Asia-Pacific
Economic Cooperation

APEC Roundtable on 'Best Practices'
in Infrastructure Development

APEC Economic Committee (EC)

1996

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FOREWORD

The APEC Roundtable on Best Practices in Infrastructure Development was a critical element of this year's APEC agenda for promoting free trade and investment in the region. The event brought together more than 100 businesspeople and government officials from 14 Asia-Pacific economies to discuss ways to accelerate infrastructure development in the region, which is crucial to continuing economic growth.

A remarkable consensus on many issues and a healthy airing of other viewpoints was achieved among the roundtable participants regarding what was needed to facilitate business sector participation in infrastructure development in the Asia-Pacific region. Participants identified some aspects of "best practices" in such areas as mitigating the risks of infrastructure projects, creating a supportive policy environment and regulatory regime for infrastructure development, and improving communications between the community, public and private sectors regarding infrastructure needs.

The proposed inputs into "best practices" and related case studies were presented at the APEC Senior Officials Meeting, on August 19-20 in Davao, The Republic of the Philippines. In addition, there are plans to prepare further infrastructure "best practices" brochures and reference guides with supporting case studies that serve to place successful practices in context as an aid to facilitating infrastructure projects for government officials as well as private developers, investors and lenders.

The APEC Roundtable on Best Practices in Infrastructure Development was a dynamic exercise in identifying possible needs and possible approaches to advancing public-private cooperation. We invite you to read the recommendations and case studies presented by this superb group of delegates.

We would like to thank the National Center for APEC for its splendid arrangements for the Roundtable, and also thank the sponsors and individual participants for sharing the tremendous range of their experience.

Ruslan Diwiryo

Raymond E. Vickery, Jr.
Secretary General

Assistant Secretary for
Ministry of Public Works

Trade Development
Republic of Indonesia

U.S. Department of Commerce

APEC INFRASTRUCTURE BEST PRACTICES ROUNDTABLE SUMMARY REPORT

Seattle, Washington, United States of America
July 24-26, 1996

BACKGROUND

At their November 1995 meeting in Osaka the APEC Ministers decided to explore activities such as compiling best practices and holding public-private dialogues in order to enhance the effectiveness of the infrastructure development process. To this end, Indonesia and the United States co-hosted a Roundtable in Seattle, Washington, USA, July 24-26, 1996. Representatives of the public and private sectors of Australia, Canada, The People's Republic of China, Hong Kong, Indonesia, Japan, the Republic of Korea, Malaysia, Mexico, the Republic of the Philippines, Chinese Taipei, Thailand, and the United States attended. The APEC Secretariat and the World Bank were also represented.

The meeting was co-chaired by Mr. Ruslan Diwiryo, Secretary General, Ministry of Public Works, Republic of Indonesia, and Mr. Raymond Vickery, Assistant Secretary of Commerce for Trade Development, U.S. Department of Commerce. The Roundtable was structured to allow representatives of the public and business/private sectors to conduct small group discussions of case studies prepared by the participants on successful approaches to infrastructure development.

As next steps, the work of the Roundtable will be developed in follow-on activities identified in the APEC Infrastructure Work Plan, and plans exist to prepare an infrastructure "best practices" brochure that can serve as a guide to facilitating infrastructure projects for government officials as well as private developers, investors and lenders.

ROUNDTABLE FOCUS AND OBSERVATIONS

The Roundtable on Best Practices in Infrastructure Development, which brought together more than 100 business people and government officials from 14 Asia-Pacific economies, was a critical element of this year's APEC agenda for promoting economic and technical cooperation in the region. A remarkable consensus emerged among the Roundtable participants regarding what was needed to facilitate infrastructure development in the Asia-Pacific region, which is critical to sustaining growth.

Roundtable participants focused on four interrelated areas relevant to infrastructure development and project implementation: 1) mitigation of infrastructure risk: financing and investment management alternatives; 2) creation of a supportive policy environment for infrastructure development; 3) beneficial elements of institutional structures and regulatory regimes conducive to infrastructure development; and 4) the importance of effective communication between the public and private sectors. The participants reached several conclusions on these subject areas, as summarized below:

A. Infrastructure Risk Mitigation: Financing and Investment Management Alternatives

International infrastructure development is fraught with risks for all parties involved - host government, project sponsor, investors, lenders and suppliers. Typically the host government wants to transfer most of the project risks to the private sector, while the private sector is anxious to minimize its risk exposure. How the parties identify, manage and mitigate risk is fundamental to any infrastructure project. During the APEC Roundtable, the participants made the following observations:

1. The **mitigation and allocation of risk** between the public and private sector should be made clear and should reflect the nature of the individual project. Government and private investors should break the risk into segments as much as possible to allow distribution of the risk to the most appropriate party. Financial hedging techniques can be used and measures to offset the risk should be examined (for example, on a rail project, giving the investor the right to develop adjacent real estate)

2. **Process transparency** is paramount to attracting private investment. Financing and insurance costs decrease with greater transparency. Government must make clear to private investors whether it will allow future projects which will compete with that investor. (If there is a toll road project to the airport and the government plans a parallel railroad in the future, the toll road investor must be fully aware of the plan.)

3. **Privatization** is not a method for government to escape all risk. Government must understand the perspective of the private investor and consider the need for borrowed capital to be paid back in a timely fashion, and that inflexible pricing by government will only delay projects or kill them. In this regard, government must include in its calculations the economic price of inaction in delaying infrastructure development

4. Accurate **feasibility studies** in which both government and private investors honestly look at both downside risks and potential profits, should be provided where necessary to clarify the technical, economic and risk fundamentals of investments. Government must be aware of the high cost of feasibility studies and contract acquisition risk (the cost to a private investor of seeking a contract). Where feasibility studies are a major cost and therefore a risk factor in projects, government should consider means to cover some or all of these costs, from government sources or within the price of the winning bid for the project

5. Government must take the **risk-return profile** of projects into consideration in creating support measures to develop a project that is attractive and viable from both the private sector and public interest viewpoints. This may include government guaranteeing a rate of return, mitigating the impact of inflation or currency devaluations, and/or borrowing the capital with the private investor assuming repayment

B. Supportive Policy Environment for Infrastructure Development

In an environment of strong international competition for private finance, the challenge facing many APEC economies is to create a policy environment that will encourage

private investment, both foreign and domestic, in infrastructure projects. Without substantial commitment and cooperation on the part of host governments, such investment is unlikely to materialize. Indeed, experience suggests that a proactive government policy to attract infrastructure investments can be a decisive factor in the competition for foreign investment. A proactive policy also provides the host government with an opportunity to manage infrastructure investment in a coordinated way, thus ensuring that the national interest is served. The APEC Roundtable participants' key observations included recommendations in the general areas identified below:

1. Government must recognize that **privatizing infrastructure** is a major departure from previous practices, transforming government's role from a monopoly provider to an enabler. Previously only government could afford to undertake large scale infrastructure projects, however, private development of such projects is now feasible. This requires a new legal framework, a new philosophy, new mechanisms, and new ways of integrating financial and market criteria

2. Government must make a **strong commitment to infrastructure development** as a matter of public policy and follow that commitment up with strong, consistent planning. Government must create a comprehensive master plan. In addition, government must create a clear regulatory framework and outline of procedures

3. Government should make its policy toward infrastructure development clear. Recognizing that civil servants are not paid to take risks, and in fact operate in a culture which penalizes risk-taking, government needs to **create a can-do attitude** within its bureaucracy. The top policy levels of government need to make known to the working levels of government their support for the success of privately-financed infrastructure projects

4. Both government and private investors have to understand that they are a **partnership**, and there must be goodwill toward all parties and recognition of needs at all levels. For example, government has to explain how its land ownership laws and labor laws work and provide clear implementing regulations; the private investor has to work within that framework

5. Government should provide a **legislative framework** that allows for profit, and government should realize that it must bear the cost of changing regulations which affect the private investor

6. Government needs **internal coordination and consistency** concerning the regulation of infrastructure projects, especially ensuring that financing mechanisms are consistent with tax rules

7. Government should ensure **clear communication** exists between the upper policy levels of government, in which the commitment to private investment is clear, and the lower levels that are in closer contact with the public, and must implement public-private partnerships

C. Beneficial Institutional Structures and Regulatory Regimes

The institutions and regulatory regimes in place for governing infrastructure projects are an important determinant in attracting private investors. An inadequate legal framework - or the lack of effective institutions for the enforcement of legal rights - will result in delay or undermine the strength and effectiveness of the various types of contracts that constitute the structure of the typical infrastructure project. In this regard, the participants of the APEC Roundtable made the following observations:

Project Tendering & Selection Procedures

1. Government should make clear, understandable, and responsible **long-term plans** that prioritize infrastructure projects. Bidding procedures should be disseminated widely and the expense of preparing bids should be kept to a minimum - early short-listing (pre-qualification) will prevent private investors from expending unnecessary money preparing bids for projects on which they have little chance of success

2. It is very important for all parties to develop clear project requirements as well as **clarity and maximum transparency** in the process of choosing successful bidders. All investment restrictions should be laid out clearly in advance. Foreign investors should be clearly informed of any domestic preference so that they may make appropriate allowance for these in their bids. If foreign bidders are chosen, they should receive national treatment

3. Government needs to develop a **"friendly," non-adversarial, approach to the preparation of bid documents** and involve the private sector. In this process government can guarantee a rate of return and, to avoid monopolistic practices, receive income that exceeds an allowable revenue ceiling. But such agreements need to be mutual

4. Government should consider **pre-qualifying** bidders for a package of multiple projects. If a bidder does not win one contract, they should not have to start all over to qualify for another project

5. Government should consider **transparency procedures** such as videotaping bid presentations, having independent auditors present during the bid process, publicizing the names of those on selection committees, and preventing contact between selectors and bidders during the bidding process

6. Government should also allow the private sector to make **unsolicited proposals that fit overall policy parameters**. Government should be impartial and objective in evaluating bids, so that bidders can focus on making their projects as cost effective as possible

7. If governments establish fair and clearly **accountable selection processes**, contracts could be awarded by direct assignment or by solicited contracts. Privately financed projects should not have to be awarded through the same cumbersome competitive bidding process used when public funds are involved. The speed and lower cost achieved by doing this benefit both the investor and the public served by the

infrastructure project

Project Administration, Approval and Decision-Making

8. Government should do as much **pre-clearance of projects** as possible. This could include careful definition of the project, land acquisition, environmental clearances, and pre-approval of financing. The associated costs to government could be recouped by having the successful bidder pay a pre-clearance fee for these services

9. There is a need for a **single point of registration of projects**. At a minimum, the government must identify clearly its organizational structure and process for the private investor. Government points of contact must have decision-making authority in the name of the government regarding specific projects. Internal government coordination should be the responsibility of this point of contact. The approval process for projects should be as consistent as possible across APEC economies

10. There should be a government-level body dedicated to **bringing to fruition privately financed infrastructure projects**. This body should look at what needs to be done to finish the project, and not regard itself just as a regulatory body

11. Government needs to ensure that the project manager or agencies dealing with the private investor are staffed with people with commercial experience or at least a proven **ability to understand the investor's point of view**. This could prevent many disputes

12. **Time limits** must be established for each stage of the approval process. Government should obtain as much information as possible from and about prospective bidders while they are preparing a tender. Government should narrow the field of bona fide contenders as early as possible to limit the cost of further bid preparation to only these contenders

Project Financing Considerations

13. Government should be sensitive to **actions which affect the finances** of the private investor. Government may need to guarantee debt repayment or provide a stand-by cash flow to service senior debt repayment in the early days of some projects. Tax relief can be tied to performance and there can be time and tax penalty links, including compensations borne by government if it does not meet its performance timetables

14. **Expedited approval procedures** should be considered for privately-financed infrastructure projects. Examples include a pre-clearance process and a time limit on government approval (i.e., if no action is taken by a certain date, approval is assumed)

15. Government should be willing to openly consider **financial incentives**, including subsidies where appropriate to underwrite socially necessary infrastructure. Government should also consider indirect guarantees, such as taking steps to assure commuter volumes for a subway project through zoning and tax measures

16. Clear **time-specific deadlines** should be set, whenever practical, for government actions that affect finances

Dispute Settlement and Mediation

17. There must be a clearly understood **dispute resolution mechanism**. Government should address potential disputes in a flexible and timely manner. If resolution cannot be achieved, there should be a move toward mediation and arbitration. It is essential that a body exists to enforce the rights of investors

18. Mediation and arbitration panels should have the **appropriate expertise** to avoid reliance on local courts, where judges often have no understanding of the subject matter

Other Key Concerns

19. Projects, once selected, should be afforded a reasonable degree of **regulatory protection** from potentially damaging competition. Ongoing regulation of a completed project should be objective, impartial, and should only interfere with private sector management where a matter of clear and pressing public interest exists that cannot be readily resolved by other means (providing the project is operating within established guidelines)

20. Government should play a major role in **land acquisition**, for example, underwriting all or part of land acquisition where such intervention and support are needed to make projects feasible

21. The **environmental impact** of infrastructure projects must be taken into account. Environmental standards should not be lowered in order to lower the initial cost of infrastructure projects; this will only increase community resistance and raise long-term costs

22. If government is to attract international investors to infrastructure projects, it must protect any associated **intellectual property rights** of foreign investors

D. Effective Communication Between Public and Private Sectors

It is not enough that the host government have a commitment to promoting private investment in infrastructure - that commitment must be communicated both to the private sector and, no less critically, to the public at large. In addition, there must be opportunities for government to receive feedback. During this session, the participants in the APEC Roundtable made the following observations and recommendations:

1. Government must manage public perceptions by **communicating clearly with the community** what the infrastructure project will entail. The private investor should also make its expectations clear to the community. There must be a clearly understood mediation mechanism to address any disputes that arise

2. Communication with the public must be **credible and timely**. Modern

communication techniques, including the Internet, should be employed. If necessary, professional communicators should be hired (government officials are often not accomplished in persuading the public). Information communicated to the community should be comprehensive but expressed simply, using easily understood graphics. Be consistent, totally open, and do not backtrack. Do not try to avoid responsibility for tough issues; face them directly

3. The **mass media**, including television, radio, and public meetings, are effective elements in communication strategies. Communication should begin in the development phase of the project and continue through its implementation

4. Government should create **a task force to pursue a coordinated communications strategy** to the community; public officials should be accessible; mass media should be used to explain the benefits of private financing; feedback received from the public should be acknowledged; and useful suggestions from the public to improve the project should be adopted

5. The main emphasis in persuading the public of the need for infrastructure projects remains **jobs and progress**. Both government and the private sector must make it clear that privately financed infrastructure projects are part of a clear overall plan that benefits the general public. The benefits to be received must be emphasized to sell the project to the public

6. The benefits of the lower overall cost and accelerated flow of services from fast-track, **privately financed projects** should also be emphasized. Newer technology can sometimes be more readily incorporated with privately financed projects. The costs of <u>not</u> carrying out needed projects should be recognized and publicized

SUGGESTED FOCUS FOR FURTHER APEC WORK

Along with the elements identified in the APEC Infrastructure Work Plan, Roundtable participants felt the following areas, emerging from the above recommendations, could provide focus for future discussion:

A. APEC should provide assistance to its developing members to create public health, safety, and environmental standards that are consistent with those of the wider APEC membership. This will preclude private investors from having to deal with widely varying requirements

B. APEC should consider establishing a mediation mechanism for resolving disputes related to infrastructure projects. It should also consider methods to enforce arbitration decisions obtained outside the host economy

C. Realizing that human resource problems still exist in some member economies, APEC should concentrate on developing the human resource skills of government officials who deal with the private sector on infrastructure projects

D. APEC should consider conducting a public/private sector dialogue to discuss innovative ways to improve the coordination of overall infrastructure development planning within member economies

MELBOURNE CITY LINK

INFRASTRUCTURE FINANCING STRUCTURE

Prepared by

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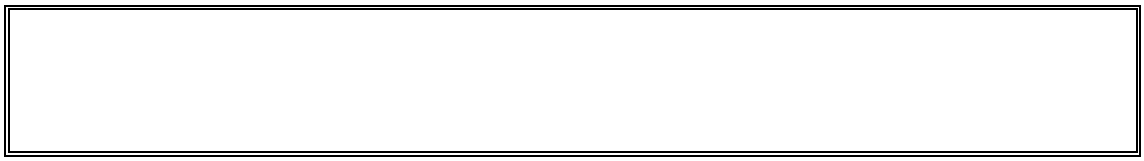


MELBOURNE CITY LINK
INFRASTRUCTURE FINANCING STRUCTURE

The Melbourne City Link Project, jointly undertaken by Transurban City Link Limited and Transurban City Link Unit Trust, is the first major infrastructure development in Victoria, Australia in which retail equity investors were given the opportunity to participate. It is Australia's largest privately funded transport infrastructure project and, alongside the Hills Motorway in NSW, is Australia's second listed toll road. The A$1,800 million Project involves the design, construction, financing, operation and maintenance of approximately 22 km of new and upgraded roadway through Melbourne (Australia's second largest city).

This paper outlines the Project's ownership and investment structure and discusses the various factors that influenced its design. The structure uses a listed unit trust and a listed public company which have jointly issued parcels of "stapled" securities comprising shares in the Company, units in the Trust, and Equity Infrastructure Bonds issued by the Company. The strong level of demand at both the retail and institutional level suggests a widespread acceptance of complex structures by the investment community, provided the complexity has arisen as a result of a tailored structure that delivers identifiable benefits to investors.

BACKGROUND

In July 1992 the State Government of Victoria ("the State") sought expressions of interest to design, build, own, operate and maintain the proposed Melbourne City Link tollway ("the Link"). The Transurban Consortium, sponsored by Transfield Holdings ("Transfield"), Australia's largest privately owned construction company and the Obayashi Corporation ("Obayashi"), a major Japanese construction company, lodged a submission and was one of two consortia short listed as a result of the expression of interest process.

The Project was temporarily suspended and then relaunched on 1 July 1994. On 29 May 1995, after a nine month competitive bid process, the Melbourne City Link Authority, a government authority set up to oversee the tender process, selected the Transurban Consortium as the preferred tenderer. Following a further five months of negotiations, Transurban City Link Limited and Transurban City Link Unit Trust (jointly "Transurban") executed a Concession Deed and financial close was achieved on 4 March 1996.

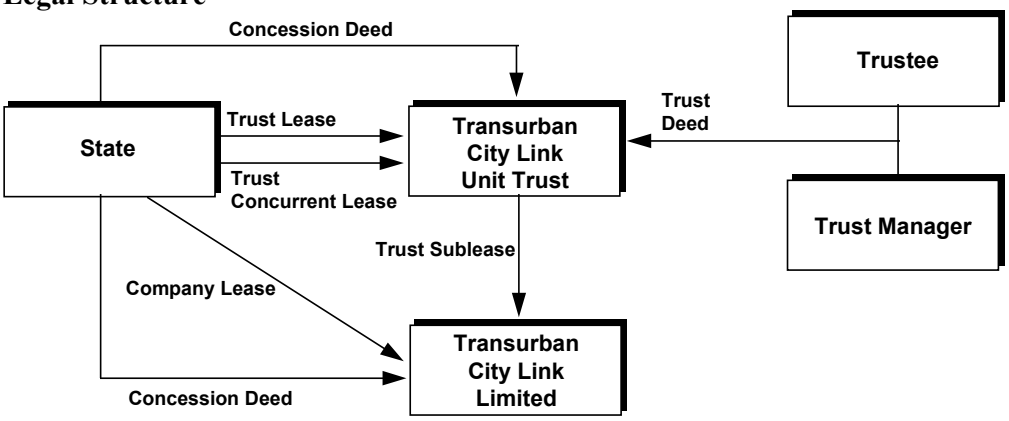
The Concession Deed grants Transurban the right to construct and operate the Link and to impose tolls for approximately 34 years after completion of construction. At the expiration of this concession period, Transurban's rights in respect of the Link are surrendered to the State of Victoria for no consideration. Consequently, the Project is an investment with a finite lifespan with no anticipated residual value for investors. As such, distributions received by investors during the concession period comprise both distributions of profit and the return of capital.

Construction of the Link is being undertaken by Transfield and Obayashi as sub-contractors acting through a joint venture. Construction of the road is split into two sections, referred to as the Western Link and the Southern Link. The Western Link is scheduled to open by April 1999 and the Southern Link is scheduled to open by December 1999.

THE LEGAL STRUCTURE

The legal structure was designed to enable the majority of the Project's income to be distributed to investors by way of pre-tax trust distributions and to facilitate the use of an infrastructure borrowing programme and the issue of equity infrastructure bonds.

Legal Structure



The Trust is responsible for the upgrading of two existing freeways, the Tullamarine Freeway and the South Eastern Arterial. The Trust will lease land from the State relating to these sections of the Link. In addition, the Trust will assume responsibility for raising the majority of the debt funding for the project.

The Company is responsible for the design and construction of 2 tunnels known as the Burnley Tunnel and the Domain Tunnel, an elevated 6 lane roadway between the Flemington Road interchange and the West Gate Freeway and a bridge across the Yarra River. The Company will lease from the State the land relating to these sections of the Link.

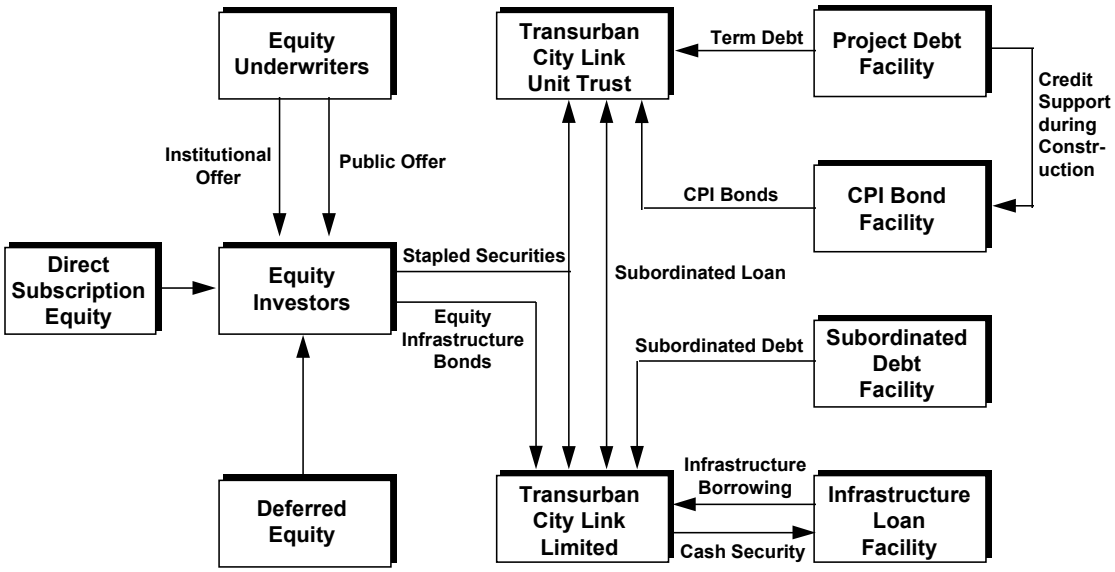
Upon completion of the Link, the Company will sub-lease the Trust land from the Trust and will be responsible for the operation, maintenance and tolling of the entire Link.

FUNDING STRUCTURE

The A$1,780 million required to complete the Project has been funded by raising approximately A$510 million of equity and A$1,270 million of debt. The equity raising included a retail offer, an excluded institutional offer, and direct subscriptions by the Project Sponsors and other institutional and corporate supporters. The equity issue was completed in late February 1996 and the equity parcels were listed on the Australian Stock Exchange on 15 March 1996.

The Project debt is a combination of long term bank debt with a term of 17 to 19 years, a A$350 million CPI bond facility with a 27 year term, and a A$50 million subordinated debt facility with a six year term. In addition, a nine year infrastructure borrowing facility of approximately A$1,250 million will be drawn down to fund eligible infrastructure expenditure (as outlined in Section 93L of the *Development Allowance Authority Act*). Drawdowns under this facility will be secured by cash deposits sourced from the other facilities. This infrastructure borrowing facility has been certified by the Development Allowance Authority so that it qualifies for concessional taxation treatment under Division 16L of the *Income Tax Assessment Act 1936*. In broad terms, this concessional tax treatment allows holders of the infrastructure bonds to receive interest income on the bonds free of any income tax liability, while the issuer of the bonds does not receive a tax deduction for interest paid on the bonds.

Funding Structure



The Company will derive its income from the collection of tolls and from revenue generated by selling advertising space on signs erected along the link. The Company will also earn interest income on cash deposits including the cash deposits securing the infrastructure borrowing facility.

The Trust will derive its income from rentals under the Trust Sublease and from interest payments on subordinated loans made to the Company. The majority of the distributions to investors will be made through the Trust.

SOURCES OF EQUITY AND OFFER STRUCTURE

Sources of Equity

A total of A$510 million in equity funding was raised for the Project. Of this amount, A$100 million was provided by the Project Sponsors, Transfield and Obayashi, and the remainder was provided by institutional and corporate investors and the public.

Equity commitments were required from the commencement of the bidding process in January 1995 to provide the State with financial certainty on the deliverability of the Transurban tender. The only viable sources of such long term underwriting commitments were some of Australia's leading stockbroking firms (with support from their institutional clients) and a number of select institutional and corporate investors. JB Were, Macquarie Underwriting and SBC Warburg agreed to support the Transurban bid and subscription agreements were executed prior to the original bid submission in January 1995. As the tender process progressed, the investors and equity underwriters were required to reconfirm their commitment to the Project several times prior to the actual date for contribution of their funds.

Notwithstanding the long period over which underwritten equity commitments had to be maintained, Transurban was committed to a retail issue to ensure a greater spread of investors to enhance liquidity and guarantee compliance with the Listing Rules of the Australian Stock Exchange. A retail issue also provided potential users of the road with the opportunity to invest directly in an asset they will subsequently use. The underwriters accommodated this decision and underwrote the retail Tranche over a period of 14 months setting a precedent for the duration of underwriting commitments in Australian equity markets. Ultimately, A$63.5 million was raised by way of an underwritten Public Issue under a prospectus issued jointly by Transurban City Link Limited and City Link Management Limited (the Trust manager). In hindsight, it is clear that the Public Issue could have been significantly larger, although it must be acknowledged that there is a practical limit to the retail market exposure that underwriters will bear over such an extended period.

Due to the strong level of retail demand and the imperative to achieve financial close, the directors of the Company and the Trust Manager were able to close the Public Issue within a week of issuing the prospectus.

Structure of Offer

The majority of the Project's equity was contributed at financial close and is referred to as initial equity. The balance of the equity funding was committed prior to financial close but is not scheduled to be contributed until the expected date for completion of construction (December 1999).

Initial Equity

The initial equity was raised in three separate issues and accounted for A$455 million of the total equity requirement.

The three separate issues were:

Public Issue	Pursuant to a prospectus, the public was invited to apply for parcels of securities worth A$63.5 million

Institutional Issue	Pursuant to a separate offering memorandum, institutional investors were invited to apply for parcels of securities worth A$206.5 million. This was an excluded offer as defined in sub-section 66(2) of the Corporations Law
Direct Subscription Issue	Transfield and a select group of institutional and corporate investors executed agreements to subscribe for parcels of securities worth A$185 million

The Public and Institutional issues (comprising A$270 million) were jointly underwritten by the equity underwriters. The remaining initial equity of A$185 million was raised by way of direct placement under the Direct Subscription Issue to investors who had supported the Transurban Consortium throughout the bid process. These investors were separate from the institutions supporting the equity underwriters.

Deferred Equity

Obayashi and Transroute (a major French toll road operator) executed agreements pursuant to which they will subscribe for A$50 million and A$5 million of equity respectively. This deferred equity was committed prior to financial close but is not scheduled to be paid up until 45 months after financial close (the expected construction completion date). The obligations of Obayashi and Transroute to subscribe deferred equity are supported by irrevocable bank letters of credit.

INVESTMENT STRUCTURE

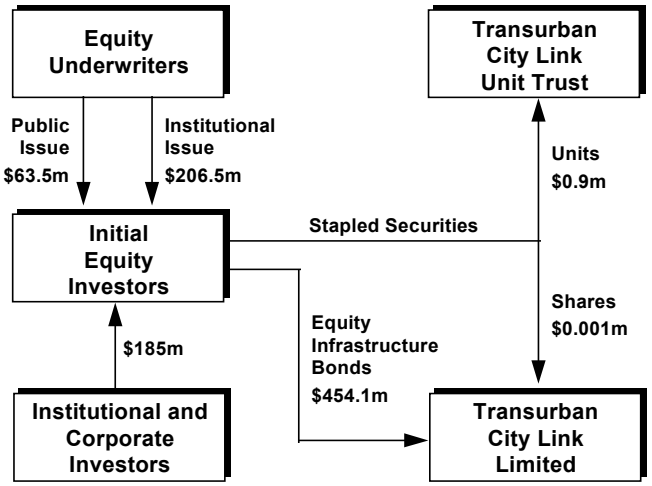
Initial Equity

The initial equity was subscribed for in the form of A$500 Parcels. During the construction period each Parcel comprises:

Quantity	Security	Issue Price
499	Equity Infrastructure Bonds issued by the Company at a price of A$1.00 each	A$499.00
1	Share in the Company issued at 1 cent	A$0.01
1	Unit in the Trust issued at 99 cents	A$0.99
	Total Issue Price	**A$500.00**

The single share and single unit in each Parcel serve to establish ownership and voting rights in the Company and the Trust. All 501 separate securities are “stapled” together and cannot be traded separately.

Initial equity structure on financial close



During the construction phase, distributions will be paid to investors by way of quarterly interest coupons on the Equity Infrastructure Bonds which will be tax exempt or debatable at 36% at the option of the holder. These coupons are forecast to be A$50.00 per Parcel per annum and while the distribution is not guaranteed, the cost to the Company of paying them has been factored into the financing plan.

Forty-five months after financial close, the 499 Equity Infrastructure Bonds within each Parcel are scheduled to be redeemed from an additional A$454 million drawdown under the infrastructure borrowing facility. The redemption proceeds from each Bond will be automatically subscribed (on behalf of investors) for Stapled Securities that comprise one Share in the Company and one Unit in the Trust.

The Equity Infrastructure Bonds will be redeemed at a price being the greatest of:

- A$1.00
- issue price plus Consumer Price Index ("CPI") indexation over the term of the issue
- average market value of a Parcel for the month prior to the maturity date divided by 500

Any premium payable on redemption will be applied as a premium payable on subscription for units in the Trust. For capital gains tax purposes, investors' cost base of each new Stapled Security is expected to equal the original issue price of the Equity Infrastructure Bond plus any premium on redemption of the Bond.

After redemption of the Equity Infrastructure Bonds and the automatic subscription for Stapled Securities, each Parcel will contain 500 Shares and 500 Units with each Share being stapled to a Unit. At this time, the equity Parcels may be divided into individual Stapled Securities (each comprising one Share and one Unit). However, the stapling between each Share and each Unit cannot be undone.

Once the Link is opened to traffic, returns to investors will be dependent upon its operational performance (principally the volume of traffic using the toll road). Distributions during the operations phase will be primarily by way of pre-tax distributions from the Trust. They are expected to include tax exempt and tax deferred components arising from accumulated losses generated during the construction phase and depreciation allowances available to the Company and the Trust. To the extent that the Company derives taxable income it is proposed to distribute that income to investors by way of franked dividends.

Deferred Equity

Forty five months after financial close, the deferred equity will be subscribed for in the form of a Stapled Security that comprises one share in the Company fully paid to one cent and one unit in the Trust fully paid to 99 cents. These Stapled Securities will be identical in all respects to the Stapled Securities held by initial investors after the redemption of their Equity Infrastructure Bonds.

LISTING AND REPORTING REQUIREMENTS

Immediately after the date of issue of the Transurban prospectus, the Company and Trust applied to the Australian Stock Exchange for admission to the official list, and for the 499 Equity Infrastructure Bonds, the one Share and one Unit in each Parcel to be jointly quoted. The application was successful and the Parcels of securities were listed on the Australian Stock Exchange on Friday, 15 March 1996 at around a 20 percent premium to the issue price.

