

Consultancy on Privatization of the Water Sector in the Kingdom of Thailand

THE ROYAL THAI GOVERNMENT

MINISTRY OF INTERIOR, MINISTRY OF FINANCE AND MINISTRY OF SCIENCE,
TECHNOLOGY AND ENVIRONMENT

PRIVATIZATION OPTIONS - FINAL REPORT EXECUTIVE SUMMARY



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**Privatization Options - Final Report
Executive Summary**

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1. EXECUTIVE SUMMARY

This report presents recommendations from the Options we have reviewed in relation to the reform of the water sector in Thailand. We present proposals for tariff and regulatory reform, decentralization and private sector participation in water supply and wastewater collection and treatment. While the proposals address long and short-term concerns in relation to resources, water supply and wastewater, they are devised so that fiscal pressures on the RTG will be reduced rather than increased by the proposed program of private sector participation.

The central concern is to bring safe water supply, and wastewater collection and treatment to all persons in Thailand as economically as possible, and to ensure environmental and financial sustainability of the institutions involved. The government sector will be charged with doing what it can do best – set policy, appoint regulatory agencies and retain ownership of the key water assets. The private sector will compete for service delivery across Thailand, in partnership with the RTG, leasing RTG waterworks and wastewater assets subject to performance conditions.

It is the essence of this report that a process starting with corporatization of the key water entities, followed by formation of a Water Regulatory Commission can set the stage for a new era in water supply in Thailand, whereby government specializes in regulation, consumer protection and setting policy for the provision of safe water across the community, but where the private sector, including individuals and community shareholders, have equity in the businesses which manage both the water and wastewater industries.

While the main concern is to create viable expansion of water supply and wastewater services – a desirable feature of the process is that it creates the possibility of a sequence of Initial Public Offerings (IPOs) of the proposed seven water businesses. The IPO process and the SET listing are desirable, particularly once the businesses have set out a clear track record based around past performance. Accordingly, as they become well structured, appoint sound management teams and release adequate accounts they become highly suitable for listing on the SET. The international evidence is that water and other SOE privatizations attract a premium when bids are allowed for a key management and control role. The subsequent IPO will typically be at a discount per share, reflecting the significant premium for control that strategic investors may pay, a premium probably of the order of 20% or more.

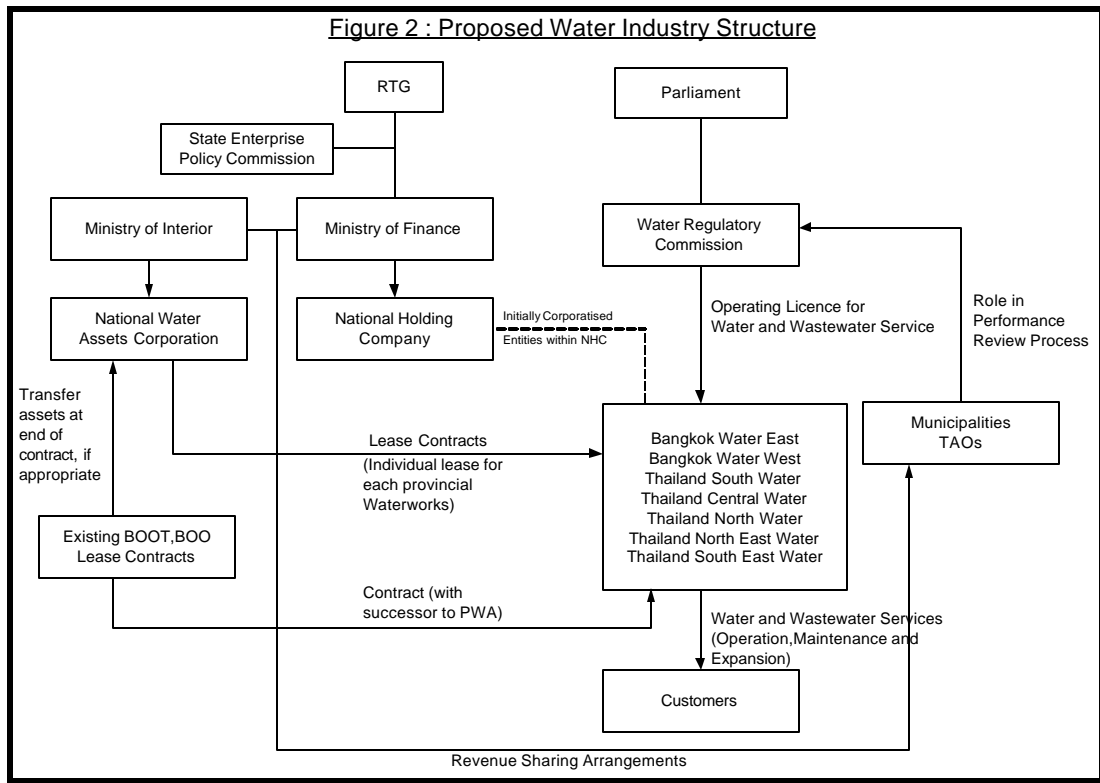
The proposed implementation process, leading to the raising of extra capital for water and wastewater investments, is one which sits well with the RTG policy of deepening and broadening participation of Thais in the ownership of vital new and competitive infrastructure service companies.

1.1 Recommended Actions for Royal Thai Government

The key institutional features recommended are:

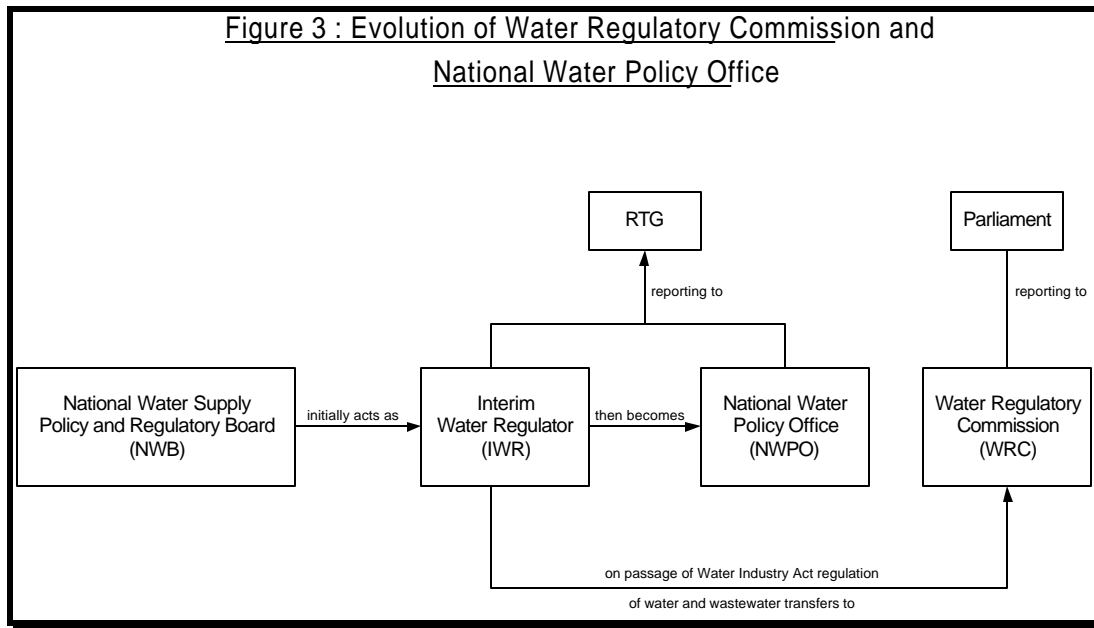
to the NHC who would then grant leases of such assets to franchised service providers so as to ensure that the assets and systems can be put to the most beneficial use for the people of Thailand.

- The organization chart summarizing the recommended corporatization, asset ownership and leasing structure and relationships is set out in Figure 2 (Proposed Water Industry Structure) below.



1.1.3 Regulation

- Implementation of regulatory reform via a Water Regulatory Commission (WRC), and improved water resource allocation via a Water Resources Agency (WRA), as per a Water Industry Act now drafted, to protect consumers, licence water abstraction and use, and to monitor contract performance of service providers.
- As noted above, and as an interim measure, the RTG (through the National Water Supply Policy and Regulatory Board) to act as an interim regulator to handle and expedite regulatory and tariff review issues.
- The sequence of events from the exercise of regulatory powers by the National Water Supply Policy and Regulatory Board (interim regulator), through to the passage of the Water Industry Act and the appointment of the Water Regulatory Commission is summarized in Figure 3 below.



1.1.4 Tariff Reform

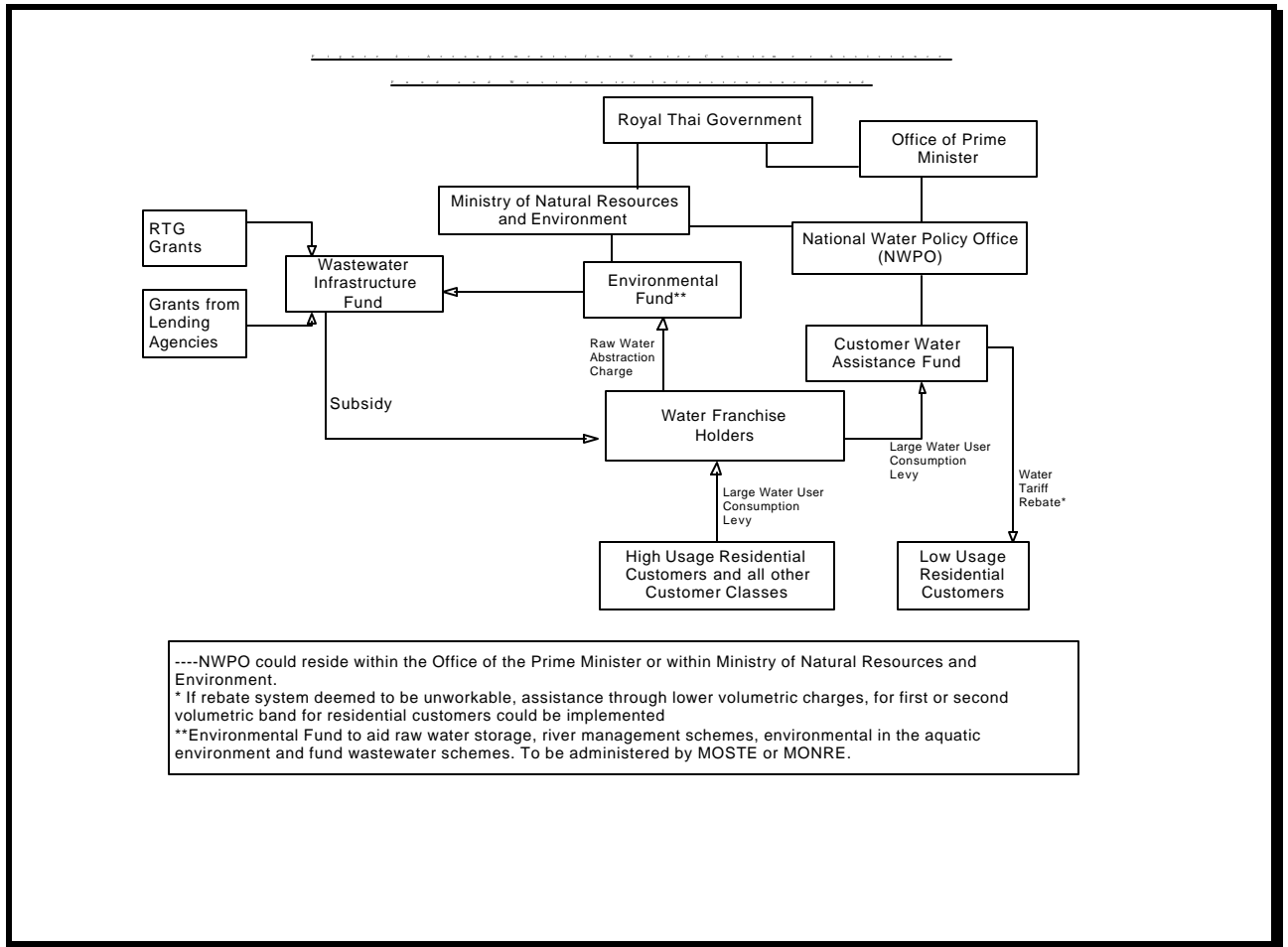
- Consideration of the implementation and enforcement of water abstraction charges and, where piped water supply is available, a phase-in of well water access and where possible, volumetric user charges, equal to charges for water supply piped from waterworks within Thailand.
- All waterworks and wastewater systems, both public and privately operated, to charge tariffs as per decisions of the Water Regulatory Commission or its interim predecessor.
- Implementation of tariff reform for PWA tariffs, with an increase of the average tariff to 15 baht per M³ as soon as practicable in 2001-2 prior to implementation of the privatization process, to facilitate early and sustainable investment in a large number of waterworks across Thailand¹.
- The MWA Board be empowered to increase tariffs to 15 baht per M³ in 2001-2 prior to implementation of the privatization process. While a 13 baht tariff is estimated in the financial model as capable of funding investment requirements; the 15 baht tariff would enable substantial concession fees to be bid by the private sector parties and thereby enable debt reduction, support for an assistance fund or more rapid implementation of

