

# **East Timor Power Sector Mission**

15 September – 17 October 2002

by

Hon David Butcher

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## 1. EXECUTIVE SUMMARY

In September 2002, the PMU (through the ADB) asked the Hon David Butcher to join a team of consultants from Hydro Tasmania (HT), then working in Dili, Timor Leste. The Government of the Republic Democratic of Timor Leste (RDTL) employs HT as technical advisers working to value the assets, review the tariffs and make institutional development solutions for Electricidade de Timor Leste (EDTL), the local power agency. HT provided Interim reports to the client in August 2002 and on 10 October, HT completed their final Valuation Report, in the field. The Client charged the Consultant with leading and supporting the HT team from September to October 2002 and with reviewing the viable management options for EDTL.

Following the 1999 Independence Referendum there was widespread violence and destruction in Timor Leste. With the restoration of order, the United Nations Transitional Administration in Timor Leste (UNTAET) managed to restore electricity supply in all of the major centers, including Dili, and in about half of the village-level power stations that existed previously. The donor community established a Trust Fund for East Timor to finance emergency reconstruction and recovery programs. The UNTAET requested the TFET to set up a fund for an Emergency Infrastructure Rehabilitation Project (EIRP) for infrastructure reconstruction in sectors including electric power.

Timor Leste became a sovereign nation on May 20 2002, and the UN handed administration of the power sector to the RDTL. The RDTL agreed on a transitional development matrix with the donors involved in financing its recurrent budget for three years. This includes a power sector, development matrix. The power sector matrix requires, among others, an immediate review of sector management and identification of the optimal management arrangements by September 2002. Donors agreed to make continuing budget subsidies for the power sector until 2004.

Efforts to build a sustainable power infrastructure or institutional framework have so far been unsuccessful. Though the generators at the Comoro power station were overhauled, the availability of free power in Dili has led to the demand outstripping the available capacity. Lack of maintenance has meant that Comoro's reliability and quality of supply is deteriorating fast. Privately owned and leased generators provide more than half of the electricity supplied in Dili and the proportion is increasing. Much of the distribution system is overloaded, weak, inefficient and prone to breakdown. Work is underway to restore power stations in about 30 rural villages. Local communities will manage these. In the larger District stations outside of Dili, power facilities have not been upgraded and supplies are intermittent.

Long-term measures are needed to restore a reasonable quality service. This is difficult as neither the UNTAET nor the EDTL has been successful in collecting money from customers to meet even recurrent power costs, including the cost of maintenance. In order to continue budget support, Donors expect the Government to determine and implement an effective strategy for resolving these issues. HT was hired to assist the RDTL address technical and institutional issues hampering improvements in the cost, quality and quantity of service.

Despite efforts to build management capacity and self-sufficiency, EDTL remains financially insolvent and cannot sustain operations with present resources. It lacks trained staff to carry out critical supervisory functions. In Dili, about half of the electricity consumers are receiving bills, but revenue collections have averaged only about 10% of the amount billed. EDTL spends all available funds on fuel and wages. So far Donor funds have covered the losses and but funds are running down rapidly. As there is no spending on capital improvement, difficulties with the system are likely to increase.

The ADB has assisted the Power Sector Steering Committee to prepare immediate and medium-term action program for the sector and suggested options for financing these. Additional short-term assistance to address a range of immediate needs, especially in revenue collection, is also available. Longer-term assistance is available from the United Nations Development Program (UNDP), which provides technical advisers in management and accounting positions and at Comoro Power Station.

While the UNTAET was in charge of Comoro, a management structure and a maintenance budget existed, the system ticked over, notwithstanding the absence of adequate revenue collection. Currently, no money is provided for a maintenance budget and the relatively new and untested EDTL is responsible for the power system. It has neither money, nor billing or collection system in place. Technical assistance created a billing system but failed in the broader issues of institutional development.

Hydro Tasmania filed their Reports in August and recommended a Management Contract as a way to address critical issues in the sector. The RDTL made policy decision in favor of a management contract on the 18 September, and since then the HT Team has focused on fleshing out that option. HT supplied preliminary draft contracts to the ADB during the week ending 28 September and during the week 4-10 October the whole HT team worked with the ADB October Mission to refine the drafts. In its October Mission report, the ADB provided a timetable allowing the management contractor to be mobilized in April and assume full control in July 2003.