While the Company and the Trust are separate legal entities, they have a unique relationship in that they have a common purpose to finance, construct and operate the Melbourne City Link for the term of the concession period, and they have common investors due to the Stapled Security capital structure. In order to simplify reporting requirements and present the aggregated economic entity, the Company and the Trust applied to the ASC for relief from the provisions of the Corporations Law which would have required the two entities to present separate accounts to investors (ss 313(1), 111AT & 1069(3)). This relief was granted allowing the two entities to prepare aggregated financial accounts. These aggregated accounts will be distributed to the Stapled Security holders of Transurban, together with a modified directors' report, directors' statement and auditor's report. The directors' report and statement will be consistent with the requirements of the Corporations Law applicable to a chief entity but will be signed jointly by the directors of the Company and the management company of the Trust. It is proposed that individual accounts for the two entities will nevertheless be prepared and will be available to investors on request.

RATIONALE FOR STRUCTURE

The size of the equity raising dictated that the Project would have to access as wide a range of investors as practically possible. As many investors have a strong preference for listed investments and given that many institutional investors are only permitted to invest in listed (or other liquid) investments under the terms of their respective investment guidelines, a listed investment structure of some form was required. Further, many of the potential investing funds preferred to receive returns in the form of pre-tax distributions

(their performance is often judged on their gross pre-tax returns). To satisfy this requirement either a partnership or trust structure was required. A unit trust structure was chosen as it is a structure many investors are familiar with and unlike a partnership, it can be easily listed on an equity exchange.

Early returns

The payment of a return during the construction period was also desired by many investors. The lack of earnings during the construction period would usually preclude any equity distributions other than by way of capital returns. Therefore, a "debt instrument" paying regular coupons was considered. It was determined that the most efficient form of "debt" available was an infrastructure borrowing programme which would be eligible for the Division 16L tax concessions. This led to the development of the Equity Infrastructure Bond instrument which comprises the majority of the securities of each listed Parcel during the construction period. However, the Division 16L tax concessions only contemplate infrastructure borrowings being made through a company, which would preclude equity distributions being made in a pre-tax form. Therefore, the dual company/trust structure was developed.

Another consideration that led to the separate company and trust vehicles was the requirement that the Trust did not fall within the "Trading Trust" provisions of the Income Tax Act (Divisions 6B and 6C). Essentially, if Divisions 6B or 6C were to apply, the Trust would be treated as a company for taxation purposes, thus removing the ability to distribute pre-tax income. To ensure compliance with the Trading Trust provisions, the Trust cannot participate in the operation of the tollway. Accordingly, the Trust's role in the Project is limited to the design and construction of certain sections of toll road which are leased to the Company and the raising of Project debt.

Taxation advantages

The utilisation of Equity Infrastructure Bonds as the major form of equity during the construction period delivers two extremely valuable tax advantages to investors. First, the coupons paid on the Equity Infrastructure Bonds are tax exempt (or rebateable at 36% at the discretion of the holder) which makes them very attractive for investors, particularly those on the highest marginal personal income tax rate. Secondly, the disposal of Equity Infrastructure Bonds is a tax exempt event. Therefore if investors sell their Parcels at a premium to their purchase price, no capital gains tax liability is incurred on the profit.

Notwithstanding its relative complexity, the jointly listed company and trust structure was utilised for Transurban because of the many advantages it offered investors over and above a more conventional corporate structure. The high level of demand for Transurban scrip at both the institutional and retail level suggests that investors will accept complex corporate and investment structures if they deliver identifiable benefits.

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* Macquarie Corporate Finance Limited was Financial Adviser to the Public Issue and provided general financial advice on the Project and the structuring of the Company and the Trust. Both Greg Hosking (Associate Director) and Robin Bishop (Executive)

worked extensively on the Project.

PUBLIC/PRIVATE PARTNERING:

THE NORTHUMBERLAND STRAIT CROSSING PROJECT

Prepared by

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PUBLIC/PRIVATE PARTNERING:
THE NORTHUMBERLAND STRAIT CROSSING PROJECT

The Northumberland Strait Crossing Project represents the first major infrastructure project undertaken under the Public-Private Partnering format, which includes a full financial plan and 35-year concession period. The goal of the Developer, Strait Crossing Development Inc., was to achieve a non-recourse financing solution and to obtain an equitable balance of contractual risk with the Government of Canada. In structuring its financing model for this project, the Developer investigated traditional debt and equity options, limited and general partnerships and ultimately a unique form of real rate bond was developed for this project. The issues of security, risk transfer and other key contractual provisions are analyzed, including an overview of the ultimate resolution of each issue. The various project agreements were negotiated and finalized over a ten month period which resulted in financial closing of the project on October 7, 1993. The observations of Strait Crossing Inc. as the Sponsor of the Developer and a participant in other Public-Private Partnering projects together with some of the valuable "Lessons Learned" during this process are highlighted in this paper.

PUBLIC PRIVATE PARTNERING - OVERVIEW

Infrastructure in North America is deteriorating. It needs extensive repairs, expansion of capacity and additions in order to meet the requirements of the public now and into the 21st century. Our Governments are buried in debt and are spending an ever increasing percentage of Gross National Product to service debt. As this phenomenon continues, Government at all levels is affected by credit rating agencies and the ability to access monies from foreign and domestic Capital Markets. All levels of Government are spending less money on infrastructure repair and new projects and at the same time, are having to provide traditional government services to the taxpayers.

Many jurisdictions are experiencing a growing gap between the infrastructure needs and the available funding. The symptoms range from collapsing bridges and ruptured water mains to growing congestion on highways and at airports. These problems, which confront all levels of Government, are occurring at a point in time when there is a mini taxpayer revolt in North America. Taxpayers are insisting that Governments downsize, act more efficiently and deliver government services on a more cost effective basis while at the same time, holding the line on tax increases.

These factors have forced all levels of Government in North America to rethink how essential public services are to be supplied. One of the main opportunities for our Government to meet the requirements of the taxpayer is through privatization of projects and services traditionally provided by the Government.

The main opportunities which have been created are in the areas of transportation systems, sewage and water treatment plant facilities, power generation facilities and out-sourcing of government services.

The European Community has moved more quickly to embrace the concept of privatization, toll roads and general user pay models. In Europe, there is a public acceptance of higher gasoline taxes which has created enormous pools of funds to support

development, maintenance and operation of transportation facilities.

In North America on the other hand, the 50¢ a litre price for gasoline is still a reality. A rapid increase of any carbon based tax or excise tax will be resisted in the first instance by the public and secondly by the very powerful lobby groups representing the oil and gas industry. Unfortunately, the United States and Canada also suffer from a love affair with the automobile and this has resulted in a complex road and highway system which is over built and under utilized in many areas and at excess of capacity in other areas.

The one area of noticeable improvement in North America is that the public at large appears to be recognizing and accepting the need for direct user fees in lieu of taxes. There also appears to be a growing recognition that public/private partnerships or alliances are necessary to meet the demands and the requirements of the taxpayers. There is a growing tendency in all levels of Government to downsize and streamline the bureaucracy and to introduce to the bureaucracies a new "entrepreneurial" attitude towards the supply of government services.

The public sector has begun to realize that there are certain areas in which the private sector can greatly assist in the financing and development of infrastructure projects. The balance of this paper will address the financial and contractual framework of the Northumberland Strait Crossing Project and conclude with some observations and lessons learned by Strait Crossing Inc.

NORTHUMBERLAND STRAIT CROSSING PROJECT (NSCP)

Background

The NSCP is a 13.5 kilometer high level bridge structure linking Cape Tormentine in New Brunswick to Borden in Prince Edward Island. This $840 million bridge will replace an existing ferry service between these two points that, pursuant to Project Agreements, will cease operations upon opening of the bridge facility. The bridge facility and the existing ferry service are required as a result of a constitutional obligation between the Government of Canada and the Province of Prince Edward Island which is contained in the Terms of the Union Agreement executed at the time of Prince Edward Island joining Confederation in 1873.

The Government issued a Request for Proposal and Prequalification in 1988 which attracted proposals from 12 international groups. The Government had clear evaluation criteria which reduced this group from 12 to 7. The remaining 7 were invited to submit preliminary designs, construction methods, a regional benefits assessment, a preliminary environmental assessment and a full description of the group's design, construction and project management capabilities. The initial proposals were not priced, though an outline of a financial plan and security package was required. The developers were also required to identify any contract terms and conditions that they would require in order to proceed with this Project. Out of the 7 invited bidders, 6 proposals were submitted.

Based on well-documented evaluation criteria, a detailed evaluation process was undertaken with all 6 bidders and requests for clarification were made, followed by written resubmissions and a further round of discussions and clarifications. In September

1988, the Government of Canada announced that 3 consortiums had been selected to submit priced proposals and a full financial plan. The submission of final pricing was delayed in 1988 by a Federal election and the replacement of several key cabinet ministers.

An environmental review process was also undertaken during this time period and, after initially overcoming some environmental obstacles, a fully priced submission and details of financial and security packages were submitted in May 1992. At this time, the Strait Crossing Consortium was declared to be the lowest bidder. Between May 1992 and October 1993, which was the Financial Closing, there was an extensive environmental court action which resulted in significant delays. Also during this time period, there was extensive negotiation to finalize the contract terms and conditions.

The NSCP represented the first significant BOT Project undertaken by the Government of Canada and it was approached with considerable care and scrutiny by several Government departments (Public Works, Transport, Finance, Environment and Justice).

FINANCIAL SOLUTION

The Government of Canada, during the Proposal Call process, established two financing mechanisms to assist in obtaining financing for this project. The first assistance was in the form of an annual subsidy payment which would commence on the Date Certain, be indexed 100% to increases in CPI from the Bid Date of May 27, 1992, and would be paid commencing on the Date Certain whether or not the bridge was completed on time.

The second financing mechanism was by way of a minimum floor level of toll revenue. The Stage III Proposal Call provided for toll rates to be determined based on the toll rates in force the year prior to the bridge opening. These toll rates, together with the traffic on the ferry service, the year before the bridge opened, would determine a minimum floor level of toll revenue. This minimum floor level of toll revenue was indexed 100% to increases in CPI during the 35-year Concession Period. The terms of the Bridge Operating Agreement allowed the Developer to increase tolls on an annual basis by a factor of 75% of the annual increase in CPI.

If this annual increase, together with the current traffic in any year, is not sufficient to equal the minimum floor level of toll, as adjusted for 100% of CPI, the Developer was entitled to increase the toll rates by an amount which would allow the recapture in the following year of the deficiency between the minimum floor level of toll revenue and the actual toll revenue received in that prior year.

The Developer, together with its financial advisors, Gordon Capital Corporation and Wood Gundy Inc., its legal advisors, Davies Ward & Beck and its tax and accounting advisors, Peat Marwick Thorne, worked to identify all possible options to be used to finance the Project. These options included:

Traditional Use of Subsidy Payment

Under this option, the Developer would arrange a construction loan during the period of construction and have this interim financing construction, or bridge financing if you will,

replaced by a take out debt financing on completion of the bridge based on the Government's promise to pay the annual indexed subsidy. This solution was ultimately discarded. The Developer was not prepared to take the risk of a floating rate construction financing during the 4.5 year period of construction and also, this financing would have been on a recourse basis to the members of the construction consortium.

Toll Revenue Bonds

The Developer reviewed extensively the issuance of toll revenue bonds. The Developer engaged the services of Peat Marwick Stevenson Kellogg to prepare a detailed traffic model and then the Developer prepared a forecast of net operating toll revenues internally based on this model and assumed toll rates. The Developer took the additional step of having this forecast of net operating toll revenues verified by Peat Marwick Thorne.

The insurance markets of Canada were approached to market non-recourse toll revenue bonds. There was substantial appetite for the toll revenue bonds. This solution was also ultimately discarded due to the requirement to pay interest during the construction period. A substantial portion of the toll revenue bonds would be on a recourse basis to the construction consortium and the discount factor associated with the completion risk was too high.

Tax Enhanced Equity

The Developer and its financial advisors reviewed and prepared term sheets on tax enhanced partnership units, both general and limited. Tax ruling requests were submitted to Revenue Canada and advance tax rulings were ultimately given.

In early 1992, the Government indicated that it was not prepared to see tax enhanced partnership units issued that would create tax write-offs in excess of the partners "at risk amount". The Developer and its financial and legal advisors, disagreed with this interpretation, however, the Developer proceeded to re-examine and restructure its Financial Proposal in order to achieve the closing of the Project.

Traditional Equity Units

The Developer and its financial advisors prepared a draft Offering Memorandum for purposes of issuing traditional equity units in the developer entity. This Project was the first significant BOT project undertaken in Canada and this factor, together with environmental challenges which were ongoing and the discount factor of the completion risk, would not allow the creation of a sufficient size of equity offering to justify the dilution that would occur to the construction consortium's ownership position.

Final Solution - Real Rate Bonds

The Developer came to recognize during this process, that the only way to achieve the final solution was to leave the completion risk with the construction consortium, rather than attempting to sell either debt or equity interests which were based in the first instance, on completing the bridge and in the second instance, on accepting the traffic forecasts and net operating revenues during the 35-year Concession Period. These factors

are "non-traditional risks" for the debt and equity markets and resulted in a substantial discount to proceeds which would otherwise have been anticipated.

To solve these problems, the Developer developed a real rate bond product which in many ways was similar to the Government of Canada's real rate bond instruments. This real rate bond instrument discounted the future value of the 35-year stream of annual indexed payments to be made by the Federal Government. The structure of the bond was to pay a yield equal to 4.5% plus the annual increase in inflation. This instrument was largely purchased by the Pension Funds of Canada who found the indexed nature of the yield to be a near perfect match to the indexed liabilities which they have to their Pension Plan participants.

The Developer deposited the bond proceeds of $661 million with Montreal Trust Company, the Project Trustee. As part of the Financial Closing Documents, SCI negotiated with the Government a reinvestment strategy which permitted the Developer to direct the Project Trustee to invest the $661 million in accordance with this reinvestment program strategy. The Developer hired CIBC/Wood Gundy to assist in this reinvestment program. The Developer, by detailing its anticipated drawdown schedules, was able to provide to CIBC/Wood Gundy a drawdown schedule which allowed the purchase of a series of investments with maturity dates to match this drawdown schedule. This reinvestment program, together with the construction consortium's commitment of 10% funding by way of a Letter of Credit, provided financing for a total anticipated Project cost of $840 million. It was a condition of the Stage III Proposal Call that all of the construction costs, in this case $840 million, be deposited with the Project Trustee or otherwise in the control of the Project Trustee as of the date of Financial Closing.

In order to maximize the proceeds from the real rate bond offering, the Developer, with the cooperation and support of Government officials in New Brunswick, established SCFI. SCFI as a Provincial crown corporation, was the ultimate issuer of the real rate bonds (the "Bonds"). This step was taken in order to ensure that there was no construction, project or operating risk that could at any time in the future, disrupt the flow of annual subsidy payments from the Government of Canada through SCFI to the ultimate holders of the Bonds. This step, together with the sovereign credit rating of the Government of Canada, allowed the SCFI Bonds to be rated AAA by both Standard & Poors and Moodys. This allowed the Bonds to be issued at a rate of approximately 15 to 20 basis points behind the Government of Canada's own real rate bond program. This was an extremely efficient and well priced financing instrument and ultimately enabled this project to proceed.

CONTRACTUAL ISSUES

In structuring this transaction, the Developer's key goal was to create non-recourse debt for this project. This was achieved through the issuance of the Real Rate Bonds described above. The organizational structure for the Developer and the project are described in Table 1 following this Section.

In order to achieve this goal, it was necessary for the Government of Canada to agree to make the first payment to bond holders on May 31, 1997, the estimated Date of Completion of the bridge, whether the bridge was completed or not. This put a unique

pressure on the "completion risk" associated with this project. If the Developer was late, the Government of Canada would find itself in the position of making the first annual indexed subsidy payment and continuing to operate the ferry service.

This was not a risk that was acceptable to the Government of Canada and in the negotiation process, the Developer was required to reimburse the Government for operating costs associated with the ferry service in the event completion of the bridge was delayed beyond May 31, 1997. A very extensive security package comprised of parent company guarantees, a $200 million Performance Bond and a $20 million Labour and Material Payment Bond were supplied to secure the Government against the completion risk.

In addition to the "completion risk", the Government was very concerned about the "cost overrun risk". The Government required a separate Letter of Credit for $73 million to be set aside as extra protection against cost overruns. The Government also hired financial advisors, Rothschild of Canada and Doane Raymond, to undertake an extensive review of the financial model. In addition to Public Works Canada's own engineers, the Government had an independent engineer, Buckland & Taylor of Vancouver, extensively review the design, construction methods, construction price and schedule of the Developer and write a detailed report approving this program prior to financial closing.

The Developer had focused its main return on the concession period with the up-front real rate bond financing and interest during construction covering the design and construction costs. In order to maintain a positive return, the Developer had to approach the balance of the contract negotiations to ensure that no contractual terms during the 35 year concession would negatively affect the Developer's ability to place toll revenue bonds on the project. The Developer's financial advisors were provided with summaries of negotiating positions and contract terms to make sure that toll revenue bond holders were not exposed to risk and credit uncertainties.

There were extensive negotiations to deal with normal contractual terms and conditions such as:

Applicable Laws

Subsurface and Geotechnical Risks

Taxation Issues

Force Majeure

Workers' Compensation

Insurance Program

Strikes and Lockouts

Design Approval

Acceptance of Construction

Progress Payments

The Government of Canada initially took the position that they were not prepared to accept any risk. After accepting some financial and completion risks, albeit well secured from the Developer's perspective, the Government was less willing to assume risk in the areas listed above. In order for this project to proceed, the Government of Canada and the Developer negotiated a sharing of risk allocation which, from the Developer's perspective, certainly favoured the Government of Canada. The Developer, during this process, attempted to focus risk management and risk transfer techniques in order to minimize its risk, particularly in areas where it assumed greater than normal contractor risk.

The following analysis highlights the individual points, the negotiated responsibility and the risk management techniques used for each of these contractual terms:

Contract Term	Responsibility	Risk Management
1. Applicable Laws	Federal Government responsible for all Federal laws and Developer responsible for any Provincial or Municipal laws which would affect the bridge or bridge construction.	The Developer entered into separate Agreements with the Provinces of Prince Edward Island and New Brunswick with respect to taxes and Workers' Compensation. The Developer worked to establish good relationships with Provincial officials to facilitate an open door policy in the event of any issues or disputes.
2. Subsurface/ Geotechnical Risk	The Government bore the risk of contaminated materials and the Developer bore the risk of obstructions and unanticipated geotechnical or subsurface conditions.	The Developer, prior to Financial Closing, had its own geotechnical experts review the geotechnical reports and core samples available from an extensive geotechnical program undertaken by the Government of Canada.

Contract Term	Responsibility	Risk Management
		The Developer also undertook its own geotechnical drilling program in certain areas where the information was incomplete or inconclusive, thereby allowing for a bid which did not contain excess mark-up and contingencies for unknown risk.

Contract Term	Responsibility	Risk Management
3. Taxation Issues	The Developer was responsible for satisfying itself as to all applicable taxation issues prior to financial closing.	The Developer applied for and obtained detailed GST and Income Tax Rulings which permitted the Real Rate Bonds to be issued. These rulings also assured the Developer of specific tax treatment that better matched the cash flow profile of the 35 year Concession Period.
4. Force Majeure Clause	The normal force majeure clause was replaced with a concept of Project Risk Event which would only allow compensable delay under acts of Government, acts of war and the most extreme weather conditions. All the risks within the "normal" force majeure clauses were assumed by the Developer. The Developer also negotiated a concept of "Project Delay Event" which allowed for an adjustment to toll rates during the concession period as a result of events beyond the Developer's reasonable control. The quantum of compensation for a Project	The Developer undertook an extensive review of construction methods and windows of weather during the marine seasons. Construction methods were focused on land based production of precast elements and obtaining the best possible marine erection equipment. The Svanen marine erection rig used on the Storbaelt Project was purchased to ensure that the marine erection process could be completed in the available marine

Contract Term	Responsibility	Risk Management
	Delay Event would be negotiated and toll rates increased to allow an increase in toll revenue, on a net present value basis. Any disputes would be resolved by a Disputes Resolution Board.	seasons.
5. Workers' Compensation	Obtaining a comprehensive Workers' Compensation Program was the Developer's risk. Main risk is out over the water in the Northumberland Strait which is an area of Federal jurisdiction and the Provincial Workers' Compensation programs may not apply.	The Developer negotiated a separate Agreement with the Workers' Compensation Boards of Prince Edward Island and New Brunswick which covered all workers on the basis of point of dispatch. The total Workers' Compensation coverage of $20 million was negotiated, which included stop-loss coverage in the event of any claims in excess of the coverage and/or as a result of any claims located in areas subject to Federal jurisdiction.
6. Insurance Program	The Federal Government insisted on a very expensive insurance program with limits that were originally based on full replacement value rather than maximum foreseeable loss. The concept of maximum foreseeable loss was	The Developer personally accompanied its insurance brokers, Alexander & Alexander to meetings in England, France, Germany and Switzerland to ensure that a clear

Contract Term	Responsibility	Risk Management
	eventually accepted. The Developer had the risk for coverage limits during the construction period and an adjustment to toll rates, during the concession period, if insurance premiums exceed inflation.	presentation of construction risk was made which enabled a buy-out of an insurance program with coverages as requested by the Government at a price better than originally budgeted.
7. Strikes and Lockouts	This was excluded from the definition of Project Risk Event and was a risk assumed by the Developer.	The Developer was also able to include certain coverages to protect its completion risk such as force majeure/liquidated damages coverages which would commence after a six-month self-insured retention period by the Developer. The Developer, prior to financial closing, negotiated Project Labour Agreements with all building trades in Atlantic Canada which provided for no strike and lockout provisions.
8. Design Approvals	The required criteria of a 100 year design life was a Developer's obligation. The Parent Companies of the Developer were required to guarantee the design obligation for 10 years.	The Developer agreed to assume the 100-year design responsibility, but only on the basis of an independent engineer being appointed by the Developer and approved by the Government to sign

Contract Term	Responsibility	Risk Management
9. Acceptance of Construction		off on the design as an ongoing process. To facilitate timely approvals, the Developer has incorporated representatives of the independent engineer on its design team. To reduce its exposure, the Developer obtained a $20 million errors and omission insurance policy which covered the project designers and all subconsultants. The Developer has implemented a comprehensive Quality Control and Quality Assurance Program to ensure compliance with the Project Requirements and has established an office on site for the independent engineer in order to facilitate the acceptance of construction as work progresses.
10. Progress Payments	The Government wished the right to approve progress payments, which the Developer did not agree with. Ultimately, the Developer prevailed by way of reconfirming its responsibility for design,	The involvement of the independent engineer provided a comfort level to the Government of Canada and by restricting the involvement of the

Contract Term	Responsibility	Risk Management
	construction and completion and having the independent engineer monitor the cost to complete in limited areas.	independent engineer to "Major Work Items Only" a cost to complete review could be provided without unduly restricting the Developer.

The relationship of the Government of Canada, the Developer, the contractor, the parent companies and Strait Crossing Finance Inc. are shown on Table 1 which follows this Section. Table 1 also indicates the establishment of a company called Strait Crossing Bridge Limited which will be a wholly owned subsidiary of the Developer, Strait Crossing Development Inc. and which will operate the bridge during the 35 year concession period. This particular step was undertaken to ensure isolation of all operating risks into a limited company and for certain other tax considerations.

THE FUTURE OF PUBLIC-PRIVATE PARTNERING PROCESS

The NSCP should not be followed as a model of timeliness. The project took in excess of 5 years to finalize with a construction period of only 4 years. Some of the time concerns will be addressed in Section 4 of this paper. Nevertheless, the NSCP is the first substantial BOT Project undertaken by the Government of Canada to provide an infrastructure facility. This Project can be used as a model for other privatization projects in the way it has addressed the financial and completion risks together with the finalization of normal contractual terms. It clearly illustrates that each individual project must be carefully analyzed as all projects are different. All projects are not financeable to the same extent and each individual project has its own unique allocation of risk. It is important for both the public and private sector to reflect on projects undertaken as private initiatives and projects which have failed and to focus on the lessons to be learned.

Based on our experience to date, and debriefing sessions undertaken with the public sector, we would summarize the lessons which we have learned as follows:

Identify and understand the project - Approach each project with a fresh perspective. Identify and discuss the project with proposed public sector partners at the earliest opportunity.

Identify members of your consortium at the earliest opportunity - Ensure technical/financial capacity and capabilities. Build on existing working relationships and alliances. Ensure level of commitment is agreed to in terms of dollars and time.

Identify political agenda - Proposed project must be supportable in public domain. Encourage full public discussion of policy implications **PRIOR** to RFP process. Early identification of political champion for the specific process or project.

Identify all affected interest groups (pro and against) - The need to identify at the earliest possible stage, a particular interest group or issue which may affect the project. If only anti-voices exist, you may need to create or sponsor a pro-business group to support the project. The Press should be treated as a special interest group and jointly formulate, with the public sector, a Communication Plan at the early stages of the project.

Early finalization of legislative/regulatory requirements - This must occur at the front end of the project in order to provide a comfort level for all participants and to establish contractual framework for the project. This issue is particularly important to financial lenders and given the cost of pursuing financial proposals in the capital markets of the world, there can be no room for doubt or uncertainty in this area.

Early finalization of time lines for the project - The Proposal Call or RFP process must clearly identify the time lines associated for the project and address issues of compensation to the Developer where either a project is canceled or time lines are extended. In order to ensure the best quality of submissions, public sector is slowly moving towards compensation to bidders where the RFP process is complex or anticipated to be greater than 6 months. There must be an assumption of responsibility by the public sector where there is an extensive slippage in time line due to litigation, regulatory approval or environmental challenge.

Appropriate RFPs will foster appropriate responses - State clear and honest objectives in the RFP. State explicitly the evaluation criteria and avoid any perception of bias. Statements of goals are preferable over a detailed requirement. Do not tighten the definition of the project to the point of forestalling innovations and potential cost efficiencies. Define an appropriate procedure for addressing unsolicited proposals.

Shorten bidder list at first opportunity - It is in the best interest of both the public and private sector to reduce the participants in an RFP process as soon as possible. In complex infrastructure proposals, there should not be more than 2 or 3 final bidders in order to ensure that you obtain the best effort and best price of the participants involved in the project. Until the rules and procedures change, the privatization process is too expensive for the private sector to participate from start to finish in all RFP opportunities.

Early nomination of an "empowered" negotiating committee - It is imperative that the public sector establish a negotiating committee and empower specific individuals to make decisions. These decision makers should be known to the private sector participants. There should be no hidden agenda and there should be no "empty chair" negotiations. All affected agencies within the Government must either be part of the negotiating committee or have delegated their authority to other members of the negotiating committee. This can best be achieved through the legislative or regulatory framework. Once established, the negotiating committee should not change until finalization of all Project Agreements.

Maintain flexibility in your financial plan - Circumstances change, time lines change and financial markets change. The Developer must always have some flexibility in its financial plan to deal with the unexpected. The financial plan must provide an adequate rate of return to the Developer and its lenders to reflect assumption of risk.

Risk allocation - There must be an early identification of project risks and a reasonable negotiation process that will equitably allocate these risks. Private sector should expect to assume a higher level of risk than a normal construction bid. The public sector cannot assume a zero risk posture as this will not allow a properly priced financial proposal and will discourage participation in subsequent privatization opportunities. Certain risks such as legislative changes, acts of war, acts of God, environmental or legal injunction and the collapse of financial markets are risks that will not be accepted by the capital markets and can only be assumed by the Public sector.

Demonstration of full Government support - In addition to providing the necessary legislative and regulatory framework, the applicable public sector participant must clearly indicate support for the project frequently throughout the RFP, contract negotiation and during the marketing of the project financing. There should be no policy debates or any expressions of uncertainty associated with the project once the RFP process has commenced.

Encourage the establishment of a relationship of trust - Business relationships in the private sector are based on **TRUST** and based on the fact that generally, such organizations are like-thinking in their approach to the project. We must encourage the public sector to establish a level of **TRUST** with the private sector and particularly to ensure that the public sector discloses all information in its possession with respect to the proposed project. There is a substantial "common interest" that results in a successful privatization. Both the public and private sector must learn the lessons from these projects and learn to establish working relationships which, over time, can ultimately be founded in mutual respect and trust.

CONCLUSION

It is the belief of Strait Crossing Inc. that the public-private partnering process is the way of the future. Public-private partnering process will enable the public sector to provide a higher level of service and quality of life without a corresponding increase in tax burden or public sector debt. When considered against a backdrop of downsizing in Government and Government's focus on deficit reduction, the public-private partnering process is the obvious answer to the public sector's need to provide infrastructure and other public services to its citizens.

A BUILD, OPERATE AND TRANSFER FRANCHISE

FOR A NEW, STRATEGIC ROAD LINK

Prepared by

Transport Branch
Hong Kong Government

July 1996

A BUILD, OPERATE AND TRANSFER FRANCHISE FOR A NEW, STRATEGIC ROAD LINK

INTRODUCTION AND BACKGROUND

Traditionally, Hong Kong's residential and commercial development has been concentrated in the urban areas of Kowloon and Hong Kong Island in the central and south-eastern parts of the territory. With economic growth, the ever increasing cross-border traffic to China and the development of new towns in the north-western parts of the territory, there is a need for the construction of a strategic north-south route to improve access from the urban areas to the newly developed parts of Hong Kong, and to the border.

The Country Park Section (CPS) of Route 3 is a dual-three lane expressway connecting the urban areas with the north west New Territories. It comprises a 3.8 Km tunnel and a 6.3 Km approach road. The alignment of the Route 3 (CPS) is shown in the plan at Annex A. The project has a total cost of over HK$7 billion, and will take 38 months to complete.

In 1995, Hong Kong Government awarded a franchise to a private company, the Route 3 (CPS) Company ('the franchisee'), to construct the project under a 'Build, Operate and Transfer (BOT)' arrangement. Under the terms of the BOT franchise, the franchisee is required to:

- construct the project within a fixed programme (38 months) and within a fixed budget (HK$7,254 million/US$930 million)*
- to operate the project upon its completion
- and to transfer the facility at no cost to Government at the expiry of the 30-year franchise period

In return, the franchisee has the right:

- to charge a toll to road-users according to a formula agreed with Government

In this case study, we attempt to outline the benefits to each of the stakeholders in the project (Government, road-users and the franchisee), and the risk sharing arrangements which balance the interests of all the stakeholders.

POLICY CONSIDERATIONS

The prevailing policy of the Hong Kong Government is to involve the private sector where appropriate in the construction and management of transport infrastructure. There are different forms of private sector participation in transport projects. For example, Government can grant a BOT franchise. Alternatively, Government can build the facility,

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* *Official peg rate HK$7.8 : US$1.*

and upon completion, contract-out the management of the facility to a private sector operator. The specific form of private sector participation to be adopted depends on the individual case. Factors like financial viability of the project, whether the tolls to be charged under a franchise option are politically acceptable etc. will require careful consideration.

As far as the BOT arrangement is concerned, all stakeholders stand to benefit:

a **Government** resources which would otherwise be required for the project can be released to other social uses. At the end of the franchise period, Government will get the facility without having to compensate the franchisee. The BOT arrangement realizes the 'user pays' principle, as taxpayers do not need to foot the bill for the construction of the project, which will be recovered from the road-users by the franchisee

b **the franchisee** will be able to earn a reasonable return on his investment. Investment in infrastructure is a relatively low risk non-cyclical business capable of producing a stable stream of recurrent income

c **road-users** are able to benefit from a competitive toll level which is the outcome of a competitive tendering exercise. They would also benefit from the use of the new infrastructure earlier than would be the case if it had to be financed by Government under a restricted budget

GOVERNMENT'S ROLE IN A BOT PROJECT

A BOT arrangement does not imply a hands-off approach on the part of Government. Indeed, the success or otherwise of a BOT project depends crucially on Government's input during both the tendering stage and construction of the project. This is discussed in the following sub-sections.

Legal and contractual framework

A clear legal and contractual framework is essential for business confidence. Detailed provisions relating to the operational, engineering and financial aspects of the project are contained in a Project Agreement. The award of the franchise and the tolls to be levied on road-users are given legal backing in a statute enacted specifically for the project. In view of the change of sovereignty over Hong Kong on 30 June 1997, the contract was discussed and agreed in the Sino-British Joint Liaison Group before its award. This will minimize any concern on the part of the franchisee and financiers of possible sovereign risk.