¹ The financial model indicates that post privatization and the reform process water tariffs could vary by region, over a range from 11-16 baht, depending on efficiency outcomes. The detailed tariff outcomes will obviously depend on obligations defined (as per the Information Memorandum) and on the periodic reviews. The competitive tender process for the proposed Regional Water Companies (see below) will subsequently award the five RWC contracts to the consortia with the lowest tariffs bid in each case, consistent with the required expansion of the former PWA waterworks. The financial model indicates that with substantial efficiency gains post competitively tendered privatizations, that tariffs in the indicated 11-16 baht range (indexed) are achievable within a private sector framework.

expanded investment obligations.

1.1.5 *Affordability and Cross-subsidy*

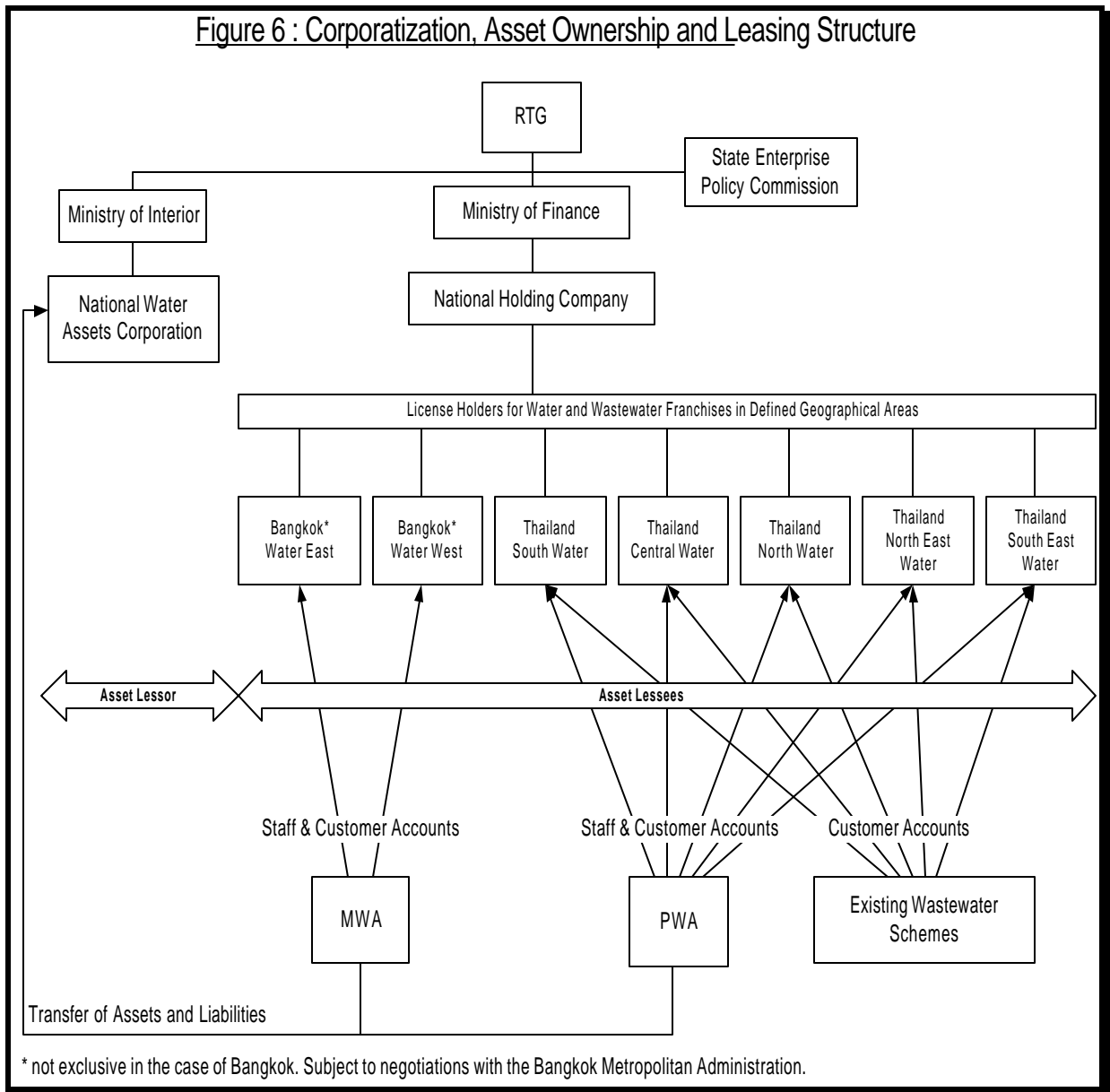
- The current and proposed tariff levels are generally indicated to be affordable, but many customers may deem other services have higher priority, and be vocal against water sector reforms if tariffs are seen to rise say to 15 baht from their current average below 12 baht. Thus there is a communications need, plus some possible funding or cross-subsidies required, in order to make reform more politically feasible. One option recommended for analysis is the application of modest transitional levies (50–70 satang per M³) on large residential and all industrial customers, to support a Water Consumer Assistance Fund, to shield in excess of 5 million persons from tariff increases as part of the tariff reform.
- However, there is some evidence that a cash fund may be misused or misunderstood in Thailand – and thus there could be a case for continuation or even extension of cross subsidies across customer classes and of low volume consumers (via the first volumetric block) in particular. While such volume-based cross-subsidies are poorly targeted, in terms of focusing the bulk of the subsidy on genuinely needy persons, they may be administratively preferable, and a matter for review at the implementation stage of the reforms.
- There should also be a review of cross subsidies to residential customers from commercial/industrial users, which should however be restricted to less than 25%, so as to encourage piped c.f. groundwater connections on the part of commercial / industrial consumers.
- The various possible tariff-related relationships and sources and uses of tariff revenue for water and wastewater systems, including a suggested Water Consumer Assistance Fund are summarized in Figure 4 (Tariff, Fee Revenue and Subsidy Relationships).



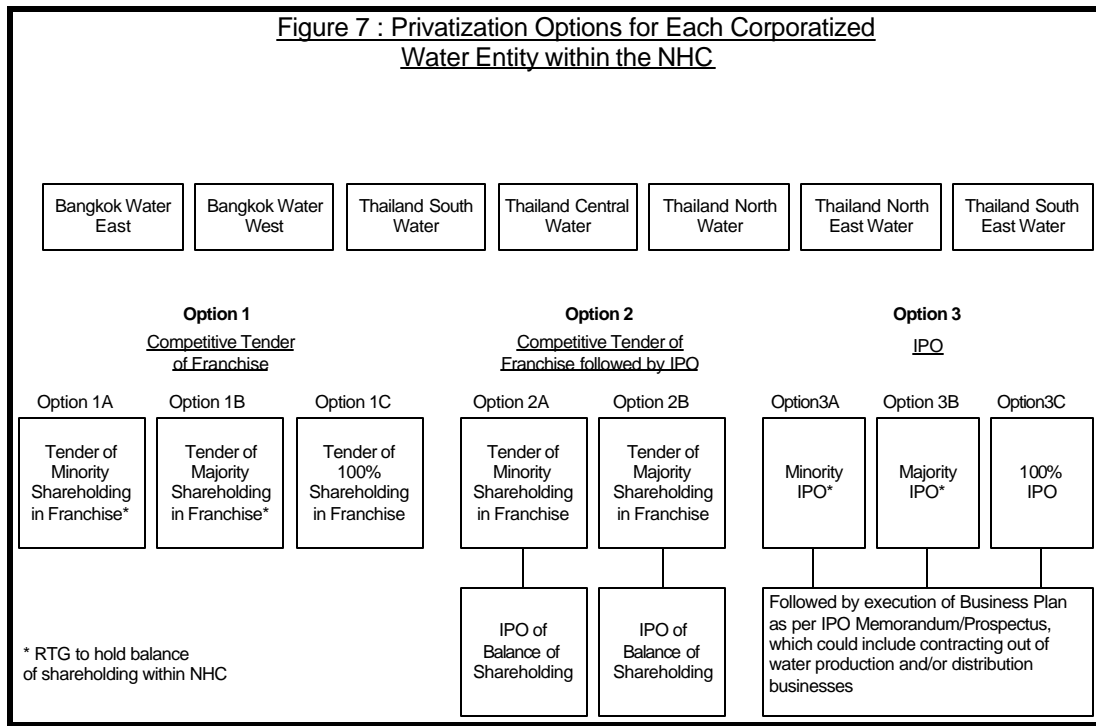
1.1.6 Preferred Structuring Option – Seven Tendered franchises – public-private partnerships

- The initial step involves corporatization and licensing of seven competitively tendered water and wastewater customer franchises, as per the attached map (Figure 5). Each of seven licensees would lease (groupings of waterworks) assets from the Ministry of Interior through a suggested National Water Assets Corporation (NWAC).
- Preparation of separate leases over the MWA waterworks, 224 provincial waterworks, nominated Municipal waterworks and a range of current and new wastewater schemes. The goal is to create accountability for performance using those assets, or via a decision of the WRC, to facilitate transfer or return to government or municipalities if the performance standards in license/contract are not met, or if responses to the regulator are deemed unsatisfactory.
- The various structural relationships, including asset ownership and leasing relationships between the new corporatized water and wastewater franchised enterprises (lessees) and the proposed National Water Assets Corporation to be housed within the Ministry of Interior (lessor) are summarized in Figure 6 (Corporatization, Ownership and

Leasing Structure).