By the conclusion of the consultant's Mission, the combination of the Policy Decision of 18 September and the availability of the draft Management Contract has created an opportunity for several positive solutions to come together. However, a number of serious risks remain:

- the Policy Decision has provided a good foundation on which to proceed, but some of the terminology in the statement is loose and capable of being used to support sub optimal solutions,
- the combination of the Policy Decision and the availability of the Management Contract draft have created an opportunity to make decisions, but some people see their positions of influence threatened and have incentives to derail the process,
- the Prime Minister and Finance Minister are overloaded and do not have the time or energy to focus on the potential to political disaster in the power sector,
- the absence of Minister of Transport Communications and Public Works in Portugal at this crucial time means that the initiative will remain in the Steering Committee that has not performed well in the past,
- some of the newly appointed middle managers in EDTL see opportunities in the future management structure, but many are worried for their personal situations,
- some influential people are using these worries to put pressure on the Minister to slow down the process, thereby securing their own positions,
- the Finance Ministry report that they are budgeting an extra US\$ 2 million a year for the power sector, but even this will not be enough if management does not improve and pre-paid meters are not installed,

- with the draft of a management contract on the table some donors have rekindled their interest in the sector and are interested in playing an important part in restoring Comoro, but nothing has yet been decided and the three people who can make decisions are going to be out of the country during the run up to the ADB mission timetable,
- risk of wholesale failure of the power system in Dili remains high and while the ADB is not responsible for this, it is regarded as the lead agency in the power sector and this impression is reasonable from a casual reading of the claims on the ADB web site, and
- the Country Manager for the World Bank and the Resident Representative of the ADB have been fully briefed on the issues in the power sector and are keen to help. However, neither official has a power sector background. This may hamper their effectiveness at this crucial stage.

The Consultant reports that the important issue now is to sustain this momentum and makes the following recommendations.

- the ADB should urgently seek the help of the UN to ensure that all its resident advisers are fully briefed on developments and committed to making the management contract work,
- to head off the staff concerns, the ADB should support an amendment to the draft management contract so that it will contain a clause requiring the contractor to hire all current staff and guarantee their salaries for at least one year,
- there may be a need for temporary augmentation of the ADB and World Bank presence on the ground to ensure that there are properly briefed energy experts to work alongside the resident officers and the government while the management contract is put in place,
- if the additional donor support for the power sector is not forthcoming or is delayed, there should be a fallback position whereby by emergency loan or grant money is available to sustain service in Dili,
- there should be a review of the material on the ADB web site to ensure that it emphasizes properly the role the ADB is playing

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**3. APPRECIATION**

During the course of this assignment many people, too numerous to mention, have played important roles in making the Consultant’s work possible. However, particular mention must be made of the strong support and encouragement received at all times from the Minister of Transport Communications and Public Works, Ovidio Amaral, whose close interest and personal commitment have been outstanding. In addition, Richard Phelps of the EIRP office has been a fund of knowledge and experience allowing many mistakes to be avoided and many lines of useful enquiry to be undertaken.

Rohan Wirasinha, Brian Flemming and Marc Dickens of Hydro Tasmania were very hard working colleagues and offered the consultant tremendous support and experience. Sirpa Jarvenpaa provided our team with strong leadership, incredible energy, knowledge and commitment to ensure the success of our work, while ensuring that we remained focused on the main issues. Others, such as State Secretary Egidio de Jesus, Emilia Peres (donor coordinator) and Virgilio Guterres (Head of Power for EDTL) made their time available in order that our joint endeavor worked to the advantage of the people of East Timor. To all concerned, the consultant wishes to offer his sincere thanks.

## **4. THE ASSIGNMENT**

### **4.1 The TOR**

1. In the Terms of Reference (TOR) delivered to Wellington on the 14 September 2002, Hon David Butcher (the Consultant), of David Butcher and Associates, (through PA Consulting of Auckland, New Zealand) was asked to join a team of consultants from Hydro Tasmania (HT), then working in Dili, Timor Leste. The HT consultants are professional engineers and financial analysts. The Government of the Republic Democratic of Timor Leste (RDTL) employed them as technical advisers. HT produced three interim reports, on Asset Valuation, Tariff Review and a Progress Report. On 10 October, HT completed their final Valuation Report, in the field. The Consultant was asked to lead and support the team from September to October 2002 and was charged with reviewing the viable management options for the government agency responsible for the power sector: Electricidade de Timor Leste (EDTL).

2. The contract required that when the review was completed the consultant should proceed to make preparations for implementing the agreed solutions. This entailed identifying and communicating to the RDTL the related costs, risks, and obligations as well as the benefits of the best option. The consultant was also required to build a consensus and authority for the optimal management option and develop with the Government's power sector authorities, appropriate documentation for the decision making processes including for the Council of Ministers. Herewith is the final report on this assignment.

