIC):** Replaces Return on Assets (ROA) charge
  - Intended to fund activities listed under s56(2)(b)(i, ii and iii) of NWA
  - Costs of investigation, planning, design, construction and pre-financing of new infrastructure
  - Costs of betterment of already existing infrastructure
  - Only intended to finance activities for social and economic development stimulus infrastructure
  - Section 56(2) (b) (v) of NWA makes provision for a RoA charge “for funding water resources development”; however, ROA’s private sector connotation tended to obfuscate its purpose
  - Introduces a higher degree of transparency in calculation of FIBC
Changes to the Water Use Charges (2/2)

- **Economic Regulator Charge:** Introduces an Economic Regulator Charge that is intended to fund the activities of the Economic Regulator
  - Institutional arrangements for Economic Regulator are still to be finalized
  - NDP and NWRS2 intimate a transition to an independent regulator
  - Best practice warrants independent funding for regulator

- **Hydro Power Charge:** Will be levied on all existing and new hydropower plants
  - Hydropower is a critical component of power generation mix but has a significant impact on water resources
  - Proposed charges for hydropower generation will be based on
    - c/kWh of energy generated, and
    - Fixed charge based on kW installed
Changes to calculation of depreciation charges

- Depreciable portion (%) and Estimated Total Useful Life (years) were previously prescribed
  - Depreciable portion was based on a set of (unqualified) assumptions
  - Overly complicated process and could lead to misunderstandings given (unqualified+-) context behind parameters
  - Not aligned with standard industry depreciation practices used by water boards and related entities
  - Potential problem with depreciating only a portion of an asset is that loans can never be paid back without showing a profit
- Proposes that full component is depreciated over a certain period, and not only a portion
- Estimated Total Useful Life (years) of asset components are aligned with standard industry depreciation practices used by water boards
S56 of NWA state that the pricing strategy may contain a strategy for setting water use charges to include funding for –

• Water resource management
  o Includes costs related to gathering information; monitoring, controlling, conserving and protecting water resources and their use
  o Includes discharge of waste and protection of the Reserve

• Water resource development and use of waterworks
  o Includes costs of investigation and planning; design, pre-financing and construction

• Operation and maintenance of waterworks

• A return on assets

• Costs of water distribution

• Achieving the equitable and efficient allocation of water
AMENDMENTS TO PRICING STRATEGY

Provides for water resources management costs within 5 categories of charges:

- **Water Resources Management Charges**
  Cover the charges required to manage water resources within the nine water management areas determined in the NWRS-2

- **Water Resources Infrastructure Charges**
  Charges relating to the development and use of waterworks, covering charges related to planning, capital costs, operation and maintenance, depreciation, and future infrastructure build on government water schemes.

- **Waste Discharge Mitigation**
  Charges which cover the charging for discharge of water containing waste into a water resource or onto land

- **Water Research Commission Charges**
  Paid into a national Water Research Fund and used by the WRC to fund water-centred Research and Development for South Africa.

- **Economic Regulation Charges**
  Charges intended to fund the activities of the Economic Regulator
AMENDMENTS TO PRICING STRATEGY – WATER RESOURCE MANAGEMENT CHARGE

• WRMC will fund water resources management activities in WMAs
  o Activities relate to protection, allocation, conservation, management and control of nation’s water resources

• Two components to WRMC:-
  o Abstraction water use charge
  o Waste discharge related water use charge

• There are no changes in the composition and application of this charge from the current pricing strategy

• Activities will be progressively undertaken by CMAs when they are established and capacitated

• WRMCs will be levied to municipal, industrial, agricultural, SFRA and high assurance users
  o Hydropower users will not be liable for this charge
AMENDMENTS TO PRICING STRATEGY – WATER RESOURCE INFRASTRUCTURE CHARGE (1/7)

• Provides for development and use of Government waterworks and may include capital cost of projects
• Provides for four components to this charge;
  o Operations and Maintenance (O&M)
  o Depreciation / Refurbishment
  o Future Infrastructure Build Charge (FIBC)
  o Capital Unit Charge (CUC)
• Charges will be a differentiated tariff for water use categories
• Charges will be scheme specific with the exception of the FIBC (determined on a national basis)
• Applying the four infrastructure charges will vary depending on the funding arrangements of schemes
  o Infrastructure charges apply on new and existing government schemes
## AMENDMENTS TO PRICING STRATEGY – WATER RESOURCE INFRASTRUCTURE CHARGE (2/7)

<table>
<thead>
<tr>
<th>Charge to be Levied</th>
<th>Existing Schemes</th>
<th>New Schemes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Commercial portion of schemes funded by the Minister</td>
<td>Social portion of schemes funded by the Minister</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Depreciation / Refurbishment</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Future Infrastructure Build Charge</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Capital Unit Charge</td>
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</tbody>
</table>
AMENDMENTS TO PRICING STRATEGY – WATER RESOURCE INFRASTRUCTURE CHARGE (3/7)