- Preparation of a sequence of seven tenders to enable the RTG to choose as franchisees the consortia deemed best able to manage the water supply and wastewater businesses efficiently, subject to the tender conditions. The privatization options for each corporatized entity is set out in Figure 7.



The advantages and disadvantages of differing mixtures of RTG equity and franchisee equity in the IPO'd entities are set out in the slides below.

Slide 1

Option 1: Competitive Tender of Franchise – Advantages

Net advantages would depend on whether the shareholding tender would be for a minority, a majority or for 100% of the franchisee's shares:

➔ Advantages of franchise tender:

- ➔ Maximises sale price, particularly if a majority shareholding is tendered
- ➔ Future development and strategic plan can be imposed, and would be required to be implemented at the cost of the new owner
- ➔ Six or seven water franchisees will create competitive environment in contractor and supplies market
- ➔ Faster implementation of upgrading/expansion work due to reduced bureaucracy
- ➔ Significant management and technical expertise injection thereby raising standards of service

Slide 2

Option 1: Competitive Tender of Franchise - Disadvantages

- è If less than say 40% shareholding tendered and no more shares can be bought, then there may be less interest from strategic investors
- Limited control over identity of potential bidders for contracting out work
- Limited ability to minimise warranties and other contingencies where bidding is weak
- Risk of senior management leaving prior to completion of process to assist bidders
- Control on strategic issues shift to Regulator – Water Regulatory Commission will take time to gain experience

Slide 3

Option 2: Competitive Tender of Franchise followed by IPO

Net advantages depend on whether the tender was for a minority or a majority shareholding:

→ Advantages:

- Higher price to be obtained for the strategic investor's stake
- This will be able to share in upside of the franchise company
- Concerns regarding strategic plan, management of risks, etc involve contractual commitments from the strategic investor
- Strategic investor will impose greater financial discipline and accountability
- Faster implementation of upgrading/expansion work due to reduced bureaucracy
- If the strategic investor was able to retain control over the implementation of capital expenditure and the operating maintenance then an IPO of a majority of shares would be acceptable to it

Slide 4

	<h2>Option 2: Competitive Tender of Franchise followed by IPO continued</h2> <p>→ Dis-advantages:</p> <ul style="list-style-type: none">→ Control premium will be sold upfront and this may limit growth in value of the listed shares→ If majority of shares are to be sold, then this may be a disincentive to strategic investors→ There may be an incentive for the strategic investor to maximise its returns prior to the IPO
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Slide 5

	<h2>Option 3: IPO (without franchise tender)</h2> <p>Some pros and cons would be applicable to a greater or lesser extent, depending on whether the IPO was for a minority shareholding, a majority shareholder or for 100% of the shares:</p> <p>→ Advantages:</p> <ul style="list-style-type: none">→ Thai ownership retained (the percentage would depend on policy for foreign ownership)→ Assists development of Thai equity market→ Retention of Senior Management→ More flexibility for contracting out, and BOTs and other structures in the future→ Contracting out of production and distribution will enable competitive tension for tenders for upgrading/expansion contracts, leading to more efficient cost structure→ The stock market would provide a future source of capital, and this may be useful if Thai long term debt market contracts
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Slide 6

	<p>Option 3: IPO (without franchise tender) Continued</p> <p>→ Disadvantages :</p> <ul style="list-style-type: none">→ Sale proceeds likely to be less than other alternatives→ If an insufficient record of profitable operations then sale price may be low→ If the float is for a majority of the shares then, as a publicly listed company, it may be vulnerable to a takeover→ Unless it is required by law or by contract to “contract out” its businesses, there would be no introduction of new management or technical expertise - probably less capability in managing risks and introducing new technology→ If not combined with strong strategic plan and contracting out commitments, likely to be not attractive to investors (ie. more of the same)→ Not as financially efficient (lower IRR) as a project company geared with debt→ There may be a need for strong broker support on an ongoing basis as the Thai investor market may not currently be ready for this type of company→ If the Thai Government retains a shareholding then this shareholding may imply ongoing “moral” or “political” obligation to provide ongoing support→ May be pressure to distribute dividends to shareholders, rather than reinvest profits in the business→ May be less attractive to debt lenders than other options (more time consuming and complicated to raise additional equity)
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1.1.7 *Tenders and IPO of Water and Wastewater Franchises*

- The competitive tenders for the corporatized entities could be for a minority or majority share in the formerly corporatized corporations, with the balance in each case to be the basis for an IPO (once track records can be readily established and SET rules met).
- A series of seven IPOs of the water franchisees is possible, when any or each of the seven franchisee’s track records is sufficient for SET listing, with the prospectus having potential to provide regional and community groups and staff with attractive terms. In the case of staff, RTG policy on issuing options can also be implemented post IPO, to create high performance incentives. By having its equity listed on the SET, each franchisee will be able to source new equity funds from the public. SET listing will also oblige the new companies to adhere to the financial disciplines required by the SET and the equity market, to thereby help safeguard the interests of shareholders.

1.2 Steps by RTG in Implementation of Reforms

The steps involved in creating the water franchises include the following:

1. By Cabinet Resolution, a State Enterprise Capital Policy Committee establishes a Company Establishment Preparation Committee to form the Corporatized water companies under the National Holding Company (which may now be named the State

Investment Corporation).

2. The MWA and PWA entities, and title to the physical waterworks assets and wastewater and treatment schemes be transferred into the National Water Assets Corporation under the Ministry of Interior. The physical assets of the MWA, PWA and existing wastewater schemes be transferred to the proposed National Water Assets Corporation to be housed within the Ministry of Interior.
3. Liabilities of the MWA, PWA and the wastewater collection and treatment schemes to be transferred to the proposed National Water Assets Corporation to be housed within the Ministry of Interior. Following the bid process, such debts would be able to be offset by the capitalized bid fees, which are judged to be maximized if the franchised entities subject to tender have “clean” balance sheets, dominated by the franchise licence and free of physical assets and inherited liabilities².
4. A Water Industry Act (WIA) is introduced.
5. The Water Regulatory Commission (WRC) is formed under the WIA, to facilitate consumer protection, performance monitoring and lease contract performance of the private sector parties.
6. A sequence of competitive tenders is held for a series of separate “strategic investors” who would each be the successful bidder for a strategic shareholding in one or possibly two of the seven franchisees. The percentage of equity should be sufficient to attract quality investment consortia that would also provide management services to enable the franchisees to provide services in accordance with “best practice”.

1.3 Status of Waterworks and Wastewater Treatment Facilities

The waterworks and wastewater systems in Thailand can be classified into three indicative categories – for the purposes of developing and discussing Options (see Figure 9).

1. Category 1 (Core) waterworks - those that are clearly viable at tariffs within 10 percent of current average levels. This category would include the MWA on the basis of the most recent accounts, and assuming modest tariff increases to enable required maintenance and investment
2. Category 2 (Expansion and Viable) PWA waterworks are those that would be viable commercially and could expand following a reasonable set of tariff reforms.

² The experience in other jurisdictions is that if liabilities, say including a known X million baht or US\$ debt, are taken out of an entity subject to tender, that the capitalized value of bids for the business rises by more than X million. The logic is that the risk or uncertainty associated with acquiring the business is reduced by the decision and commitment that debt is to be so apportioned.

3. Category 3 (Social) waterworks are those deemed socially important but are not commercially viable without very substantial tariff increases that would be politically unattainable. Category 3 also includes a number of wastewater systems that while socially valuable, require significant subsidy and external funding in order that they be viable.
4. The recommended five Regional Water Corporations each contain a number of Category 1, 2 and 3 waterworks and wastewater treatment plants. What is proposed is that the entire set of 224 waterworks assets of the PWA and approximately 30 existing wastewater facilities be transferred to the National Water Assets Corporation and then be subject to lease agreements with the five corporatized Regional Water Companies. These RWCs would have sole and exclusive piped water franchises in the designated areas, and have leases of a long-term duration (say 25 years to encourage asset maintenance and avoid asset stripping) but be subject to periodic performance standards and review procedures. Contestability will be achieved because non-performance could trigger withdrawal of the waterworks or wastewater system lease from the franchise – and if sufficient poor performance was established by the WRC, then the franchise licence could be withdrawn well in advance of lease expirations. Transfer of franchises is to be subject to WRC/RTG regulatory approval.

1.4 Waterworks and Wastewater Plants - Alternative Options in Brief

The full discussion of Options for PWA, MWA, WMA and wastewater is set out in the body of the Report. We summarize here our preferred options and the alternatives.

1.4.1 PWA

The main alternative option considered for the PWA was to focus the private sector participation options solely on the more viable waterworks – and to seek to hand back the remaining waterworks either to the municipalities or to the residual PWA, with the private sector participating in management contracts for the waterworks to be handed back. We feel that this (cherry picking) approach will not meet decentralization goals in a fair and reasonable manner. We support a process to strengthen small regional waterworks and wastewater schemes by facilitating access to competent regional management with commercial expertise and access to capital, via the Regional Water Companies. Where there are socially important waterworks and wastewater schemes that are commercially non-viable even with tariff reform, we recommend that this situation is addressed by having management contracts and explicit subsidies to the new Regional Water Companies.

1.4.2 MWA

In the case of the MWA the main alternative option considered is to corporatize the MWA in its current form – ie into a single integrated piped monopoly water supply corporation for Bangkok. The corporatized business would have the sole franchise for serving customers in the current

areas served by MWA, and would lease the MWA assets (and potentially BMA wastewater assets), to be transferred from the MWA (and possibly BMA) to the ownership of the National Holdings Company. The RTG would then seek private sector participation, possibly in two phases:

1. The competitive tender of the water management franchise of a key block of equity, to a strategic investor with capital, management and appropriate technology, with the concession fee being the basis for tender, at defined leasing fees for assets and pre set average tariff per M³ of water sold.
2. A subsequent or concurrent IPO of the balance of equity.

We see the advantages of this option being that there will be some cost savings in administration and coordination compared to the East/West split. The disadvantage is the absence of an element of comparative competition – which we believe could achieve lower investment and operating costs, and thus lower tariffs over the longer run, and creating a net additional value over and above the advantages of adding private sector participation in MWA of 12 billion baht. The East/West split associated with application of tendering the two franchises in conjunction with the lease model, creates scope for losing leases if performance is not up to standard, introduces competition.

If the MWA is retained as a single entity, the Board could, post the IPO (if stated in the Information Memorandum or Prospectus), choose to contract out water production and distribution. The relative merits of separation and integration are discussed and quantified in the financial model section of the main body of the Privatization Options Report.

A variation of this option could be to have an IPO first and then subsequently, as indicated in the Information Memorandum, to tender the bulk water treatment plants and distribution businesses. We feel that to take the business to an IPO and then later tender the component businesses, while a viable option, with international precedents (eg Thames Water and Northumbrian Water) but may not be the preferred outcome in Thailand. We believe it is preferable to determine the management structure and team on a competitive basis, and for those investing in the subsequent IPO to know the nature of the business management teams and business plan (and possibly performance) in advance of the public offering.

We also considered the Option of separating the bulk water treatment and transportation business from the distribution concessions, which could be subject to separate franchise ownership. The separate production and distribution businesses would lease their respective assets from the National Water Assets Corporation – and would be dependent on the security of the contracts between producer and distributor. Our recommendation is against the vertical separation on grounds unless the financing risks are deemed manageable. Our concern is that insecure supply and investment coordination risks might raise the cost of capital substantially. For example some of the distribution businesses may have rapidly growing populations, and others slow growth, creating differing attitudes to investment in bulk supply investments. Excessive vertical separation creates the prospect of these risks and uncertainties about other

companies in the water chain.