Land resumption and other preparatory works

Government is responsible under the terms of the franchise to make land available, free of cost and encumbrance, to the franchisee according to an agreed schedule. There are lengthy statutory land resumption procedures which have to be completed before the project can proceed. The public has the right to raise objections if their land is resumed or affected in any way by the project. Government is obliged to try to resolve the

objections received as far as possible, and for those which cannot be resolved, to submit them to the Executive Council* for a ruling. Furthermore, studies on the preliminary highway layout, design and construction standards, environmental and drainage impact will have to be completed before the project can proceed. Government will need to conduct these essential statutory/administrative processes either before or during the tendering stage to ensure that the project can proceed immediately after a successful tenderer is identified. In the case of Route 3 (CPS), these processes began in 1993, a long time before the award of the franchise in May 1995. Government's timely action in this regard greatly reduces the business risks in the project.

Tendering process

Hong Kong Government has a well established, clean and open tendering system. This is crucial for business confidence. A level playing field is made possible by the following arrangements:

a Before the commencement of the tendering exercise, a set of objective and confidential assessment criteria was agreed within Government. Under these criteria, tenderers would first need to satisfy certain mandatory requirements (e.g. financial standing, technical capability etc.) before they could proceed to the second part of the assessment, which covered the operational, engineering and financial aspects of the project. Appropriate score and weightings were assigned to the different criteria. Officials in different departments were responsible for evaluating those parts of the tenderers' submission that were under their purview

b To assist tenderers in the preparation of their proposals, a Project Brief containing Government's general requirements in terms of the engineering, operational and financial aspects of the project was issued to all tenderers

c Tender evaluation is a collective decision making process. No one person or department can monopolize the tender evaluation process. In the case of the Route 3 (CPS) project, more than four Government branches/departments were involved. Representatives from the Independent Commission Against Corruption were present as an observer in meetings of the assessment panel

Central co-ordination

In all our dealings with the franchisee, there is a Government Representative who puts the consolidated Government position to the franchisee after clearing the lines with relevant parties within Government. Bureaucratic red tape is therefore reduced to the minimum. Central Government coordination is particularly useful in resolving interface issues with adjoining Government projects.

Supervision

It is important to have appropriate supervision over the construction and operation of the

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* *The Executive Council is the advising Council to the Governor of Hong Kong on important policy matters.*

project to ensure that the franchisee completes and operates the project to the quality and standards specified in the Project Agreement. However, care should be taken to avoid over-interference in the franchisee's operations and the associated need to deploy a large Government monitoring team, which would defeat the purpose of private participation. Standards are achieved largely through the implementation and strict observance of a quality assurance plan.

During the design and construction stage, appropriate supervision is maintained through the Design and Checking Procedures contained in the Project Agreement. Under the procedures, the project is broken down into packages for design development and submission to Government for Approval In Principle (AIP). The franchisee can only proceed to detailed design of the project without further reference to Government if an AIP (usually with conditions attached) has been obtained. Safeguards are built into the process which require the franchisee to appoint an Independent Design Checker, who is responsible for ensuring that the AIP is complied with, and bringing to Government's attention any non-compliance. The Design and Checking Procedures provide the franchisee with the flexibility to design the project to best suit his contractor's expertise, plant and programme, and at the same time provide Government with the comfort that the project will be designed and implemented to the approved standards.

Before the project is completed and opened to traffic, the franchisee is required to obtain prior Government approval on the general procedures which govern the operation and maintenance of the facility. The franchisee will have to pay a financial penalty if he breaches his obligations under the Project Agreement or the Ordinance. The purpose is to safeguard the interest of road-users.

FINANCIAL ARRANGEMENTS

The financial arrangements are the most crucial element to ensure success of a BOT package. The financial arrangements for the Route 3 (CPS) project balance the interests of different stakeholders (Government, road-users and the franchisee) and seek to share equally the risks amongst the three parties. The financial objectives of the stakeholders are outlined below:

- For **Government**, to minimize or avoid any form of financial guarantee for the project. Any form of financial support to the project from the general revenue will be against the 'user pays' principle and may pose uncertainty and complications in budget planning

- For **the franchisee**, to have the right to charge a toll and to make suitable increases in the toll during the 30-year franchise period, so that he can raise the necessary project finance, and earn a reasonable return on his investment. However, there is no certainty that the approval of legislators to a toll increase, which would normally be required, would be obtained. Investors in BOT projects now require more certainty achieved through a set of pre-determined, objective yardsticks to govern toll increases during the entire franchise period before they are willing to invest in transport infrastructure. The uncertainties inherent in the legislative process may affect business confidence

- For the **road-users**, they would of course like to have a low and stable toll regime

We consider that the following financial terms of the Route 3 (CPS) project strike a fair balance between the financial objectives of the different stakeholders:

- No financial or any other form of guarantee is given by Government to the franchisee. The franchisee has to bear market risks, including those relating to inflation, construction cost overrun, traffic volume, the availability of future competing routes etc.

- The shareholders of the franchisee are required to guarantee, on a joint and several basis, that the project will be completed within budget and within the specified programme of 38 months. Any additional cost arising from the failure to meet these obligations will be for the shareholders' account and will not be transferred to road-users in the form of future toll increases

- In the event of delay in the construction of the project caused by factors beyond the franchisee/the contractor's control, Government has the discretion to grant an extension of the construction period/franchise period to the franchisee, except in very exceptional circumstances (e.g., when Government instructs a change in the previously agreed technical requirements). No reimbursement of costs will be made to the franchisee. The Project Agreement also specifies that for any event which may entitle the franchisee to an extension of time, he shall use his best endeavours to recover any delay, such best endeavours being limited to incurring expenditure up to HK$200,000 (US$25,641) per day. This arrangement protects the franchisee against those genuine delays which are beyond his control, but also gives Government the comfort that frivolous claims can be avoided

- Rather than relying on the previous legislative process to effect toll increases, Government, the franchisee and the Legislative Council have agreed on a toll adjustment mechanism which will govern toll increases during the entire 30-year franchise period. Under the toll adjustment mechanism, the franchisee will be allowed to raise the toll only if certain objective criteria relating to the financial performance of the project are satisfied. A background note on how the toll adjustment mechanism operates is at Annex B. The toll formula gives the franchisee the comfort of the prospect of a reasonable return (target Internal Rate of Return is 15%), but equally if not more importantly, enables the franchisee to raise borrowings on competitive terms. A HK$4.7 billion (US$600 million) 15-year limited recourse project financing was raised, one of the longest tenor project financings raised in the Hong Kong dollar debt market

- Due to the competitive tendering process and the ability of the franchisee to raise project financing on favorable terms, road-users will be able to benefit from a low and stable toll regime. The opening toll for this HK$7 billion (US$0.9 billion) project is only HK$15 (US$2) for a private car. Under the toll adjustment formula, there will only be three anticipated toll increases (each of HK$5 or less than US$1) during the 30-year franchise period

PERSPECTIVE OF THE FRANCHISEE

The factors pertaining to the franchisee's decision to invest in the Route 3 (CPS) project have been covered in the previous sections. This section outlines the various measures adopted by the franchisee to reduce market risks which enabled him to price his bid competitively.

Business Risk

The primary concern of an investor is the commercial viability of the project. Route 3 (CPS) is well positioned to benefit from the expected traffic growth to the north west New Territories and to the Chinese border. The franchisee has nevertheless spent much effort in feasibility studies and market research to ascertain market risks before making the investment decision.

Construction Risks

The franchisee is required under the Project Agreement and the Ordinance to complete the construction works to the specified standards within 38 months. The franchisee has appointed a contractors' consortium with a proven track record to undertake the construction works on his behalf. The contractor was fully involved in tender submissions and negotiations with Government on the franchise terms. Construction risks were transferred to the contractor through a back-to-back construction contract, so that the franchisee's obligations to Government in respect of the construction of the project were carried over to the contractor. Instalment payments of the contract sum would be deferred, and heavy penalties imposed on any delay by the contractor to meet the agreed completion milestones.

Cost Overrun Risk

The franchisee is required to bear any construction cost overrun. To minimise such a risk, a fixed price lump-sum contract was awarded to the contractor. The franchisee is therefore protected from the risk of price escalation arising from inflation, currency fluctuation, or any other reasons. Under the terms of the construction contract, the contractor will not be entitled to any extension of time or claim for extra costs except where stringent conditions are met. The franchisee also uses financial instruments such as interest rate swaps, to hedge the risk of interest rate fluctuation so as to minimise the effect on the overall budget.

Operating Risk

The BOT package involves not only the construction but also the operation of the Route 3 (CPS). Toll road operation carries relatively low operating risk, as long as effective control of toll collection is in place and periodic maintenance work is carried out. The franchisee appointed an operator at an early stage, who was involved throughout the design and construction of the project stage. This helps to avoid any negative financial and operational ramifications to the project during the operating stage.

CONCLUSION - SUGGESTED "BEST PRACTICES"

Hong Kong has ample experience in attracting private sector investment in transport infrastructure under a BOT arrangement. Since 1969, four tunnels and one expressway were built under BOT franchises. These were all multi-billion dollar projects. The arrangements for implementing these BOT projects have evolved over the years to better suit market reality and the needs of road-users. In the light of the Route 3 (CPS) project, which is the latest BOT franchise awarded by Hong Kong Government, we consider that the following are the "best practices" for attracting private participation in the construction of transport infrastructure:

A package of risk sharing arrangements

- Government to take the risks of completing the necessary statutory/administrative processes in time to hand over the land to the franchisee to proceed with construction of the project

- The franchisee to shoulder all market risks, with no financial or any other form of guarantee from Government. The financial risks of cost overrun and late completion will also be borne by the franchisee

- For events causing delay to construction which are genuinely outside the control of the franchisee, the risks are shared between Government and the franchisee through an extension of the construction/franchise period

- The franchisee is given the comfort of the prospect of a reasonable return on his investment through the toll adjustment formula, which sets out the objective criteria for determining toll increases during the entire franchise period

- The franchisee can spread his risks under contractual arrangements with his construction contractor and the operator of the expressway. This would enhance the competitiveness of the franchisee's bid

A pro-active Government role to ensure

- Effective coordination between relevant Government departments to assist the franchisee in meeting his contractual obligations

- A level playing field for investors through the establishment of a clear and open tendering system

- A clear contractual and legal framework which would reduce business risks and at the same time protect the interests of Government and road-users

Transport Branch
Hong Kong Government
July 1996

Annex B

Toll Adjustment Mechanism: Summary

The toll adjustment mechanism is simply a means to ensure:

- A low and stable toll regime for **road users**
- A degree of certainty for the **franchisee** over future toll increases
- An assurance for **Government** that the BOT arrangement will continue to be appropriate, given the competing interests of the above two stakeholders.

This is how it works. Government and the franchisee agree on maximum and minimum levels of annual revenue during the franchise period. When the franchisee's revenue is more than the amount agreed, the excess is placed in a "Toll Stability Fund". Government has the right to use this money to defer a toll increase which would otherwise fall due.

When the franchisee's revenue is less than agreed, the Government may use the Fund to top up the franchisee's revenue to the minimum agreed level. If the balance in the Fund is insufficient to do this, the franchisee may bring forward a toll increase, subject to vetting of accounts by Government.

The charts at Appendix I and II illustrate this.

TOLL ROAD INVESTMENT

IN INDONESIA

Prepared by

Government of the Republic of Indonesia
Ministry of Public Works

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TOLL ROAD INVESTMENT IN INDONESIA

EXECUTIVE SUMMARY

In 1995 and 1996 Indonesia launched 19 toll road projects with a total length of 767 kilometers and investment estimated at US$3.5 billion. These toll roads are being funded through an innovative international competitive bidding process that emphasizes transparency, careful risk allocation, speed of execution and effective communications.

The financing methods being used in the current toll road program demonstrate an increased reliance on international equity and debt, and progressively more favorable terms for Jasa Marga are being met. The tender provides for financing without requiring provisions for cash flow support from Jasa Marga and the bids are providing a strong indication of how financial markets are responding to Indonesia's improving investment climate. It is expected that the improving investment climate and the transparent bidding process will continue to attract new investors for toll road facilities in Indonesia. The vigorous local and international response to the tender process is a clear signal that the transparent and well-structured bidding process will continue to attract new investors for toll facilities in Indonesia.

The Government of Indonesia, through the Indonesian Highway Corporation (PT Jasa Marga), has succeeded in attracting interest and international competition for build-operate-transfer (BOT) concessions for 19 sections of toll road with a total investment cost estimated at US$3.5 billion. This has been achieved through continuous communications between Jasa Marga and the bidders and through an open, transparent process where the terms and conditions set forth in the tender documents are applied equally to all bidders.

This process and transparent adjudication has gained Jasa Marga the confidence of domestic and international investors through open and clear communications and as a result, has been able to determine the risks of the program effectively, and equitably distribute that risk. This fair distribution of risk is critical for attracting committed bidders and assuring the success of the program.

The key elements utilized in the tendering process for Indonesia's toll road investment program are summarized as follows:

First, infrastructure risk has been mitigated through a process that reviews and evaluates the financial capabilities of the bidders during the prequalification phase as well as the evaluation of the actual bids. In addition, the risks of default have been carefully distributed between Jasa Marga and the bidders.

Second, Indonesia has offered a supportive policy environment and legal framework which help to ensure the confidence necessary to attract private sector investment while the terms and conditions of the actual tender process have been carefully structured, transparent and impartially enforced. The cost of risk has been reduced by detailed allocation prior to bidding. Bidders face less uncertainty in the post selection process and have a clearer basis for managing and costing risk.

Third, the Government of Indonesia (GOI) has provided a clear institutional structure. It has developed Jasa Marga as a strong national corporation, initially with strong government support. As Jasa Marga has gained strength and investor confidence it has been able to become fully corporatised, with little remaining dependence on government. The current BOT program includes 19 toll road sections in Java and Sumatra. Effective management of the program requires an organization with the experience and authority to implement a program spread over a large geographic area.

Fourth, effective and continuous communications have been developed both within Jasa Marga and the Government, and between Jasa Marga and the bidders. The result has been a valuable "give and take" between the two sides which has improved the tender documents and fostered a mutual respect and understanding between the bidders and Jasa Marga.

INDONESIA'S TOLL ROAD INVESTMENT PROGRAM

Background

Since its inception in 1978, PT. Jasa Marga (Persero) has become one of the largest toll road operators in the world. As of May 1996, 443 kilometers of toll roads and bridges were in operation, 212 kilometers were under construction, 437 kilometers are in design, largely under negotiated contracts with builders/operators, and 767 kilometers have been offered to domestic and international companies through a competitive bid process.

Jasa Marga has gained significant experience in the design, construction and operation of toll roads. Toll roads are no longer fully financed from government funds but are instead constructed through an innovative Build Operate Transfer (BOT) system based on private-sector financing and government support.

The current process has been developed in concert with the Government of Indonesia's (GOI) policy of encouraging the private sector to invest in the infrastructure in the more developed areas of the country, while reserving government infrastructure funds for the less developed areas. These developed areas with relatively high current or forecast traffic levels offer opportunities.

The current tendering process is open to both domestic and foreign investors through a competitive bid process to design, construct and operate toll road segments in partnership with Jasa Marga.

Scope of the Projects/Sector

Indonesia's current toll road initiative includes private-sector investment in 767 kilometers of toll road with a total investment cost estimated at US$3.5 billion. Jasa Marga has introduced a modified BOT arrangement whereby land acquisition costs are included as an integral part of the investment financing and are paid for through toll revenue.

For the current series of projects 19 sections of toll roads were identified by the Government as the priority highway facilities which would be most attractive to private investors. All are located in Java or Sumatra. Bids on the 19 sections of toll roads totaling

767 kilometers were due on six different dates between December 1995 and June 1996 allowing adequate time for proposal preparation and evaluation by Jasa Marga.

The projects were defined by Jasa Marga in terms of detailed design, required service levels and operational standards. The data provided by Jasa Marga varied significantly among the 19 sections being offered. Some toll road sections had full feasibility studies and completed designs while work on others was limited to pre-feasibility studies. The bidders were responsible for verifying the accuracy of the data and supplementing it to complete their offers. All bidders were required to form a consortium which included the lead firm, required associate firms and banks as well as Jasa Marga. The tender documents specified the terms of the Joint Venture Agreement, the Authorization Agreement, the Determination of Establishment and the major O&M requirements.

Each bidder had to agree to those terms as part of their initial bid submission. The tender documents specified the maximum length of the concession and the minimum equity share for Jasa Marga in the joint venture for each section. The debt/equity ratio was also defined in the tender documents and Jasa Marga committed itself to paying its share of equity in cash and/or in kind.

In addition to complying with all of the technical, legal and administrative requirements, bidders were asked to state what percentage of the gross tolls were proposed to be given to Jasa Marga (toll revenue sharing) and the length of the concession and construction periods. At the end of the concession period the toll road would be transferred to Jasa Marga.

The first bids were due approximately three months after the Request for Proposal (RFP) was issued. 48 firms were prequalified out of 87 firms that submitted their qualifications. The 48 qualified firms purchased 92 sets of bid documents for the 19 sections. 46 bids were submitted either alone or in combination with other firms on one or more sections.

For some toll road concessions outside of Indonesia the government guarantees a certain level of revenues based on toll levels or traffic volumes. In Indonesia toll rates and increases are established by Presidential decree, and Jasa Marga is not able to offer guarantees of income based on toll rates or future increases. In addition, Jasa Marga advised in the tender documents that it did not guarantee the traffic forecasts of the project preparation consultants nor the completion dates for connecting toll roads.

Infrastructure Risk Mitigation

The tendering process mitigated risk through well crafted tender documents; clear laws and regulations; Jasa Marga's proven track record in toll road implementation and a program to ensure proper distribution of risk between Jasa Marga and the private-sector investors.

Minimizing risk is critical in attracting investors and ensuring financing terms which are affordable and acceptable. Clear and well-prepared tender documents played a key role in minimizing risk to both the bidders and Jasa Marga by providing each of the parties with a clear understanding of the project requirements. In addition, Indonesia's history of successful toll road implementation coupled with an attractive climate for private sector investors also contributed to a successful tender process.

The need to mitigate the extremely high levels of existing and forecast congestion in the areas of the proposed toll roads required Indonesia to act quickly. It was also recognized that default of the contractor during and/or before construction would result in significant increases in time and money to complete the project as well as potentially large liabilities for Jasa Marga. Therefore, Jasa Marga adopted a number of measures to limit the likelihood and/or impact of default.

Pre-Qualification of Interested Investors. In order to pre-qualify for the tender process, each firm or consortium had to establish its financial capability and experience in comparable infrastructure investment programs. Only those firms which met all requirements were permitted to bid.

Provisions of the Tender Documents. The tender documents also gave Jasa Marga the flexibility to quickly substitute contractors and/or investors or to take over the management of the project itself in the case of default, thus minimizing the impact of a potential default on the construction schedule.

The tender documents require that the bidder's obtain a loan for the purposes of land acquisition. The proceeds of this loan allow the rapid acquisition of the land in the right-of-way and reduce the likelihood of delays that could lead to default. A bank guarantee for this loan is provided at an early point in the post selection administrative processes.

Bid Evaluation. The financing of the projects, especially the level of the commitment to the project by the prospective financial institutions, was carefully examined in the bid evaluation. Special attention was given to an analysis of the cash flow and Internal Rates of Return figures for each bid. Bids with incorrect financial data and/or conditional commitments from lenders were scored lower.

Construction costs were compared to the average of all bidder's construction costs and to the Owner's estimate to determine if any of the bidder's costs were significantly above or below average; thus, increasing the likelihood of default. No bids have failed by this criteria to date.

Supportive Policy Environment

Indonesia has clear laws in place which include policies for foreign investment, the role of Jasa Marga and policies for joint investment in toll roads.

These laws and regulations combined with a transparent bidding/selection process were critical to attracting bidders.

Indonesia provides a healthy macro-economic and legal climate for private sector investment. An especially conducive environment is provided for infrastructure investment, including toll roads through tender documents that clearly describe the enabling and controlling laws and regulations that must be met as well as the requirements and procedures for forming a joint venture with Jasa Marga.

In the early stages of the bidding process there was skepticism from a number of prospective bidders concerned with the fairness of the process. To achieve the required

level of confidence, Jasa Marga insisted on a policy of strict adherence to the rules established in the bidding documents. In the event, several bids from investors who had a record of success were rejected in open adjudication before assembled bidders. This open process made clear Jasa Marga's intent to establish fair and open competition and contributed to attracting a significant number of investors (for the various sections).

Jasa Marga's policy toward the bidder's responsibility for land costs also served to minimize risk to the bidders and limited proposed construction costs. Jasa Marga has limited the cost of land contained in a bid to a pre-set percentage of the bidder's total construction cost. The percentage varies from section to section depending on Jasa Marga's estimate of construction and land costs. By tying land costs to construction costs, low cost bidders not only benefit from their lower construction costs, but they are also rewarded with lower land costs since Jasa Marga is responsible for any land cost overruns which may occur. While this innovative approach has decreased the risk to the bidders, it has increased the risk to Jasa Marga. However, it has reduced overall project cost and encouraged low cost bidders.

Furthermore, Jasa Marga has agreed to provide the right-of-way to the bidder within 24-30 months of the preparation of the land plan and to compensate the concessionaire for any additional costs due to delays in land acquisition. This further reduces the risks to the bidder. Jasa Marga's risk is in turn mitigated by an article of the enabling law that provides for the government to ensure that land is provided.

In an effort to limit the lender risks, Jasa Marga has agreed that, in the event of default, it will make the loan payments (but not assume the loan) from toll revenues from the toll road section. This policy is intended to reduce the risk to lending institutions and make financing easier to obtain and at a lower cost.

Beneficial Institutional Structure

Since its inception in 1978, Jasa Marga has evolved from a state owned authority operating Government financed toll roads into a highway corporation capable of attracting and implementing international private sector infrastructure investments.

The Government of Indonesia formed Jasa Marga in 1978, and since that time the Government has supported Jasa Marga through laws and policies which clearly define the role of Jasa Marga in toll road development. The Government has supported Jasa Marga in developing into a flexible, well-staffed institution which is capable of implementing the current toll road development program. Jasa Marga's institutional development has been based on four distinct generations of toll road implementation. Each of these generations has been built on the experience gained on the part of Jasa Marga and the confidence developed by investors during the previous stages of toll road development. The four generations of development are briefly described as follows:

- *1st Generation (1978-1983)*, 53 kilometers, fully financed by government funds (government equity)
- *2nd Generation (1983-1990)*, 266 kilometers, funded by government guaranteed foreign development loans supplemented by bonds issued by Jasa Marga

- *3rd Generation (1987-1993)* 573 kilometers, toll financing in cooperation with the private sector using a "noncompetitive" BOT system. Some risk support from Jasa Marga was provided
- *4th Generation (1994 - present)* 767 kilometers (to date), Jasa Marga introduces a competitive BOT system to attract international investors. Additional revenue sharing benefits to Jasa Marga introduced and risk supports reduced

As noted above, each generation of development was based on the previous generations and the experience and additional institutional and financial capacity gained. The first two generations demonstrated the profitability of toll roads in Indonesia, while the 3rd generation demonstrated the feasibility of utilizing financing in cooperation with the private sector. These 18 years of experience have not only served to develop Jasa Marga as an institution, but also provided experience and confidence for the private sector to participate firstly as contractors and then as progressively more independent investors.

Jasa Marga has developed into a well respected and profitable semi-independent governmental organization. Its practical experience, attractive cash flow and ability to employ well-qualified staff has resulted in an organization which private companies and investors find to be attractive joint venture partners. Therefore, the joint venture partnerships between Jasa Marga and the investors are relatively easy to develop.

Jasa Marga's experience (in the construction and operation of toll roads) has also allowed it to effectively evaluate international competitive bids, negotiate and implement concession agreements, detect potential risks which might lead to default and correct them before they become threats to the financial health of the project.

Perhaps what is most important, Jasa Marga operates as a profit making enterprise and will be privatized in the near future resulting in an even more advantageous partnership.

Effective Communications

Effective communications and public relations have been critical in ensuring acceptance of toll road development by the public and road users.

Effective communications within Jasa Marga and the GOI as well as between Jasa Marga and the prospective bidders has been essential in ensuring a consistent and fair bidding process.

Examples of communications which have contributed to the success achieved during the current tendering process include:

- communication with the public and potential users to ensure public acceptance of the toll roads
- communication within the Government and Jasa Marga
- communication between Jasa Marga, the prospective bidders, and potential lenders

This open communication was a prerequisite to a transparent bidding and selection process. Jasa Marga recognized that in order for the organization to communicate effectively with prospective international investors, it would have to develop consistent and reasonable

positions, requirements and conditions among all of its divisions and related Government organizations.

It was therefore necessary for all of its divisions (e.g., planning, construction, operations, design, and legal) and other concerned Government organizations to review all of the major tender documents and reach a consensus on their contents. This involved establishing a committee including senior representatives of all major divisions plus legal, financial and technical consultants to review the tender documents in detail. While reaching a consensus among all the involved parties was difficult and time consuming, it resulted in documents which could be consistently administered in a transparent manner.

The original committee structure was utilized in modified form throughout the tender and selection process to reach a consensus on issues as they arose and to evaluate bids. In order to respond to questions from bidders, smaller working groups were formed from the main committee.

In order to properly evaluate the proposals, the committee was also divided into sub committees with specific areas of expertise such as construction, economics and finance and legal and administrative. Each of these subcommittees evaluated the proposals from their perspective and prepared a formal evaluation of the relative advantages and disadvantages of each bid. Representatives of each subcommittee then presented the results of their analysis to the committee as a whole. Reaching a consensus among the committee members as a whole was a long and demanding process which required each sub committee to defend, revise and rethink the importance of each of the issues that had been raised. This whole process was repeated several times more as the results of the evaluations were presented to the executives of Jasa Marga and the senior government officials. It should be stressed that the reevaluations which occurred were intended to insure that the evaluations were complete, transparent and defensible. The final result was a thorough and comprehensive technical analysis that was accepted by all involved parties.

While the Jasa Marga staff was reaching a consensus on its internal positions, it was also responding to the questions and concerns of the bidders. From the beginning Jasa Marga shared its positions with the bidders and solicited their input.

The result of this interchange of ideas was improved tender documents which reflected a better balance between the positions of the bidders and Jasa Marga.

This exchange of ideas between the bidders occurred in many ways including pre-bid conferences, revisions to the documents, written responses to all questions, presentations to financiers, bid openings and scrutiny of compliance.

It is clear from the response of the bidders and investors that Jasa Marga has established a reasonable level of confidence among all partners that the bidding and selection process has been fair and transparent.

CONCLUSIONS

Significant reductions appear to have been achieved in capital costs, required concession periods and essential government assistance for the immediate $3.5 billion toll road program in Indonesia. The current toll road tender provides a strong positive indication of the attractiveness of privately financed toll roads in Indonesia.

The financing methods adopted in the current toll road program show an increased reliance on international equity and debt, under progressively more favorable conditions to Jasa Marga. The tender provides for non-recourse financing without support from Jasa Marga and the bids are providing a strong indication of how financial markets are responding to Indonesia's improving investment climate. It is expected that the improving investment climate and transparent bidding process will continue to attract new toll road investors in Indonesia as demonstrated by the vigorous local and international response to the tender process.

The final measure of success in the current toll road investment program will not be fully apparent until the concession agreements are finalized with the winning bidders and the toll roads are in operation. Actions Indonesia has taken in the past (a well-defined legal and regulatory framework; a supportive policy environment; and the development of institutions capable of managing large BOT toll road projects) coupled with measures taken in the current tendering process to ensure an equitable distribution of risk and a transparent and open bidding process have resulted in a vigorous local and international response which should ultimately result in cost effective and rapid implementation of toll road projects. An additional benefit is the tender's contribution to improving the overall investment climate in Indonesia which will contribute directly to increasing investor confidence. Finally, the lessons learned here can be applied to other sectors where private investment is required.

