

IMPROVING PERFORMANCE -INCENTIVES FOR A PUBLIC SECTOR MONOPOLY

July 2018

Consultative Document

Responding to this Document

All persons wishing to comment on this document are invited to submit their comments by **August 23, 2018**. Responses should be sent by post, fax or e-mail to:

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1.]	INTRO	DUCTION			
	1.1	BACK	KGROUND			
	1.2	Stru	CTURE OF THE DOCUMENT			
2]	RIC'S APPROACH TO INCENTIVES – THE ELECTRICITY SECTOR				
	2.1	SETT	ING A LONG PRICE PATH			
	2.2	BUIL	DING-BLOCK MECHANISM			
	2.3	RATE	E OF CHANGE			
	2.4	Effic	CIENCY CARRYOVER MECHANISM			
	2.5	FINA	FINANCIAL INCENTIVES FOR SERVICE PERFORMANCE			
	2.6	Сом	PARATIVE PERFORMANCE REPORTING			
	2.7	Appl	ICABILITY OF FINANCIAL INCENTIVES TO THE WATER SECTOR			
3]	REGUI	EGULATING STATE-OWNED AND RUN UTILITIES10			
	3.1	Esta	BLISHMENT OF SPECIFIC TARGETS			
	3.2	GOVERNANCE INITIATIVES				
	3.2.1 Hard Budget Constraint		Hard Budget Constraint			
	-	3.2.2	Performance-related pay (PRP)15			
	3.3	OTHER	INNOVATIVE CORPORATE INCENTIVE MECHANISMS – THE "TRIGGER" MECHANISM18			
4.	l	NEXT S	STEPS			

1. INTRODUCTION

1.1 Background

The RIC Act supports an incentive-based approach to economic regulation. Incentive regulation incorporates two broad sets of incentives. The first is focused primarily on reducing costs or process innovation and the second focuses on service quality or product innovation.

With respect to reducing costs or process innovation, the central idea behind incentive regulation is to encourage firms to "outperform" predetermined benchmarks, that is, x-factors embodied in the price cap/revenue cap regime, and to allow them to retain part or all the benefit (profit) from doing so (at least for the duration of the price control period). It is argued that by doing this, the firm has a financial incentive to devote effort to decreasing its costs. Alternatively, because the firm is not guaranteed a fixed rate of return it is also motivated to improve its performance to ensure that it does not sustain losses. In this way incentive regulation mimics the behaviour of the competitive market. Regulators often employ other mechanisms that work in tandem to either enhance or complement the x-factor mechanism. One such important mechanism is the efficiency carryover mechanism¹, which ensures that service providers have an on-going incentive to make efficiency improvements².

With respect to improving service quality or product innovation, because incentive regulation does not fully replicate a competitive market, it can introduce perverse incentives that deliver inappropriate levels of quality. This has led to an increasing focus on the need to incorporate service quality incentives within the regulatory regime to ensure the appropriate level of quality. Therefore, incentive regulation also includes mechanisms within the regulatory framework to maintain or improve service quality or product innovation. In fact, a number of approaches can be used to provide incentives for service providers to meet performance obligations, including:

¹ An efficiency carryover mechanism is the means whereby the incentive to make efficiency gains by a service provider is enhanced by permitting it to carry over gains from one regulatory period to the next. Customers benefit through lower prices in the medium and long-term, when the efficiency gains are passed through.

²The RIC consults on this issue in the document entitled "Framework and Approach for the Price Review 2008-2012 Water and Sewerage Sector".

- specification of service standards and/or obligations to apply during a regulatory period;
- reporting performance against service standards/obligations as part of the performance monitoring and reporting regime;
- designing financial incentive mechanisms to reward and/or penalize the service provider for performance that varies from pre-determined benchmarks/standards; and
- any combination of the above.

This Consultation paper discusses some incentive mechanisms to be adopted in tailoring incentive regulation for the water and waste-water sector in Trinidad and Tobago.

1.2 Structure of the Document

The remainder of this document is structured as follows:

- Section 2 discusses the RIC's approach to incentives, with specific reference to the electricity sector of Trinidad and Tobago.
- Section 3 this Section looks at the challenges of regulating State-owned and run utilities and the possible incentive mechanisms which may be utilized to improve performance:
 - Establishment of specific targets.
 - Governance initiatives such as performance related pay and a hard budget constraint.
 - Other mechanisms such as "trigger" mechanisms which make the service provider forfeit part of its allowed tariff adjustment if it does not deliver on key specified obligations.
- Section 4 Next Steps.