The resulting preference we have expressed is for vertically integrated water supply companies, ideally separate East and West companies from the MWA, but where in either case it is the customer accounts – rather than government guarantees or supply agreements which ultimately underpin the commercial viability of the private sector franchises – retail and bulk. Separate distribution companies, while a viable and desirable option in many ways, will have both customer account risk and bulk supply risk to evaluate. In the current Thailand situation – with a lack of confidence in many financial and other institutions post the currency crisis - these risks seem an un-necessary complication.

1.5 Implementation Benefits

1.5.1 *General considerations – expanded connections, separation, affordability and decentralization*

While the main purpose of the reform is to enable a greatly expanded pace of connections to piped water supply and wastewater services at affordable prices, environment concerns are also central to the proposals. At present many aquifers in Thailand, especially adjacent to Bangkok, are being over used; and subsidence, salinity and scope for water borne diseases are real problems. The viability of many current waterworks is undermined by permissive use of groundwater and by major users failing to bear the full economic and environmental costs of their actions, which also divert their business away from PWA and other waterworks, which then are made less commercially viable. While our proposals are separate from other initiatives in relation to irrigation and groundwater rights and charges (an Asian Development Bank TA), the measures presented will encourage efficient use of scarce water and capital across Thailand – and allow local monitoring of performance standards and increased accountability of those responsible for supplying piped water.

1.5.2 *Expanded connections*

The proposals will both allow increased investment and expanded connections to piped water supply, plus broad-based community participation in shareholdings in seven new water and wastewater companies across Thailand (two in Bangkok and five regional water corporations). Proposals for amalgamation of responsibility for management and cost recovery in relation to wastewater schemes are included, aimed at franchising or otherwise contracting wastewater collection and treatment through the new private water sector corporations. One of the major risks investors face in Thailand water projects is that most businesses are quite used to pumping ground or river water and then using it for their own purposes. While there is a Prime Ministerial Decree requiring that parties having access to piped connections should use the local piped water supply rather than ground or river water, it would appear that decree is not backed either by legislation or enforcement procedures. The new Water Industry Act will need to ensure that

this situation is corrected³. The viability of commercial water investments is crucially dependent on the new water franchisees being able to replace well water usage where piped connections are available. A supportive element of the strategy is that the charges per M³ for groundwater use across Thailand be made at least as high as the charges for commercial piped water supply.

1.5.3 *Affordability and Water Consumer Assistance Fund*

Affordability concerns could be addressed by a special Water Consumer Assistance Fund, based on modest levies of 50-70 satang per M³ on larger and commercial/industrial customers. However if administrative and other reasons suggest a Fund is impractical then a continuation of volumetric, customer class or regional subsidies should be investigated in the implementation phase. Large customers for whom water is a relatively minor expense should be expected to pay economic charges for water, and all customers should be empowered through a Customer Charter and a new Water Regulatory Commission with the objective that water and wastewater services will be dramatically improved across Thailand.

The recommended options are timely and address the decentralization and capital market framework set out by the RTG. In particular the proposals fit the proposed formation of a National Holding Company (proposed to be re-named as the State Investment Corporation) as a vehicle to facilitate private sector participation in the water supply sector.

While our earlier Reports presented a range of options, we here focus, as requested, on the preferred Options. In the case of the MWA, we present both the preferred option – formation of East and West Bangkok Water Corporations – despite the stated preference of the Board of the MWA to retain their current management structure, but with an IPO to augment their capital base.

1.5.4 *Franchises and Initial Public Offerings (IPO)*

Given that the IPO of state enterprises is a key objective of RTG policy, we seek to ensure that the process is consistent with the overarching goal of expanding coverage of quality water supplies across Thailand, on an affordable basis. Accordingly, at the time the proposed water franchise businesses are to be placed for listing of the Stock Exchange of Thailand (SET), there will be a need for well-established track records of the seven water entities probably of up to three years, together with viable business plans. This will only be possible if the initial consortia

³ Under the Draft Water Industry Act there would be a new and powerful Water Resources Agency within a new Ministry of Natural Resources and Environment (MONRE), with transitional arrangements. It is proposed that the WRA be established as a Department or an Office with the status of a Department. After establishment, the WRA will be the only agency making bulk water allocation and abstraction licence decisions. This power will cover both surface and ground water. The WRA will have certain powers transferred from various existing government agencies to consolidate these powers within one entity. This will make administration easier. For example the powers of the Royal Irrigation Department in relation to bulk/raw water allocation and the Department of Mineral Resources re groundwater will be transferred to the WRA.

of investor/managements/operators appointed by the corporatized boards have established or inherited sound working businesses with financial track records.

It is thus both a requirement of SET listing and of the desirable standards of performance in the water sector, that there be two stages to the process of private sector participation in the expanded water sector.

1. *The first is that of competitive tendering of the franchises*, where the successful new management team (ie that bid the highest concession fee in relation to the MWA franchises, or lowest average tariff for the five RWCs), will be deemed to have adequate equity and debt finance to run an efficient customer focused water and wastewater business. The need is for both incentive and control considerations to be addressed – and without a strategic investor/manager/operator that will not be present.

We would expect that while interested private sector parties would prefer more than 50% equity in the franchise company, they may accept a smaller or minority percentage if the terms of the franchise or concession contract and the shareholder agreement are deemed satisfactory and they are entitled and able to play a meaningful role in the operations and maintenance of the water system and in the franchisee's capital expenditure. It should be noted that shareholders who subsequently buy shares at the IPO, would also be seeking a share ownership structure that enables management to maximise value, subject to the regulatory and other constraints that will be uniquely applicable to the water sector.

2. *The second stage, the actual IPO*, would invite interested individuals, organisations and staff to participate, with the likelihood that the IPO share price would be at a discount in relation to the price originally paid by the franchisee (usually an strategic investors pays a premium for the key management role). Depending on the outcome of the due diligence process, the various risks inherent in acquisition of public sector infrastructure (uncertain underground assets, groundwater “competition”, contamination and water catchment and abstraction risks, etc) should be able to be allocated amongst the various parties based on their respective abilities to manage and mitigate such risks. The IPO shareholders will also appreciate the clarification of value (ie reduced risk), and hopefully the enhancement of value that is likely to unfold as the management team implements its business plan and technology. Because of these factors, it is not unreasonable to expect a two to three year period before the regional (non Bangkok) waterworks are subject to IPO, given the need to establish a three-year track record as per the SET listing requirements.

In the case of the MWA, while it is proposed that there be a separation of the current business into two new but vertically integrated businesses, Bangkok East and Bangkok West, it will still be possible to construct financial accounts of these two entities within a reasonably short period of time. It is nevertheless likely that the IPO of the two Bangkok entities could take place within a reasonably short period of time, and ideally by 2003, the indicated time the Prime Minister (April 2001 Statement) has given for the water IPOs.

1.5.5 Water IPOs are Different

We note that in the case of Ratchaburi and other infrastructure IPOs in Thailand, they have typically not had a strategic investor or lead participant. This has been consistent with Thai concerns with some of the actions of private sector investors in recent years. We share these concerns, and thus have rejected a physical asset sale (UK) model in favour of a more French leasing/*affermage* arrangement, where assets are owned by the RTG and leased from the National Holdings Company, with roles for LGUs to also lease or transfer assets to the WRCs. We have for similar reasons suggested a regulatory structure and tender process, plus the scope for withdrawal of leases of non-performing waterworks and wastewater schemes as a safeguard. However, to go further and preclude strategic investor operators from having a critical mass of shares will prevent the attainment of the new investment and water supply standards sought by the community.

There is a substantial difference between what we are proposing for the water sector -- where the RTG will be retaining 100 percent ownership of the assets leased to the franchisees -- and the situation with the energy and transport IPOs where physical infrastructure assets are a key part of the balance sheet subject to the IPO. The balance sheet on each of the franchises subject to an IPO under the proposed water arrangements for Thailand would have as the main asset the licence or sole customer franchise on water and wastewater service provision in the defined jurisdiction – the physical waterworks assets would be on the RTG corporatized entity's balance sheet. The rights of each franchisee to use the assets will be subject to its performance under the licence.

In order to provide services, the franchisee will have to make lease annual payments in respect of each of the waterworks and will have to charge an average tariff consistent with the successful tender (see below on bidding tariff versus concession fees). There will also be predetermined raw water abstraction charges payable to the RTG that could assist in funding socially necessary water and wastewater schemes (Category 3) that are not commercially viable or otherwise improve RTG finances. There will be normal tax liabilities associated with a standard limited liability company in Thailand, with tax payments replacing the current remittances to the Ministry of Finance from the MWA and PWA.

While a monopoly IPO of the current MWA may be attractive to some shareholders, we see maximizing customer focus and value as the primary goal. We favor periodic monitoring of competitively tendered franchises that will manage the many waterworks and wastewater schemes across Thailand. We favor two vertical franchises in Bangkok (with a bulk transfer agreement). The resulting scope for genuine benchmarking or comparator competition from the WRC being able to monitor seven water businesses is, we suggest, the best means of meeting community concerns re private sector participation in water supply.

The features of the East and West water businesses as they would start – in a corporatized form in 2002 is summarized in the main body of this Report (and set out in great detail in the financial model). Over the next 20 years, the extent of investment in the West will expand both due to superior access to raw water and as population is expected to grow more rapidly in the West.

Thus while the east is a strong customer driven business, the West would be a strong capital growth and bulk water investment and distribution business.

The model proposed keeps customers and communities as the main targets of service delivery. We see no reason for maintaining one vast (private) piped water business in Bangkok when customers and the efficiency of a Regulatory agency would be helped by a capacity to have two smaller but still very sizable businesses and the five new regional water corporations. While the East business is larger in terms of customers than the West – and will initially have a more substantial cash flow, down the track the investment in water production and transmission in the West will be critical to supply in the East. The need will be for a pass-through of capital costs and security-of-supply costs from the West to consumers of water in the East in order to make the split model work over the long life of the water assets. That said, there are substantial advantages to consumers in having two water firms in Bangkok – largely through facilitating an element of benchmark competition in quality of service and in efficiency of investment and management.

Our financial analysis and experience in other jurisdictions leads us to accept that vertical integration brings coordination and risk reductions in relation to synchronization of investments and customer needs, and thus may deliver a lower cost of debt and equity capital by reducing perceived and actual risks. However, the creation of two Bangkok water businesses – each with their own water production (treatment) entities linked by a bulk transfer agreement, seems likely to offer longer term benefits that will outweigh some sharing of overheads that would result from a single entity.

Despite our preference for separation of MWA into two vertically integrated businesses, we also discuss the ramifications of a majority IPO of MWA as a single entity, and alternative runs of the financial model suggest that, while judged inferior to the recommended option, a tendered privatized MWA concession (say 35%) followed by an IPO for the balance of equity (say 65%) would constitute improvement and could contribute substantial fiscal benefits to the RTG.

1.5.6 Bidding the Tariff versus Bidding Concession Fee

A key question in terms of the competitive tender process to apply to the water sector in Thailand is whether the tender should seek bids based on the (maximum average) water tariff (as applied in Manila per example, where the bid for east Manila was substantially lower than in the west, creating a range of problems) or whether the average tariff, as with the leasing charges for the waterworks and wastewater assets, should be preset in the Information Memorandum, with the successful tenderer being the bidder with the highest annual concession fee. Because of the Manila experience, and to achieve tariff consistency within metropolitan Bangkok, we recommend that the average water tariff is set by the RTG (say at 15 baht) at the time of the tender and that concession or leasing fees be the subject of tender.