Lessons:

1. Clear institutional responsibilities have facilitated very large scale growth in investments

2. More efficient mitigation of investor and financier risks has been achieved by phased reductions of the originally strong government support, in tandem with increasing capability and lengthening track record of the ‘owner’ and consistent public sector management of the sector generally

3. This development, coupled with good communications and detailed bidding requirements have been the primary factors in inducing rapid expansion of investor and financier participation, as well as lower preparation, financing and support costs

4. As a result, a rapidly expanding investment stream can be achieved without a matching expansion of risk burden to the government and national corporation, and also with more rapid flows of revenues to fund future investments

5. The conditions now readily accepted by the private sector are unlikely to have been accepted if offered at the outset of the program without the benefit of a track record of balanced development of the sector

ALLOCATION OF RISK				
ITEM	GOVERNMENT	JASA MARGA	BIDDER	REMARKS
Political / Regulatory Risk		In the case of investor termination Jasa Marga takes over all loan payments (but not the loan) minimizing risk to lenders. Jasa Marga would take over management of the facility and loans are to be repaid from toll revenue	The associated risk is covered by Force Majuere in the concession agreement and associated insurance. If Force Majuere occurs, the bidder may terminate the agreement	Risk is minimized through laws and regulation which: • Allow Jasa Marga to build and operate Toll roads • Allow Jasa Marga to cooperate with private sector investors • Allow international investment
Currency fluctuation, and Repatriation of Profit			The bidder is responsible for all risk associated with currency fluctuation and repatriation of profit	Risk is minimized by GOI financial management policies and regulations which allow easy repatriation of profits
Land acquisition	The government is responsible to acquire all right of way (ROW) before the investor commits capital expenditure beyond investigation and design	Jasa Marga guarantees that the government will acquire all right of way In the event that the land cannot be acquired Jasa Marga commits to repay the investor's cost for land acquisition from toll revenues if / when the facility is completed Jasa Marga is responsible for any cost overrun in land acquisition costs - minimizing risk to the bidder	The bidder funds land acquisition	Laws and regulations are in place regarding government acquisition of land for infrastructure projects Land acquisition cost (to be funded by the bidder) is set at a percentage of the bidder proposed construction cost Jasa Marga is responsible for any overrun
Construction cost			The bidder is responsible for any increase or overrun in construction cost	
Toll rate	The government sets toll rates by presidential decree		As guarantees cannot be made for toll rates or revenue the bidder is at risk	Jasa Marga's history of successful toll road operation and strong traffic growth minimize risk
Traffic			The bidder is responsible for traffic forecasts and is responsible for risk if traffic is lower from forecast	There has been high traffic growth in recent years and forecast traffic growth is also high, risk is minimal
Default		In the case of investor default Jasa Marga takes over all loan payments (but not the loan) minimizing risk to lenders. Jasa Marga would take over management of the facility and loans are to be repaid from toll	In the case of investor default the investor loses all equity	Risk of investor default has been minimized by thorough review of bidders' technical and financial experience and capabilities during the tendering process

		revenue		

TOLLROADS IN OPERATION		
NO.	TOLL ROAD / BRIDGE SEGMENTS	LENGTH (Km)
1.	Jagorawi	50.00
2.	Jakarta - Tangerang	27.00
3.	Surabaya - Gempol	42.00
4.	Jakarta - Cikampek	72.00
	a. Cakung - Cikunir	9.00
5.	Padalarang - Cileunyi	
	a. Padalarang - Moh. Toha	18.02
	b. Moh. Toha - Cileunyi	17.61
	c. Pasteur Access	5.71
	d. Pasir Koja Access	5.24
6.	Cawang - Tomang - Cengkareng	
	a. Cawang - Tomang	16.00
	b. Cengkareng	14.30
7.	Belmera	33.70
8.	Semarang A & B	
	a. Srondol - Jatingaleh	6.30
	b. Jatingaleh - Krapyak	8.50
9.	Cawang - Tanjung Priok	15.50
10.	Tangerang - Merak	
	a. Tangerang Barat - Cilegon Barat	69.50
11.	Surabaya - Gresik	
	a. Dupak - Tandes	3.50
	b. Tandes - Kebomas	12.20
12.	Additional Lanes Cikampek - Cibitung (47.5 Km)	
13.	Citarum Bridge	0.91
14.	Tallo Lama Bridge	1.00
15.	Mojokerto Bridge	1.25
16.	Jagorawi Widening (TMII - CBBR) (8.30 Km)	
17.	JORR S (Pondok Pinang - Lenteng Agung)	
	a. Pondok Pinang - Lenteng Agung (JORR S)	8.80
18.	Harbour Road (Tanjung Priok - Ancol Timur)	4.80
	TOTAL	**442.84**

TOLLROADS UNDER CONSTRUCTION		
NO.	TOLL ROAD / BRIDGE SEGMENTS	LENGTH (Km)
1.	Tanggerang - Merak	7.70
	a. Cilegon Barat - Merak	
2.	Surabaya - Gresik	
	a. Kebomas - Manyar	4.35
3.	Harbour Road (Ancol Timur - Jembatan Tiga)	6.88
4.	JORR E2 + E3 + N	19.23
5.	JORR S + E1	
	a. Lenteng Agung - TMII (S)	6.05
	b. TMII - Cikunir (E1)	11.89
6.	Grogol - Pluit	4.48
7.	Ujung Pandang	10.21
8.	Cikampek - Padalarang	59.00
9.	Palimanan - Cirebon	26.30
10.	Jakarta - Merak Widening (23.23 Km)	
	a. Kebon Jeruk - Tangerang Barat	
11.	Jakarta - Cikampek Widening (24.5 Km)	
	a. Cawang - Cibitung	
12.	Semarang C	9.75
13.	JORR W2	
	a. Kebon Jeruk - Pondok Pinang	11.17
14.	Surabaya - Mojokerto	35.40
		212.41

	TOTAL	

TOLLROADS UNDER INVESTMENT PROCESS		
NO.	TOLL ROAD / BRIDGE SEGMENTS	LENGTH (Km)
1.	Semarang - Batang	75.00
2.	Cileunyi - Nagreg	23.40
3.	Cileunyi - Tanjung Sari	8.00
4.	Pandaan - Pasuruan	32.40
5.	Semarang Demak	25.00
6.	Gresik - Tuban	75.00
7.	Gempol - Pandaan	13.64
8.	Surabaya - Madura Bridge	5.44
9.	Solo - Yogyakarta	45.00
10.	Cilegon - Labuan	60.00
11.	Cilegon - Bojonagara	13.00
12.	Bogor Ring Road	10.50
13.	Cawang - Bekasi Timur (Parellel with Saluran Tarum Barat)	21.50
14.	JORR W 1 (Penjaringan - Kebon Jeruk)	
	a. Penjaringan - Kebon Jeruk	9.76
15.	Jakarta - Serpong	
	a. Ulujami - Pondok Aren	5.90
	b. Pondok Aren - Serpong BSD	7.20
	TOTAL	**430.74**

TOLLROADS UNDER BIDDING & BIDDING COMPLETED		
NO.	TOLL ROAD / BRIDGE SEGMENTS	LENGTH (Km)
1.	Sadang - Palimanan	
	a. Sadang - Subang	37.00
	b. Subang - Dawuan	52.50
	c. Dawuan - Palimanan	24.50
2.	Ciawi - Sukabumi - Padalarang	
	a. Ciawi - Sukabumi	53.50
	b. Sukabumi - Ciranjang	31.00
	c. Ciranjang - Padalarang	30.00
3.	Kanci (Cirebon) - Batang	
	a. Kanci (Cirebon) - Pejagan (Tegal)	34.00
	b. Pejagan (Tegal) - Pemalang	56.00
	c. Pemalang - Batang	35.00
4.	Semarang - Solo	
	a. Semarang - Solo	80.00
5.	Solo - Mojokerto	
	a. Solo - Mantingan	56.25
	b. Mantingan - Ngawi	35.00
	c. Ngawi - Caruban	34.00
	d. Caruban - Kertosono	49.00
	e. Kertosono - Mojokerto	38.00
6.	SS Waru - Tanjung Perak	
	a. Waru Interchange - Tanjung Perak	31.60
7.	Pandaan - Malang	
	a. Pandaan - Malang	29.50
8.	Pasuruan - Probolinggo	
	a. Pasuruan -Probolinggo	40.00
9.	Medan - Binjai	
	a. Medan - Binjai	20.50
TOTAL		**767.35**

JAPAN'S POSSIBLE SUPPORT TO PRIVATE INITIATIVES IN INFRASTRUCTURE DEVELOPMENT: BANGKOK SUBWAY PROJECT IN THAILAND

Prepared by

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Ministry of Foreign Affairs
Japan

25 July 1996

JAPAN'S POSSIBLE SUPPORT TO PRIVATE INITIATIVES IN INFRASTRUCTURE DEVELOPMENT: BANGKOK SUBWAY PROJECT IN THAILAND

BACKGROUND

A taskforce established under the Ministry of Foreign Affairs prepared the paper titled "Possible Support to Private Sector Initiatives in Infrastructure Development" (Attachment 1) suggesting policy measures to encourage the private sector to participate in infrastructure projects.

The suggested measures include policy dialogue between the governments concerned, mobilization of ODA, and active use of other public and private facilities.

EFFECTS OF THE POLICY MEASURES

Infrastructure Risk Mitigation: Financing and Investment Management Alternatives

Our proposed policy measures offer some financial facilities which can contribute to mitigating risks of private infrastructure projects. When private businesses consider investing in infrastructure projects, public finance to be provided for facilities surrounding the projects (Attachment 2) can motivate them to actively participate in such projects for the following two reasons:

a such facilities to be constructed by public finance secure the profitability of private infrastructure projects by reducing the risk for the private infrastructure project of having to proceed without such facilities, or by separating-out a non-profitable part of the project

b such involvement of the public sector, especially with that of foreign governments or multilateral organizations, can reduce political risks

Public finance and foreign aid assisting the public finance can facilitate much larger-scale private finance.

The Japanese technical cooperation scheme for project formation can also promote private infrastructure projects by reducing private businesses' costs of project formation.

Supportive Policy Environment for Infrastructure Development and Beneficial Institutional Structures and Regulatory Regimes

Policy dialogue with the governments of host countries is expected to recognize the importance of the policy environment for encouraging private initiatives in infrastructure development. Japanese technical assistance can support institutional capacity building in host countries, e.g. for the development of related laws and regulations.

Effective Communications Between Public and Private Sectors

Our policy dialogue with the governments of host countries is expected to convey the private sector's perspectives and to facilitate discussions between them.

BANGKOK SUBWAY CONSTRUCTION PROJECT

As an example of a private infrastructure project which is supported by Japanese ODA loans, the Bangkok subway construction project will be discussed here.

Description of the Project

This project is to construct a subway with a total length of approximately 20km from Hua Lampong central railway station to Bang Sue railway station, as part of the Mass Transit Network in Bangkok, Thailand. The objective of the project is to provide an alternative transportation mode other than road transportation, which is aimed at alleviating the traffic congestion in the Bangkok central area.

The construction work is expected to start this year (1996), and to be completed in seven years. The executing agency is the Metropolitan Rapid Transit Authority (MRTA), a public entity.

ODA Loan

The Japanese government is considering whether to provide an ODA loan to MRTA for the civil engineering work of the project.

Private Sector Involvement

A private entity will be granted the concession of operating the subway system through a competitive bidding procedure. The private entity will conduct the electro-mechanical works including the signaling and communication system, the fare collection system and other equipment, and purchase rolling stock from its funds. It will operate the subway system and collect the fares from the passengers.

Effects of the ODA Loan

Although the ODA loan will increase the accumulated sovereign debts of Thailand, it makes the project possible to be implemented.

Bangkok's mass transit system has been planned for a long time. It was recently decided that two projects would be carried out by private entities. Originally it was intended that the project would be a fully private one. However, the Government of Thailand agreed to make a direct investment in the civil engineering work when it decided that the project would be a subway, not an ordinary railway. Because the civil engineering work for a subway would be very costly and involve a high risk of non-completion, the Government decided it was appropriate for it to make a direct investment in order to make the national project attractive to private businesses.

The Japanese ODA loan will support such efforts of the Government of Thailand and the MRTA.

ATTACHMENT 1

Possible Support to Private Sector Initiatives in Infrastructure Development

February, 1996

1. The need for Public-Private Partnership for Infrastructure Development

(1) According to the World Bank, investment requirements for infrastructure development in developing economies in East Asia and the Pacific region are projected at between $1.3-1.5 trillion for the period of 1995-2004. However, it would be very difficult for the developing countries to depend solely on their domestic resources or public funds extended by donor countries to cover such massive investment needs.

(2) Against this background, developing countries are now exploring the possibilities of utilizing private funds and know-how to fill the financial gap.

(3) Infrastructure investments in developing countries, on the other hand, are likely to expose the private sector to various types of risks, some of which cannot be overcome solely by the efforts of private sector. As a result, there have been a relatively limited number of success stories in this area.

(4) Under these circumstances, the Government of Japan recognizes the needs to take supplementary measures to facilitate private-sector initiatives in infrastructure development in order to help developing countries achieve sustainable development.

2. Japan's support to private-sector initiatives in infrastructure development

The following outlines the measures the Japanese government intends to take to support private-sector initiatives in developing countries:

(1) Policy dialogue to assist in the creation of an enabling environment to facilitate private-sector initiatives in infrastructure development:
The government will have policy dialogue and consultation with host countries, where appropriate, on issues related to the promotion of infrastructure development funded by the private-sector, such as a specific development program or the legal framework of host countries.

(2) Mobilization of ODA to enhance private-sector initiatives in infrastructure development by means of:
   a) extending ODA loans
      - extending ODA loans to projects implemented by the government (or public sector) of the host country, which are directly or indirectly related to private-sector projects, including basic infrastructure development and environmental protection projects
      - considering providing such ODA loans in a timely manner
   b) utilizing technical cooperation schemes

- utilizing development studies schemes and technical cooperation schemes for studies necessary for project formulation
- utilizing technical assistance for:
  - institutional capacity building in the host country, e.g. for the development of related laws and regulations
  - training of experts for project operation and maintenance

c) considering the prompt and flexible use of other OECF functions (i.e. private sector investment finance schemes) for appropriate infrastructure projects within the existing framework

(3) Giving appropriate consideration to the active use of other public and/or private facilities including the Export-Import Bank loans, trade insurance, and private infrastructure funds, within the existing framework.

3. **In implementing the above-mentioned policy measures, the Government of Japan will take into full consideration the following aspects**:

(1) Supplementary Support

Infrastructure projects initiated by the private sector should be implemented, in the first place, by the host country and private sector concerned. Bearing in mind the role of the government which is to facilitate such initiatives through supplementary measures, the Government of Japan will support development projects only when it is likely to greatly contribute to the socio-economic development of the host country but cannot be undertaken solely by the private sector due to the high risks involved, and only when the host country and/or private sector concerned request the Japanese government to do so.

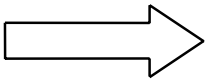
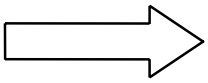
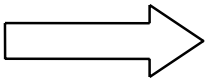
(2) International Partnership

The Japanese government would like to welcome the participation of private entities of any nationality and the collaboration with other members of the donor community, including the international financing institutions and foreign development organizations.

(3) Procurement Condition

ODA Loans to be extended as a part of such supplementary measures will be provided, in principle, under general untied procurement conditions in order to avoid any misunderstanding that said policy measures aim at promoting Japan's exports.

PRIVATE INFRASTRUCTURE PROJECT AND ODA LOAN PROJECT (EXAMPLE)

Private infrastructure project		**ODA lo**
Thermal power station		Transm Desulfu
Hydroelectric power (operation)		Dam, R
Industrial park		Water s

PRIVATE INVESTMENT IN TRANSPORTATION INFRASTRUCTURE DEVELOPMENT IN KOREA: THE CASE OF CHANG-WON TUNNEL PROJECT

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1 July 1996

PRIVATE INVESTMENT IN TRANSPORTATION INFRASTRUCTURE DEVELOPMENT IN KOREA: THE CASE OF CHANG-WON TUNNEL PROJECT

EXECUTIVE SUMMARY

Chang-won Tunnel Project is a toll road project which has been implemented by Sunkyong Engineering & Construction Ltd. (SKEC) under the sponsorship of the Kyung-Sang-Nam-Do Government (KSNDG) since 1991. The Project includes twin tunnels, each of which has 2.3 Km and 6.96 Km highways at the ends of the tunnels. The main objective of the Project is to increase the accessibility between two groups of cities through the direct connection of the east end of Chang-won City and Chang-yu Interchange of Nam-hae Expressway in Kim-hae City.

The Project was planned by the KSNDG in 1989 and constructed by SKEC, based on the Toll Road Act (TRA). According to the TRA, a private firm can construct a road and collect tolls with the permission of the local government and the Ministry of Construction and Transportation (MOCT).

The total construction cost of the Project finalized in 1995 was 92.5 billion Won ($115.7 mil). Of the 92.5 billion Won, the government financed 14 billion Won ($17.5 mil) and SKEC invested 78.5 billion Won ($98.2 mil). SKEC financed most of this investment through a domestic loan which has a floating interest rate of around 12 % per annum. With the prospect of a lower interest rate in the future, the Agreement accepted a floating interest rate. It is a form of risk mitigation. The central government subsidized 50 % of 14 billion Won. Additionally, land acquisition for the rights-of-way was financed from other government funds, although the detailed record is not clear.

SKEC procured the Project through an open bidding process. The most important criterion of the award was the lowest cost. Other major criteria were the business plan for the facilities, construction period, toll level, performance and stability of the firm, etc.

The ownership of the tunnel facilities, including the extended roads, belongs to the KSNDG upon completion of the facilities. SKEC, as a private investor, has a franchise which provides exclusive authority to collect tolls from the use of the tunnel facilities until SKEC makes up the total cost for the construction and operation. It is expected that full make-up of the total cost will take more than 20 years. The toll rate is strictly regulated both by the KSNDG and the central government represented by MOCT.

To mitigate the risk that the private firm might abandon the Project before completion because of the financial burden or any other internal problems of the firm, the Government of Korea has three kinds of institutional countermeasures: credit guarantee money; joint and several liability on guarantee; and guarantee insurance by credit fund.

There are two lessons to be learned from the Project. The first is that it is most important to correctly evaluate the feasibility of the Project. Secondly, there still remain many unnecessary regulations and limitations against infrastructure development by the private sector.
Chang-won Tunnel is one of the successful cases of private infrastructure development

projects. Almost six-years of construction have been completed successfully and actual traffic is more than the original estimation. However, the revenue still does not meet the expenses. Nevertheless, SKEC has evaluated the Project as successful, not because it is profitable, but because it guarantees stable cash flows, which is very important for the stability of the construction company. In the public aspects, the Project attained its original objectives. Every year more than 8 million vehicles can save travel distance and time. The Tunnel also contributes greatly to relieving the congestion in alternative highways.

OVERALL SITUATION

Institutional Arrangements

Korea started the institutional preparations for encouraging private investment for infrastructure developments in the early 1970s. According to the Toll Road Act (TRA) revised in 1970, a private firm has the authority to construct toll roads and collect tolls. Since the revision of the TRA in 1970, private investment for infrastructure projects was introduced in many other laws, such as the Port Act, the Urban Rail Road Act, the Shipping Business Act, etc. Many projects have been tried and implemented by private companies. However, most of the provisions in specific laws concerning private investments are very fragmented, and are lacking details and consistency. By and large, they are for small-scale local facilities, not for national-scale projects.

For a more comprehensive and systematic promotion to encourage private investment for large-scale infrastructure developments, the Korean government established "The Private Capital Inducement Act for the Expansion of Social Overhead Capital (PCIA)" in 1994. It is a special law which controls the provisions related to private investment in other specific laws. PCIA has very detailed provisions and regulations for the process of private infrastructure development projects. Therefore, although any infrastructure development project can be promoted either by a specific law or by PCIA, it is a recent trend that most of the infrastructure projects by private investment are prepared based on the PCIA. Especially large-scale projects whose total costs exceed 200 billion Won ($ 250 mil), should be advanced by the PCIA.

Review of the Transportation Infrastructure Projects by Private Investment

Before the PCIA in 1994, many small-scale transportation facility projects were attempted by private companies under each of the specific laws. Typical projects were the construction of toll highways, especially with tunnel facilities, based on TRA, port developments under the Port Act, terminal facility projects under the Shipping Business Act or Passenger Terminal Act, private railway station facilities under the National Railway Property Utilization Act, etc. Some of the projects achieved their objectives. Some of them were completed, but unprofitable. Some others are still under construction.

With the PCIA, some national large-scale transportation projects have been promoted by private investment in recent years. A freeway for the Inchon New International Airport Project was started last year, and new port development projects and high speed rail projects are planned. However, since they are still in progress, it is not easy to discuss or evaluate them as of now.

CHANG-WON TUNNEL PROJECT: A CASE STUDY

Outline of the Project

Location Conditions

Chang-won Tunnel Project is a toll road project which has been under construction by Sunkyong Engineering & Construction Ltd. (SKEC) under the sponsorship of the Kyung-Sang-Nam-Do Government (KSNDG) from 1991 to now. The Project includes twin tunnels, each of which has 2.3 Km and 6.96 Km highways at the ends of the tunnels.

The Project site is located at the Bul-mo Mountain side of the Local Highway 1020. Mt. Bul-mo is a thick barrier between two groups of regional cities; Chang-won, Chin-hae and Ma-san at the west side of the Tunnel, and Kim-hae and Pusan at the east of the Tunnel. Without the Tunnel, a direct channel between two groups of cities, Local Highway 1020, was an unpaved surface road along the Mountain.

Therefore, the Tunnel is a very important neck point which connects two major groups of cities in southern region of Kyung-Sang-Nam-Do. The eastern group, Pusan and Kim-hae, contains large industrial complexes and airport facilities as well as the Pusan metropolitan area. The western group, Chang-won, Ma-san and Chin-hae, is a rapidly growing area with a newly developed industrial complex. Since the two areas are blocked by thick mountains, without tunnel facilities travellers would have to make a very long detour around a mountain, using the Nam-hae Expressway far north of Chang-won City or using National Highway 2 far south of Chin-hae. Such detours also create serious traffic jams both in Chang-won City area and in Chin-hae City area.

Brief History

The Project began in November 1989, with the Agreement of Private Investment between SKEC and KSNDG. SKEC started the construction work in February 1991 and finished the first phase of the construction, which include a single tunnel and highways at both ends, in November 1993. They opened to the public in February 1994, but the toll collection was set for August 1, 1994 with the permission of the Korean Ministry of Construction (MOC) and KSNDG. The second phase of construction, which is for a twin tunnel, will be completed in November 1996.

Objectives of the Project

The main objective of the Project is to increase the accessibility between two groups of cities through the direct connection of the east end of Chang-won City and Chang-yu Interchange of Nam-hae Expressway in Kim-hae City. It can save 16 km and 20 minutes between the two areas, relieving the traffic congestion in Chang-won and in Chin-hae. Additionally, the easy access between two areas can vitalize the industrial activities on both sides.

Related Institutional Arrangements

The private investment project for the Chang-won Tunnel was based on the Toll Road Act (TRA; enacted in 1963, recently revised in 1986). According to the TRA, a non-governmental organization (e.g., private firm) can construct a road and collect tolls with the permission of the local government (KSNDG in this case) and the Ministry of Construction and Transportation (MOCT). TRA is a special law of the Road Act which is the basic law for all kinds of roads. Nevertheless, TRA has not prepared more detailed provisions for the private (i.e. non-governmental) road project and detailed conditions of the project were decided based on the KSND Ordinance of Toll Collection (OTC; enacted in 1994) and on the above Agreement of Private Investment of 1989 more specifically.

Process of the Project

Preparation

Chang-won Tunnel project was planned by KSNDG in 1989. In Korea, it is required by the related laws that a road project is to be planned and initiated by the government. As was the usual process, based on the TRA, KSNDG prepared the outline of the private investment for the Project and presented it to the private companies based on the principle of competition. SKEC applied for the project with its own project plan.

Procurement and Award

SKEC procured the Project through an open bidding process. SKEC reported that more than 5 companies bid. The most important criterion was the lowest cost. Other major criteria were the business plan for the facilities, construction period, toll level, performance and stability of the firm, etc..

Financing

Total construction cost of the Project which was re-arranged and finalized in 1995 is 92.5 billion Won ($115.7 mil). Of the 92.5 billion Won, the government financed 14 billion Won ($17.5 mil) and SKEC invested 78.5 billion Won ($98.2 mil). SKEC financed most of this investment through a domestic loan, with a floating interest rate of around 12% per annum. The central government subsidized 50% of the 14 billion Won. Additionally, land acquisition for the rights-of-way was done through other government funds, although the detailed record is not clear.

The amount of the expenses for the construction for each year are shown in the table below.

Table 1

Amount of the Expenses for the Construction by Source and by Year

unit: billion Won

Year	Total	Private Fund (SKEC)	Subsidy from Central Government	Fund from Local Government
Total	92.5	78.5	7.0	7.0
1991	2.8	2.8		
1992	13.6	13.6		
1993	25.0	25.0		
1994	10.0	6.0	2.0	2.0
1995	22.5	16.5	3.0	3.0
1996	18.8	14.8	2.0	2.0

Source: SKEC

Business; Ownership, Benefit of the Private Investor (SKEC), Tolls

The ownership of the tunnel facilities, including the extended roads, belongs to the KSNDG upon completion. However, SKEC is responsible for the maintenance of the facilities. SKEC, as a private investor, has a franchise which provides exclusive authority to collect tolls from the use of the tunnel facilities until it makes up the total cost for the construction and operation. It is expected that full make-up of the total cost will take more than 20 years. The toll rate is strictly regulated both by the central government, which is represented by MOCT, and KSNDG. Current toll rates approved by both MOCT and KSNDG are as below:

Car and Pick-up Truck: 800 W($1.0)
Bus and Heavy Truck: 1,200 W($1.5)
Special Vehicle (e.g. Tanker): 1,600 W($2.0)

According to the counts by toll tickets, vehicle type mixes are:

Car and Pick-up

86.4 %

Bus and Heavy Trucks

9.4 %

Special Vehicles

3.2 %

Annual total number of the vehicles for the Tunnel and financial balances are as follows:

Vehicles

Balance

		Revenue	Operation Expense	Repayment
1994	2,599 thou veh	2,230 mil W	652 mil W	2,618 mil W
1995	7,440	6,372	2,950	6,743
1996 (till May)	4,238	8,700 (expected)		

Risks and their Management

First of all, as with most infrastructure projects, it is expected to take several years to recover the total amount of investment costs, especially with the current high interest rate structure in Korea. With the prospect of lower interest rates in the future, the Agreement accepted a floating interest rate. This is a form of risk mitigation. Secondly, although traffic demands have been increasing since opening the toll facilities in 1994, SKEC worries that the increase of traffic may have a ceiling since the Tunnel is on a local highway. Another critical problem is that the toll rate is strictly regulated both by MOCT and by KSNDG. The toll rate is determined by an Ordinance of KSNDG with the agreement of MOCT. Therefore, it is not easy to re-arrange the toll rate flexibly. SKEC can only propose an increase of the toll to the KSNDG when it is inevitable.

On the public side, there is a risk that SKEC might abandon the Project because of financial burdens or other internal problems of the firm. The Korean government has three kinds of countermeasures to mitigate such risk; credit guarantee money, joint and several liability on guarantee, and guarantee insurance by credit fund. In this Project, KSNDG required SKEC to deposit 30 % of the total private share of the construction cost as a guarantee. Additionally, two other well-known construction companies hold joint and several liabilities for the completion of the construction.

Lessons And Evaluation

Lessons learned

There are two lessons to be learned from the Project. First, it is most important to correctly evaluate the feasibility of the Project. The feasibility study for the highway project included the estimation of the travel demand and the evaluation of financial profitability. In this case, travel demand was estimated appropriately, but low profitability was expected due to the high interest rate of the domestic loan.

Secondly, there still remain many unnecessary regulations and limitations against infrastructure development by the private sector. For instance, the completion of the construction should be inspected twice; by the local government and by the central government. The toll rate needs double permissions; by the local government and by the MOCT. It took 9 months from the completion of the facility to the first collection of toll.

Evaluation of the Project

Chang-won Tunnel is one of the successful cases of private infrastructure development projects. Almost six-years of construction have been completed successfully and actual traffic is more than the original estimation. Still, the revenue does not meet the expenses, including the interest payment, mainly due to the high interest rate of the loan. Nevertheless, SKEC has evaluated the Project as successful, not because it is profitable, but because it guarantees stable cash flows, which is very important for the stability of the construction company. For the public, the Project attained its original objectives. Every year more than 8 million vehicles save travel distances and enormous time. The Tunnel also contributes greatly to relieving the congestion.

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THE HIGH SPEED RAIL IN BOT -

A CASE STUDY FROM CHINESE TAIPEI

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THE HIGH SPEED RAIL IN BOT - A CASE STUDY FROM CHINESE TAIPEI

EXECUTIVE SUMMARY

In order to provide an adequate solution for the rapidly growing transportation demand in recent years, the government of Chinese Taipei has decided to construct a high speed rail system in the western corridor of the island to connect Taipei, Taichung, and Kaohsiung, the island's three principal residential and commercial areas. The 345 km long high speed rail is expected to serve 19 million inhabitants, representing 90% of the island's total population.

The overall cost of the Project is estimated to be around US$17 billion. In an effort to ease the government's financial burden, and to introduce efficiency and managerial expertise from the private sector, the government has decided to launch the Project on the BOT (Build-Operate-Transfer) basis. The government, however, will be responsible for acquiring the land required for the Project, and will also consider making, financial contribution in order to make the Project financially viable.

Principles of implementing the Project are as follows:

1. The relationship between the private sector and the public sector should be that of partnership

2. The spirit of cooperation is upheld between the two parties in the course of proposal evaluation and negotiation, and later, during the operation

3. Risk sharing and reasonable project return are deemed as necessary for the success of the Project

4. A sound legal framework, the "Encouragement Statute", is provided as the guideline for the implementation of this Project

5. Strong government support is ensured for the Project

PROJECT DESCRIPTION

A Scope of Project

1. Alignment and Stations

Chinese Taipei is a densely populated economy boasting the fourth highest per capita income in Asia; the recorded GDP for the year 1995 was NT$7,656 billion, or US$279 billion. The latest census shows the island has 21.3 million inhabitants, and 90% of the population resides in the western part of the island, where it also boasts 96% of the island's GDP.

High travel demands in this region have long pushed all the existing transportation channels beyond saturation. There was no question that an added transportation mode

must be built to accommodate the travel demand. At the conclusion of the feasibility study and the studies conducted on comparative advantages of alternative transportation modes such as the construction of a third freeway or upgrading the existing narrow-gauge railway operation, the high speed rail was concluded to be the most economically viable solution for the island's west corridor.

The planned high speed rail will pass through 7 cities, with the terminal stations located in the two biggest and busiest cities, Taipei and Kaohsiung, situated respectively in the northern and southern ends of the island. The HSR is 345 km in length, with three stabling yards (one in the north, one in the central region, and the other in the south), and two maintenance bases; the maintenance base in the south will be responsible for overhaul work (see figure 1).

2. Project Cost

The total project cost is estimated to be approximately US$17 billion, which includes US$2.87 billion for land acquisition, US$7.40 billion for civil works, US$2.87 billion for E&M work and core system, US$1.67 billion for administration/contingency, US$0.65 for trackworks, US$0.60 billion for stations, US$0.4 billion for stabling yards and workshops, and US$0.52 billion for design and project management.

3. Construction Schedule

Thus far, the project has completed the primary guideway design and the environmental impact assessment. The future milestones include:

a The issue of RFP by October 1996
b Land acquisition completed by December 1998
c Construction of civil works commences by January 1998
d Testing and Commissioning for the System by April 2003
e Commercial operation by December 2003

B Objective/advantage of Project

1. Ridership Forecast

Ridership is the critical factor in evaluating the viability of the Project. Five independent ridership studies have been conducted. Among which, the result released by MVA, a reputable international transportation planning consultant, revealed that there will be more than 200,000 passengers per day after commencement of the operation, and the volume will increase to 292,000 by year 2010; the revenue is estimated to reach NT$70.8 billion or US$2.57 billion (1996 currency). Train frequency will be as many as 186 per day. This traffic forecast result, as well as results from the other studies indicate the HSR project is not only economically viable, but could be commercially successful.

2. Advantages of the HSR

High Speed Rail is a public transportation system which has large transportation capacity, and faster speed compared with other surface transportation models. In addition, the High Speed Rail also requires less land, produces less air pollution, and offers absolute safety for passengers.

Upon the completion of High Speed Rail, the system will not only increase the service quality for intercity transportation, but it will also effectively shorten the "distance" in terms of time required between metropolises, which shall contribute to the integration of economic zones and further expansion of the development potential for regions that have been made more accessible through the operation of High Speed Rail.

C Method of Award

High Speed Rail will be launched by using the BOT approach. Interested parties are invited to submit a proposal for the government to evaluate. The winner of the best proposal will be given the privilege to negotiate the contract with the Client.

The Request for Proposals of the Project is planned to be announced by October 1996, and the evaluation process is expected to be completed after one year from the date of the announcement. If everything goes smoothly, the contract could be awarded by December 1997.

D Key Participants

Key participants for the HSR BOT project can be divided into two groups, the public and the private sectors.

1. The Public Sector

a For the government's overall program control: a task force will be established in the government to supervise the implementation of BOT projects, including High Speed Rail. The goal of the task force is to assist various government agencies to promote the BOT projects, and to help remove obstacles in the process of implementation

b On the Ministry of Transportation and Communication Level (the MOTC): the Ministry of Transportation and Communications is responsible for the implementation of HSR as well as many other infrastructure projects. The MOTC will also be responsible for the selection of the best proposal from the competitive bid, the negotiation and signing of the Concession Agreement, and the supervision of the construction and operation of the HSR

c On the HSR Project Office Level (known as POHSR): POHSR is appointed by the MOTC as the responsible agency for the execution and implementation of the HSR project. The assignment shall cover the land acquisition, bidding process, land development, planning, design and supervision in the course of the execution of the project

2. The Private Sector:

Anticipated potential private participants include:

a Investors

Due to the size and complexity of the Project, it can be foreseen that the investment group shall be formed by foreign and local investors, such as E&M (Electrical and Mechnical) equipment suppliers, financial institutions, property developers, or civil contractors, etc..

b Lenders

The success of a BOT project cannot be achieved without involvement of financial institutions as lenders. The potential lenders in this case shall include local and international banks, government aid and long term funds, life insurance companies, and pension funds

c Various suppliers, contractors, consultants engaged by the government, and/or private bodies to accomplish certain tasks designated through contract

E Key Contractual Terms

The detailed terms and conditions of the Concession Agreement are currently being developed. The principal areas to be addressed in the Concession Agreement are as follows:

1. Concession Agreement is on BOT nature, i.e. terms and conditions can be negotiated.

2. Define the minimum scope of work which includes all E&M works including the core system, station and station area development, 30-year franchise for operation and maintenance. However, the private sector is strongly recommended to include civil works in their investment package with a financial contribution from the government

3. Technical design criteria, performance requirements, safety and operating guidance shall be conditions that "Must" be fulfilled by the Concessionaire. Others could be negotiated and finalized upon mutual agreement

4. The base case for the duration of the concession period is 30 years, which could be adjusted upon negotiation

5. Bidders will be provided with the liberty to propose tariff formulae. Upon review and approval by the government, the proposed tariff formulae will be incorporated in the Concession Agreement as the basis for the adjustment of the fares

6. Land will be provided by the government for the Concessionaire. The government is prepared to provide a financial contribution to the Concessionaire who will undertake all the civil works. The amount of financial contribution is subject to negotiation

7. Allocation of responsibilities for the development and operation of the Project will be defined upon agreement between the government and the Concessionaire

8. Circumstances under which the government will step in with or without compensation for the Concessionaire

F Legal Framework

The Statute for Encouragement of Private Participation in Major Transportation Infrastructure Projects is the legal provision specifically drafted for the purpose of encouraging the private sector's participation in the transportation industries and makes it possible for transportation projects to be built, operated by the private sector, and transferred to the government without being subject to restrictions in certain legal provisions. The Encouragement Statute was approved by the legislature in November 1994.