Operations and Maintenance Charge

- Facilitate recovery of direct and indirect O&M costs on government water schemes to ensure that infrastructure is maintained
  - Charge will be recovered on a scheme or system basis
  - Charge applicable to all sectors, but capped for irrigation
- Direct O&M charge includes fixed and variable costs, attributed directly to –
  - Administering, operating and maintaining schemes, distribution costs
- Direct O&M costs will be allocated directly to sectors where this is possible; cost of joint works and operations will be shared on a volumetric basis
- Indirect O&M costs cannot be directly attributed to a specific scheme; contribute towards sustainable management of water schemes
  - Costs will be allocated to different sectors in an equitable manner
Depreciation Charge

- Provides for loss in functional performance and real term value of existing water resource infrastructure
  - Occurs due to wear and tear, decay, inadequacy and obsolescence
  - Value not restored by regular maintenance

- Charges will be –
  - Used to refurbish existing assets on a prioritised basis
  - Applicable to all sectors supplied from Government waterworks
  - Capped for irrigation sector
  - Scheme or system specific

- Depreciation commences when asset is available for its intended use
  - Land, artwork and assets under construction are not depreciated
  - All other property, plant and equipment are depreciate
AMENDMENTS TO PRICING STRATEGY – WATER RESOURCE INFRASTRUCTURE CHARGE (5/7)

**Future Infrastructure Build Charge (FBIC)**

- Support development of social and economic development stimulus infrastructure
  - Social infrastructure: Supplying basic water requirements of municipal water users in rural areas
  - Economic stimulus infrastructure: Provide for future economic water use where water supply is necessary for future economic development

- Charges will be paid by municipal, industrial / mining, high assurance use
  - Capping of infrastructure charges for irrigation is retained; these may be uncapped in future

- FBIC will be calculated at a national level, such that all users liable for FIBC
  - Based on annual costs for infrastructure, applied to water use volumes of all included user categories
AMENDMENTS TO PRICING STRATEGY – WATER RESOURCE INFRASTRUCTURE CHARGE (6/7)

Capital Use Charge (CUC)

- Institutional framework provides for funding government water schemes off-budget (debt financed), where such infrastructure is commercially viable
- CUC will be determined for each scheme and provide for debt service requirements on these commercially viable projects. CUC will be –
  - Taking cognizance of affordability, economic life and timing of potential future augmentation of infrastructure
  - Based on financial models for the project and on water used from scheme (and not necessarily on water provided into scheme)
- All water users supplied from scheme will be liable for CUC, except the social component
  - Users of social component of scheme will be subject to tariffs applicable to state funded schemes
Assurance of Supply

- Strategic water users have a high assurance of water supply – 99.5%
  - They should, on average, get their full supply of water for all but one year out of two hundred
- Assurance of supply for other sectors is as follows:
  - Municipal and Industrial / Mining users – 97%
  - Agricultural users – 70%
- Differences are reflected in charges that different sectors pay since assurance of supply is built into calculation of infrastructure charges
- Applies to Future Infrastructure Build Charge (FIBC) and Capital Unit Charge (CUC) infrastructure related charges
AMENDMENTS TO PRICING STRATEGY – WASTE DISCHARGE CHARGE (1/2)

• Waste Discharge Charge System (WDCS) based on polluter pays principle
  o Provides an economic instrument to assist in maintaining the Resource Water Quality Objective (RWQOs), which is the desired state of surface water resources
• Pricing Strategy may provide for a differential rate for waste discharges, taking into account –
  o Characteristics of waste discharged
  o Amount and quality of waste discharged
  o Nature and extent of impact on a water resource caused by the waste discharged
  o Extent of permitted deviation from prescribed waste standards or management practices
  o Required extent and nature of monitoring the water use
AMENDMENTS TO PRICING STRATEGY – WASTE DISCHARGE CHARGE (2/2)

• WDCS will be implemented at a catchment or sub-catchment level
• WDCS will be levied on water quality variables that critically impact RQOs
• RQC will be selected with due consideration to the following:
  o Type of waste discharge sources
  o Nature of waste typically discharged
  o Cost-effectiveness of monitoring different variables
• WDCS will comprise of two distinct water use charges:
  o *Waste Mitigation Charge (WMC)* - Cover quantifiable costs of mitigating waste discharge related impacts
  o *Waste Discharge Levy (WDL)* - Provide a disincentive for use of the resource as a means of disposing waste
• Pricing Strategy only provides for WMC, as the levying of the WDL will require the promulgation of a Parliamentary Money Bill
AMENDMENTS TO PRICING STRATEGY – WATER RESEARCH COMMISSION CHARGE