In the case of the proposed five Regional Water Companies, they will have substantially different costs and there will be a strong case for tariffs to vary by region, consistent with cost variations.

There will be wastewater schemes that will be the subject of special agreements, where in effect there will be management contracts to provide a number of wastewater connections subject to specific subsidy payments from designated PSO funds. It is our view that for a number of reasons, the maximum weighted water and wastewater tariff should be the subject of competitive tender. This means the five regional water franchises will have predetermined concession fees and leasing charges for waterworks and wastewater assets and will seek to bid the lowest weighted average tariff, the weights being the volume factors applied to water and wastewater service provision as set out in the Information Memorandum, along with coverage and standards and other contractual items.

The effect of bidding the concession fee in Bangkok should be to generate funds to expand investment in water and wastewater treatment in Bangkok. The average tariff should be set both to encourage conservation and to generate the required funds for the waterworks. The effect on bidding the tariffs in the case of regional Thailand, subject to preset concession fees, will be to deliver the obligations on water supply and new connections at the lowest feasible tariffs.

In general the private sector is used to building financial models of infrastructure systems optimised around a bid value for a concession fee per annum or an average tariff or the present value of concession fees payable, at the predetermined discount rate. What matters to the RTG finances is the total effect on net revenues and outlays, plus there will be concerns for the general economic benefits of an expanded private sector utility sector and a deeper capital market via the IPOs. It should be noted that indirect investment benefits will arise for the many households who at present feel a need to install expensive tanks and treatment systems in order to secure safe water supply. In the event that potable water supply is available in Bangkok and the rest of Thailand over time, this will reduce the need for households and businesses to invest in what amounts to their own personal water treatment plants.

1.5.7 Water "Privatization" – different from other utilities

It is important to stress that our recommendations are not to sell the physical water resources and pipes, dams, catchments and treatment plants, but to sell the franchisees that provide water services on those assets. The model envisaged here retains ownership of all key natural resource and water infrastructure assets under the ownership of the RTG. The physical investments made in the past by the MWA, PWA and participating Municipal governments would be retained under government ownership and control via the Ministry of Interior under the suggested nominee – that we have labelled the NWAC. Where the private sector is to be invited in, the purpose is to provide competitive water and wastewater services using those assets. The competitive element arises because of the contestability of the resulting franchises and lease contracts. Performance standards will be a feature of all tendered franchises or concessions, and a new professional regulatory agency – the Water Regulatory Commission - will be formed to monitor and compare performance against the other water businesses and relevant external best practice.

Communities, individual consumers and LGUs will all have roles in reviewing performance against pre-set standards. Unlike the current situation, there will be incentives and penalties in

relation to good and poor performance that will encourage better capital and staff productivity, resulting in lower unit costs. Accountability and private initiative will be rewarded, and in cases of non-performance, franchises re-allocated to more competitive parties. While it is not possible to forecast precisely the cost savings from introducing contestability, there is abundant evidence from the large number of privatizations world wide that efficiencies and cost savings of the order of 10% - 20% are achievable through introduction of competition and contestability of infrastructure franchises, including water.

Thus whereas the telecoms, energy, airport, airline and other transport privatizations are focused heavily on the sale of physical assets, the water “privatizations” we propose are really public-private partnerships – where the private sector competes to provide customers with improved water services on assets owned by, or to be transferred to, the public sector – via the NWAC.

1.5.8 Corporatization of Water Utilities

At present the MWA is responsible for water supply in Bangkok and the adjoining provinces of Nonthaburi and Samutprakarn and currently supplies approximately 3.9 million M³ per day to around 10 million people, serving approximately 64% of the population in its service area. The PWA provides water in the remaining 73 provinces (in 425 municipalities and sanitary districts) by means of 224 waterworks, through 10 PWA Regions, with a volume of around 1.8 million M³ per day to approximately 8.4 million people.

Approximately 10 million people reside within the service areas of PWA’s Waterworks. A further 4 million persons are served by Municipal and town water supply schemes, and 38 million are served either by small town and rural schemes or local wells and vendor supplies⁴. It is the expansion to connect these poorly served customers, and the substitution where appropriate of piped water for well water that is an important goal of the reforms across regional Thailand. Integrating TAO schemes within larger management structures, say through a management contract or potentially full integration of the TAO and the RWCs, offers the prospect of substantial efficiency gains – even if there remains a required subsidy element. There are also commercial viability goals of what should be more integrated service provision.

It is recommended that the assets of the MWA and the PWA, and subsequently selected wastewater plants be transferred to the NWAC pending implementation of the regulatory reform and privatization process, including subsequent IPOs. Boards would be appointed, under the recommendations, to seven new corporations to which we have assigned some indicative geographical names:

1. Bangkok Water West Corporation
2. Bangkok Water East Corporation
3. South Thailand Water Corporation

⁴ Five City Municipalities, Thirteen Town (Muang) Municipalities and approximately 500 Sub-District (Tambon) Municipalities supply water under the supervision of the Public Works Department. The population within these Municipalities totals approximately 4 million people.

4. SouthEast Thailand Water Corporation
5. Central Thailand Water Corporation
6. NorthEast Thailand Water Corporation
7. North Thailand Water Corporation

The rationale for separating the MWA into two vertically integrated businesses has been set out above and is discussed in further detail below. The reason for forming the 224 waterworks of the PWA into five regional businesses is that each would have a substantial number of connections in excess of 260,000 connections and be serving 1-2 million persons, with scope for expanding coverage substantially. While many waterworks are non-viable even with substantial tariff reform, we believe that the new Regional Water Companies will be better able to handle extensions and enable service to be contracted with smaller subsidy than if the current situation continues. The extent of required subsidies and the nature of the asset situation of all waterworks within the 224 managed by the PWA has been beyond the time and budget of the Consultant. However there is general agreement from a range of independent experts and commercial operators that the proposed water businesses would enable a better implementation of expansion of water supply services.

1.6 Community Concerns with “free water”

Because water comes free from nature, it is often suggested that piped water supply should also be treated as a (near) free public service. However it is the capital-intensive nature of water catchment, treatment and piped distribution that is costly in investment and maintenance terms. Furthermore, absence of safe water imposes other health and economic costs, and bottled water can cost 10-100 times the cost of commercially viable piped water. Thus the key to the proposals is not to keep water tariffs artificially low – but rather to raise them to levels that reflect scarcity and value – and so enable investment in water to be sustained.

1.7 PWA Franchise Options – Implementation Process

This is why even in the case of MWA, where a tariff below 15 baht should enable profitable expansion, as with some parts of the PWA system, we seek to price scarce potable water at a modest premium where feasible on environmental and scarcity grounds, and so favour an indexed 15 baht per M³ reform across the board, but with regional variations.

In the case of the waterworks of the PWA and nominated municipal water schemes *it is recommended* that five regional water corporations (RWCs) be formed (see attached schedule and map below). Each of the 224 PWA waterworks and a number of city, town and Tambon waterworks that the RTG or the LGUs nominate would have their assets transferred to the NWAC. The NWAC would aggregate franchises, act as lessor to the RWCs to provide water supply services on the leased assets, via a licence issued by the regulatory authority (WRC).

Each of the RWCs would be of a commercially viable size (at least 275,000 PWA connections and sizable scope for expansion) and be based around a core of commercially sound areas

(Category 1), plus areas that will also be commercially sound (Category 2), once a policy of viable tariffs and sound management of groundwater wells is implemented. Contracts to extend service to new areas outside current connections, and non-commercially viable (Category 3) would be implemented by the RWCs under management contracts from funding commitments of the RTG drawn from the privatization process or from grant or donor sources.

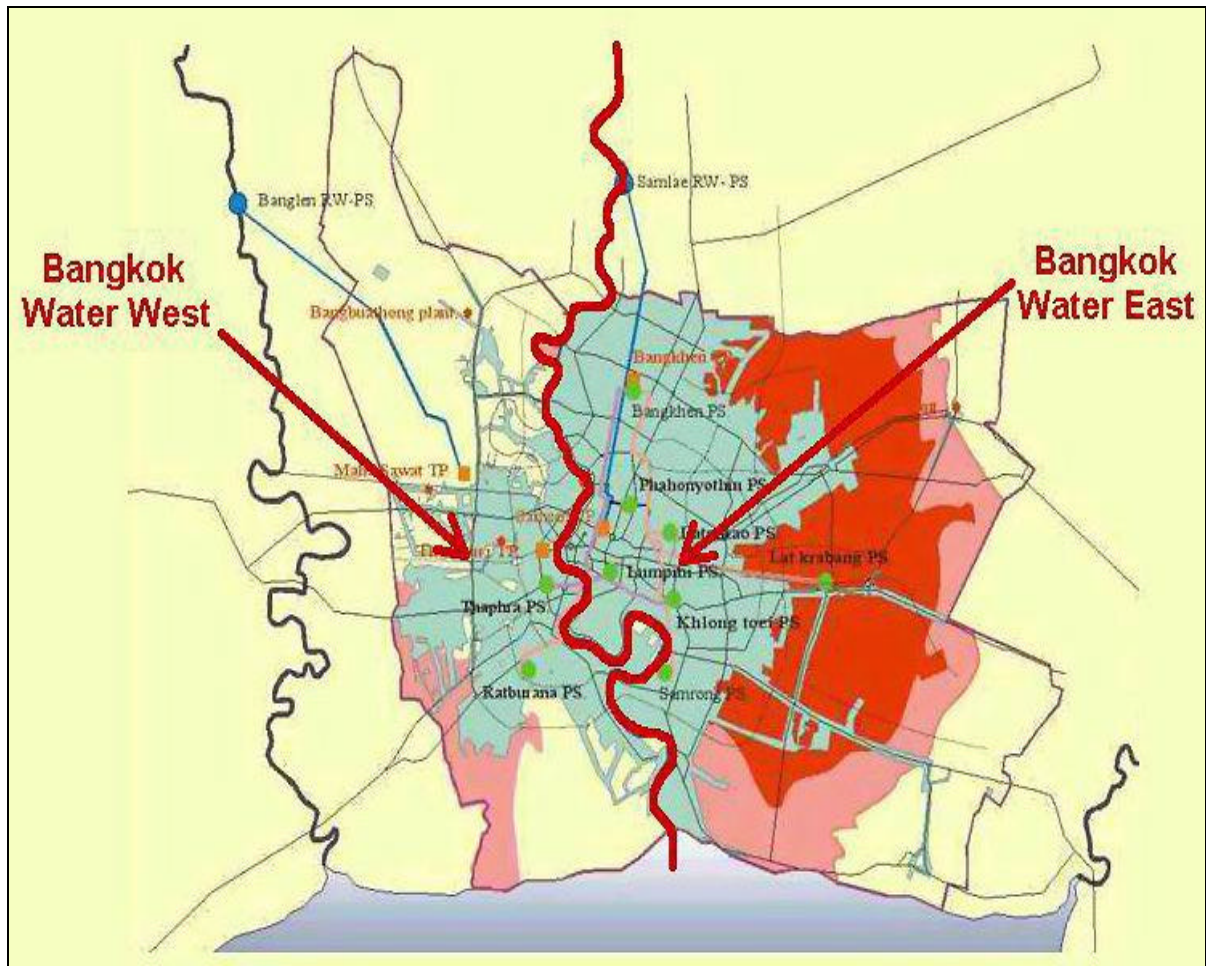
1.8 MWA Privatization Options

In the case of the MWA three options (see Figure 10) were advanced:

1. The first and MWA Board preferred option (A) retains an integrated but private monopoly based on current MWA, with a minority IPO and without a strategic investor. The Consultant sees merit in this Option only if there is a strategic investor bringing new expertise and capital, and/or if the business plan is to competitively tender the production and distribution businesses.
2. The second and recommended option (B), as represented in the RTG Master Plan for State Enterprise Sector Reform, would be for the formation of two vertically integrated water businesses, East Bangkok Water and West Bangkok Water, east and west of the Chao Phraya River⁵.
3. The third option (C) would see the formation of a Bangkok Bulk Water Corporation, responsible for all the water abstraction, pumping, treatment and production and for sale of water to a number of distribution businesses. This third option could include one to five separate water supply companies across Bangkok, companies which would submit and collect payment for services from consumers, and would be the public face of water supply. It would be envisaged that the ownership of the water supply companies would be from the broad community and a separate consortia.