Included in the Encouragement Statute are provisions that provide the private party the right to use and develop the government-owned land for construction and operation of transportation industries and ancillary business without being subject to restrictions of Land Law or the State Owned Property Law. The Encouragement Statute also relaxes the restriction of land use in the station area, enabling the private entity to conduct commercial operations in the land provided by the government.

The Encouragement Statute also sets out provisions for the application of preferential long-term loans and tax incentives for the private constructors and operators of the transportation industries. As of May 1996, eleven out of fourteen by-laws for the Encouragement Statute have already been completed and enacted, with the remaining three by-laws to be completed before the end of 1996.

G Risk Mitigation/Allocation Measures

For any BOT project, investors must consider the risks involved before committing capital in a host country. In principle, the risks to be considered by the investors and lenders in this Project would include the following:

1. Completion Risks

2. Cost Overrun Risks

3. Ridership/Revenue Risks

4. Force Majeure

5. Sovereign Risk

6. Energy Supply Risk

7. Financial Risk

8. Environmental Risk

9. Operation Risk

The appropriate risk mitigation scheme is being developed at the moment. To be certain, the basic rule of appropriating the risks fairly between the government and the private sector is the operating guideline in setting out the scheme.

H Adopted Concept and Approaches towards BOT

With the size and the complexity of the HSR BOT Project, the government has set out the following guidelines in implementing the BOT project.

1. The relationship between the private sector and the public sector should be that of partnership. The investors, therefore, are given the opportunity to present their own ideas for discussion and negotiation

2. The spirit of cooperation is upheld. Potential investors are invited to meet regularly with the government to exchange views on the RFP and other BOT related matters

3. Risk sharing and mitigation are pertinent issues for the Project, neither the private sector, nor the government should bear all the risks

4. The "Encouragement Statute" serves as the legal framework for the implementation of this Project

5. Strong government support is ensured for the Project

CONCLUSIONS

The High Speed Rail Project in Chinese Taipei is in its final stage of developing and preparing the Request for Proposal for the BOT scheme. The basic concept and the principles for the BOT structure, however, have already been defined by the government based on the numerous studies and research made in the last three years. In the meantime, potential investors and the government have already established proper channels to exchange views and ideas on the BOT implementation, which have resulted in the building-up of the spirit of partnership between the two parties.

The following principles in the practice of implementing BOT projects as they have been well received by the private sector, may be adopted for other Projects:

1. Principle of Fairness and Transparency

- Release various assessments made by the government for potential investors to review and study

- Establish a regular meeting for management-level personnel to exchange views and ideas in the course of tender and evaluation procedures

2. Concept of Risk Sharing

Though the final agreement on the sharing of risks is still to be reviewed, discussed, and negotiated, the concept of risk sharing has already been appraised by the potential investors.

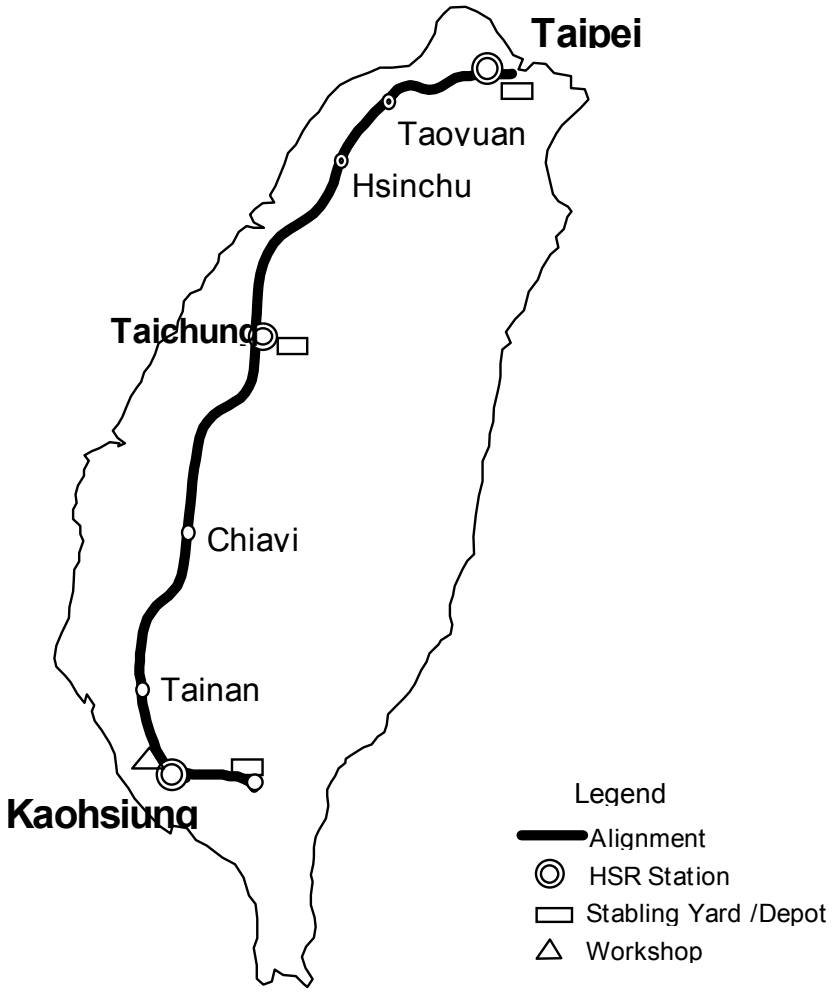
3. A Defined Legal Framework

To reduce certain risks and to demonstrate the government support on this project, the "Encouragement Statute" serves as a guarantee in the legal framework for this Project.

4. Consideration of Reasonable Project Return

In order to ensure the Project is financially viable, the government promises not only to provide the required land, but the government is also prepared to make a financial contribution through negotiation with the private sector. It can almost be certain therefore, that the investors should have reasonable project return.

Figure 1: Chinese Taipei HSR Alignment



OUTSOURCING THE WATER AND WASTEWATER SYSTEMS OF ADELAIDE, SOUTH AUSTRALIA

Prepared by

South Australian Water Corporation

OUTSOURCING THE WATER AND WASTEWATER SYSTEMS OF ADELAIDE, SOUTH AUSTRALIA

EXECUTIVE SUMMARY

South Australia has recently taken a significant step in reshaping the roles of the public and private sectors in water infrastructure management. It involves the private sector without the transfer of any assets from public to private ownership, and without the loss of other fundamental controls such as setting of prices and performance standards.

In 1994, the South Australian Government's objective was to achieve cost savings in the delivery of water and sustainable economic growth for South Australia.

There were significant risks if these objectives were to be pursued in a public sector environment by relying on traditional public sector methods and using public sector skills. The key risks were:

- the achievability of quantum improvements in operational efficiency through internal reforms alone and the length of time this would have taken

- the achievability, and associated financial risks, of generating substantial economic growth by winning contracts in the very competitive Asia Pacific markets given a lack of commercial negotiation expertise in the public sector

The strategy was to seek proposals from major international water companies not only to operate Adelaide's water and wastewater systems but also to drive the development of the existing water industry in South Australia in order to achieve significant international competitiveness and exports. This strategy sought to reduce the financial and commercial risks to the Government in achieving its objectives.

The outcome was a long term contract of 15.5 years which achieved committed savings of 20% of benchmarked costs, ongoing arrangements for sharing of future cost savings, a commitment to achieve a minimum of $628 million of net exports from South Australia over the next 10 years with an undertaking to seek a further $852 million of net exports over the same period.

THE PROJECT

The project involves contracting out to a private sector company:

- the operation and management of the water and wastewater systems for the metropolitan area of Adelaide, the capital city of the State of South Australia, with a population in excess of one million people

- the development of the elements of a water industry that existed in South Australia from a domestically focused industry into an internationally focused and competitive water industry

CHRONOLOGY

The South Australian approach to outsourcing and economic development originated from the South Australian Commission of Audit report of early 1994. This contained recommendations to improve the performance of the South Australian Water Corporation (SA Water).

In November 1994, the Government approved a strategy with two goals:

- to achieve international best practice water and wastewater services in Adelaide and achieve substantial cost savings to improve the financial position of South Australia

- to achieve sustainable economic growth and development by facilitating the development of a viable, export focused, private/public sector water industry in South Australia

The Government stressed that it would not privatise the services or let a concession contract. It would continue to own the assets, set prices to customers, supply bulk water to the water network, set service standards and manage customer relationships.

In seeking to achieve its goals, the Government did not adopt the conventional approach of calling for expressions of interest and following this with a formal tender process. At the outset SA Water established the criteria which a company would have to meet if it was to have any chance of winning the contract. The key criteria were:

- a large water and wastewater organisation on a world scale
- significant expertise outside of the home country
- significant presence in Asia

International research determined how many companies met or nearly met these criteria. As a result seven global water industry leaders were asked to make presentations and provide written submissions to SA Water.

Following these presentations, four companies were shortlisted and invited to participate in the selection process. These were Compagnie Generale des Eaux (France), Lyonnaise des Eaux (France), North West Water (UK) and Thames Water (UK). Subsequently, Compagnie Generale des Eaux and Thames Water were given approval to submit a joint proposal.

This was followed by four months of intensive dialogue with each company to confirm its suitability as a potential long term partner and to prepare a Request for Proposal document. Extensive background information was sought from the companies. Visits were made to their headquarters and operational sites overseas. Each company was given a concept paper proposing approaches to, and seeking comment and alternative views on, the policy areas to be addressed in the Request for Proposal. A series of structured meetings was conducted to reach approaches to the policy areas satisfactory to all parties.

The Request for Proposal document was issued on 1 May 1995.
This was followed by a 14 week period for preparation of proposals, during which the companies were required to carry out due diligence in order to submit unconditional

proposals on 7 August 1995. During this period the companies were able to access a comprehensive Information Room, make site visits, submit written questions and points of clarification for response by SA Water and seek specific briefing meetings. This process was carefully managed to ensure equity and fairness to each company.

Before 7 August 1995, a comprehensive and detailed evaluation methodology for proposal evaluation was developed. It was aligned precisely to the specific requirements in the Request for Proposal.

Initial evaluation in August 1995 was followed by a period of clarification and parallel negotiations with the companies.

In October 1995, United Water International was selected for final negotiations. United Water is a consortium of Compagnie Generale des Eaux, Thames Water and Kinhill Engineers of South Australia. Negotiations were concluded in December 1995 and the contract signed on 18 December 1995. The contract commenced on 1 January 1996.

SIGNIFICANT FEATURES

The Process

A Request for Proposal process is not prescriptive about how project goals are to be met. It was adopted to provide both SA Water and the bidding companies with flexibility which is difficult to achieve with a Request for Tender. The Request for Proposal enabled proponents to maximise the use of their intellectual property to prepare innovative proposals that met the project goals.

The most significant aspect of the Request for Proposal process was the intensive period of clarification and parallel negotiations with the companies following the submission of the initial proposals. This gave the negotiating team the best opportunity to influence companies' proposals while there was still intense competitive pressure. It was only when the negotiating team believed there was no scope for further enhancement of proposals that a preferred company was selected for final contract negotiations.

For effective parallel negotiations to be conducted, it is essential to the integrity of the process, and the confidence companies have in it, that:

- the processes are fair and equitable
- each proposal is confidential with the contents not revealed to other companies
- proposals should not be 'auctioned' against each other, although companies may be informed of mandatory 'hurdle' prices or other requirements which must be met or improved upon.

The level of commitment of all companies was such that the negotiating team achieved major improvements to the initial proposals.

Another significant feature was inviting a small number of selected companies rather than a large number of companies to present proposals. This approach worked because a significant effort was made to identify companies capable of meeting the project goals

and which would be compatible with the project and the project sponsor.

Economic Development

It was a significant innovation to link an economic development objective with the traditional cost savings objective. This approach was consistent with the strategic accountability of a government to manage its economic resource endowments to maximise their contribution to economic growth and to improve the economic welfare of the community.

An output approach was taken by requiring the companies to specify in their proposals:

- the monetary value of the new **net exports** they were prepared to commit to over the first 10 years of the contract

- the approach they would take to **leading** the development of a new water industry in South Australia

The companies were also required to submit one-year, five-year and ten-year business plans to support their economic development proposals.

Some may perceive a risk that the economic development commitments might be cross-subsidised by service provision costs. The pre-qualification process was designed to virtually eliminate that risk by ensuring alignment between the Asia Pacific growth strategies of the companies and the aspirations of SA Water. The companies saw benefit to themselves in the economic development part of the contract which provided them with a landmark demonstration site which would enhance their competitive position. Their enthusiasm for the opportunity to strengthen their market position removed cross-subsidies as an issue and contributed to the creation of a highly competitive process.

Nonetheless, it was still necessary to impose discipline on the evaluation process to avoid any possible residual risk of cross-subsidisation. SA Water had to ensure that it maximised the extent of achieving both its cost savings goal and its economic development goal. SA Water had to ensure that cost savings were not traded off for more economic development.

To this end, separate evaluation teams were established for cost savings and economic development. There was no commonality of team members and the teams were physically segregated to ensure no cross over of information between the teams.

SA Water benchmark costs were specified in detail and given to the companies together with minimum savings requirements. Companies submitted highly structured costings to show sources of savings. These submissions were rigorously assessed for credibility and the negotiating team used this information as the basis for driving more cost savings.

The preferred company was selected once the negotiating team was satisfied there was no scope for more cost savings or for higher levels of economic development commitment.

Retained Assets

The approach adopted by SA Water is not a privatisation model as it is commonly understood. Nor is it a concession or franchise model. It is a partnering model where the Government still owns the assets and sets customer prices with SA Water's role being that of a partner with United Water. The Government is making SA Water, a public sector corporation, a model of a non-privatised utility, with all the hallmarks of a private organisation, working in cooperation with a private sector service provider.

This model, in which the Government still owns the business and the assets, fundamentally changes the role of SA Water. SA Water will now arrange the provision of services by the private sector rather than undertake the work itself and will provide support to United Water's economic development initiatives.

In the Adelaide metropolitan area, SA Water has retained responsibility for asset ownership, setting prices to customers, supplying bulk water to United Water, customer relationships and setting service standards. Also, it will continue to provide the full range of water and wastewater services to the non-metropolitan areas of South Australia.

THE OUTCOMES

The contract

This is a long term contract for service. It is not a privatisation nor a concession.

The contract is for 15.5 years from 1 January 1996. Its scope is to manage, operate and maintain the water and wastewater systems of Adelaide which is a city of some 1.2 million people. The contractor will also manage a substantial capital works programme on a fee for service basis but will not be entitled to bid for work. Finally, there is a very substantial industry and economic development component focused on exports to other Australian States and to the Asia Pacific Region.

The contractor is required to perform all services in accordance with 'good operating practices', 'good design and construction practices' and at least to the levels achieved by SA Water prior to contract commencement. These terms are defined at length and include the requirement that the contractor obtain quality assurance accreditation under the International Standards for quality assurance ISO 9000 series.

The contract specifies over 50 individual, objective standards of performance that must be achieved on a continuing basis. These relate to treated water and wastewater quality, water pressure and flow together with responses to customer problems such as water main bursts, sewer overflows, chokes and odours.

United Water International is committed under the contract to offer 55% of its equity to Australian investors within 12 months of contract commencement. If the offer is successful, there will then be a 60% Australian shareholding including the 5% holding of Kinhill Engineers.

Cost savings

Over the contract period, United Water will deliver cost savings of $164 million. This is a reduction of 20% against SA Water's benchmark costs of managing, operating and maintaining Adelaide's water and wastewater systems.

Prices for operations and maintenance services are fixed for 5.5 years beginning on 1 January 1996 and ending on 30 June 2001. These prices have been fixed to deliver at least 20% cost savings over this initial period. Five-year pricing for the subsequent years of the contract will be set at the end of years 5 and 10. Price re-determination provisions lock in the initial 20% cost savings for the life of the contract and provide for sharing the savings from ongoing improvements in productivity between SA Water and the contractor. Incentives for the contractor to continually drive down costs and share the resulting savings with SA Water are a key part of the contract.

In the previous four years, SA Water had already reduced its workforce in its total operation by 45%. United Water have already achieved a workforce reduction of 44% in the Adelaide operations in addition to the substantial earlier reductions.

Further cost savings are expected to result from United Water's management of a capital works program of $650 million.

Economic development

United Water has contractually committed to generate $628 million of new net exports to overseas and interstate markets from South Australia over the ten years from 1996.

United Water will be the means by which Compagnie Generale des Eaux (CGE) and Thames Water will tender for projects in Australia, New Zealand, Papua New Guinea, Indonesia, Vietnam, India, the Philippines, Myanmar, the Pacific Islands and certain provinces and/or projects in China.

The only exceptions will be where an alternative arrangement (in which United Water would be invited to participate to the extent consistent with its resources and capabilities) is likely to produce a better result for United Water and, therefore, the South Australian community.

In other countries, CGE and Thames Water will use their best endeavours to offer United Water the opportunity to participate in identifying, bidding for and carrying out elements of projects.

Servicing the export business won by United Water means that South Australia will have a vibrant and competitive water industry with the skills, efficiency, customer service and competitiveness to meet these commitments.

United Water has the principal leadership role in developing the South Australian water industry. This includes assisting local firms to improve their operations and enhance their skills and knowledge so that they can be more effective participants in Australian and overseas markets. To further broaden the spread of water industry capabilities available

within South Australia, there will also be a wide ranging program of inward investment and relocations of businesses to South Australia drawing upon the extensive business networks of CGE and Thames Water.

United Water's head office functions will be established and maintained in Adelaide as will the Asia Pacific Regional Headquarters of Thames Water International Ltd.

CONCLUSIONS

The SA Water experience is a clear example of innovation by government in the utilities sector. Government should focus strategically on the resource endowments of their State and explore methods of developing these further.

Governments should be held accountable for whether and how they seek to maximise the values obtainable from future development of infrastructure for the benefit of their communities.

Ambition combined with innovation, intellectual rigour, good planning, careful attention to probity and strong political support will achieve excellent results without governments taking on unacceptable commercial risks.

It is very important to ensure access to appropriate legal, commercial, negotiating and other skills throughout the process.

Request for proposal processes are critical to stimulate creativity and innovation, place intense competitive pressure on proponents and to leverage benefits through parallel negotiations.

One key aspect of the process is that high priority must be given to public/political information and education processes at the very inception of the project.

What has been achieved is a paradigm shift from a water industry which was dominated by the public sector and largely disinterested in export markets to one which is predominantly driven and managed by the private sector and is strongly focused on export markets, especially those in the Asia Pacific Region.

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LABUAN WATER SUPPLY PRIVATISATION

MALAYSIA

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LABUAN WATER SUPPLY PRIVATISATION MALAYSIA

EXECUTIVE SUMMARY

Case Presented

Until 15 years ago, water supply development to meet increasing water supply needs in Malaysia had been traditionally implemented with Government funding in a conventional way, employing consultants to carry out studies and design and engaging contractors to build the works by tendering. This method mostly has been replaced by a new approach by privatisation of a project on a BOT model. The case presented in this paper is the successful privatisation of a water supply project for supply of water to Labuan Island. The project entails the construction of a 38 Mld (8.3 imperial mgd) water treatment plant in mainland Sabah and the laying of a 610 mm (24") diameter steel pipeline 45 km long from the mainland to the island. It is a BOT project with a concession period of 13 years. This project has now become a "best practice" example of infrastructure development that fits in with the current economic situation of Malaysia where project implementation by the conventional method is unable to keep pace with the rapid growth in economy and high demand for additional infrastructure facilities.

Aspects of "best practice"

Infrastructure Risk Mitigation

As negotiated, the concession agreement provides for risks to be allocated to both parties, the Government and the Privatisation Company. For good reasons the Government has agreed to guarantee the purchase quantity of water (to cover the capital investment, rate of return and other fixed costs). To be fair to the Company, the Government also allows for fluctuations in price due to future variation of the power supply tariff and the price of chemicals during the concession period, as such tariff/prices are not within the control of the Company. All other risks are taken by the Company, such as cost overrun risk, time overrun risk, foreign exchange risk, risk on interest rates and operating and maintenance risk and inflation.

Supportive Policy Environment

To encourage private sector investment in infrastructure in Malaysia, the bidding method is used less and less often because of its unattractiveness to bidders who have to pay for feasibility studies and engineering design with low prospects of success. A more attractive method is to grant a letter of exclusivity to any proposer who presents a good concept for privatisation of infrastructure development. The proposer granted this exclusivity is protected from competition by others in a stipulated period (usually 6 months). In most cases this method ends up with a successful contract signed. Included in this Case Study project is a tax incentive giving the Company corporate tax exemption for the first 5 years with an option to be extended by another 5 years. Other support given by the Government includes free land use rights, free water abstraction rights and provision of power supply to the treatment plant site.

Beneficial Institutional Structures and Regulatory Regimes

No special legal or administrative framework had to be improvised to ensure successful implementation of this project. What was needed was strong Government participation in coordination of the implementation of this project to ensure that there was no undue red tape in the approval process by various authorities involved. That the project was implemented ahead of schedule (within 12 months instead of 18 months) is testimony to the need for such Government participation in project coordination. For some mega projects, the Malaysian Government sets up a task force, usually headed by a Cabinet Minister, to oversee the project implementation.

Effective Communications Between Public and Private Sectors

The need for this project has been acknowledged by both existing consumers who have been suffering from acute water shortages and potential investors in industrial development. Privatising this project was generally welcomed, especially when the Government had no intention of increasing water rates because of this project. In Malaysia, mobilising local public opinion in favour of privately developed infrastructure projects has not been found necessary, mainly because of the high level of affordability of the public and the growing demand for higher levels of infrastructure service. This is one of the reasons why Malaysia, among other developing countries, has been successful in infrastructure privatisation.

DETAILED DESCRIPTION OF CASE STUDY

Introduction

All developing countries need to develop their infrastructure which includes roads, water supply, power supply, telecommunications, etc. as a matter of priority. This is because firstly the developing countries have to uplift the living standards of their people, and secondly to provide the necessary infrastructure to attract foreign investment.

In Malaysia, traditionally conventional methods were used to implement development programmes: consultants were engaged to carry out planning and design, money was borrowed from international lending agencies to finance the projects and the projects were tendered-out. This was fairly successful in the past. However, if the country is progressing very fast like Malaysia, where the annual growth rate exceeds 8% p.a., this method has its weaknesses; for instance, it is not fast enough to keep pace with development in the country. It also puts too much strain on the Government's financial resources. Furthermore, if the Government were to invest a lot of money into infrastructure development, it will only cause inflation. This was the scenario in Malaysia about 15 years ago.

Privatisation of Water Supply

In recognising this, 11 years ago the Malaysian Government adopted a new strategy for infrastructure development. However, this new strategy was not invented by Malaysia. It is actually borrowed from various other countries like Brazil (privatisation of power supply), Britain (privatisation of water supply and telecommunications) and Japan (the Japan

Incorporated concept). By combining all these, the privatisation policy was introduced in 1985.

Privatisation in Malaysia started with port handling services followed by telecommunication facilities, highways and power supply. Public reaction was not very good in the beginning, particularly in the case of highways because of the imposition of toll charges. Today, however, public reaction is different. Because it is so convenient to travel along the new privatised highways, the public is prepared to pay the toll charges for good services in return. There are also similar successes in other services such as power supply, telecommunications, airlines, airports and posts.

The subject of this case study is water supply. Of all infrastructure development, this is the most difficult to privatise. One has to consider the public's affordability to pay for water supply services because there are no alternatives. The problem in developing countries is that there are many classes of people, from the very rich to the very poor. Traditionally water supply in developing countries is always subsidised by the Government and privatising water supplies is in a way making the public pay the true cost for a more efficient service. Now, more than 10 years after the first water supply privatisation, like the highways, the people of Malaysia have accepted that the privatisation of water supply is somewhat good and beneficial. In the present context, privatisation is the best practice for Malaysia insofar as water supply is concerned. To illustrate this point the privatisation of the Labuan Water Supply Project is presented as a Case Study in this paper.

Water Supply General Information

Malaysia is located in the heart of South East Asia just north of the Equator. Malaysia has a land area of 329,758 sq.km. and a perpetual summer with abundant rainfall (2000mm annually) and lush verdant vegetation. It has a population of 19 million comprising Malays, Chinese, Indians, Ibans, Kadazans and other races. Since gaining independence 39 years ago, the economy has rapidly expanded from rubber and tin to include palm oil, petroleum and manufacturing. Exports, 70% of which are manufactured products, exceeded US$44,000 million last year. Per capita income is US$3,225 while GNP is US$62,000. The economy is projected to grow by more than 8% in 1996. The country has aims to achieve a developed nation's status by the year 2020.

Constitutionally, water supply is a State Government matter. Public water supply in each State is the responsibility of either a State Public Works Department (PWD) or a State Water Supply Department (WSD) with the exception of 5 areas where water boards are in charge, one State where water supply is now under a state owned corporation, and one State where water supply has been privatised. The Federal Public Works Department based in Kuala Lumpur functions as a Federal agency responsible for the planning and design of water supplies and for giving technical guidance and advice to the State PWD's and WSD's. It coordinates implementation of all water supply projects funded by the Federal Government by way of Federal loans or grants.

The yearly growth in demand for water supply is at 8 to 9.5%. In a span of 30 years since independence in 1957, due to rapid development, increase in per capita consumption, increased coverage and industrial expansion, the water demand has increased ten-fold

although the population in this intervening period has not even doubled. The present demand is 7,000 megalitres per day (Mld) (1,540 imperial mgd) and expected to rise to 11,000 Mld (2,420 imperial mgd) in 2010.

While overall water supply coverage in 1957 was only 38%, the overall coverage in 1996 is 85%, with a near 100% coverage in urban areas and 75% coverage in rural areas. Between 1980 and 1990 (the UN Water Decade Period) Malaysia improved rural coverage from 43% to 70% and overall coverage from 59% to 80%, with the spending of US$1,714 million on water supply development works.

Labuan Water Supply Privatisation

Labuan is a small triangular-shaped island of about 82 square kilometers, situated in the South China Sea 8 kilometers west of the Sabah mainland. The location of the island is shown in Figure 1. The island has a population of about 40,000 and its main activity is industrial. Some of the heavy industries in the country are located on this island. Of late, the island has been made into an Offshore Financial Centre along the lines of the Virgin Islands.

The water supply system in the island before the implementation of the Labuan Water Supply Project consisted of 3 reservoirs and 26 boreholes supplying about 23 Mld (5 imperial mgd) to meet the water demand in the island. Due to a prolonged drought in the island in the early 80's, water supply capacity in the island dropped to as low as half the demand in the island, causing an acute water shortage. In fact, only the boreholes were sustaining the water supply. Hence there was an urgent need to implement a water supply project both to meet the current demand in the island as well as to ensure that the growing demand in future can also be met more confidently. It is for this reason that the Government then decided to implement a submarine pipeline scheme to supply water to the island from the Sabah mainland. The Government however, had little experience of implementing such a scheme or of the risks involved.

Furthermore, the Government Consultants had also recommended a scheme which appeared to be more expensive and took 3 to 4 years to implement. Hence the Government decided to opt for privatisation of the project proposed by a private sector company. The privatisation proposal was less expensive, the implementation period was much shorter, and took most of the risk out of the hands of the Government.

Scope of Project

The Labuan Water Supply Project was privatised in the build-operate-transfer (BOT) form in 1987. This was also the first water supply privatisation to be implemented in the country. The project involves abstraction of water from the Padas River in the mainland Sabah, treatment of water at a nearby treatment plant and supplying the treated water to Labuan Island through a submarine pipeline across the channel. The layout of the project is shown in Figure 2. The main components of the project are as follows:

- Intake and treatment plant with a design capacity of 38 Mld (8.3 imperial mgd) in mainland Sabah

- 610mm (24") diameter steel pumping mains of a total length of 45 km from the treatment plant to terminal storage reservoirs in Labuan Island, made up of 13 km across land, 8 km through swamp and a 24 km long submarine section under the sea

- Two treated water storage reservoirs each of 4.5 Ml (1 imperial mg) capacity in Labuan Island

The Concession Agreement

Procurement and Award

The proposal to privatise the Labuan Water Supply Project in the BOT form was first submitted by a private company on its own initiative. It was followed by the Government giving the Company a 'Letter of Exclusivity' in December 1986 to carry out a detailed study and submit within a few months their detailed proposal for further negotiations, all at the Company's own cost and risk. Detailed negotiations were then carried out between the Government and the Company, and were concluded in July 1987 with the signing of the concession agreement. There were also certain conditions set as precedent to the commencement date of the agreement such as:

- Obligations of Government
  - grant the Company a 10-year Pioneer Status
  - land rights, water rights, licenses, permits

- Obligations of Company
  - raise necessary finance

With the fulfilment of the above conditions the commencement date of the agreement was then fixed for February 1988.

Key Contractual Arrangement and Terms

The basic terms of the concession agreement were as follows:

i The Company shall design and finance the complete construction, operation and maintenance of the project over a concession period of 13 years from the commencement date

ii The Company shall complete the project within 18 months of the commencement date

iii After its completion the Government shall purchase water in bulk for the remaining concession period

iv Payment for purchase of water shall be in 2 parts, the first being a fixed monthly payment referred to as the Water Purchase Payment (WPP) and the second a Variable Monthly Payment (VMP) dependent on the actual quantity of water supplied. The VMP is for the costs of the power and chemical components of the operation and takes into account fluctuations in the price of chemicals and the power supply tariff

v If the Company fails to supply water in accordance which the quantity and quality as set out in the agreement, it shall pay the Government a penalty equal to 50% of the WPP rate

vi At the end of the concession period the Company shall hand over the entire water supply facility to the Government free of charge and in good working condition

The key contractual arrangement is a concession agreement between the Government and the private company, Labuan Water Supply Sdn. Bhd. The Company then has its own arrangements with all the other parties concerned. The overall contractual arrangement is illustrated in Figure 3. The concession agreement defines the client and the concession company. It also sets out the obligations of the Government, namely, demand, payment, land rights and water rights and the obligations of the Company, namely finance, design, construction and operations. Finally, the concession agreement sets out the scope of service, program and cost.

Risk Mitigation/Allocation

There are many kinds of risks associated with such a privatisation project. All these risks invariably have to be priced for or shared among the various parties involved. The more the risks involved, the higher the pricing is going to be. Hence in order to keep the pricing of the privatisation proposal as low as possible, the Government also may have to bear some of the risks. Figure 4 shows the summary of risk allocation between the Government and the Company in the case of Labuan Water Supply Project. Basically the Government guarantees the quantity of water to be purchased in order to give confidence to the investors and lenders while ensuring a certain rate of return on their investments.

As with most water supply projects, it was anticipated that the demand at the beginning would be low and would not generate sufficient cashflow in the initial stages. To circumvent this, the Government opted to pay the Company in two parts, the first part being the WPP (Water Purchase Payment) which is a fixed monthly payment to cover the capital investment, rate of return and other fixed costs and the second part being the VMP (Variable Monthly Payment) which is based on the actual quantity of water supplied to cover the operational costs. Again to minimise the "cost" of risk and to avoid paying for an annualised rate of escalation, a price adjustment formula was built into the VMP to allow for the increase or decrease in the price of chemicals and the power supply tariff. To minimise the risk of currency fluctuation and to avoid paying for the escalation to cover this risk, the Government insisted that only local sources of funding be obtained to finance the project.

CONCLUSIONS

One of the most difficult tasks in the evaluation of this type of water supply privatisation proposal is the price negotiation. One must have a clear understanding of how the privatisation proposer frames his proposal and arrives at a price to offer to the Government as a basis of negotiation. It is also necessary to understand the decision-making process of the private sector and the various factors that influence private sector investments. There must also be exclusivity given to the Company invited to study and submit proposals, so that the Company is protected from competition by others in a stipulated period (usually 6 months).

Furthermore, a review of financing terms and policies by bankers and investors who tend to place emphasis on risks should be considered. Another area to be considered as a possible means to reduce the price further is a review of tax laws so that the additional taxes upon privatisation need not be taken into account.

With the privatisation of the Labuan Water Supply Project the Government was able to fulfil its objective of meeting the urgent need for water supply in the island. The project was in fact completed within 12 months from the commencement date, i.e., much faster than the scheduled completion period of 18 months. Other development on the island went on as planned without being constrained by water supply shortage. The people on the island are also enjoying an uninterrupted water supply of good quality. It has been now 9 years since the privatisation of Labuan Water Supply Project and there has been no report of any breakdowns yet in the water supply to the island. All the parties concerned, namely the Government, consumers, company, contractors, lenders and investors are happy with the outcome of this privatisation project. This has also become a model for other privatisation projects.