2. RIC's Approach to Incentives – The Electricity Sector

For the RIC's first Price Review for the Electricity Transmission and Distribution sector (PRE 1), the RIC adopted an incentive-based approach to regulation that involved a number of mechanisms. These incentive mechanisms encompassed both financial incentives (such as a long price path, efficiency carryover mechanism, guaranteed standards scheme) and non-financial incentives (performance monitoring and reporting). These incentive mechanisms are discussed below³.

2.1 Setting a Long Price Path

For PRE 1, the RIC established a price path for a period of five years based on forecasts of key components of revenue requirement (including operating and maintenance expenditure, capital expenditure and returns) for the Trinidad and Tobago Electricity Commission (T&TEC). This allows the service provider to retain any benefits that arise from out-performing the forecasts and equally requires the service provider to bear any losses from under performance. One of the strengths of this approach is that it leaves operational and commercial decisions in the hands of the service provider. For this approach to work, there should be limited or no opportunity for the determination to be re-opened, as it will weaken the incentive properties of the framework.

2.2 Building-Block Mechanism

The RIC, in determining price limits for the electricity sector, used a building-block approach. The price limits were based on an assessment of forward looking revenue requirements using forecasts of efficient firm-specific cost of service. The RIC was therefore able to provide incentives to increase efficiency as the approach established the allowed revenue requirement based on a buildup of benchmarks⁴ for various cost component.

³ The methodology for PRE 1 has worked well, and is being employed for the Price Review for the second Price Review for the Electricity Transmission and Distribution Sector PRE2.

⁴ Established considering both internal performance and industry best practice.

2.3 Rate of Change

The RIC also used 'rate of change' as another technique for arriving at an efficient level of operating and maintenance costs (Opex). The rate of change is the year-to-year change in Opex for a number of factors such as expected productivity improvements in labour and other costs. This rate is established by examining the productivity achievement in Opex for a number of years and calculating future costs reductions on the assumption that the same rate of change (i.e. productivity improvement) will continue in the future.

2.4 Efficiency Carryover Mechanism

Apart from utilizing the above mechanisms to provide incentives the RIC had included an efficiency carry-over mechanism to further supplement the incentives for achieving efficiencies within the regulatory control period. There are two broad efficiency carryover mechanisms:

- A glide-path mechanism under a Glide Path Mechanism, gains (losses) are calculated by comparing actual expenditure in the last year of the regulatory period with the benchmark for that year. Benchmarks for the next regulatory period are based on the actual expenditure for the last year of the previous regulatory period.
- A rolling carryover mechanism under a rolling carryover mechanism (at times referred to as a fixed term efficiency carryover mechanism) efficiency gains (losses) are carried by the service provider for a specified number of years following the year in which they occurred. The benefit is then passed to customers.

The RIC had incorporated a rolling carryover mechanism into its methodology for PRE1.

2.5 Financial Incentives for Service Performance

Another method of providing incentives to improve service performance is the linking of actual performance to prices. There are two approaches:

(i) <u>Guaranteed Payments</u> – Under this approach, the service provider is required to make guaranteed payments to customers who receive service below a certain benchmark. This is one of the most common approaches used by regulators to control service standards.

The standards are generally divided into guaranteed and overall standards. This approach is being used by the RIC for the electricity transmission and distribution sector⁵.

(ii) <u>Performance Incentive Mechanism</u> – Some regulators include a service standards mechanism in the price control formula, this is known as the "S-Factor". It provides an incentive for the firm to increase service levels by collecting additional revenue where the service provider exceeds pre-determined service quality targets. Such a mechanism establishes a linkage between the price level and performance indicators, outperformance is rewarded through a higher price, while failure to achieve standards results in a lower price. After a detailed analysis the RIC decided not to introduce an S-Factor mechanism for PRE1 and has taken a similar decision for the current Price Review (PRE2).

2.6 Comparative Performance Reporting

Under this approach the service provider is required to report its performance against a specified set of measures. It is a relatively straight forward approach and arguably a pre-requisite for other forms of incentives. The reporting and auditing of the performance of a service provider against a set of indicators provides a solid basis for delivering on the incentives. The RIC has introduced this approach for the electricity sector⁶.