• Charge used for promoting water research and development
• Minister is empowered to set tariffs in respect of water research charges levied on quantities of water supplied, or made available for use, for
  o Agricultural purposes
  o Urban purposes
  o Industrial purposes
  o Any other purposes
• Department will collect charges on behalf of WRC
• Charges remain independent of changes in water use charges
• Water research charge is payable by the municipal, industrial & mining, agriculture and high assurance water use sectors
  o Resource poor farmers will be exempt from paying the levy
AMENDMENTS TO PRICING STRATEGY – ECONOMIC REGULATION CHARGE

• Charge is proposed as a separate category
  o Intended to fund activities of the Economic Regulator
  o Activities of the Economic Regulator are not part of the costs to produce water
  o However, the Economic Regulator has a critical role to play in all aspects of the water value chain
  o NWA *does not* currently provide for levying a charge for these activities
• Charge will only be implemented once necessary legislation provides for such charges
• Charge will be –
  o Based on annual budget of the Economic Regulator
  o Recovered on total register volume of users liable for charge
  o Payable by all sectors
## AMENDMENTS TO PRICING STRATEGY – SUMMARY OF CHARGES

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Water Resources Management Charge</th>
<th>Water Resources Infrastructure Charge</th>
<th>Waste Discharge Mitigation Charge</th>
<th>WRC Charge</th>
<th>Economic Regulation Charge (Future)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Industry and Mining</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>High Assurance Use</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Agriculture</td>
<td>YES</td>
<td>YES (Capped)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Stream Flow Reduction Activities</td>
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<td>🚧</td>
<td>🚧</td>
<td>🚧</td>
<td>🚧</td>
</tr>
<tr>
<td>Hydropower</td>
<td>🚧</td>
<td>YES</td>
<td>🚧</td>
<td>🚧</td>
<td>🚧</td>
</tr>
</tbody>
</table>

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IMPLEMENTATION OF PRICING STRATEGY (1/5)

Measurement of Water Use

- Water charges currently based on registered water use
  - Water use is not measured or metered
- Water for productive use is abstracted at different assurances
  - Must be reflected in payment for water resource management services
  - Is taken into account in registered volumes
- Compulsory measurement of water abstraction to be phased-in so that water use can be charged against actual abstraction
- Water resources management charges will continue to be charged against registered use for stability of revenue and administrative ease
Indexation of Charges

• Must use index that is linked the closest to costs being inflated or compared
• CPI (Consumer Price Index) is a benchmark for how consumers perceive
tariff increases relative to a basket of other goods consumed
  o CPI is a good overall test; however, this index should be limited to O&M
    components when calculating raw water use charges (except for
    energy)
  o An ‘energy index’ based on the average price of electricity as calculated
    from Eskom’s Annual Report should be used as it best reflects energy
    cost
• PPI (Production Price Index) reflects the cost of manufacturing goods and is
  the closest reflection of the cost of construction
  o PPI should be applied when calculating infrastructure related charges
IMPLEMENTATION OF PRICING STRATEGY (3/5)

Treatment of Reserve Funds for Depreciation and FIBC

• DWS to manage funds associated with depreciation and FIBC within a dedicated reserve fund

• The above structures will enable the following:
  o Depreciation charge revenue may serve as a stabilization reserve for refurbishment
  o FIBC income may serve as a provisioning reserve for betterment and development of social and economic stimulus development projects

• Use of depreciation funds will be prioritised in accordance with DWS integrated water resource risk management systems

• DWS will continue to fund these projects until such time that the reserve fund has been built up
IMPLEMENTATION OF PRICING STRATEGY (4/5)

**Multi-Year Charges**

- DWS (and CMAs) will introduce a system of multi-year charges
  - Sectoral charges will be developed during the budgetary process for each water management area
  - Charges will be set for a period of three years
- Water use charges must be approved by the economic regulator
  - Charges to be approved before 15th September of every appropriate year
  - Charges must be provided to WSPs and bulk WSPs to enable them to calculate bulk water tariffs before 30th September
- Minister must approve the charges until the economic regulator is established
IMPLEMENTATION OF PRICING STRATEGY (5/5)

Approval of Water Use Charges

• Minister approves water use charges for government waterworks and for water resource management
• Economic Regulator reviews and advises Minister on aspects such
  o Revenue
  o Cost and tariff trends
  o Substantive parameters
  o Impact of an adjustment of tariffs on sectors,
  o Revenue and sustainability of the WTE
  o Compliance with pricing strategy
  o Other regulatory guidelines and requirements
• Minister presents charges to Portfolio Committee to get their input, but remains ultimately responsible to approve the water use charges
Can the public have access to these documents? 

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- Revision of the pricing strategy for water use charges – Gazette Notice number **1154 of 2015**
- Revision of the norms and standards for setting water services tariff - Gazette number **1153 of 2015**

OR


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THANK YOU