In today's context, privatisation of water supply has been accepted as a good practice in Malaysia. To date, some 57 water treatment plants with a total capacity of 3800 Mld (836 imperial mgd) have been privatised. This represents approximately 50% of the total supply capacity in the country. New water supply projects involving capital investments of more than 2.7 billion Malaysian Ringgit (US$1.1 billion) have also been privatised in the BOT and mixed management and BOT forms. Presently the emphasis in the country is on total privatisation, i.e., privatisation of all water supplies as a total package.

Whether or not this model can be successfully implemented in other developing countries in the APEC region would depend on the particular circumstances existing in those countries.

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FIGURE 4: SUMMARY OF RISK ALLOCATION

	GOVERNMENT		COMPANY
1.	Force Majeure	1.	All design and construction risks
2.	Demand	2.	Cost overruns
3.	Fluctuations in price of chemicals and power supply tariff (during operation)	3.	Time overrun
4.	Land rights	4.	Failure to deliver water
		5.	Interest rate fluctuation over loan period
		6.	Foreign exchange
		7.	Inflation on operating costs (except chemicals and power supply)

NATIONAL ELECTRICITY MARKET REFORM

AUSTRALIA

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NATIONAL ELECTRICITY MARKET REFORM AUSTRALIA

ELECTRICITY INDUSTRY BACKGROUND

Under Australia's federal system of government, electricity supply has traditionally been provided by vertically integrated, publicly owned State utilities meeting the needs of the individual States. The industry has not operated on an integrated national basis and the grid connections between States have been weak or non-existent.

The State governments have been heavily involved in operational and planning activities, including the setting of tariff structures. There is some Commonwealth regulation, exercised mainly through state borrowing limits (Australian Loans Council), taxation, foreign ownership and environmental controls. The Commonwealth Government is not directly involved in the industry except as a shareholder, with the States of Victoria and New South Wales, of the Snowy Mountains Hydro-electric Scheme.

Australia has installed electricity generation capacity of 37,250 MW, producing around 157,000 GWh annually. Coal fired power stations provide 80% of generation with peak and intermediate power provided mainly by hydro-electricity and gas. Nuclear power is not used for electricity generation. The industry has assets of about $A54 billion and 45,000 employees. Annual sales to 7.8 million customers raise over $A12 billion in revenue. Over the last decade electricity use increased by some 5% per annum. Over the next decade the electricity growth rate is forecast at 2.2% per annum. The energy fuel mix is not expected to change markedly.

OBJECTIVES AND RATIONALE OF APPROACH

During the 1990s, there has been a major focus by governments in creating a more competitive economy with the aim of fostering strong, internationally competitive industries which are based on Australia's comparative advantage. The reforms aim to deliver more efficient and sustainable use of capital infrastructure and energy resources and to improve Australia's domestic and international economic performance.

Competition is considered the most effective driving force to achieve these objectives. The potential gains of competition reforms in Australia's electricity industries have been estimated to provide annual benefits of around $5.0 billion ($A93-94) to Australian gross domestic product.

The structure, operation and regulation of the electricity supply industry is the subject of major reforms with the progressive introduction of a National Electricity Market (NEM). The new arrangements are based on the separation of industry sectors and allow for direct customer/generator trading and competition at the generator and retail levels. The regulatory framework is shifting from state-based, industry specific regulation to a system of light handed national competition regulation.

The NEM is expected to commence in late 1996 and evolve in stages to a fully competitive market over a transition period to 2000.

KEY PARTICIPANTS AND THEIR ROLES

In 1991 governments agreed to work cooperatively to introduce a competitive electricity market in southern and eastern Australia. The National Grid Management Council (NGMC) was established as an intergovernmental advisory body to develop the competitive national market and trading arrangements in consultation with industry, stakeholders and the public.

The NGMC itself comprises one government nominated representative from each of the participating jurisdictions (Queensland, New South Wales, the Australian Capital Territory, Victoria, Tasmania, South Australia, the Commonwealth), plus an independent Chair.

The NGMC is supported by a framework of working groups and sub-committees. There have been several distinct phases to the NGMC's activities and committee structure since the initial NGMC framework was first agreed. The changes have largely reflected the evolution of the NGMC, the changing nature of the tasks it has been undertaking, the need to bring more resources to bear to develop the NEM and most recently, a requirement to undertake some market implementation activities prior to the establishment of the two national companies which will oversee the operation of the NEM.

The NGMC has, and continues to draw heavily on, resources from the electricity authorities and its member jurisdictions. In addition, the NGMC has made extensive use of consultants, both domestic and international, in all areas of its activities.

Governments have maintained a close control over the parameters of the NGMC process, regularly providing direction to the NGMC in response to options and recommendations put forward. In developing and proposing the model for the NEM, and in making all its other recommendations to governments, the NGMC has conducted detailed research into existing electricity markets throughout the world and has undertaken extensive consultation.

NATIONAL MARKET OBJECTIVES

The fundamental objectives for the competitive national market which have been agreed by governments, include:

- separating transmission from other activities
- non-discriminatory access to the interconnected networks
- customer's choice of supplier
- cost reflective transmission pricing
- merit order dispatch, and interstate sourcing of generation
- non-discriminatory access for new industry participants
- uniform regulation based on an industry code of conduct

One of the primary aims of the national reforms is to create an environment which offers the customer the freedom of choice to negotiate the purchase of electricity at the best available price and level of service. This overall goal of increasing economic efficiency is being achieved through an emphasis on trading mechanisms that promote active competition, are non-discriminatory, and allow participants to manage the risk of exposure to pool prices.

NATIONAL ELECTRICITY MARKET DESIGN

The NEM is designed around a spot market (or 'pool'). The market will be a gross pool in that all electricity will be physically accounted for through the pool. A centrally organised unit dispatch process will arrange the loading of supply side and demand side resources in merit order based on simple buy/sell offers after taking transmission and power system security factors into account. The price will be set on an ex-post basis by the bid of the marginal unit of generation or demand to meet the customer load.

Provision is to be made for short term forward trading and longer term contracting arrangements. A broad range of flexible financial contractual instruments and trading mechanisms will be available to allow participants to manage the risk of exposure to spot prices and to negotiate the purchase of electricity at the best available price and level of service. Such contracts provide a hedging facility, but do not carry with them any rights to commitment or dispatch or access to the network. Participants may choose to opt out of the wholesale market altogether and rely on competitively offered retail arrangements.

It is recognised that the transmission network will retain monopoly characteristics. Therefore, prices for connection to and use of the network are to be transparent, cost reflective and non-discriminatory to facilitate market competition and provide appropriate signals for future investment decisions.

REGULATORY FRAMEWORK

Regulation of the electricity supply industry has traditionally been the responsibility of State and Territory governments, however with the reforms a more national approach is being taken.

Governments have agreed that the NEM will be subject to a mix of national and state based regulation. Market behaviour will be subject to the broader “light-handed” market conduct and pricing oversight of national competition law as administered by the independent national regulator, the Australian Competition and Consumer Commission (ACCC). Customer franchise pricing, health, safety and environment matters will remain State based responsibilities.

Market operations (that is, network pricing, network connection and access, market rules and operation, and system security) will be covered by an industry code of conduct (National Electricity Code) which establishes the uniform rules, procedures and regulations which underwrite the NEM.

Two national companies, which will become operational in the coming months, have been established to oversee the operation of the NEM.

The National Electricity Market Management Company (NEMMCO) will be responsible for the day-to-day operation of the market and power system, including arrangements for national merit order dispatch of generation and controllable load. In addition, it will be responsible for the operation of the spot and forward trading markets and settlements systems. NEMMCO will work on an integrated basis with regional power system operators who will act as its agents.

The National Electricity Code Administrator (NECA) will perform a regulatory function, including monitoring and reporting compliance with the National Electricity Code, enforcement, Code dispute resolution and managing changes to the Code.

The founding members of the two companies are the governments of New South Wales, Victoria, Queensland, South Australia and the ACT. Both companies will be subject to national corporations and trade practices laws.

The National Electricity Code, the instrument under which the NEM will primarily be administered, is in its final stages of completion by the NGMC after a process involving substantial consultation with industry, the public and governments over the past two years. Once completed, the Code will be endorsed by participating governments and then submitted to the ACCC, probably in August, for authorisation and acceptance of access undertakings under the Trade Practices Act. Changes to the Code can only be made through a transparent Code change process under which changes need to be approved by the ACCC.

In the specific context of the development of the NEM, co-operative legislation is to be passed by New South Wales, Victoria, South Australia, Queensland and the ACT. The legislation is underpinned by an interstate agreement (National Electricity Market Legislation Agreement). The relevant States and the ACT have agreed that the national market legislation can be amended only with the unanimous agreement of all jurisdictions party to the Agreement.

As a consequence, the regulatory environment of the electricity supply industry will be stable with any change to be transparent and planned. National regulatory consistency and transparency are fundamental goals to ensure that costs are kept to a minimum, business sector investment is encouraged and sovereign risk is minimised.

INTRODUCTION OF THE NATIONAL ELECTRICITY MARKET

The NEM is to evolve in stages. New South Wales, Victoria and the ACT have agreed to harmonise their existing competitive electricity markets from around 1 October 1996 to achieve the competitive benefits of interstate electricity trading at the earliest possible date. This first stage market will have merit order dispatch based on existing regional dispatch systems with provision for interstate trade. By July 1997 common transitional steps to the introduction of retail competition will have been adopted and the dispatch of generation plant will be on the basis of an integrated market across the three regions.

South Australia is expected to join the NEM in the latter half of 1997 after it has completed the appropriate structural reform of its industry. Queensland and Tasmania will join following implementation of further competitive reforms and of course subject

to grid interconnection. The feasibility of developing grid interconnections between these two states and the existing multi-state grid is being assessed.

The NEM arrangements will evolve progressively as a National Electricity Code approved by the ACCC is applied, and NEMMCO establishes the national based systems to support the operation of the market. The further development, testing and implementation of the real time NEM control systems (including 5 minute dispatch update) and their interface with the State electricity control centres' energy management systems, however, is at least some 12 months away.

At an early stage governments recognised that the rate of structural reform was likely to vary quite considerably from State to State. There was also concern about the need for a smooth adjustment to the new competitive environment, not just for consumers, but also in terms of the potential budgetary impacts on the States and government owned utilities. The transition to a fully competitive market is expected to be completed by 2000.

SUPPORTIVE POLICY ENVIRONMENT

Reform of the Australian electricity supply industry and its regulatory framework is taking place within a general policy environment which has the aim, amongst other things, of increasing competition rather than dependence on regulatory direction.

In April 1995 the Council of Australian Governments agreed to adopt broad ranging national competition policy reforms which will encourage competition in the trading activities of government-owned enterprises and, in particular, achieve competitive neutrality between government-owned and private industries.

As part of the agreement the Commonwealth will provide financial assistance payments to the State and Territory governments totalling $4.2 billion over the period to 2005-06. The payments are conditional, in part, on satisfactory progress in reforming the electricity supply industry.

In parallel with electricity reform, the Commonwealth is working with State and Territory governments to ensure that legislative and regulatory barriers to free and fair trade in natural gas are dismantled and that appropriate industry regulatory codes are developed as the foundation for a consistent national framework for gas pipeline operation.

STATE REFORMS

The Australian electricity supply industry has undergone significant reforms in the lead up to the national market. The States and Territories are progressively dismantling their previously vertically integrated electricity utilities. Competitive generation and distribution sectors are emerging with increased private sector involvement.

These recent reforms have already resulted in marked increases in efficiency. For example, the real price of electricity has fallen 5% over the last 5 years, service quality levels have improved, and returns to asset holders have increased due to continued improvements in labour productivity.

At present only New South Wales, Victoria, South Australia and the ACT are interconnected to form a grid network. Interstate flows of electricity represent on average less than 2% of total electricity consumed within these States. Studies are underway to examine the economic feasibility of developing interconnections with Queensland and Tasmania. A diagram of the electricity network is at Attachment 1.

The reforms which have taken place in the States and Territories are outlined in Attachment 2. The electricity industries of Western Australia and the Northern Territory (where geographic distance precludes future participation in the NEM), are also being reformed consistent with the thrust of general competition reform in Australia.

CONSULTATION AND COMMUNICATION

The NGMC has consulted widely in developing key issues. Extensive use has been made of public seminars, the dissemination of reports and issues papers and public submissions processes to garner a wide range of views and input. A variety of stakeholder interests have been represented on many of the NGMC's key working groups. Development of the Code, for example, has been an iterative process utilising all of the above mechanisms, including a broadly based reference group of well over 300 organisations and individuals to provide input and feedback on the various technical and policy aspects of the Code. Recently the NGMC established a 'home page' on the Internet.

In addition to the formal seminar processes, NGMC representatives have over the years made presentations on the reform process at numerous industry conferences and have had countless meetings with electricity industry, business, Commonwealth, State and local government representatives, environment, community service and other groups to discuss issues related to the competitive reforms.

A 'Paper Trial' simulation of the proposed NEM trading mechanisms and arrangements was conducted from November 1993 to end June 1994. The Trial allowed over 170 potential major market participants gain experience in the dynamics of a competitive electricity market without financial risk and permitted the NGMC to test whether the NEM model was delivering the appropriate competitive industry outcomes as desired by governments. The Trial served an important role in refining the arrangements of the NEM.

The NGMC has developed a computer simulation model of the competitive multi-state network as an educational tool which allows prospective market participants to familiarise themselves and gain experience with the proposed trading mechanisms which are to be a function of the new market. NEM 'User Guides' are also being developed for the different categories of potential market participants.

LESSONS LEARNED

Achieving the fundamental underlying competitive industry structural reform has perhaps been the most difficult task. This has been compounded by some very practical realities. For instance, since 1991 when the concept of national based electricity reform was agreed, there have been changes in governments in all the participating States and Territories and at the Commonwealth level.

Legislation to establish and implement the national market still requires passage through a number of Parliaments. The National Electricity Code has to be endorsed by governments and approved by the market regulator, the ACCC, following another round of public scrutiny.

The Code will, for the first time, draw together in a single and transparent document the rules for the market's operation - aspects which previously have been a 'black box' for most electricity users. Issues such as metering, treatment of losses, common system security (particularly in the event a disruption in one region causes problems in another), have all had to be addressed. The Code represents a balancing act between different degrees of regulation. Whilst aiming to be light handed, it requires sufficient regulatory integrity to ensure a competitive market structure is achieved and that the benefits of reforms flow through to the customer.

One of the challenges in the development of the Code has been to provide a sufficient level of system flexibility. It is appreciated that as the market evolves there will be a need to accommodate maturing market arrangements. As the characteristics of the industry itself change, particularly with the greater participation of the private sector the Code will need to provide for equitable treatment of all participants, irrespective of ownership structures. The Code has therefore been designed to be a dynamic document. A formal change mechanism has been incorporated into the Code to ensure that it reflects changing circumstances.

Transmission network and distribution pricing have proven a little contentious. Governments agreed to the NGMC's recommendation that deprival value methodology be applied to asset valuation to ensure a consistent and commercial approach to the valuation of transmission assets. The network charges for the use of extra high voltage and lower voltage sub-transmission networks are, in principle, to be cost reflective. Several governments, however, wish to maintain uniform tariffs for social and equity reasons, particularly for remote users. Accordingly, some price averaging will be accepted for low voltage distribution system pricing.

Aspects of the mechanisms and rules to govern competitive inter-regional trading are unresolved. The NGMC is still debating the relative merits of whether a market based approach, or a more regulated hedging arrangement, is appropriate for inter-regional trading. The characteristics of the Australian electricity system are such that pool price differentials are anticipated to occur at times between different States due to transmission constraints. The treatment of these differentials and development of suitable financial risk management instruments are under consideration.

As with any fundamental industry reform, existing contractual arrangements either need to be re-negotiated or allowed to run their course. In Australia there are a number of partially privatised power stations with long term contracts selling into the grid. Electricity trade between the existing three interconnected States is governed by a utility agreement which is under re-negotiation.

Arriving at a consistent definition of eligible market participants across States has even proven difficult, especially in regard to customers owing to the different rates of reform and competitive customer threshold reduction timetables that are being applied in

individual States. Fortunately, many of these issues will resolve themselves through the transition period to the year 2000.

The ‘greenfields’ development and testing of the software and communications systems to suit the unique characteristics of the Australian market is proving more complex and time consuming than first envisaged.

CONCLUSION

The implementation a fully competitive NEM will provide the opportunity for direct generator customer links, competitive tendering for supply capacity across a range of energy sources, location of capacity at the most advantageous sites, a more commercially oriented industry, and a much greater level of private sector participation. One of the desired objectives of such reforms is to improve Australia's business climate and attractiveness as an investment location.

The arrangements being developed for the competitive NEM in Australia are at the leading edge of world developments. The proposed evolutionary approach is a low risk, pragmatic approach to the introduction of competitive trade between jurisdictions that allows for the gradual transition to the fully competitive national electricity market. Importantly it will facilitate effective interstate trade between market participants, whilst not compromising intra-state systems security.

ATTACHMENT 2

STATE ELECTRICITY INDUSTRY REFORMS

VICTORIA

A competitive State wholesale electricity market has been operating for over one year with electricity traded through a 'pool' arrangement managed by the Victorian Power Exchange. Five distribution/retail organisations have been established. PowerNet Victoria manages and operates the transmission network. GenVic is a separate generation holding company under which individual generators trade in the market. Regulation falls to the independent Office of the Regulator General.

Victoria has developed a timetable for the staged introduction of choice of supplier through to the year 2000. Currently customers with load levels greater than 1 MW have been introduced to retail competition. Prior to each customer group being given choice of supplier, its tariff is regulated under a "maximum uniform tariff" regime. The regime has been developed to deliver real tariff reductions during each group's transition to contestability.

The State's five distribution businesses were privatised in late 1995 with proceeds in excess of $A8.3 billion. The Victorian government has embarked on a program of privatising generation. There is an expectation that during the course of the next 3-4 years Victoria will sell its remaining electricity assets, including the high voltage transmission network.

NEW SOUTH WALES

Under legislation passed in December 1995, the State's former monopoly generation utility, Pacific Power, has been separated into two state owned corporations. The previous 25 distribution boards have been rationalised to six corporations - two covering metropolitan centres in and around Sydney, and four servicing the rural areas. A separate State owned corporation, TransGrid, manages and operates the high voltage transmission network as well as performing the role of market systems operator.

A competitive State wholesale market was introduced on 1 March 1996. Although the State government has at present ruled out privatisation of existing industry assets, private sector involvement in the industry is being encouraged.

QUEENSLAND

On 1 January 1995 the Queensland Electricity Commission (QEC) was restructured and two new government owned corporations were established. AUSTA Electric has responsibility for electricity generation. Queensland Transmission and Supply Corporation (QTSC), through its transmission and 7 regional distribution and retailing corporation subsidiaries, is responsible for planning and supply of electricity.

The Queensland government has established an independent Task Force to consider a range of reform issues relating to the structural, institutional and regulatory arrangements to apply in its electricity industry having regard to future participation in the NEM. Queensland is also reviewing options for connection to the national grid.

SOUTH AUSTRALIA

The State owned vertically integrated Electricity Trust of SA was corporatised in mid-1995 as ETSA Corporation. Effective 1 January 1997, generation will be separated from ETSA Corporation to form an independent government business enterprise, thereby positioning the State to become a future participant in the NEM.

TASMANIA

In Tasmania the predominantly hydro-electric based electricity supply is to remain a vertically integrated government business. Ring fencing of generation, transmission and distribution accounts within the Hydro Electric Commission has been adopted to provide some transparency, while the entry of new generators is being encouraged.

AUSTRALIAN CAPITAL TERRITORY (ACT)

The ACT corporatised its combined electricity and water utility (ACTEW) in July 1995. The corporatisation process included the separation of electrical regulatory functions from the corporation. It is proposed that ACTEW's distribution and retail activities be "ring-fenced". The ACT relies on imports of electricity from NSW and the Snowy Mountains Hydro-electric Authority. It is currently participating in the NSW wholesale market. The ACT does not have any electricity generation capacity.

WESTERN AUSTRALIA

In January 1995 the former State Energy Commission of WA was split into separate government owned electricity and gas corporations, Western Power and AlintaGas. Western Power Corporation is ring-fenced into 5 units: generation, transmission, interconnected system distribution and sales, Pilbara interconnected system, and isolated system. Competitive tendering has been introduced for increments of new generation capacity. A timetable has been announced from 1997 for the provision of open access to Western Power's transmission and distribution systems.

NORTHERN TERRITORY

The Northern Territory electricity industry is characterised by a small and geographically diverse load with minimal grid development and a diverse range of power station capacities. This makes the implementation of micro-economic reforms such as separation of generating, transmission and distribution functions somewhat difficult. The Power and Water Authority (PAWA) has, however, taken steps to increase efficiency and productivity. As part of this, PAWA has allowed private ownership of electricity generation and distribution facilities.

ELECTRICITY SECTOR

IN INDONESIA

ELECTRICITY SECTOR IN INDONESIA

EXECUTIVE SUMMARY

The development policy for electricity is based on the Electricity Act. No. 5, promulgated in 1985, which provides a wider legal basis for private sector participation as a "player" in electricity supply to the public, in addition to the State Owned Electricity Corporation (PLN) and the Cooperatives. Entering the first year of the Fifth Five-Year Development Plan (1989/90-1993/94) there was a rapid increase in electricity demand, especially in the industrial sector where supply and demand could not be met, resulting in shortages of electricity supply. In comparison with those of the past, the demands were too great for the public sector to address without strong and increasing participation from the private sector.

Subsequently, to enable and encourage private sector participation, the government issued a series of Regulations, starting with issuing Presidential Decree No. 37/1992 on Private Sector Enterprises for Electric Power Supply, which is based on the above mentioned Law. The Decree is intended to "encourage private sector enterprises and cooperatives to finance development, own and operate electric supply projects, generation, transmission and distribution enterprises".

For power generation, both solicited as well as unsolicited private power projects were to be considered. For solicited projects, the Government of Indonesia (GOI) granted the projects to investors based on the results of a tender which was participated in by those investors who had been declared pre-qualified by the GOI. However, private power projects need not be specifically solicited solely by the GOI. Investors may propose to the GOI the development of power projects which investors consider economically feasible. Proposals submitted shall first be studied and assessed by the State Owned Electricity Corporation (PLN), after completion of which the GOI (in this case the Directorate General of Electricity and Energy Development), taking into account PLN's assessment of the proposal, will promulgate a Letter of Preliminary Approval (LPA), simultaneously requesting the applicant to conduct a feasibility study and submission of a detailed proposal, to be evaluated and negotiated.

In 1991, due to the urgent need for power generation, the government invited two consortiums to submit their proposals for the Paiton I Private Power Project, 2x600 MW, to be the first private power project located at the PLN's power complex. The implementation of this project was executed by a Private Power Team and a Government Negotiations Team established by the GOI with members from different Ministries and Government Agencies. After the proposal had been evaluated, one consortium was selected to negotiate according to the terms and conditions of the project. Since it was the first private power project, the Team engaged Consultants for the legal, commercial and technical aspects. Due to the complex nature, large size, likely environmental impacts, longer construction period, long term contract (30 years) and single buyer (PLN), negotiations were prolonged and discussions were mainly concerned with risk allocation, since the project relied on new non-recourse financing without any guarantee from the GOI.

Although it was a lengthy process, it has provided very significant experience for implementing future private power projects. Based on the experience gained from the negotiation of the Paiton I Private Power Project, and the signed Power Purchase Agreement

(PPA) with terms and conditions which already conform to the guidance, directives and relevant government regulations, this PPA has been used as a model for the next IPP's in Indonesia.

As initial project agreements have been finalized and the PPA used as a model, the terms and conditions of the PPA have become familiar, and there has been greater understanding of the responsibilities of the concerned parties (Government, PLN, Developer and Lender) and how risk allocation should be distributed. Hence, subsequent private power projects have started with more realistic positions on both sides, and the negotiations have been carried out more effectively within a shorter time, with fewer critical issues raised resulting in a lower price for the electricity.

Since the government launched Presidential Decree No. 37/1992 and the related Regulations, the development of private power participation (not including geothermal power plants) as part of the General Plan for National Electricity Development, has been as follows:

Projects with an already signed PPA:

a	5 units Coal Fired SPP	=	4.080 MW
b	1 unit Combined Cycle PP 135 MW	=	
	Total	=	4.215 MW

Note: 2 projects, i.e., Paiton I and Paiton II have achieved financial closing

Projects with completed negotiations (waiting for government approval):

a	3 units Coal Fired SPP	=	700 MW
b	2 units Combined Cycle PP	=	190 MW
	Total	=	890 MW

Projects under negotiation:

a	4 units Coal Fired SPP	=	2.220 MW
b	5 units Combined Cycle PP	=	1.620 MW
	Total	=	3.820 MW

Projects under evaluation/submission of detailed proposals (already received LPA):

a	2 units Coal Fired SPP	=	1.450 MW
b	1 unit Hydro PP	=	180 MW
	Total	=	1.630 MW
	Grand Total 10.555 MW	=	

For Geothermal Power Plants, the signed Energy Sales Contract (ESC) provides 11 units with a total capacity of 790 MW, with 3 units of 100 MW under negotiation. All these

private power plants are planned to be in operation between 1997/98 - 2003/04 to supply the growing electricity demand for the next 10 years.

Key elements in the implementation of private power participation are summarized as follows:

1. Laws and Regulations which govern the implementation of private power participation already exist

2. The Government has provided a clear institutional structure

3. A transparent risk allocation structure has been developed as stipulated in the model PPA (see attached matrix)

4. The Government has offered a supportive environment for investment

To achieve greater efficiency in the electricity supply, and to gain access to non-governmental financial resources, a gradual shift from total government control to the market forces of open competition with a degree of regulatory oversight is required. In accordance with the Government decision to permanently incorporate private sector participation, a restructuring of the power sector will undoubtedly have to follow.

This process, although yet to be expedited, will need to go through several carefully managed stages to assure stability and productability of electricity supply, a key requirement of continued national development.

LESSONS LEARNED
(Profile of the Paiton I Private Power Project)

The Paiton Steam Power Complex, located at the Paiton Village, Probolinggo, East Java, is one of the power generation developments in the Java-Bali grid with an ultimate generating capacity of 4000 MW. Two units (unit No. 1 and 2) each of 400 MW, built by the State Electricity Corporation (PLN) were commissioned in July 1993.

The Paiton Private Power Phase I with a capacity of 2x615 MW units (unit No.7 and 8) is the first coal-fired private power project to be developed by the government, located within the intended eight-unit Power Generating Complex.

The other four remaining units consisting of two units each of 400 MW (unit 3 and 4), was to be constructed by PLN and two units each of 600 MW (unit 5 and 6) by the private sector.

The government invited two Consortiums to submit their proposals for the Paiton Private Power Project Phase I. After the proposals had been evaluated, one Consortium of prominent companies from the United States of America, Japan and Indonesia was selected to negotiate the terms and conditions for the project and the required Power Purchase Agreement.

The negotiations were performed in seven session in Jakarta, namely:

- Session 1 from September 15 through September 24, 1992
- Session 2 from November 6 through November 24, 1992
- Session 3 from February 5 through February 26, 1993
- Session 4 from April 27 through June 19, 1993
- Session 5 from September 24 through November 18, 1993
- Session 6 from December 7 through December 17, 1993
- Session 7 from January 11 through February 9, 1994

The Power Purchase Agreement was executed on February 12, 1994. Although it was very time consuming, it has been a very significant experience for all parties. As a result, a better understanding of the issues concerning private power was established. There were many matters affecting the prolonged negotiations, where discussions were mainly concerned with risk allocation, since the project involves non-recourse financing without any guarantee from the Indonesian government.

The complex nature, large size, likely environmental impacts and longer construction period of the Paiton I project, in comparison to other private power projects, created various concerns which, in the spirit of understanding, were resolved by the concerned parties involved.

The first unit of Paiton I is scheduled to enter commercial operation in June 1998, and the second unit six months later.

The development of the first private power project set the stage for the improvement of the existing legal framework in the sector that is designed to attract investors and lenders

to private power development. As the private sector role evolved, a more comprehensive legal framework was established.

Based on the experience gained from the negotiation of the Paiton Private Power Project Phase I, and having signed the Power Purchase Agreement (PPA), where the terms and conditions are already in accordance with the guidance, directives and government regulations, this PPA can be used as a model for the coming IPP's in Indonesia.

Here are some highlights of the PPA:

Technical Matters

The following is a brief presentation of technical data for the Paiton I Private Power Project, Units 7 and 8.

The project consists of:

* Two 660 MW gross (615 MW net) turbogenerators

* Net heat rate 2,447 kcal/kwh at 100% load

* Two 190 bar, 2,290 tph coal-fired boilers

* Precipitators with 98.5% efficiency of particulate removal with 10% of fields out service

* Flue gas sulphur removal - seawater scrubber system with 90% efficiency of sulphur removal for design coal

* Design coal:
  - Moisture

    27.0%
  - Ash

    1.8%
  - Sulphur
    0.3%
  - HHV

    5,000 kcal/kg

* Operational limits (firing coal):
  Maximum output

  unit

  653 MW

plant

1,305 MW

Minimum output

unit

300 MW

plant

600 MW

* Environmental standards:

Indonesian standards shall apply; to meet these air pollution standards a single 220 m high chimney with one flue for each unit shall be used. Nominal flue gas temperature of 42 degrees C will apply and the emissions per day for each flue must not exceed:

Unit emission in kg/day

SO2

5,064

NOX

35,500

Particulate

12,848

CO

44,000

* Special Facilities:

In addition to the equipment and works required for Units 7 and 8, PT PEC shall finance, construct and commission Special Facilities that will serve solely Units 5 and 6 or will be shared by these and/or other units at the Paiton site. After commissioning, these Special Facilities will be transferred and thereafter will be owned, maintained and operated by PLN.

Commercial Issues

The following is a brief summary of key commercial issues to facilitate better understanding of the Paiton I Private Power Project.

* Contract parties:

  PLN and PT. Paiton Energy Company (PT. PEC)

* Type of plant:

  Base load

* Term of contract:

  30 years after the date of commercial operation

* Type of contract:

  Build-Own-Operate; energy to be taken and paid for as delivered

* Tariff components:

  Capacity payment - consisting of:
  - Capital recovery component, and
  - Fixed O&M cost recovery charge

  NOTE: These components are tied to plant performance through actual plant availability vs. contracted availability; foreign exchange and Rupiah components of the fixed O&M are indexed to the U.S. and Indonesian consumer price indexes respectively.

Energy payment - consisting of:

- Fuel payment

NOTE: This component is tied to plant performance through actual plant heat rate vs. contracted heat rate.

- Variable O&M

Supplement payments - due to:

- Grid emergency plant output ordered by PLN
- Start-up fuel cost attributed to PLN actions: based on start-up fuel use schedule included in the PPA
- Net electrical output prior to commissioning date

* Tariff payment:

  In Rupiahs; foreign exchange content of the above component is indexed to actual US dollar/Rupiah exchange rate at the time payment by PLN is due; initial exchange rate is 2083 Rupiahs to 1 US dollar

* Coal price: 71,126 Rupiahs per ton in 1997

  NOTE: The coal price will be renegotiated each year after 1997; foreign exchange content of the coal price will be renegotiated once every five years after 1997 and shall not exceed 60% of total coal cost.

* Contract capacity: 1230 MW for years 1-7
  1220 MW for years 8-30

* Availability: Average 83%, actual availability is set on a yearly basis for the life of the contract in a schedule included in the PPA.

* Scheduled outages: set in Scheduled outage hours per year for the life of the contract are the PPA.

* Partial load heat rates: Set in the PPA at 1% intervals for the range 50% to 100% load.

* Land: Land for the plant shall be provided by PLN for a fixed annual fee paid by PT. PEC; all land related taxes and fees shall be paid PT. PEC.

Risk Allocation and Legal/Commercial Concepts

The Paiton I Private Power Project's Power Purchase Agreement contains the following philosophy of risk allocation and legal concepts: (The Government of Indonesia is following the same principles in negotiating other private power projects.)