⁵ The customer base and water resource situation suggests that the West business would have more substantial investment requirements and involve provision of bulk water to the East, and with the East business having a more substantial customer base -- in excess of one million connections -- but would need contractual assurances re purchase of bulk water from the West business.

The map of the asset locations and possible division of MWA is set out below.



1.9 Wastewater Sector and the WMA

In the case of the Wastewater Sector and the WMA the recommended option is for amalgamation of the provision of wastewater services into the Regional Water Companies, possibly as subsidiaries and with integrated management with joint invoicing of water and wastewater, as in many overseas cities and towns. The new wastewater systems to be implemented with customer tariffs and focused service delivery of outputs that are clearly defined in advance. There would be in effect be (management) contracts for wastewater service provision, with pre-defined grants or other forms of financial support.

At present only wastewater schemes in Pattaya and Phuket collect any user charges – other schemes are totally unfunded by consumers. Under our proposals the Regional Water Companies would, when bidding the average tariffs for the franchises, also be required to include business plans, on the basis of specified asset leases, target numbers and volumetric information. There would thus be introduced user (polluter pays) tariffs to recoup operating costs to at least a pre-specified degree – and the Regional Water Companies would not be obliged to subsidize the wastewater service companies outside the parameters of their bids. In

the tender process for the joint waterworks and wastewater companies the bidders would specify a weighted average tariff, based on the volumes of water and wastewater specified in the Information Memorandum.

Potential funding arrangements for wastewater schemes are presented in Figure 8 below. Given that there is very limited history of applying tariffs to wastewater schemes in Thailand to date and that the implementation of full cost recovery wastewater tariffs is thus unlikely to be generally achievable, RTG grants and financial support from lending agencies will be required to fund future wastewater schemes. We propose that these funds be channelled through (say through a Wastewater Infrastructure Fund [WIF]) to provide grants to the water franchise holders. However it is strongly recommended that where possible wastewater tariffs be implemented through existing and upcoming wastewater schemes which cover O&M costs. In cases where this cannot be achieved, assistance to the water franchise holders in covering O&M costs could be made by the WIF. However this should be kept to a minimum and apply mainly to existing wastewater schemes. Future wastewater schemes should be planned only in locations where full O&M cost recovery can be achieved from the first day of operation.

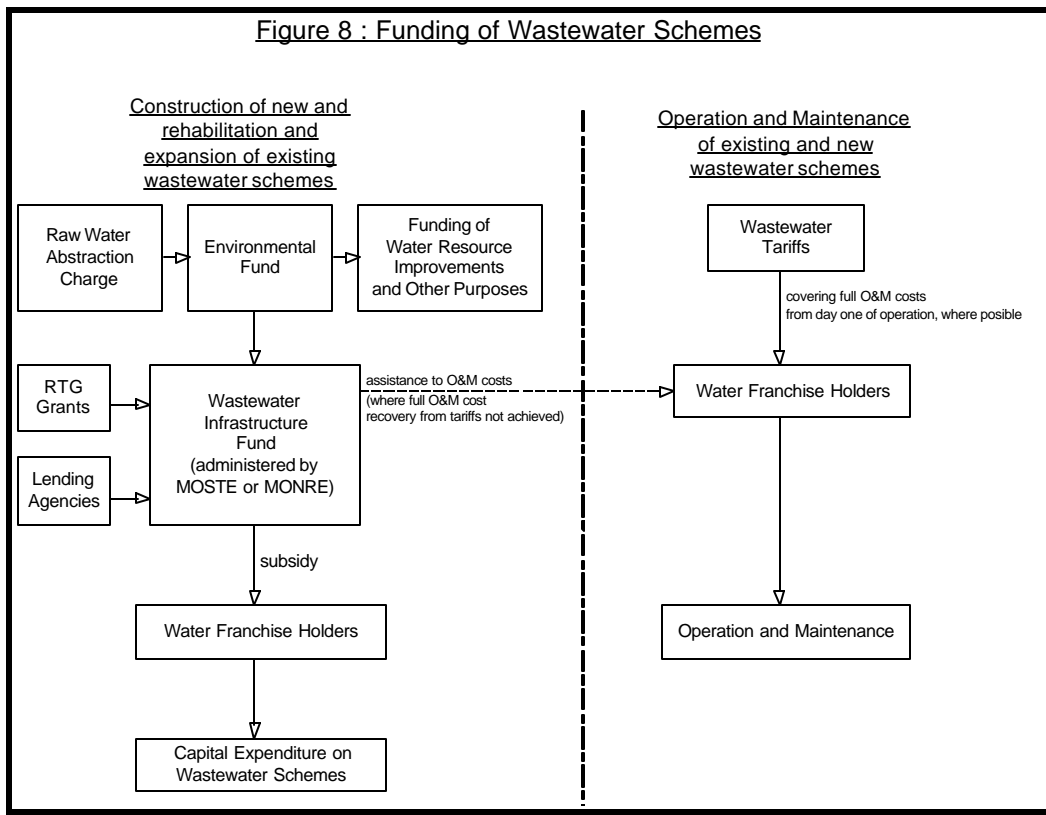
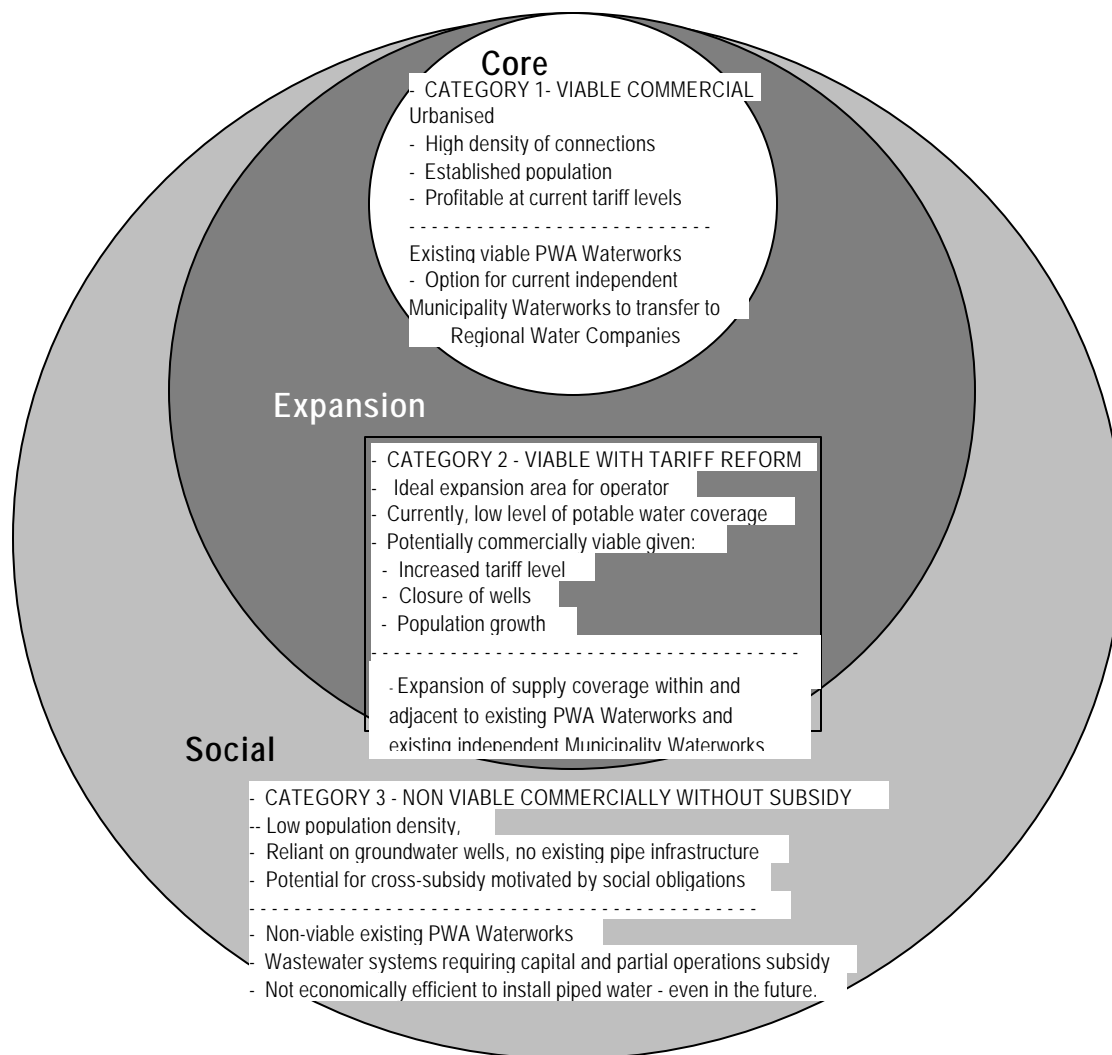
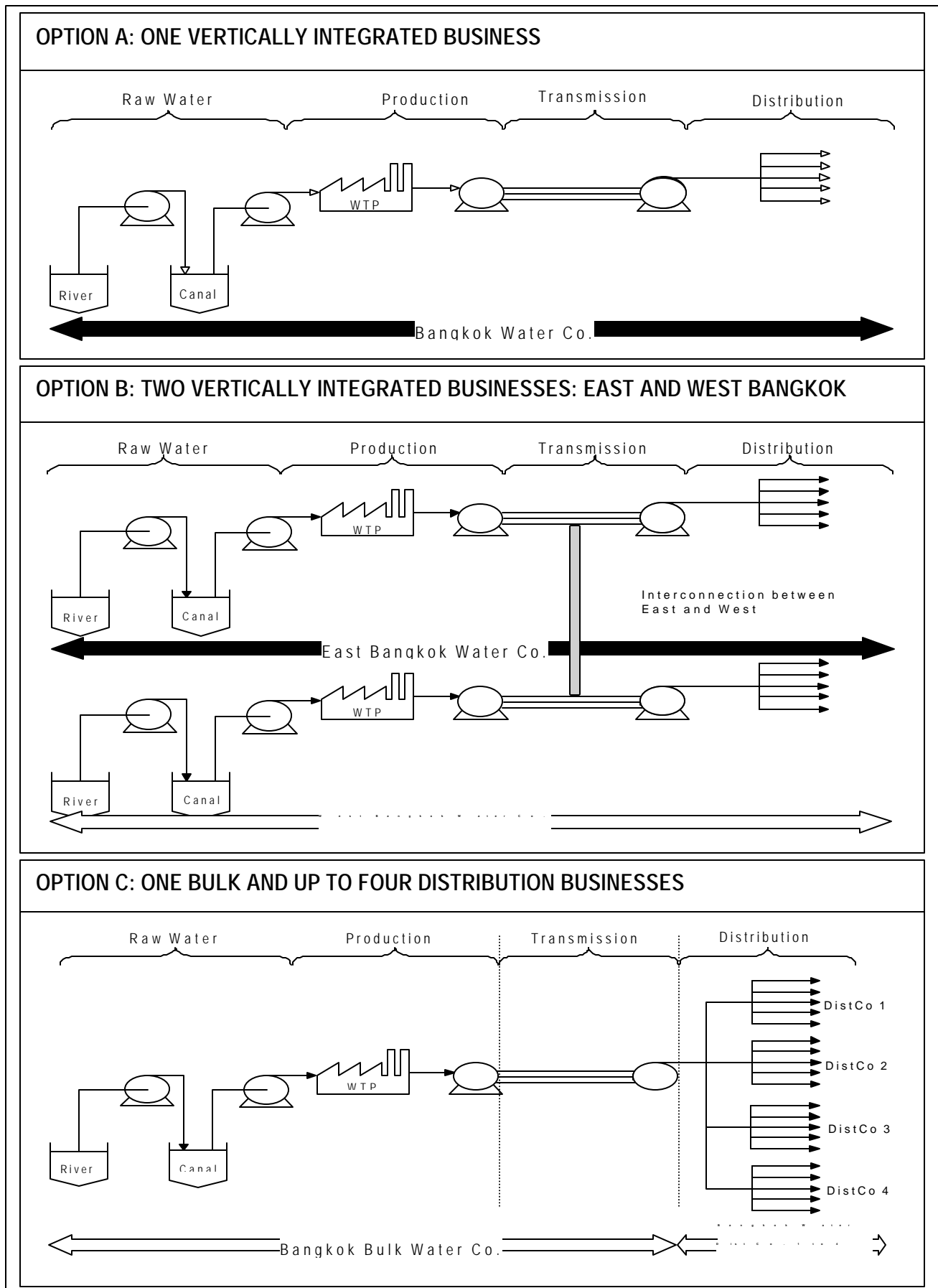