2.7 Applicability of Financial Incentives to the Water Sector

The existing ownership and governance arrangements for the water sector in Trinidad and Tobago as well as the potential conflict between social and commercial objectives may limit the effectiveness of financial incentives. Therefore, non financial incentives may be more effective in the case of the water sector. Furthermore, the primary incentive to reduce costs embodied in incentive regulation is the ability to make profit. Consequently, it may be argued that such a regime will be most successfully applied to utility service providers that are privately owned and

⁵ The Guaranteed Standards Scheme continues to perform well, and performance reports are available on the RIC's website, www.ric.org.tt

⁶ Performance Monitoring Reports for the Electricity Transmission and Distribution Sector are available at www.ric.org.tt

operated, that is, conventionally financed through a mixture of debt and equity⁷. Here the incentives are transmitted by (i) shareholders, who maximize their value by encouraging outperformance of regulatory targets and (ii) debt holders/lenders, who are keen to avoid under performance in order to protect their interest payments and principal. Utilities that are stateowned and controlled sometimes have very different objectives and it may be necessary to provide additional incentives or employ different mechanisms to ensure improved efficiency on the part of those utilities. This may entail a heavier reliance on "sticks" within the regulatory framework, that is, setting tough targets coupled with appropriate penalties, rather than "carrots", that is, rewarding performance beyond the target level.

Moreover, the mechanisms usually employed to further incentivise privately owned/and or commercially run utilities, such as, the efficiency carryover mechanism mentioned above may have limited effect on these utilities. In the public sector, the regulator has to assess the lowest reasonable overall cost of delivering the performance levels that the service provider is required to meet. He cannot rely on the presence of private shareholders nor market forces (there is often very little competition in these sectors) to deliver efficiency. All these issues are examined further in the following Section.

Comments are invited as to whether financial incentives such as the efficiency carryover and S-Factor mechanisms are likely to be appropriate and effective for the water sector.

⁷ Indeed different types of corporate entities, with their associated regulatory and financing arrangements, lead to different incentives for cost efficiency.

3. Regulating State-owned and run Utilities

Well run state-owned and operated water utilities are the exception rather than the rule. Indeed, most regulators acknowledge that it is often more difficult to regulate such enterprises than their private sector counterparts. While incentive-based regulatory mechanisms place greater pressure on management to reduce costs and/or improve quality, whether an entity is publicly or privately owned, it is generally more effective under the latter, as private owners exert increased pressure on management to achieve efficiency improvements which elevate profits. The presence of private lenders (without government guarantee) can also act as a check on utility performance, especially where loan covenanting and step-in arrangements make financial performance thresholds clear.

There appears to be a consensus that the reasons for the poor performance of state-owned enterprises (SOEs), including public utilities infrastructure providers, are rooted in the failure of the political directorate to maintain an arms-length relationship with these enterprises (Irwin and Yamamoto 2004, Foster 2005, Nellis 2006). As public sector ministers are obliged to act as bankers, and to control the finance available to the service provider. They have to juggle conflicting demands for cash, which means that money will not always be available to such enterprises. In undertaking these tasks there is little scope for maintaining a hard budget constraint and creating the right incentives, without being pulled into micro-management. The existence of a hard budget constraint is essential to the proper delivery of service and to efficiency. This issue is explored more deeply later in this paper.

Consequently, separating policy, regulation and service delivery roles, that is, making service delivery and regulation more independent and more distant from day to day political concerns strengthens a utility's accountability and performance.

Indeed, where government is the majority shareholder the following essential principles of good governance can be applied:

• The shareholder appoints the board, and agrees to the terms on which the Directors and senior managers are appointed (annually and for the longer term).

- The shareholder agrees to the Company's strategic plan with the Board.
- The Board is accountable to the shareholder for delivering the agreed plan.
- The shareholder gives the Board the operational freedom to take the necessary action needed to deliver the goals and objectives of the Strategic Plan.
- The shareholder monitors the Company's performance to satisfy itself that the strategic plan is on track.
- The strategic plan will be a business plan setting out how management intends to deliver objectives and metrics that would be designed to deliver on and out-perform the regulatory determination.