The project owner, PT. PEC, has sole responsibility for design, financing, construction and operation of the plant. PT. PEC is responsible for efficient plant operation and maintenance. If contract heat rates and availabilities are not achieved, payments to PT. PEC are reduced accordingly.

When PT. PEC operates the plant according to the agreed formulas on availability and contract capacity, PLN is required to take energy as delivered and pay for the energy and capacity in accordance with the agreed formulas.

PLN has the right to dispatch the plant, but as long as the plant is able to meet the contract availability and contract capacity, PLN must pay the full capacity payment.
If PLN is not able to take the energy available from the plant due to grid or other problems, and under certain force majeure conditions occurring after the commercial date of operation of the plant, deemed dispatch occurs, and PLN will be required to make payments as indicated in the paragraph above.

PT. PEC has sole responsibility to plan and arrange coal supply, but the coal price will be renegotiated annually after 1997. In the case of price disagreement, the matter may be referred to an expert. The expert is then directed by the PPA to set the coal price with reference to market conditions as follows:

* 45% based on New South Wales coal, with comparable composition, intended for any destination
* 40% based on Indonesian sources of coal of comparable composition
* 15% based on the price paid by PLN to privately owned commercial coal suppliers

Dispute resolution will be attempted through mutual discussion. If unsuccessful, disputes may be referred to an expert. Unresolved disputes will be referred for final settlement by an arbitration tribunal under UNCITRAL rules.

Delays in the commissioning of units and in commercial operation of the plant caused by PLN or the Government of Indonesia will result in an electricity price adjustment.

The PPA can be terminated by either PLN or PT. PEC before its expiration due to the occurrence of various events defined in the PPA. When termination due to certain events occurs, PAN has the right to purchase the project for a price based on a formula included in the PPA.

At any time during the life of the PPA, PLN may exercise the option to purchase the Project with all rights of PT. PEC for a price defined in the PPA.

Changes of laws or regulations that result in increased cost or in cost savings will be treated through price adjustment. Trigger events leading to these adjustments are specified in the PPA.

The PPA is governed by laws of the Republic of Indonesia.

As noted in the summary of lessons learned from the previous project, there are several items that need attention during the course of negotiation with the Private Power Developers. These are:

1.

Legal aspects:

- The Agreement shall be governed by the laws of the Republic of Indonesia

- The implementation shall be in line with the current Government Regulations

- Risk allocation shall be borne in accordance with the burden and responsibility of the concerned parties during the construction period and contract term, which can be divided into:
  - commercial risk
  - technical risk
  - political/country risk
  - non-political risk/force majeure

2. Commercial aspects:

- The electricity tariff shall be calculated for the year of commercial operation by using a Financial Model with the following input data:

  - Capital cost, consisting of cost for designing, engineering, construction, testing and commissioning
  - Other costs, such as development costs, initial working capital, land procurement
  - Loan terms and conditions: loan sources, interest, exposure fee, front-end fee, commitment fee, repayment period
  - Debt Equity Ratio
  - Reasonable return on equity
  - Operation and Maintenance (O&M) costs, consisting of Fixed O&M and variable O&M costs
  - Fuel cost
  - Contract term
  - Availability factor
  - Depreciation based on current regulations
  - Disbursement of equity mid loan
  - Specific Heat Rate
  - Taxes, import duties and levies
  - Contract capacity

* The electricity tariff will have 4 components:
  - Capacity cost
  - Fixed O&M cost
  - Fuel cost
  - Variable O&M cost

* Payment formula

3. Technical aspects:

* Quality and reliability of the power station
* Reasonable capital cost of a power station with similar technology
* Environmental impact shall follow the current Environmental Regulations

In accordance with Presidential Decree No. 37/1992, the electricity selling price must reflect the most economical price based on a joint agreement and must be approved by the Minister of Mines and Energy; this means that the State Electricity Corporation (as the Purchaser) is still able to sell the electricity to the consumer (public) through the transmission and distribution lines based on the current Basic Electricity Retail Price.

After successfully signing the first PPA, in which the terms and conditions were already in accordance with the guidance, directives and government regulations, this PPA has served as a model for the next IPPs. The PPA, as the principle contractual document, contains a sector for the investor to indicate all commercial and legal terms governing the sale of electric power from the Project Company to PLN. Penalties and compensations in response to any deviations from the contract terms set in the PPA are also stipulated in the PPA.

By using this model PPA, experience tells us that future private power projects will be negotiated more effectively, in less time, with fewer issues raised, resulting in a lower electricity selling price. As of today, as mentioned previously, there are 6 private power projects that have signed a PPA, 5 projects under negotiation, and 9 other projects still being negotiated with PLN.

Allocation of Risk

Risk	Remedy
CONSTRUCTION PERIOD	
Cost overrun	Included in the fixed price of component "A" (capacity charge) of the tariff
Delay in completion	Penalties to the EPC Contractor
Failure of plant to meet performance specifications tests as result of fault by EPC contractor	Penalties to the EPC Contractor
Land acquisition	Government provides an indication of land cost for project cost estimation, to be included in the fixed price of component "A"
Increased financing cost	Formulated in the Loan Agreement with Lender
Government - changes in law, tax, custom, environmental standards	Tariff adjustment based on new regulations
- expropriation, nationalization, consent withdrawn	Owner entitled to terminate as government default compensation is paid for termination
OPERATION PERIOD	
Operating costs overrun company	Penalties payable by the O&M Developer
Inflation resulting in adverse payment change in cost of finance, exchange or interest rates	Formulated in the invoicing and Developer/Buyer procedure

Foreign exchange non-payment availability/non-convertibility	Formulated in the invoicing and Developer/Buyer procedure
Failure to make available payment sufficient foreign exchange	Formulated in the invoicing and Developer/Buyer procedure
Fuel Supply agreement	Formulated in the fuel supply Developer
Failure of power (PLN) to purchase	Formulated in payment formula Buyer payable capacity charge with with an agreed capacity factor
Forced outage/de-rate or temporary shortfall in capacity determination in heat rate (owner's fault)	Formulated in payment formula
Forced outage or temporary shortfall in capacity (purchaser's fault)	Formulated in payment formula
Increased fuel cost (not arising from lighter heat rate deterioration than base case)	Fuel price adjustment formulated in fuel price determination passed through component of the tariff
Boiler explosion	Formulated in the insurance policies
Failure of the operator to perform obligations	Penalties to the O&M company
Environmental incidents caused by the operator	Penalties to the O&M company

PAGBILAO POWER PROJECT

IN THE PHILIPPINES

Prepared by

The Export-Import Bank of Japan

June 1996

PAGBILAO POWER PROJECT IN THE PHILIPPINES

EXECUTIVE SUMMARY

Pagbilao Power Project is an example of a successful BOT infrastructure project in Asia. It contains the following characteristics.

A

Risk Mitigation

- The Philippines Government provided a Performance Undertaking for the obligations and performance of National Power Corporation, which is both the power purchaser and the fuel supplier in this project, under the relevant agreements with the project company

- A powerful international cooperation link was formulated among Multilateral Development Agencies (IFC and ADB) and Bilateral Governmental Agencies (JEXIM, MITI, US-EXIM, and CDC). This cooperation scheme covered the difficulties of private financial institutions to provide long-term credits to the Philippines

B

Supportive Policy Environment

- The Philippines Government made it clear that it was one of the country's primary policies to promote foreign investment, including in the private infrastructure field. It enacted various laws and conducted policy reforms providing a legal framework, fiscal and non-fiscal incentives, foreign exchange assurances, etc. in order to improve the "investment environment" of the country

- It also established the so-called BOT Law in 1990 to provide a clear legal framework for private infrastructure development

- Despite the transition from the administration of President Aquino to President Ramos, this policy was not changed, and was even further strengthened later

C

Regulatory Regimes

- BOT Law established in 1990

- Efforts to simplify administrative procedures (toward "One-Stop Shop")

- Transparent international competitive bidding for BOT contractors.

D

Communications Between Public and Private Sector

- Repeated announcements by the Government to promote private infrastructure investments and publication of concrete measures.

DETAILED DESCRIPTION OF CASE STUDY

1

Scope of Project

- The project is to establish and operate a 770 (2x385) MW base load coal-fired power plant in Pagbilao (Quezon), about 150km southeast of Manila, Luzon Island
- It is structured on a build, operate and transfer (BOT) basis
- Under an Energy Conversion Agreement (ECA) entered into with the National Power Corporation (NPC), the project company will build, own and operate the plant for 25 years after completion
- At the end of the period, ownership of the plant will be transferred to NPC at no cost
- All power generated is sold to NPC for distribution
- The plant is fueled with low-sulphur imported coal which, together with the land, are provided by NPC at no charge to the project
- The opening ceremony of the power plant was held on June 10, 1996

2

Objectives of Project

- To alleviate serious power shortages in the Manila metropolitan area, which had become a constraint to the country's economic growth. (One of the "Fast Track Projects" approved by the Government of the Philippines.)
- To improve the financial situation of the National Power Corporation (NPC) and introduce private investment in power generation. (The World Bank advised in 1991 to introduce private investment in the power sector of the Philippines.)

3

Method of Procurement and Award

- Competitive bidding among qualified bidders

4

Key Participants

- Project Company:

  Hopewell Power (Philippines) Corp.

- Sponsors:

  Hopewell Energy International Ltd.

  87.5%

International Finance Corporation (IFC)

4.25%

Asian Development Bank (ADB)

4.25%

Commonwealth Development Corporation (CDC)

4.25%

- Lenders:

  The Export-Import Bank of Japan

(& co-financing Japanese banks with MITI Insurance)

The Export-Import Bank of the United States

IFC

ADB

CDC

- EPC Contractors:

  Mitsubishi Corporation

Slipform Engineering Ltd.

- Power Purchaser:

  NPC

- Fuel Supplier:

  NPC

- Operator:

  Hopewell Tileman Power Systems Corp.

Brown & Root International

5

Key Contractual Terms

- EPC Contract: Lump Sum Turnkey Contract
- Power Purchase (Cooperation Period): 25 years
- Debt financing amounting to US$698 million was provided by the Senior Lenders on a "Limited Recourse" basis
- Loan Tenure (JEXIM): 10 years after completion

6

Legal Framework

- BOT Law established in 1990

7

Risk Mitigation Measures

- A Performance Undertaking by the Ministry of Finance of the Philippines Government for the obligations of NPC under "Energy Conversion Agreement" (PPA)

- A comprehensive "Security Package" sharing various risks among Senior Lenders, Sponsors, EPC Contractors, NPC and other participants of the Project

8

Other Comments

- A successful example of international cooperation among Multinational Development Agencies and Bilateral Governmental Agencies

- An Off-shore Escrow Account in New York

CONCLUSIONS

A

Lessons Learned

- Deep commitment and undertaking by the host government are essential factors for the success of a private infrastructure project

- Cooperation among Multinational Development Agencies and Bilateral Government Agencies is very important not only for securing long-term financing, but also for mitigating various types of risks involved in a private infrastructure project

B

Applicability

- The above lessons can be applied most appropriately to economically viable projects in relatively higher risk countries. Undertakings by the host government help to reduce the risk margin of the loans accordingly

- Limited recourse financing cannot be applied for projects with a lower rate of return

C

Recommended Improvements

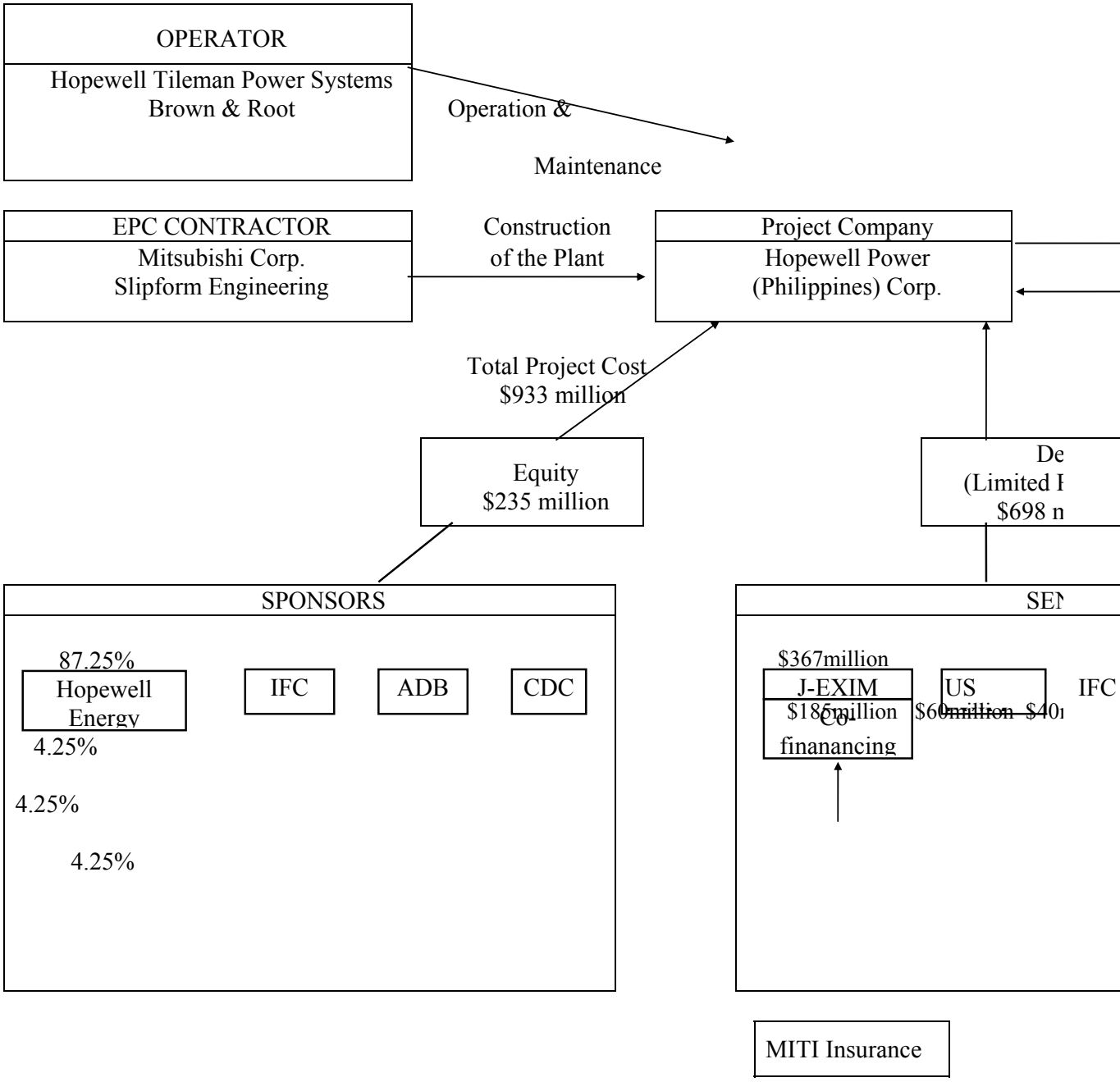
- The sustained and increasing role and commitment of a host government are of great significance for the smooth promotion and realization of private infrastructure projects

D

Further Information About Japan's Exim Bank

- For further information about the Export Import Bank of Japan and its "Project Finance," please refer to the attachment herewith

Structure of the Philippines Pagbilao Power Project



Project Financing
of
The Export-Import Bank of Japan

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The Outline of the Export-Import Bank of Japan

1. Status
   an independent governmental financial institution established under the Export-Import Bank of Japan Law

2. Objective
   to facilitate Japan's economic interchange with foreign countries through the provision of financial services to supplement and encourage financing by commercial banks and other financial institutions in Japan

3. Capital (December 31, 1995)
   JPY985.5 billion (USD98.5 billion*) (100% owned by the Japanese Government)

4. Loans and Equity Participation Outstanding (December 31, 1995)
JPY8,874.8 billion (USD88.7 billion*)

* converted at the exchange rate of ¥100.00 per US$1 for convenience

Criteria for J-EXIM Project Finance

- The project should be significant to Japan's national interests.
- The project should be viable with a full security package satisfactory to J-EXIM.
- Parties concerned with the project should appropriately share risks concerned.
- Host government should acknowledge the importance of the project for its economic development.
- In addition to the above, priority will be given in accordance with the degree of Japanese company's involvement in the project; the company's supports and obligations to the project.

Examples of Private Sector Infrastructure Projects financed by JEXIM

Commitment Date	Project	Country	
1993.4.	Pagbilao Power Project	Philippines	
1994.9.	PLDT Telecommunication Networks Expansion Project	Philippines	
1994.12.	Leyte Geothermal Power Project	Philippines	
1994.6.	Oil Refinery Project	Thailand	
1995.3.	Paiton Power Project	Indonesia	
1994.12.	Hub River Power Project	Pakistan	
1995.5.	Lal Pir Power Project	Pakistan	
1995.12.	Pac Gen Power Project	Pakistan	
1995.12.	Izumil Water Project	Turkey	
1995.9.	Telecommunication Networks Expansion Project	Argentina	

* based on estimation as of the date of JEXIM commitment

TELECOM NEW ZEALAND LIMITED

KIWI SHARE

Prepared by

New Zealand Treasury

TELECOM NEW ZEALAND LIMITED
KIWI SHARE

EXECUTIVE SUMMARY

A A "Kiwi Share" (called internationally a golden share) was a specific methodology used to assist in creating a political consensus in favour of private investment in the telecommunications infrastructure, by ensuring key undertakings given by the State-owned telecommunications company regarding price and service obligations were enforceable by the Crown following privatisation

B The Kiwi Share is a special rights preference share held by the Minister of Finance (the Kiwi Shareholder) on behalf of the Crown, which places limitations on strategic shareholdings in Telecom and sets out certain price and service obligations

C The Telecom Kiwi Share was successful in helping to achieve the important step of privatising New Zealand's former State monopoly telecommunications service provider

D In general, the experience with the Kiwi Share has been positive in that Telecom has complied voluntarily with the Kiwi Share obligations since they were put in place in 1990, and this has required little monitoring or involvement by the Kiwi Shareholder on behalf of the Crown

E The experience with the Telecom Kiwi Share has also demonstrated some potential difficulties with utilising an instrument of this sort. Kiwi Share provisions can:

- depress the sale price that would be offered by potential buyers of Crown-owned companies, particularly if the provisions are not tightly drafted

- tend to blur the distinctions governments normally seek to maintain between their regulatory responsibilities and their commercial objectives

- have an adverse impact on efficiency, for example by distorting pricing and investment decisions

- prove difficult to change or dispense with as circumstances change

F Since Kiwi Shares are inherently commercial mechanisms (they are contained in a company's Articles of Association), they tend to have shortcomings as regulatory instruments because they may be less transparent than most regulatory instruments; they tend to apply to only one participant in a market, and may be difficult to enforce. These shortcomings will tend to compound over time as the market becomes more deregulated and competitors enter the market and become established

BACKGROUND

The Kiwi Share was employed primarily as one of the initiatives to create political consensus in favour of private investment in the telecommunications infrastructure.

Prior to 1987, investment in telecommunications was almost exclusively a Crown concern. The Crown-owned telecommunications company, which until 1986 was a division of the New Zealand Post Office, had a monopoly in the delivery of telecommunications services. By 1987 it had been recognised that the reasons which led to early State involvement in the provision of telegraph services - doubt over the ability of the markets to provide the capital infrastructure of a developing country - no longer applied.

In 1987 a report by Touche Ross concluded that the telecommunications market would benefit from competition. In response to this report, the Government deregulated the telecommunications industry from 1 April 1989. A scoping report on the potential sale of Telecom in May 1989 concluded that sale of Telecom would meet the criteria for sale of Crown businesses set out in Annex 4 to the 1988 Budget.

The Crown sought two principal outcomes from the sale of Telecom:

1. Development of an efficient telecommunications industry in New Zealand

2. Advantages to the Crown resulting from the sale and receipt of the proceeds of sale (such as reduction in net public debt and minimisation of balance sheet risk)

It was considered that retaining Telecom in State ownership would impact adversely on realisation of competition in the telecommunications market, with a consequent impact on efficiency.

Efficient development of telecommunications was promoted by regulatory and other policies designed to ensure that the industry environment placed competitive pressures on the former State-owned enterprise, Telecom, to improve profits by efficiency improvements rather than price rises. The principal concern from a regulatory standpoint related to Telecom's market dominance in key aspects of its operations.

The Kiwi Share provided some protection for consumers in a segment of the market in which competition had not fully developed. However, the Kiwi Share was not the key regulatory mechanism for dealing with the issue of Telecom's market dominance. That was contained in the Commerce Act, and in particular Part IV of that Act, which permits price controls if Telecom should charge excessive prices in markets in which it was dominant, and section 36 which prohibits Telecom from using its dominant position to deter or restrict competition by others. Telecom was also required by regulation to publish the accounts of the operating companies providing the residential telephone services.

OBJECTIVES, PARTICIPANTS AND PROCESS

Objectives of the Kiwi Share Methodology

The objectives of implementing the Kiwi Share were to:

- assist in privatising the State-owned telecommunications company, Telecom (with the associated goals of developing an efficient telecommunications industry and achieving the Crown's objectives of reducing net public debt, minimising balance sheet risks, etc.); while

- avoiding undue blurring of the distinction between regulatory responsibilities and commercial objectives

Key Participants

The key participants in the process leading to the Kiwi Share were:

- Telecom Board: it was the Board of Telecom who initially provided certain undertakings about availability of telephone services, residential rentals and domestic local call charging, which eventually led to the inclusion of the price and service obligations in the Kiwi Share

- Ministers responsible for promoting the sale within the Government caucus: Ministers made the decision to include within the Kiwi Share obligations based on the price and service undertakings given by Telecom

- Treasury officials responsible for negotiating the sale: Treasury officials had misgivings about use of Kiwi Share provisions to achieve regulatory or social goals

- Commerce Ministry officials: the brief of the Ministry of Commerce was to advise on regulatory issues relating to telecommunications, and in this capacity they provided some input into the discussions about the Kiwi Share

Steps Taken to Implement the Kiwi Share

The Kiwi Share was not extensively negotiated between the Crown and Telecom. Once it was decided what its key features would be - to place limitations on strategic shareholdings and to implement the price and service undertakings provided by Telecom- officials and Telecom agreed on a draft which would implement those intentions. That draft was included in the Articles of Association of Telecom.

DESCRIPTION OF THE KIWI SHARE

Nature of the Kiwi Share

A Kiwi Share (known internationally as a golden share) is essentially a commercial mechanism in that it operates through the basic commercial document of the company, its Articles of Association (now company constitution). A Kiwi Share is therefore most appropriate when it relates to matters normally covered by the Articles, such as share ownership. The Telecom Kiwi Share went further than this, setting out some price and service obligations for the company.

The Kiwi Share provided a way for the Crown to keep control over specified aspects of Telecom's operations and ownership structure following the sale of the company. This was achieved through creation of a preference share which gave the Kiwi Shareholder (the Minister of Finance) special powers which were entrenched in Telecom's Articles of Association prior to the sale. The Kiwi Shareholder is entitled to convert the Kiwi Share into a single ordinary share in Telecom, in which case the special rights in the Kiwi Share would come to an end.

Kiwi Share Obligations

The Kiwi Share has two key features:

- limitations on shareholdings
- price and service obligations

1.

Limitations on Shareholdings
This provision gave the Crown control over the holding of strategic stakes in Telecom. The Kiwi Share states that no person shall have a "relevant interest" in 10% or more of the voting shares of Telecom without the written approval of the Kiwi Shareholder and the Board. In addition, no person other than a New Zealand National shall have a "relevant interest" of more than 49.9% without the approval of the Kiwi Shareholder.

2.

Price and Service Obligations
The Kiwi Share provides that, in relation to the provision of telephone services, Telecom shall observe the following general principles:

a Local Call Charging: A local free calling option will be maintained for all residential customers. Telecom may, however, develop optional tariff packages which entail local call charges for those who elect to take them, as an alternative.

b Price Movement: The standard residential rental will not be increased in real terms provided the overall profitability of the subsidiary companies providing the ordinary residential telephone service is not unreasonably impaired.

c Standard Prices and Availability: The line rental for residential users in rural areas will be no higher than the standard residential rental, and Telecom will continue to make residential telephone services widely available.

Enforcement

The provisions are intended for the most part to be self-enforcing and to require little monitoring by the Kiwi Shareholder.

The principal enforcement mechanism for the limitations on shareholdings is a power of sale where the limitations on holding of "relevant interests" has been exceeded. The process is that the shareholder first has an opportunity to dispose of the "affected shares". If no disposal is made, the Board can arrange for the sale of all or some of the "affected shares". If the Board does not exercise this power, the Kiwi Shareholder is entitled to exercise the powers of the Board.

No specific enforcement mechanism was set out for the residential service obligations. It was anticipated that the company and its shareholders would seek to cooperate for public relations reasons, both in the sense of conveying a positive image to customers and to avoid public outcry, which could lead to pressure on the Government to use the regulatory powers at its disposal (under the Commerce Act or by the threat of regulating). Legal opinions also indicated that remedies would be available through the Courts to enforce the Kiwi Share obligations.

RISKS AND DIFFICULTIES WITH KIWI SHARE PROVISIONS

Because the Kiwi Share spelled out explicitly what powers the Crown may exercise, prospective buyers were able to assess the risk this entails and reflect that assessment in the purchase price offered. Where the provisions are not tightly defined, there is a risk that potential buyers will reduce the price they would offer for State assets.

A tightly defined Kiwi Share, however, will almost inevitably be a static instrument, which may not sit well with the dynamic conditions in the firm and the market created by increased competition. This effect will tend to compound as the market develops.

To the extent the obligations signal an intention to interfere in the commercial affairs of the company, they blur the distinction which governments normally seek to maintain between their regulatory responsibilities and commercial objectives. Because Kiwi Share obligations typically apply to only one company and not to all participants in the market, they can also be discriminatory, and this can cause difficulties for entrants to the market as well as the incumbent. An instance of this may be the recent interconnection negotiations, in which Telecom argued new entrants should have to pay an access levy reflecting the price to Telecom of the Kiwi Share obligations.

The risks of a Kiwi Share for the purchaser of a Crown-owned company are:

- the potential for future Governments to seek to renegotiate provisions of the Kiwi Share on a basis more favourable to the Crown or more onerous to the company

- the possibility of mis-pricing of the Kiwi Share obligations, for example where experience differs from key assumptions; and/or

- the provisions create unintended restrictions on the company's activities

The risks of the Kiwi Share for the Crown are that Kiwi Share provisions:

- signal the Crown's intention to maintain a role in the company, and may cause buyers to discount their offers for the company

- adversely impact on the development of an efficient telecommunications market, for example by distorting pricing and investment decisions or by permitting excessive leeway in exploiting monopoly characteristics in the market

- be difficult to change or dispense with as circumstances change

- create a precedent encouraging interest groups to lobby for Kiwi Shares in future asset sales, which could reduce the possibility to achieve "clean" sales

EXPERIENCE WITH THE KIWI SHARE

The experience with the Kiwi Share has generally been positive. The inclusion of the Kiwi Share was an important factor enabling the sale of Telecom. The price paid for Telecom may have reflected the buyers' assessment of the risks attached to the Kiwi Share but, at $4.25 billion, the sale price was still considerably above market expectations.

Telecom has complied voluntarily with the Kiwi Share obligations since they were put in place in 1990. The Kiwi Share has required little monitoring or involvement by the Kiwi Shareholder on behalf of the Crown.

On the downside, the Kiwi Share has been controversial with companies trying to enter the telecommunications market to compete with Telecom. It created difficulties for the companies in interconnection negotiations with Telecom because Telecom sought to insist the companies pay an "access levy" reflecting the cost to Telecom of the Kiwi Share obligations. These difficulties, together with concerns about the efficiency implications and the opinion that the Kiwi Share in any event provides too much leeway for Telecom to exploit its market dominance in some sectors, have led other telecommunications companies to argue that the Telecom Kiwi Share should be discarded.

CONCLUSIONS

A

Lessons Learned

- Kiwi Share provisions can be useful in gaining a consensus in favour of a sale where there are concerns about matters such as ownership of the asset and price and service obligations for the relevant Crown-owned company

- Where Kiwi Share provisions are tightly defined they should not diminish the price for an asset materially

- The use of Kiwi Share provisions to achieve other than commercial ends can have implications for the Crown's regulatory goals, such as the efficient development of markets or sectors of markets

- It can prove difficult to amend or dispense with Kiwi Share provisions once they are put in place

B

Applicability to Other Projects or Sectors of the Economy

- As a commercial mechanism, a Kiwi Share will prove most useful and will have least cost where there is a need to control some commercial aspect following the sale of an asset - such as setting limitations on shareholdings

- Kiwi Share provisions are not ideal to advance regulatory goals because such provisions:

    - can lead potential buyers to discount the sale price they might offer for Crown-owned companies, particularly if the provisions are not tightly drafted

    - tend to blur the distinctions governments normally seek to maintain between their regulatory responsibilities and their commercial objectives

    - can have an adverse impact on efficiency, for example by distorting pricing and investment decisions

    - are primarily a commercial mechanism and therefore are less transparent than most regulatory instruments, tend to apply to only one participant in a market, and may be difficult to enforce

    - can prove difficult to change or dispense with as circumstances change

- The rationale for use of Kiwi Shares must be clearly made out in each case and the terms of Kiwi Shares should be tightly defined where they are employed

C

Improvements to the Kiwi Share Methodology

- It would be helpful for Kiwi Shares to include a "sunset clause" or at the least to contemplate a period after which their continuation could be reviewed

D

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OPPORTUNITIES FOR "GREEN" BEST PRACTICES:

ASIA PACIFIC INFRASTRUCTURE PROJECTS

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OPPORTUNITIES FOR "GREEN" BEST PRACTICES: ASIA PACIFIC INFRASTRUCTURE PROJECTS

EXECUTIVE SUMMARY

According to World Bank estimates, over the next decade countries in East Asia alone will need to invest up to $2.5 trillion in infrastructure development. This includes some $493 billion in power projects, $256 billion in telecommunications, $607 billion in transportation, and $153 billion in water and sanitation. All of these projects are bound to have substantial environmental impacts, especially when coupled with the industrial, commercial and residential development which they will foster and underpin.

The essence of the concept of "sustainable development" is action to build environmental considerations into each stage of economic and social decision processes. Such actions can avoid or reduce "downstream" costs of human activities, including infrastructure development, and preserve the natural environment for future generations.

Recent learning about how to undertake "green" approaches to capital projects indicates that there are vast opportunities to improve both the environmental performance of infrastructure and to reduce both short and long-term costs through pollution prevention strategies applied to project conception, design, construction and operation.

In more specific terms, "green" design, "green" construction, and "green" operations best practices can be applied to each of the themes of the APEC Roundtable on Best Practices in Infrastructure Development:

- *Infrastructure Risk Minimization* can be fostered by designing out potential environmental liabilities, by managing project construction processes in ways that enhance the health and safety of the public within the radius of development, and by reducing the production of toxic and hazardous substances in the operation of infrastructure

- A *Supportive Policy Environment* can be offered more assuredly through application of "green" capital project principles, reducing sovereign risks associated with clean-up and other environmental liabilities, and avoiding uncertainties and delays to the private sector caused by lengthy and contentious environmental assessment procedures. Financing from international financial institutions such as the Asian Development Bank is increasingly contingent on adequate provision for environmental impacts of projects

- *Beneficial Institutional Structures and Regulatory Regimes* can likewise be secured through public sector decision processes which factor-in benefits and increase transparency to the local population from the outset, and ensure the environmental as well as economic viability of projects over the long term. The prevention strategy of project conception, design, construction and operation leads naturally to a minimum amount of post hoc regulation and to greater simplicity of expectations of bidders and bid evaluation

- *Effective Communications Between Public and Private Sectors* is an essential aspect of all "green" design, construction, and operation concepts, since the assumption is that the

private sector will carry out the bulk of implementation work using engineering principles and best practices which reflect continuous dialogue about economic, political, social, and environmental needs and requirements

DETAILED DESCRIPTION OF CASE STUDY

Context

According to World Bank estimates, over the next decade countries in East Asia alone will need to invest up to $2.5 trillion in infrastructure development. This includes some $493 billion in power projects, $256 billion in telecommunications, $607 billion in transportation, and $153 billion in water and sanitation. All of these projects are bound to have substantial environmental impacts, especially when coupled with the industrial, commercial and residential development which they will foster and underpin.