Figure 9: Restructuring Options for Water Supply in Provincial Thailand



CATEGORY	Option A RECOMMENDED	Option B	Option C
(1) Core	Responsibility of Regional Water Corporations (RWCs)	Responsibility of Regional Water Corporations (RWCs)	Responsibility of individual Municipalities
(2) Expansion		Responsibility of Municipalities/RTG	
(3) Social		RWC may have management contracts in Social (Category 3)	
	Option of Municipal / Rural Waterworks to transfer to RWC and to lease wastewater schemes		However, likely that social obligation difficult to enforce. Social may need to be centrally administered by RTG

Figure 10: Restructuring Options for Water Supply within the MWA



2. SUMMARY OF FINANCIAL POLICY PAPER

2.1 Tariffs the First Priority

The Report recommends specific tariff and institutional reforms, with prompt action on tariffs adjustments to around 15 baht, in order to set the stage for the other reforms. We also present a financial model that enables valuations of the proposed businesses to be performed, conditional on specific assumptions about tariffs, efficiency and debt assignment. Naturally, many caveats apply, and many issues must await a full “due diligence” analysis and other signed valuations that may be legally required in any implementation of corporatization, privatization and/or IPO. Assumptions about growth are critical to investment assumptions and thus financing needs.

What the financial model indicates is that MWA requires a tariff of around 13 baht in order to fund needed investments and expanded coverage, whereas the PWA requires a tariff in excess of 15 baht in order to breakeven. In both the case of the MWA and the PWA there is substantial evidence internationally that a highly competitive restructuring and privatization process is capable of enabling major efficiencies and savings in relation to capital and operating expenditures, thereby also delivering improvements in productivity. What the modelling suggests is that implementation of such a reform strategy is also capable of stabilizing tariffs in the long run at real (15 baht indexed) levels similar to those recommended.

The financial simulations suggest that an average tariff of 15 baht applied to the MWA would greatly assist the formation of a balance sheet suitable for privatization, and so enable a potentially substantial contribution to debt reduction through bids for the integrated or the two east-west businesses. The bids could be either capitalized or annual fees, contingent on the pre-specified tariff and indexation formulas, review process and defined obligations. The model indicates that tariffs below 15 baht might be achieved if there are not substantial debts assigned to the water businesses and if efficiency gains can be captured. However it may be more prudent to attach concession or leasing fees consistent with tariffs in the 15 baht range, a matter to financially modelled as part of the corporatization process.

While a 15 baht tariff applied to the PWA, would in association with other reforms, facilitate highly beneficial improvements in water sector, in the absence of some debt relief, a 15 baht tariff creates little room for financing expansion of PWA connections. We suggest that privatization, injection of private sector funds and competitive tendering of tariffs across the regions is most likely the best solution, given the objective of expanding investment in water supply across Thailand.

In the case of provincial Thailand, there are substantial variations in the costs of providing water services - what the simulations show, is that a mixture of privatization, efficiency reforms and transfer of customers from groundwater to piped water supply, is capable of holding regional tariffs in the 11-16 baht range, depending on the localities (the 16 baht upper range is for areas near Bangkok where substantial capital expenditures are required). The analysis thus also sees

merit then in not merely an upward adjustment to around 15 baht but also in the introduction of regional variations.

2.2 Values of the Water Businesses

While MWA and PWA both need tariff adjustments, it is clear that the water businesses of Bangkok are highly valuable – e.g. can have discounted net present values (NPV in 2002) of net income to 2025 of the order of 77.5 billion baht at 3% tariff indexation post tariff reform, assuming achievement of efficiency goals and with an 8% discount rate.

The capitalized bid values of this magnitude, while feasible and consistent with the model, may not be realized until there is a clearer track record both in terms of the water companies and in terms of regulatory performance, both commercial and in relation to usage of groundwater. Accordingly risk considerations may suggest that it makes more sense to tender the annual concession fees rather than seek capitalized bids. Risk considerations, if not mitigated, may also suggest higher discount rates, or weighted average costs of capital – and a 15% discount rate for example would lower the NPV from 77.5 billion baht to 38.5 billion baht.

Similar long-term valuations can extend to the five combined PWA businesses, as and when they can charge commercial tariffs, be clean of old debts, attract efficient management and achieve 20%-40% capex and opex efficiencies and expansion of coverage through capturing groundwater customers. The problem with the current PWA businesses is tariffs, and their political restraint over the last decade. At current average tariff levels (11-12 baht) the PWA businesses are losing propositions – but with Regional tariffs varying at a range of 11-16 baht tariffs (that would be acceptable in nearby countries) the businesses will be commercially sound if also subject to commercial post-privatization reforms.

It needs to be stressed, of course, that the proposed Water Regulatory Commission (or its interim predecessor) would conduct periodic reviews of performance and these reviews and recommendations as to escalators and productivity adjustments would also have an impact on valuations – as evident from the workings of such reviews in the UK, US and Australia for example.

2.3 Cross Subsidy Considerations

The consideration of how consumer groups may react to tariff reform is important, and leads us to recommend a possible Water Consumer Assistance Fund, conditional on reasonable estimates of administration costs, in order to insulate disadvantaged persons from higher tariffs. We estimate that a modest charge of 50-70 satang on large water users could shield at least 5 million persons from required increases – and thus help make the reforms feasible. An alternative to a Fund is to target the Category 3 or “Social” Waterworks – deemed as socially beneficial but non-viable at tariffs that make other Waterworks commercially viable.

Another alternative and familiar approach to affordability is to exempt low volumes (say the first block) from tariff increases. This approach has the virtue of simplicity, familiarity through past practice and ease of implementation – but with a weakness in terms of targeting needy or vocal critics of the reform. Many poor customers have large families and consume substantial volumes. The other problem is that many low volume customers are not poor – and thus volume of water consumed is not a good proxy for poverty status.

Despite the fact that an argument can be made for a mixture of a flat tariff and targeted assistance, in the current and the proposed tariff structure set out in this document, we have an increasing block structure with the majority of increases on the higher volumetric blocks – ie successive blocks pay higher rates per M³, which has the effect of lowering the costs of water for low volume customers, some of whom may be low income as well.

2.4 Tradeoffs – Tariffs and Debt Reduction

The financial model of the various options enables us to explore the nature of some of the trade-offs involved – one major trade-off being lower tariffs versus debt reduction or reduced net RTG outlays/increased revenues associated with the raising of leasing contract and concession fees.

A related option open to Thailand given perceptions of political risk that could push discount rates and weighted average cost of capital (WACC) to around 15%, and bid values down, is to take advantage of international and national facilities for insuring against political interventions that may affect the financial outcomes of a project. We note that perceptions of risk, certainly post the 1997 baht crisis and subsequent Asian crisis suggest the merit of political risk insurance arrangements such as the Partial Risk Guarantees (PRGs) offered by the World Bank Group – which can lower the weighted cost of capital and extend the maturity of debt.

Guarantee options should be seen as an integral part of the financing arrangements, in light of the post 1997 baht crisis situation, the history of risk sharing in the water sector to date (almost all risk borne by the RTG) and the urgency of finding private sector participation models for water in Thailand. Adding guarantee options in the bidding documents for the proposed privatization schemes would seem a way of dealing with high levels of perceived political risk in relation to Thailand water concessions. The experience in Manila with currency and resulting regulatory risk has soured some investors of the water supply sector – and thus there will be a need to address these “confidence” and “political risk” issues.

Perhaps the most important element of all is the knowledge of those investors that government is going to enable water businesses to be run as businesses, according to contracts and without interference regarding the process of indexing tariffs and so forth, as set out in various agreements. Under this new model, Government focuses not on overseeing SOEs such as MWA and PWA, but on improving the regulatory processes, appointing the regulators, and during the corporatization process, deciding on the structure to be taken to the private market

for competitive tender and/or IPO. The government focuses on governance – the private sector on investment, management and customer service.