The RIC, in its 2006 Determination for the Trinidad and Tobago Electricity Commission (T&TEC), noted the importance of good governance as a catalyst for improving the performance of that enterprise. The RIC also highlighted some aspects of corporate governance that could be put in place to benefit that sector, including:

- well-defined responsibilities for the State as owner, the Board and senior management, ensuring that the accountability of each party is rigorous and transparent;
- the presence of high quality, independent, commercially experienced non-executive Board members who will bring openness and objectivity but also be able to question and advise senior management, when necessary, about the different aspects of the business' operations; and
- transparent and appropriate incentives and penalties for staff to ensure that the right calibre of professionals are attracted to the sector. Including the payment of bonuses which should be published in advance and based on independently measurable and verifiable targets.

Byatt (2007)⁸ notes that in the United Kingdom privatization allowed the utilities to establish an arms-length relationship with ministers. Ministers became key standard setters, maintaining public control over the collective objectives of the supplying companies. Finance for investment

⁸ Byatt, Sir Ian, "Regulating Public Utilities – Outputs, Owners and Incentives", Occasional Lecture 20, Centre for the Study of Regulated Industries, April 2007.

was provided through the capital markets and the new owners were subject to a variety of pressures, some from markets and some from regulators, to improve both delivery and efficiency.

The challenge therefore for many regulators, especially those of state-owned and run utilities, is to establish the appropriate mix of incentives and mechanisms to improve performance. Some of the incentives and mechanisms that could be used to supplement the RPI – X mechanism⁹ of price/revenue caps when applied to such utilities are outlined below.

3.1 Establishment of Specific Targets

One of the most common tools utilized by regulators to incentivise performance is the establishment of specific targets in areas where improved performance is deemed to be critical. Operational, customer service and financial targets are the most commonly used. Individual performance targets with associated penalties and bonuses (in addition to the mechanism discussed in Section 2) will add discipline and highlight areas requiring special attention. Performance targets need to be both achievable and challenging for the service provider.

In the RIC's first review of rates for the electricity transmission and distribution utility special attention was paid to the establishment of specific targets in a variety of key operational areas. The RIC intends to follow a similar approach in its review of rates for the water and waste-water sector. Defining appropriately, and with clarity, the output measures that the Water and Sewerage Authority (WASA) is required to deliver and on which it will be monitored is critical if the objectives of the RIC for the sector are to be achieved. Key areas of concern will be the reduction of Non-Revenue or Unaccounted for Water, increasing number of metered customers, and increasing the number of areas receiving a twenty-four hour supply. A number of regulators have set specific targets and examples are provided in Box 1 and 2.

⁹ RPI is the Retail Price Index and the X refers to the general efficiency or productivity factor set for the firm.

Box 1: Office of Utility Regulation (OUR) Jamaica

The Office of Utility Regulation¹⁰ (OUR) in its 2003 Determination for the National Water Commission (NWC) established a number of targets including the following:

- Net receivables not to exceed 25% of revenues and bad debt provision to be 8%.
- Employee costs not to exceed 35% of revenues (within two years of determination).
- Unaccounted for water to be reduced to 55% by the end of fiscal year 2004/05 and thereafter by at least two (2) percentage points per year.
- Collection rate to be 92% of billed revenues.
- Water quality compliance to be 99% of the IJAM standards.

In its 2013 Review it targets included the following:

- Net receivables not to exceed 25% of revenues and bad debt provision to be 8%.
- Unaccounted for water to be reduced to 55% by the end of the target period in 2018.Collection rate to be 90% by 2018.
- Water quality compliance to be 99% of the IJAM standards.

Box 2: The Water Services Regulation Authority (Ofwat)

Ofwat, established the following targets in 2005:

- Improvements at 227 water treatment works and replacement, relining or cleaning of 22,000 km of distribution mains to achieve compliance with drinking water standards.
- Cleaner effluent from 1,043 sewage treatment works, and improvements to 2,005 intermittent discharges leading to less pollution of the environment.
- A programme of nearly £1 billion to safeguard homes against the risk of sewer flooding. This was expected to resolve or mitigate every known high-risk problem of internal flooding from overloaded sewers by 2010. By then, the proportion of properties at risk would reduce to 0.01% of households.

In 2014 its targets included:

- Reduction in the time interruptions affect supply by 32%.
- 370 million liters of water to be saved each day by tackling leakage and promoting efficiency.
- 5% average drop in water bills over the five-year period.
- A reduction in the number of properties being flooded by wastewater from sewers.
- £44 billion investment in improving services, improving resilience and protecting the environment.

Comments are invited on use of specific targets as a means of improving performance for Public Sector Service Providers.