Power projects often involve either flooding of substantial land areas or production of air pollutants such as sulphur dioxide and nitrogen dioxide as stationary generating plants consume fuel to produce electricity. Alternatively, nuclear generation systems require long-term provisions for storage of radio-active wastes and significant investments in plant safety and security systems. Environmental considerations in developing power generation may lead to selection of more efficient production and transmission systems, consumer demand management initiatives to complement new supply, use of lower-emission fuels such as natural gas, and substitution of alternative energy sources for conventional fossil fuel or nuclear sources where feasible.

New telecommunication lines may require tunnelling dedication of rights of way across large tracts of land, construction of towers in wilderness areas, and substantial production of toxic substances associated with terminals and lines. Environmental factors may lead to alternative voice and data transmission systems, increased energy efficiency of user technologies, low waste technologies for terminals and lines, etc..

Transportation projects frequently open up substantial new areas to the full range of human activities as well as demanding both land and large supplies of energy and materials for construction and operation. Environment-friendly transport systems may include careful planning of routes and construction methods to minimize loss of habitat, provision for mass transit and alternative fuel vehicles, and substitution of communication for transportation where possible.

Water treatment and distribution and sanitation projects typically respond to the needs of urban populations for clean water supplies and pollution control. They both require substantial supplies of toxic chemicals like chlorine, consume substantial energy in operation, and produce large amounts of byproducts like sludge. Consideration of environmental factors may result in low-energy treatment systems, autonomous community servicing systems, chlorine-free disinfection, use of sludge for fuel, and various recycling options as well as demand management technologies for water and water-borne waste.

Objectives and Rationale of Approach

The construction of government-sponsored facilities and infrastructure such as airports, national highway systems, and marine ports requires large quantities of energy, materials, and substantial changes to natural habitats every year. The extraction, transformation, use and disposal of materials such as cement, steel, and petrochemical products have environmental costs, including loss of species and breeding grounds, resource depletion, air pollution, water pollution and solid waste generation.

The essence of "sustainable development" is action to build environmental considerations into each stage of economic and social decision processes so that increased "downstream" costs of human activities, including infrastructure development, are avoided, and the natural environment is preserved for future generations.

Substantial opportunities exist for reducing the environmental *and* economic costs of government infrastructure by incorporating environmental factors into the early stages of project design, as well as by adopting a variety of best practices during construction, commissioning and operation.

Actions to construct "green" capital projects already have a substantial track record in many countries in the form of "environmental assessment processes". For example, energy generation, highway, airport, and major urban development projects are considered from the standpoint of how they may transform wildlife areas, alter local or regional micro-climates, or cause pollution of air, water and soil within and around the development site.

Typically, these assessments then result in different proposals for mitigating the impact of the projects, such as by building on less fragile portions of the site, leaving reasonable amounts of green space, and installing appropriate pollution control equipment.

The problem posed by environmental assessment processes is that they are most often carried out *after a capital project has already been well defined*, and fully launched. This tends to place the environmental considerations into conflict with economic and government operations considerations. Moreover, because they come into play late in the process, environmental considerations may be confined to reducing the worst effects of, rather than complementing, the project reviewed.

"Green" design and construction principles can be adopted to anticipate the results of environmental assessments by minimizing damage to the natural environment on which the capital works rest, and which surround them. Associated "life-cycle" approaches can be applied to selecting and installing technologies and design features to increase energy and water efficiency in buildings and facilities. In addition, there are important opportunities for pollution prevention through a variety of waste minimization practices during construction itself.

Recognizing the opportunities for action to improve the environment through both long-term investment in facilities and infrastructure and day-to-day actions, OECD Ministers of Environment agreed in February, 1996 on certain principles to guide all of their efforts:

- that environmental concerns should be integrated with operational, financial, safety, health, economic development, and other relevant considerations in government decision-making about the nature and scope of operations

- that, in their operations, national governments should meet or exceed the letter and spirit of their own environmental laws, and where appropriate, international standards
- that pollution prevention and sound environmental management principles should be applied at each stage of government facilities and operations, from initial design to termination and close-out, the "cradle-to-grave" philosophy

- that cost-benefit analysis and results should apply to the selection of priorities for investment, behavioral incentives and disincentives, and technologies for achieving improved performance

These principles indicate the scope of efforts to incorporate environmental considerations into public sector decision-making, and suggest how to implement the results of considering the environment at each stage of the life-cycle of public sector projects.

Key Participants

The APEC Roundtable represents a major effort to engage all of the key players in infrastructure development in productive and practical dialogue about how best to proceed in the future.

Those charged with meeting the pressing needs of growing populations and rapidly expanding industries for power supplies, telecommunications, transport and/or clean water supplies may be impatient with lengthy and complex approaches to preventative environmental management, and much prefer to have feasible best practices spelled out for them. Indeed, researchers are developing new types of decision-support software which will increase the speed and accuracy of considering environmental factors while decisions are being made.

Government procurement agencies for major capital projects have a vital role to play in defining the performance requirements of such projects in terms of output, transmission speeds, volumes of water to be supplied, etc. Often government procurement agencies also demand specific technologies, in order to favour local suppliers of goods and services and to generate employment.

Ultimately, procurement agencies establish the scope of environmental considerations which can successfully be accommodated by would-be suppliers, whether public works departments of government or private sector contractors.

Investors in private sector and public sector infrastructure projects combine a short-term concern about profitability and viability of the customer base with much longer-term considerations such as rates of deterioration of capital facilities and equipment and environmental liabilities.

Typically, they will have the broadest view of how the infrastructure should perform from both economic and environmental perspectives. In particular, their concern about the attitudes of insurers has recently caused a major rethinking of environmental aspects of capital projects in many developed countries.

Urban and system planners shape the technologies used to install, maintain and upgrade infrastructure by applying specific planning criteria and standards, determining how peak loads may be accommodated, linking proposed new infrastructure with existing systems, etc. They may also help determine the economics of different infrastructure solutions by establishing standards of service to customers, performance requirements, and "bridging" requirements as new facilities are constructed and commissioned.

"Green" design approaches can most appropriately start with urban and system planners.

Consulting engineers seek to develop optimal solutions to meet the objectives developed by procurement agencies, investors, and system planners, selecting different routes, technologies, and removal or modifications to land areas to accommodate the infrastructure works.

Consulting engineers are the key leverage point for introduction of more environmentally-friendly technologies and system management solutions as a response to potential environmental problems. They also often determine the routes of infrastructure and related facilities in detail, permitting them to apply ecological land-use management principles in their work.

Materials and equipment suppliers respond on a competitive basis to all of the performance standards generated by the above players.

They can offer more energy-efficient, less wasteful machinery and equipment for infrastructure installations, and can also adopt "Design for Environment", product life cycle and other principles and practices in manufacturing materials and components such as pipe, pumps, relay stations, asphalt, and transmission cable.

Construction companies which actually undertake new capital works projects and renovate or upgrade existing infrastructure determine both the amount of energy and materials to be consumed in the construction process, as well as the quality and durability of work put in place.

Construction firms can reduce the environmental impact of their own activities through sound construction practices, proper recycling and disposal of overburden and waste construction materials, use of energy-efficient machinery and equipment, etc..

System managers and operators determine to a large degree the consumption of energy and materials in the ongoing operations of capital facilities through their day-to-day management practices. They often select methods of waste disposal, determine what types of cleaning and maintenance products will be used, and schedule repair and upkeep activities.

Managers and operators can establish the environmental performance of infrastructure and related facilities in many different ways, and thus generate the overall life-time environmental profile of the given capital project. Best practices for infrastructure management and maintenance are essential to sound environmental performance of these systems as a whole.

Users of infrastructure and members of the surrounding community have a large impact on the day-to-day performance of infrastructure systems through their behaviour and patterns of use in particular. They can determine the degree to which the system can be managed well or becomes overloaded and unable to cope. They also help determine the rate of deterioration and the need for repair and replacement.

Residents of the surrounding areas often provide labour and materials for construction and ongoing operations, and shape the political climate within which infrastructure projects are conceived, designed, built, and operated over the long term. They may limit the choice of technologies used and/or the extent to which expansion can be undertaken.

Engagement of both users and members of the surrounding community, who are often the same people, is essential to achieve "green" operations over the long term. It is also a vital part of all the other stages in the life cycle of infrastructure projects.

Steps taken to implement the approach

Principles of "Green" Design and Construction

Principles of sustainable or "green" design and construction are sufficiently broad and flexible to adapt to evolving technologies and are easy to apply in evaluating alternatives. As just noted, "green" design and construction rely on planners, construction contractors and system managers and operators, all of whom contribute to a sustainable environment throughout the life cycle of the infrastructure and related facilities.

The objective of "green" design and construction can be achieved by minimizing the materials required, reusing materials if at all feasible, and using recycled or renewable materials. As well, players at each stage can ensure that the extraction of materials used did not harm the environment, that toxics were not generated in materials creation nor are they potential contributors to indoor pollution, and that the design of the materials layout and details is of high quality.

In operational terms, the principles of "green" design and construction have the following implications:

- *Conserve*: This leads to the use of passive measures to provide heating, cooling, ventilation, and lighting for structures associated with infrastructure in order to minimize energy consumption. It also leads to the use in infrastructure projects of durable materials that have long lifetimes and require low maintenance

- *Reuse*: Reuse contrasts to recycling in that reused items are simply used intact with minimal reprocessing while recycled items are in essence reduced to raw materials and used in new products. Supplying items such as wire, pipes, bolsters and bricks that can be reused in new construction and renovation has proven to be profitable

- *Recycle/Renewable*: This applies to energy where renewable sources such as solar and wind power are available for use; to materials such as wood, which can be supplied from certified sustainable forests; and to a wide range of other products and materials with recycled or waste content

-
- *Protect Nature*: Impacts of materials acquisition practices should be scrutinized i.e., in logging, mining, and energy consumption, to minimize environmental effects

- *Non-Toxics*: The products used in the built environment and its construction include a wide variety of hazardous and toxic substances that ultimately threaten human health and well-being. Clearly toxic materials must be handled with care and eliminated to the greatest extent possible. One approach is to consider the ultimate elimination of these materials except in cases where the manufacturers can keep them in a closed system, such as mercury in control systems, or fluorescent light bulbs

- *Economics*: Life Cycle Costing addresses the combined operational and maintenance costs of infrastructure and related facilities over their lifetime, expressed as a single figure. Calculations of such costs raises the issue of the "internalization" of external costs, for example, by changes to tax codes that could tax pollution rather than production

- *Quality*: The notion of quality includes excellence in design of infrastructure and related facilities as an absolutely essential component of "green" design and construction. Capital works that are not valued by their occupants will, by their very nature, fall into disuse, disrepair, and disorder, contributing to the antithesis of what sustainability strives to achieve. Selection of materials, energy systems, design of passive energy and lighting systems, and other design choices rest on significant analysis of user needs and occupancy patterns. Among other things, designers seek to lay out pleasing public spaces, such as airports, harbour facilities, and highway rest facilities, and to help users to occupy them in a functional and pleasurable manner

Instances of How the Approach Has Been Applied to Infrastructure Projects

Environmental Policy of the Asian Development Bank

On the international front, a strategic point of influence for "green" design and construction strategies is the requirement by international financial institutions that capital projects meet sustainable development criteria.

In this regard, the *Asian Development Bank* sees the essence of its work as translating the concept of "sustainable development" into reality. Through policy dialogue with senior government officials, the Bank gives advice on appropriate policy, institutional and market reforms to achieve environmentally sustainable development, and is working to improve the quality of project sustainability reports. Compared to other multilateral development banks, the Bank claims to have sound policy and a fairly comprehensive set of policies and guidelines pertaining to entire project life cycles.

The Asian Development Bank extends analytical or technical support focused on capacity building or strengthening of environmental institutions and units in key line agencies. Through its environmental policy, procedures and requirements, it ensures that projects it funds are environmentally sound.

Life Cycle Analysis of Building Materials and Buildings

A few months of facility construction can consume more resources and generate more pollution than a decade of operation. Therefore, material choices and other design strategies need to incorporate more than the cost, availability and conventional performance criteria.

Life Cycle Assessment is a multi-criterion assessment protocol for evaluating products, processes and activities in a holistic and balanced framework. There are a growing number of manuals, data bases, and computer decision-support systems which assist researchers and designers in carrying out such analysis, which is being most widely applied in both the construction and the automotive sectors today.

"Green" Design and Construction Practices

"Green" design asks that governments look at all phases of capital projects to insure that environmental principles are adhered to by all parties during the life cycle: developers, planners, architects, engineers, builders, and operators.

Designers can ensure materials used in construction are recyclable, that products are designed for disassembly and recycling, and that buildings can be recycled at the end of their useful lives. The design stage should also lay the foundation for future stages so that during construction and operation the excellent environmental intent of the space is able to be maintained.

Because consulting engineers often have primary control over the specifications, they can control processes to assist contractors in better waste management practices. This also insures that if some additional costs are incurred, the contractor will have the ability to build the costs into his or her bid.

Design for Efficient Energy and Water Use in Infrastructure

Several considerations reveal a need for a change in the practices of water and energy use, moving toward conservation of both.

In relation to water, factors at work include: declining water quality; increasing cost of municipal services; and the declining condition and capacity of municipal sewage and water services.

Though buildings associated with infrastructure projects are not great consumers of potable water, there are substantial wastes in most buildings through automatic toilet flushing systems, etc. Fixtures which conserve water are a simple design solution which will reduce the problem at source. Supplying hot water over long distances is another potential waste of water, through leakages, which also wastes energy.

Design solutions such as insulation or point-of-use heating which reduce the problems at source are readily available.

Every product used in every stage of the construction process requires energy for its creation, transportation, use (and reuse) and finally, disposal. Greenhouse gas emissions which

contribute to the depletion of the ozone layer and to global warming require a reconsideration of energy consumption, along with more local considerations of smog and acid rain.

The design stage needs to incorporate the environmental costs of the types and amounts of energy to be used over the lifetime of the infrastructure and related facilities. In design, two main strategies can be used to address both depletion of non-renewable energy resources and the environmental costs of energy use.

The first is conservation. A facility can be designed to inherently use less energy: more insulation, better sealing, sitting in shelter from the wind, more efficient lighting and HVAC (heating, ventilation, air-conditioning) systems. Many conservation features of energy-efficient facilities actually save on up-front capital costs of new construction by reducing the cost of mechanical equipment required to handle reduced loads.

The second design strategy is the use of energy from renewable resources, such as solar, wind, geothermal or hydro energy, particularly to replace the use of the "dirtier" fuels. Passive solar heating, daylight-hour controls of electrical lighting, and other measures that will minimize the purchase of commercial energy and the environmental damage that results.

Evaluation of How Well the Approach Has Met Its Objectives

As a strategy for avoiding much or all of the environmental assessment process, "green" design, construction, and facility management *has yet to be tried* on any substantial scale in either public or private sectors.

However, "green" design and construction approaches are widely transferable from public sector infrastructure projects to the private sector and create opportunities for project design and management companies. As well, construction companies applying green design and construction principles may find wider markets for their new technologies and approaches in the private sector, which is always looking for ways to reduce operating costs.

As for "green" operations, a variety of organizations around the world are well on their way to changing their behaviour in order to limit environmental impacts and improve environmental performance. These include Environment Canada itself, the large telecommunications company Bell Canada, the Commission of the European Union, the Government of the United Kingdom, the U.S. Department of Defense, and many others.

CONCLUSIONS

Lessons Learned from the Case Study

"Green design", "green construction", and "green operations" best practices can be applied to each of the themes of the APEC Roundtable on Best Practices in Infrastructure Development:

- *Infrastructure Risk Minimization* can be fostered by designing out potential environmental liabilities, by managing project construction processes in ways that enhance the health and safety of the public within the radius of development, and by

reducing the production of toxic and hazardous substances in the operation of infrastructure

- A *Supportive Policy Environment* can be offered more assuredly through application of "green" capital project principles, reducing sovereign risks associated with clean-up and other environmental liabilities, and avoiding uncertainties and delays to the private sector caused by lengthy and contentious environmental assessment procedures. Financing from international financial institutions such as the Asian Development Bank is increasingly contingent on adequate provision for environmental impacts of projects

- *Beneficial Institutional Structures and Regulatory Regimes* can likewise be secured through public sector decision processes which factor-in benefits and increase transparency to the local population from the outset, and ensure the environmental as well as economic viability of projects over the long term. The prevention strategy of project conception, design, construction and operation leads naturally to a minimum amount of post hoc regulation and to greater simplicity of expectations of bidders and bid evaluation

- *Effective Communications Between Public and Private Sectors* is an essential aspect of all "green" design, construction, and operation concepts, since the assumption is that the private sector will carry out the bulk of implementation work using engineering principles and best practices which reflect continuous dialogue about economic, political, social, and environmental needs and requirements

Applicability of Best Practices More Widely

While there is substantial experience with individual techniques of "green" design, construction and operations management best practices applied to specific facilities and infrastructure projects, there is little system-wide experience at this stage, particularly in Asia-Pacific countries. A major effort to develop best practices further through field testing is required, followed by dissemination and training to ensure that they become part of the management culture of all key players.

Recommended Improvements to Best Practices Described

The key "improvement" required in applying "green" design, construction and day-to-day infrastructure management best practices is to use and test them in a sufficiently wide variety of circumstances that they can become second nature to all of those involved. From the questions asked of roundtable participants, there is some distance to go as yet in achieving this kind of situation.

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Annex I

PRESENTATION BY

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TO THE APEC ROUNDTABLE ON
"BEST PRACTICES" IN INFRASTRUCTURE DEVELOPMENT

Good Evening

I'd like to start my talk tonight by thanking Mike Mullen and our Seattle hosts for the opportunity to talk about my favorite subject - making infrastructure projects happen**.** Although I am an engineer by training and serve on the board of the largest U.S. infrastructure engineering firm, I assure you my remarks will have less to do with the design of a highway or airport or transmission system and more with the design of a framework which lets those projects happen.

As an engineer, however, I would be lost without a structured approach to solving a problem, so let me start by telling you what I hope to cover over the next 30 minutes or so.

Overview

Briefly I will talk about:

- Parsons Brinckerhoff's (PB) role in Asian infrastructure

- I will review the case for infrastructure development and why we have to improve the delivery process

- I'll look at risks and risk allocation and provide some thoughts from my perspective that will hopefully be consistent with your own views over the next several days

- I'll review three infrastructure development case histories and highlight some of the issues I will raise with respect to risk and risk allocation

- And finally, I'll provide some suggestions for accelerating infrastructure development. Hopefully, I'll put some new or different ideas on the table for each economy to consider

Parsons Brinckerhoff's role in Asian Infrastructure

Let me start with a brief overview of PB's involvement in Asian infrastructure, not so much as a commercial for PB, but rather to establish a framework for some of the observations I will be making:

First, who is Parsons Brinckerhoff?

- PB was founded in 1885, and is

- the oldest U.S. engineering firm, we are also employee owned
- our work in Asia goes back to the 1890s

- we are ranked #1 in transportation, and

- ranked #10 in buildings
- largest building mechanical and electrical consultancy in Asia, and

- our work is primarily for Asian developers

- PB is ranked #10 overall on "Engineering News Record's" top designers list

- we have a global staff of 5000, with approximately 1000 in Asia

Second, let's look at some of the infrastructure and development projects we have had key roles on in Asia**.**

- Chep Lap Kok Airport

- where we have played multiple design roles

- HIT container terminal in HK

- where we provided mechanical/electrical services

- Hong Kong MRT

- perhaps the best infrastructure development success story in Asia
- profits from associated developments offset a significant portion of RR construction costs
- PB has been involved in multiple projects here since our early work on the tunnel ventilation system

- Suntec City in Singapore

- the largest commercial development project in Singapore where we serve as mechanical/electrical consultants

- Singapore Metro

- where we have been involved in multiple projects including, most recently, the Woodlands extension

- Taipei Rapid Transit System

- 54 mile heavy rail transit system where we lead the design and management effort

- Transmission Line Crossing of Java Straits

- in progress
- note the height of the towers - each is as tall as the Eiffel Tower

- State Railway Thailand

- technical advisor on the Hopewell project
- Yangpu Power Plant in China

- the Yangpu development, being undertaken under a 77-year lease, represents an interesting development approach which, while not broadly applicable, may satisfy certain development needs in Asia

My third point on PB addresses our role at the forefront of infrastructure development in Asia. Active projects today include a mix of roads, ports, rail and power systems. This is just a partial list.

Many of my observations will be based on our experiences on these projects:

Case for Infrastructure Development

Let me turn now to the case for infrastructure development and why we have to improve the delivery process. While this is not a group that requires a lot of convincing about the importance to the Asia-Pacific region of efficient infrastructure development, I do believe it is worth a minute to look back at one of the points of the Osaka Action Agenda

Economic Infrastructure Common Policy Concept

The pace of economic growth in the Asia-Pacific region depends on the improvement of economic infrastructure. APEC economies will seek to accelerate infrastructure improvement, facilitating investment in infrastructure and encouraging business/private sector involvement.

This is why we are here

High infrastructure development rates and sustainable, high economic growth rates go hand in hand. Infrastructure development not only provides the foundation for sustainable economic development but also provides the framework for any economy - developed or developing - to more efficiently organize its labor resources; marshall the capital investment required for a strong construction sector; and develop the administrative, regulatory and legal framework for further private sector development and investment. Infrastructure development is an economy's primary tool to restructure itself for a new competitive environment

But, improvements in the infrastructure development and delivery process are necessary, not just on an economy-by-economy basis, but equally importantly on a regional basis, or increasingly we will see:

- limits to economic growth
- limits on access to the required capital
- increased risk of poisoning the well for future development

Let's turn now to some of the risks infrastructure development in Asia faces and how those risks may be best allocated

Risk and Risk Allocation

I'd like to look at risk from two different viewpoints:

- a conventional one
- an unconventional one

First, the unconventional view - simply stated, I believe risks can be divided into two categories:

- risks from the actions we take
- risks from the actions we fail to take (risk of inaction if you will)

The first category lends itself readily to the more conventional perception of risk which I'll discuss in a minute. The second category - the risk of inaction - is more interesting and possibly the more severe level of risk we face in infrastructure development in the Asia-Pacific region. Each economy must quantify the impact of deferring infrastructure development and balance it against the more conventional risks it is being asked to consider in conjunction with an infrastructure development program

It is only when both the unconventional risks and the conventional risks are placed on the same scale that one can put in perspective the risks to an economy as a result of moving forward with a specific infrastructure development program

Which is the greater risk to an economy - measurable, lower economic development rates or the potential impacts of guarantees associated with risks outside a developer's control?

We must not lose sight of the Osaka Action Agenda which calls on APEC economies to facilitate investment in infrastructure and encourage business and private sector involvement. I would suggest that the pools of already raised equity capital that currently sit on the sidelines in Asia looking for viable projects - viable from the financial managers perspective - suggests that this balance has not yet been achieved

Economies must move better towards the balance point between the risks associated with inaction and those associated with active facilitation of infrastructure development. The Osaka Action Agenda requires concerted positive steps that facilitate infrastructure development

Let me turn now to a more conventional view of risk

The conventional perception of risk divides it into three types reflecting our degree of understanding of each risk. These are:

- known knowns - simply, the risks we know about and understand
- known unknowns - the risks we know about but do not yet fully understand
- unknown unknowns - perhaps best described (in deference to our host city) as "clueless in Seattle"

The conventional perception of risk also divides it into several dimensions which may include:

- political
- construction completion
- operating
- financial
- legal
- market and revenue

or some other organizing principal

In this more conventional perception of risk, risk allocation must be driven by both its dimension (political, construction, etc.) and the degree of understanding we have regarding the risk. A primary focus in risk allocation must be development of a shared understanding of each of these risks a project will face as well as a recognition that risk (and reward) must be shared

In evaluating risk sharing approaches, all parties to an infrastructure development project must be included - government, at all appropriate levels; project sponsors; concession company; contractor and suppliers; project lenders; insurers and performance guarantors. Any other approach will result in risks unacceptable to one or more of these entities

In evaluating risks and allocating them, my experience suggests that there are several risk related factors that are often not adequately considered. These include:

- **scale risk** - the bigger the project, the bigger the prize. But also the fewer the players. Market competition is constrained and risk concentrated. Project delays and under-performance affect the entire capital structure of an investor rather than if spread over two or three separate projects with the same total cost but with independent risks. The result - higher total risk and higher required risk-weighted returns

- **experience (or lack of) risk** - in an emerging capital market. One bad experience can poison the well for further development for some time to come. A market can develop a reputation which impacts the investment climate

  Similarly, the first projects have no experience to point to, thus the perception of risk - the **unknown, unknowns**, are higher

  We must remember that capital flow is more sensitive to lessons learned than economies

  Global cash flows can and will be highly reactive to failure of the APEC economies to implement facilitating measures to increase investments in infrastructure development

- **infrastructure enhanced development value (a reward)** - the failure to recognize the size and scope of infrastructure value-added is perhaps one of the greatest failings of economies worldwide

Infrastructure's economic reach is not like an industrial project with well defined inputs and outputs that can have the boundaries of its impacts fenced off. Rather, by its very nature, it is a diffusive system, often linear, that does not lend itself to being "fenced in," and thus its economic impacts extend, by design, and by expectation well beyond the immediate project scope. This "value-added" is inadequately considered when the risks of inaction and action are weighed. Even more important, the steps to capture this "value-added" are often inadequately addressed, in my opinion

- **inadequate leverage risk** - I can argue that this is more a symptom of an inadequate risk allocation framework than a separable risk but for now let me ask you to consider this -

  If a project must be financed by higher priced equity only, is it by definition fundamentally flawed?

  I would suggest that an inability to attract non-recourse project debt will both drive up required equity returns as well as drive down the pool of equity which is willing to potentially invest in such projects

The results:

- higher cost infrastructure to each economy
- increased local perception of unacceptably high returns on investment
- fewer, and slower to develop, projects

The risks of inadequate leverage on infrastructure development projects is affecting the rate of development on a large number of infrastructure projects throughout the area, including many of those on which we are involved.

Each economy must assess its current situation in this regard, and, in my opinion, enter into a dialogue with traditional project lenders to better understand their current concerns. The investment framework necessary to facilitate appropriate project leverage must be developed or infrastructure development will continue to lag the needs of each economy

- **entry barrier risk** - let me just comment briefly on this - my concern here is not on the requirements with respect to local ownership and participation, or organization of the local infrastructure project business entity. These risks are not unique to the Asia-Pacific region and quite frankly manifest themselves to this date in the U.S. in the form of "Buy America" requirements, specified wage rates and various minority participation programs

  The entry barriers that concern me the most are those related to an inadequate or incomplete definition of the infrastructure project development framework. Specifically:

  - what is the approval process, and is an expedited approach possible for certain projects? Which ones?
  - what are the constraints on rates of return and how do we establish those at the earliest possible date - capital flows do not like surprises

- what are the constraints on competing facilities? Often the infrastructure master plan is incomplete, outdated or even more importantly, was developed when only publicly funded and provided infrastructure was envisioned. How must that master plan be modified to create the required investment framework for aggressive participation by the private sector in infrastructure development?

- **exit risks** - risk capital is impatient. There must be well defined exit strategies in a "reasonable" time frame. The absence of well defined exit strategies will further narrow the pool of capital available for project development and ultimately slow infrastructure development in the Asia-Pacific region. The solution for each economy will be different but I believe more focus must be put on creating the institutional framework for the development of sufficient capital markets and structures to facilitate exiting of projects

Infrastructure Development Case Histories

Let me turn briefly to three case histories to illustrate some of the points I have made:

Airport Railway

The airport railway is a 34 km infrastructure project that provides value-enhanced access to five sites along its route. It is a classic case of the economic value-added that infrastructure can provide. In this case, unlike in many other infrastructure development projects, mechanisms were put in place to capture, for the benefit of the infrastructure development project, much of the infrastructure value-added

PB was involved with the infrastructure project, as well as three of the five planned developments. The size of the sites and the scale of the planned developments give you a feel for the scale of the infrastructure value-added from this one project alone

I would call your attention to the fact that the infrastructure development project's economic success was not linked to a single revenue source or the success of a single real estate development project. Rather, it addressed scale risk by breaking the project into a series of endeavors with independent risk

Metro Manila Skyway

Metro Manila better links a key business district with its labor source in the suburbs. A key factor in this project moving forward was the existence of a well defined infrastructure development framework. The project was pre-identified as a government desired and government supported project. The rules of the game were well defined

The entry risks I described previously had been well addressed

Like the airport railway link, steps were taken to focus and capture the infrastructure value-added
A close look at the project also shows a staged development approach which will allow early project success to fuel later project stages

Chengdu-Mianyang Expressway

The Chengdu-Mianyang Expressway is an example of an infrastructure development project that will also provide good infrastructure value-added

However, in this case, capture of the significant value-added to the economy is not sufficiently well defined from a project developer's standpoint. Risk associated with unknown future competing facilities, whether real or perceived, is increased. Returns are totally linked to toll collection of one project

This project, however, together with four other similar projects may yet successfully happen by all being "bundled" to provide risk mitigation through a "portfolio" solution

With that comment let me turn to some suggestions for accelerating infrastructure development in the Asia-Pacific region

Suggestions for Accelerating Infrastructure Development

1. Facilitate portfolio-based risk mitigations - like the Chengdu-Mianyang Expressway project, look at bundling multiple projects together to spread the risk to capital from a single project event. Approaches can be as simple as the staged development approach the government of the Philippines outlined for the Manila Skyway or broader through the creation of multi-project development and operating entities like the Hong Kong MRT

   Increasingly the private sector is spreading the risk to capital from an event in a single economy by developing multi-economy based investment funds

   To fully open up capital flows both portfolio approaches must be more fully developed

2. Facilitate the flow of non-recourse project debt - high percentage equity participation in projects increases the cost of infrastructure development to each economy and indirectly increases the cost of the equity employed. The opportunity here is for each economy to consider a credit enhancement program. One such model may be the newly created state infrastructure banks recently created in the U.S. These, however, are not yet proven. Other models may consist of standby cash flow guarantees for interest payments in early years of a revenue generating project

   The role of the Asian Development Bank should be reexamined along the lines of a merchant bank focused on becoming a vehicle to facilitate development of market economies

   I would suggest that the cost of these credit facilities and their attendant risk are more than outweighed by the risk of inaction
3. Develop a framework for timely exit of expensive project development equity. The models here will certainly vary by economy but some suggestions I could make include:

- earlier focus on the developer's exit strategy. This will certainly focus discussions on risk allocation

- corporatization of multiple projects or portions of multiple projects and subsequent share sales on a single economy or regional basis. I believe a clear private sector role exists here in cooperation with the regional economies

4. Re-address infrastructure master planning from a modified framework involving multiple private sector financed projects. Incorporate existing or planned private sector financed infrastructure development projects. Use your master planning process to clarify, focus and capture the value-added from infrastructure development. My best example here is for a toll road - remember that the plan and assumptions made when it was to be a free facility are no longer valid when it is tolled

5. Link investment policy to the restructured master plan explicitly rather than implicitly. Simply stated, reduce the unknowns by building a comprehensive project development framework

   In doing this, each economy must carefully consider the risks of inaction as it sets its investment policy

   An appropriate risk balance point must be found

6. Create a pool of "developable" projects. I like to think of this as a project "store" where early project definition and pre-clearance work has been done and priority projects put on the shelf for "sale". These, of course, should be directly linked to the economy's revamped master plan

The benefits of this early investment are better defined (read lower risk) projects and the application of a system-wide perspective to infrastructure development

A second benefit is that projects necessary for optimum system performance can be prioritized and accelerated, and the risk of an unconnected and uncoordinated hodge podge of projects reduced

An example here is an increasing concern I have regarding the development of power generation facilities without the corresponding "system" investments in the transmission and distribution networks

These are just some ideas. The rest and probably the best are yet to come over the next several days. The challenge for each of us is to ensure that the linkage between efficient and effective infrastructure development and strong and continuing economic growth is placed center stage and accorded the priority which it demands

Together we must insure that the risks to the APEC economies from inaction are never realized

Annex II

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