3. RECOMMENDATIONS

The Consultancy on Privatization of the Water Sector in The Kingdom of Thailand, in presenting this Final Privatization Options Report, and the Recommendations below, seeks to facilitate a sound discussion within the RTG and across the broader community, leading to a well-based Implementation Strategy for the water supply sector and its institutions in Thailand

3.1 Recommendations for MWA

1. That in terms of organisation structure, Option B (East/West) be adopted, forming two vertically integrated water businesses, with an associated raw water abstraction agreement, and a bulk water supply transfer agreement between Bangkok Water East and Bangkok Water West.
2. That in terms of the corporatization process, the assets and liabilities of the MWA be transferred to the Ministry of Interior via a suggested NWAC, and that the staff and customers to then be allocated to the two franchisees, which would be the new corporatized entities, Bangkok Water East Corporation and Bangkok Water West Corporation.
3. That the regulatory process be applied to the new corporatized waterworks – and that the interim Water Regulatory Commission be given authority in relation to tariffs and other regulatory matters.
4. That concurrently two water supply franchisee licences be prepared, including long-term (25 year) leases over current MWA assets, and subject to competitive tender.
5. That while the RTG could consider having an option to retain a percentage of equity in the franchisees, a shareholding by the RTG should be un-necessary, given that key water supply assets will remain under the ownership of the RTG, via the asset holding entity, and given that the RTG will be responsible for appointing the interim regulator and the subsequent Water Regulatory Commission (WRC). The WRC will be responsible for implementation of the Water Industry Act and for enforcement of the terms and conditions of the licence and any contracts and leases relevant the exercise of the contracts. The effect of having the RTG as a shareholder may be to reduce private sector interest in participation, given perceptions of conflict of interest and possible political interference.
6. That a designated percentage of equity, say 35%, in the East and West franchisees, or in the single franchisee should that option be chosen, be subject to competitive tender to the private sector.
7. That bids sought by competitive tender be for the designated percentage of equity (say 35%) in the franchisees, with the bids sought to cover either:

- a. a guaranteed minimum and indexed franchise fee per annum, subject to the RTG specified average tariffs (of 15 baht) and with leasing charges for designated assets, and subject to indexation clauses for both tariffs and franchise fees; or
 - b. a guaranteed maximum average water tariff per M³, subject to the RTG specified concession fees and leasing charges, and any other pre-defined charges to the RTG or its agencies (as set out in the Information Memorandum) for designated assets, and subject to indexation clauses for both tariffs and franchise fees.
8. That the franchise tenders be conducted in a phased sequence, dictated by readiness to meet listing requirements of the SET and the RTG, ie not necessarily all at one time, and in order to enable a learning experience for both the RTG and the private sector.
 9. That a consortia may win only one franchise, from the five regional tenders, but that a successful tenderer for one of the East and West Bangkok franchises/licences (Bangkok Water East Corporation and Bangkok Water West Corporation) will also be eligible to win one of the regional franchises.
 10. That the RTG, via the National Holding Company retain 65% equity in each of the franchisees (if the designated tendered franchisee equity is 35%), but which would later all be subject to an IPO. Given that we also recommend the RTG retain ownership of existing physical assets, and given a proposed new regulatory body (WRC) and a Water Resources Agency, we see no national interest reason for the RTG to retain equity in the franchisees. The licence conditions and the Water Industry Act and the Water Regulatory Commission should also serve to facilitate adequate safeguards for ensuring that Thailand's security and other concerns are met independently of any equity stake in the franchisees. The RTG financial position will best be maximized by retaining control through the regulatory process rather than retaining equity in the businesses.
 11. That once an adequate track record for the new corporatized franchisees is established, which could be a matter of months given the capacity to construct accounts for the East and West businesses from existing MWA accounts, that the franchisees be obliged to assist the RTG to place the a defined percentage balance of residual equity into an IPO or IPOs on the Stock Exchange of Thailand, with possible allowance of specified allocations for community groups, staff, and with scope for issue of stock options for management at subsequent intervals.

Comment:

- We see the creation of two water supply businesses, from the current MWA, generating substantially larger efficiencies than obtained at present, in terms of capital and operating expenditure and achievement of reduced water losses and thus lower costs of water supply per M³.
- The formation of two contestable businesses either side of the Chao Phraya River will enable the Water Regulatory Commission, and its predecessor interim agency, to better benchmark performance, and for each substantial

vertically integrated business [Bangkok Water East Corporation and Bangkok Water West Corporation] to capture the efficiencies that can be achieved via vertical integration from raw water abstraction through treatment and distribution to customers.

- The fact that financiers will have the security of customer accounts backing all investments – bulk, distribution and new connections – should deliver a lower cost of equity and debt finance and reduced need for RTG assurances and guarantees.
- The fact that there will be available to the franchisees, political risk guarantees, eg through the World Bank, will also enable debt and equity to be raised on better commercial terms and for longer periods
- What is expected, indeed required, of the RTG is the prompt implementation of a sound regulatory regime and associated passage of the Water Industry Act.
- In relation to Option A (Integrated), we suggest that despite some overhead economies, it would not bring the same benefits as Option B (East/West). This conclusion reflects the widespread judgement that a minority IPO will inject neither comparative competition nor new management. While existing MWA management has achieved much in terms of performance standards in the region, and improved staff/connections ratios, the challenges of the coming years suggests there is merit in facilitating new, competitive and benchmarked East and West water supply businesses in Bangkok.
- However Option A (Integrated) would still be considered an improvement over the current situation in the event the details re the business plan in the IPO provide scope for new management, contracting out and the introduction of new technology.
- Option C (Vertical Separation – Bulk/Distribution) should be considered if capital market judgments, contrary to current indicative advice, confirm that the risks, the costs of capital and coordination costs of breaks in the vertical water supply chain are judged as acceptable, thus allowing competitive and regulatory advantages to be achieved relative to A and B.
- Thus, in summary, we see elements of merit in all the options A (Integrated), B (East/West) and C (Vertical Separation – Bulk/distribution) for MWA, depending on assumptions regarding benchmark competition, coordination risks and costs of capital.

3.2 Recommendations for PWA

1. That in terms of organization structure, Option A be adopted – forming five Regional Water Companies with franchise areas and leases over the waterworks of the current 224 PWA waterworks plus nominated wastewater schemes. This Option clearly defines

- universal obligations, and would mandate extension to “social” areas conditional on RTG finance and contracts.
2. The boundaries of the proposed five businesses (see Figure 5) have been designed to mix minimum size of business with practicality. These boundaries are nevertheless matters for careful administrative, boundary, water catchment and commercial analysis during the corporatization process, since the financial model can readily adapt to different boundaries.
 3. That in terms of the corporatization process, the assets and liabilities of the PWA 224 waterworks be transferred to the NWAC and for the staff and customers to then be allocated to five franchisees, which would be the new corporatized entities.
 4. That the existing contracting parties on the BOO and BOOT contracts of the PWA be invited to negotiate with the corporatized franchisees and their private sector successors, with a view to integrating the contracts within the new franchise areas and the associated companies Thailand South Water Corporation, Thailand North Water Corporation, Thailand SouthEast Water Corporation, Thailand NorthEast Water Corporation and Thailand Central Water Corporation.
 5. That the existing Municipal waterworks be invited to negotiate with the corporatized franchisees and their private sector successors, with a view to integrating their water supply systems within the new franchise areas. Alternatively, the Municipal governments also be invited to transfer their assets to the NWAC for participation in the new regional water supply corporatization and privatization scheme, in exchange for revenue sharing arrangements to be negotiated.
 6. That the regulatory process be applied to the new corporatized waterworks – and that the interim Water Regulatory Commission (currently designated as the National Water Policy and Regulatory Board) be given authority in relation to tariffs and other regulatory matters.
 7. That concurrently five water supply franchisee licences be prepared, including long-term (25 year) leases over current PWA assets, and with a designated percentage of equity (say 35%) to be subject to competitive tender, with the RTG retaining the balance of equity in the franchisees up until the subsequent IPO.
 8. That the licence conditions and the Water Industry Act and the Water Regulatory Commission should also facilitate adequate safeguards for ensuring that Thailand’s security and other concerns are met independently of any equity stake in the franchisees. The RTG financial position will best be maximized by retaining control through the regulatory process rather than retaining equity in the businesses.
 9. That the designated percentage of equity in the franchisees (say 35%) be subject to competitive tender to the private sector, with the bids sought to cover the weighted water and wastewater tariff. The weighted tariff bids will be for franchises with predetermined concession fees and leasing charges for waterworks and nominated wastewater assets. The successful bidders (five) will bid the lowest weighted average

tariff, the weights being the volume factors applied to water and wastewater service provision as set out in the Information Memorandum (IM). The IM will also specify coverage and water quality standards and other contractual items including a guaranteed franchise fee per annum and subject to indexation clauses for both tariffs and franchise fees.

10. That the five franchise tenders be conducted in a phased sequence, dictated by readiness to meet listing requirements of the SET and the RTG, ie not necessarily all at one time, and in order to enable a learning experience for both the RTG and the private sector. It would be expected that the regional tenders would be after the two Bangkok tenders, given the ready capacity to demonstrate a track record in the case of the East and West franchisees (using reconstructed, i.e. split, MWA accounts) c.f. the five new regional franchisees.
11. That once an adequate track record for the new corporatized franchisees is established, that the franchisees be obliged to assist the RTG to place the defined percentage balance of residual equity into a sequence of IPOs on the Stock Exchange of Thailand, with possible allowance of specified allocations for community groups, staff, and with scope for issue of stock options for management at subsequent intervals.

Comments

- Option B (building from Category 1 and Category 2 waterworks – or “cherry picking” could evolve to be similar to A, but would create a period of ambiguous status for non-viable waterworks.
- Option C – handing back waterworks to Municipal governments and TAOs would seem contingent on a high level of expertise at provincial and municipal level – and this could take some time to be achieved.
- We see the creation of five water supply businesses, from the current PWA, as generating greater scope for providing expanded coverage in provincial Thailand. Substantially larger efficiencies in capital, operating expenditure and water loss reduction should be achievable.
- The formation of five contestable water businesses, with leases over 224 waterworks plus nominated wastewater schemes will enable the Water Regulatory Commission to benchmark performance, and facilitate efficiencies and expanded quality coverage.
- Where the Category 3 waterworks and wastewater schemes are concerned, the availability of earmarked CSO and other funding, plus the management expertise of the new RWCs should enable higher quality service to be extended than would otherwise be possible.
- The fact that the five RWCs will be vertically integrated means financiers will have the security of customer accounts backing all investments – bulk, distribution and new connections – and should deliver a lower cost of equity and debt finance and reduced need for RTG assurances and guarantees.

- What is expected, indeed required of the RTG is the prompt implementation of a sound regulatory regime and associated passage of the Water Industry Act.

3.3 Wastewater Schemes and WMA

1. We favour Option B, amalgamation of wastewater systems into the five Regional Water Corporations (Thailand South Water Corporation, Thailand North Water Corporation, Thailand SouthEast Water Corporation, Thailand NorthEast Water Corporation and Thailand Central Water Corporation).

Comment: This recommendation is strengthened by the shortage of management expertise both in the sector generally, and in the regions.

2. This Option would seek to clearly define obligations and arrangements to extend “social” coverage in areas conditional on user based tariff (“polluter pays”) cost recovery plans, RTG finance, donor funding and associated contracts.
3. That in terms of the corporatization process, the assets and liabilities of the wastewater schemes be transferred to the NWAC and for the staff and customers of existing wastewater schemes, and staff from the WMA to then be allocated to the RWCs, with responsibilities for management of the inset wastewater schemes. The initial wastewater franchisees would be the new corporatized entities.
4. That the regulatory process be applied to the new corporatized wastewater schemes – and that the interim Water Regulatory Commission be given authority in relation to tariffs and other regulatory matters.
5. That the wastewater schemes be included in the five franchisees be subject to competitive tender to the private sector, with the bids sought on the weighted average water and wastewater tariffs, and subject to indexation clauses for both tariffs and franchise fees and other designated pre-specified obligations.
6. That the amalgamation of existing wastewater schemes with the proposed RWCs, be used to create sound commercial practices over time into the wastewater industry.
7. That there be negotiations between the new Bangkok water corporations, when formed, and the BMA and wastewater schemes regarding scope for incorporating the Bangkok wastewater schemes into the Bangkok Water Corporation(s).