¹⁰ The Office of Utility Regulation (OUR) is responsible for regulating the water and waste-water sector (among others) in Jamaica.

3.2 Governance Initiatives

A key cornerstone for improving the performance of state-owned and run entities is strengthening the governance framework within which the entity operates. This may also include high level reforms such as, subjecting the enterprise to company law, external regulation or even listing a minority of shares on the stock exchange. Indeed, for incentive-based regulation to work, it is essential that managerial incentives are available for out-performance of targets, that is, governance initiatives which create appropriate internal organizational incentives for improved performance.

There are two key initiatives in this regard:

- The establishment of a hard budget constraint¹¹ that is, if a utility spends the financial resources made available in its regulatory determination without achieving the required outputs then the customers are not made to pay twice to meet the cost of remedying same; and
- **Performance-related pay** (**PRP**) that is, tying managerial pay to company performance.

3.2.1 Hard Budget Constraint

One of the key elements of incentive-based regulation is ensuring that the regulated company faces a hard budgetary constraint. To be fully effective, the tight budgetary constraint requires detailed scrutiny of the level of service and investment outputs that are actually delivered, as well as a limit on the resources that are available to deliver that level of service. Regulators set price or revenue caps to create such constraints. In turn, privately-owned regulated companies are subject to pressure from shareholders to outperform the regulatory settlement. It is this pressure that forces management to seek to improve efficiency which is eventually passed on to customers in the form of lower prices. In effect, the regulator sets the minimum level of performance and the incentives in the framework to induce the company to outperform the regulatory contract.

¹¹ Typically, when a firm faces a hard budget constraint it means that they must cover their costs of production using revenues generated either from the sales of their product or from other financial sources. In the short term, firms facing hard budget constraints may borrow to cover their operating costs. In the long term, however, if firms cannot cover their costs from their revenues, they fail, which means they must declare that the company is bankrupt or they must sell their assets to another firm. Hard budget constraints coincide with a situation where government authorities do not bail-out or subsidise poorly performing or loss-making firms. The discussion in this section draws on the same tenets but applies it to a regulatory environment.

Where regulators oversee privatized companies, such as in the United Kingdom, they do not increase prices to compensate for a failure by a regulated company to meet its obligations under the regulatory contract. As a result, there is no danger that customers would be asked to pay twice for the same promised improvements. Shareholders bear the risk. Under the public sector model there is no equity buffer and the risk may be borne by the government.

Therefore, for a publicly-owned and operated utility a hard budget constraint would mean that if the service provider were to spend the financial resources made available in a price determination without achieving the required outputs, then it should not be allowed to increase its borrowing to meet this shortfall, the government (as shareholder) would be liable to meet the costs of remedying this through the public purse. Customers must not pay twice through rates for a promised benefit. The service provider must understand that there can be no recourse to customers in the event of a failure to deliver the agreed levels of service and investment outputs. A hard budget constraint will force the service provider to be more aggressive in collecting receivables, linking investment more closely to profitability, and shifting objectives from simply meeting output targets to making a profit as well. Establishing proper financial discipline is critical to ensuring that the service provider meets and out-performs the regulatory obligations.

Ultimately, for a hard budget constraint to be applied effectively, government must accept that a state–owned and run service provider should be subject to no less financial discipline than its commercially owned and financed peers.

Comments are invited on the importance of establishing a hard budget constraint for a public sector monopoly

3.2.2 Performance-related pay (PRP)

An important component for ensuring that the service provider delivers on the regulatory contract, especially in the public sector context, is ensuring that the interests of management are aligned with the required levels of performance. This can be done through performance-related pay (PRP).

PRP ties managerial pay to company performance. In private organizations (for-profit), equitybased pay/stock options link remuneration to the company's profitability. However, management pay can also be easily linked to quality, safety, service delivery or other aspects of the company's financial performance. But to be effective, the financial incentives need to be both well aligned with the objectives set for an organization and of sufficient value to provide a real incentive to management.

In a study in the UK, Conyon and Freeman (2004) found that PRP has a positive and significant impact on financial performance and labour productivity for UK listed firms. Using a sample of 52 UK engineering firms between 1978 and 1982, Cable and Wilson (1989) found that companies with profit-sharing schemes have higher productivity than those without such schemes, with a differential reaching 8%.

In the UK, companies like Network Rail and Glas Cymru,¹² which are subject to incentive regulation but do not have shareholders, have sought to implement PRP schemes to provide incentives to their managers to improve performance. There are two key characteristics of these schemes, the first is a high level of transparency not only in their operation, but details of the schemes are made available to their customers and the public at large via the companies' websites. The second is that the schemes align the incentives of management with the interests of customers. These are critical elements which must be adhered to if such schemes are to be utilized locally in the water sector. Additionally, in the case of Network Rail, it is the regulator which requires that the entity operate such a scheme under the terms of Network Rail's Licence. While Network Rail determines the structure of the scheme it is subject to confirmation by the regulator that it meets the licence requirements. Well run publicly owned water utilities such as the NWSC (Uganda) and the Public Utilities Board (Singapore) also operate PRP schemes. Details of the NWSC scheme are discussed below.

¹² Network Rail is the company which runs, maintains and develops Britain's rail track, signalling system, rail bridges and tunnels etc. Glas Cymru is the company which owns Dwr Cymru, the Welsh Water Company. Both companies are private companies limited by guarantee, which means there are no shareholders but members who do not have ownership interests in the company. Both Glas and Network Rail are debt financed. However, part of Network Rail's debt is backed by a Financial Indemnity (Government Guarantee).

It is recognised that if such a scheme were to be operated in the context of a publicly owned and operated business its structure would have to be determined by the Government and Board of the utility. However, the RIC, as in the case of the regulator for Network Rail, would likely reserve the right of approval to such a scheme, lest it lead to perverse incentives or undesirable outcomes. Additionally, the RIC is also cognizant that from a customer/stakeholder perspective PRP, especially performance related bonuses, is likely only to be tolerated in response to sustained improvements in service. Hence, in order to encourage both out-performance of the regulatory contract and customer support, any approach should be founded on the principle of bonuses being paid only if the utility exceeds the level of performance to be set by the RIC in its Final Determination. Moreover, the utility would have to demonstrate that any proposed management incentive scheme would be objectively measured and be transparent in its implementation.

Alternatively, it can be argued that failure to achieve certain key targets should manifest itself in pay-cuts for key managerial staff. This is a sensitive issue and the RIC understands that both the Government and Board will have to consider any such impositions in terms of industrial relations agreements as well as individual contracts that may exist. However, such an approach is not without precedent in other countries for a publicly owned and run utility. The NWSC (Uganda) operates a system whereby the board can reward management for achieving performance. These rewards are usually in the form of annual salary increments or bonus payments. The performance of employees is evaluated annually by the use of standardized performance appraisal systems. The achievement of the performance target is accompanied by incentive payments that can be as high as 50 percent of basic salary. However, underachievement of the performance standard may lead to members of the area management team forfeiting 25 percent of their basic pay.

The RIC is also aware that if a PRP scheme similar to the one utilized by the NWSC were to be implemented and managers were required to forfeit part of their basic salary for poor performance then they must be given the tools necessary to improve their performance. Consequently, such a scheme should be accompanied by reforms which promote managerial autonomy and appropriate monitoring and evaluation programmes.

Comments are invited on the merits of utilizing performance related pay as an incentive mechanism for the Water and Sewerage Authority.

3.3 Other Innovative Corporate Incentive Mechanisms – The "trigger" mechanism

There are also a number of innovative corporate incentive mechanisms which have been developed by other regulatory agencies. One such example is the inclusion by the UK Civil Aviation Authority of certain "triggers" or price cap conditions within its price cap formula for the airports in the UK. The key "trigger" included in this regard was the completion of certain elements of the capital investment programme of Heathrow and Gatwick Airports according to schedule. The price caps were calculated according to an RPI related formula but with additional terms for Heathrow and Gatwick based on performance against triggers. Where one of these triggers was not achieved, the allowed level of maximum charges was reduced reflecting the delay in completion.

Such an approach can be easily adapted to WASA for the delivery of critical projects or tied to WASA's lack of attainment of key deliverables in the RIC's final determination. The quantum which should be forfeited would need to be carefully considered as one would not want to jeopardize the fulfillment of other obligations.

Comments are invited on the use of triggers to tie a service provider's lack of performance in key areas to its ability to take up price limits set in the determination as well as ideas for other mechanisms which may not have been considered by the RIC.

4. Next Steps

The RIC encourages all interested stakeholders to respond to the issues raised or any other aspect of the document in a written submission. Following the receipt of the submissions, the RIC will consider all comments/proposals before formulating a position on the issues raised in this paper.