## **5. BACKGROUND**

3. Following the 1999 Independence Referendum there was widespread violence and destruction in Timor Leste. With the restoration of order, the United Nations Transitional Administration in Timor Leste (UNTAET) managed to restore electricity supply in all of the major centers, including Dili, and in about half of the village-level power stations that existed previously. The Donor Community established a Trust Fund for East Timor (TFET). TFET was to finance emergency reconstruction and recovery programs. The International Development Association (IDA) was the Trustee. The UNTAET requested a fund for an Emergency Infrastructure Rehabilitation Project (EIRP), from the TFET for infrastructure reconstruction in sectors including electric power. The request was granted as Grant 8181-ETM (TF). The Asian Development Bank (ADB) is now acting as the Project administrator and Ministry of Transport, Communications, Energy, and Public Works as its Executing Agency.

4. Timor Leste became a sovereign nation - the Republic Democratic of Timor Leste (RDTL) - on May 20 2002, and the UN handed administration of the power sector to the RDTL. The RDTL agreed on a transitional development matrix with the donors involved in financing its recurrent budget for three years. This includes a power sector, development matrix. The power sector matrix requires, among others, an immediate review of sector management and identification of the optimal management arrangement by the tentative date of 30 September 2002. Donors agreed continuing budget subsidies for the power sector until 2004.

5. Notwithstanding increasing load shedding, Dili aims to provide 24 hours power supply, while most District centers operate for 6 hours per day, and sub-district centers not at

all. Efforts to build a sustainable power infrastructure or institutional framework, however, have so far been unsuccessful. Though the generators at the Comoro power station were overhauled under a Japanese aid grant, the availability of free power in Dili has led to the demand outstripping the available capacity. Privately owned and leased generators provided more than half of the electricity supplied in Dili in January 2002. The proportion provided privately has been increasing. Much of the distribution system is overloaded, weak, inefficient and prone to breakdown. Work is underway to restore power stations in about 30 rural villages. The local communities will manage these. Power facilities have not been upgraded in the larger District stations outside of Dili and supplies there are intermittent.

6. Since July 2001, lack of maintenance has meant that Comoro's reliability and quality of supply is deteriorating fast. Both immediate and long-term measures are required to restore reasonable quality service. This is difficult as neither the UNTAET nor the EDTL has been successful in collecting money from customers to meet even recurrent power costs, including the cost of maintenance. In order to continue budget support, Donors expect the Government to determine and implement an effective strategy for resolving these issues. HT were the last in a series of consultants who were hired to assist UNTAET, and more recently, RDTL address technical and institutional issues hampering improvements in the cost, quality and quantity of service.

7. Despite efforts to build management capacity and self-sufficiency, including a TFET-funded technical assistance for Establishment of a Power Utility and its Financial Management System, EDTL remains financially insolvent and cannot sustain operations with present resources. It lacks trained staff to carry out critical supervisory functions. In Dili, about half of the electricity consumers are receiving bills under a tariff introduced in August 2001. However, revenue collections have averaged only about 10% of the amount billed. EDTL spends all available funds on fuel and wages. So far Donor funds have covered the losses and but funds are running down rapidly. As there is no spending on capital improvement, difficulties with the system are likely to increase.

8. The ADB and HT have assisted the Power Sector Steering Committee to prepare immediate and medium-term action program for the sector and suggested options for financing these. Additional short-term assistance to address a range of immediate needs, especially in revenue collection, is provided by TFET. Longer-term assistance in the form of international expertise is available from the United Nations Development Program (UNDP) that provides technical advisers in management and accounting positions and at Comoro Power Station.

9. ADB also has funding for technical assistance to prepare Phase One of a 20-year power development plan for Timor Leste. This will include a review of the national economic and electricity demand patterns and prepare a forecast of future requirements in the power sector; a technical review of the availability and costs of imported and indigenous energy resources for power supply; economic and financial analysis; and a least-cost investment plan for the sector, covering both urban and rural areas. However, care should be taken to ensure that the ADB web site does not exaggerate the extent of the ADB role, as some statements on the ADB web page could be taken to imply resource commitments that are not currently available.

## **6. HYDRO TASMANIA'S WORK**

10. The EIRP recruited Hydro Tasmania, in June 2002, to provide technical assistance in the institutional development of EDTL. In its Progress Report of August 2002, HT noted that

the power supply situation had deteriorated and four engines at Comoro were out of action for repairs. In the daytime, the total generating capacity available was insufficient to meet the base load. EDTL shed almost half the demand in the evenings by rotational load shedding. HT also noted that the LV distribution system appears to be substantially overloaded, poorly designed and poorly maintained.

11. HT's principal recommendation was contracting out generation to a private company that could supply a guaranteed amount of power at an agreed cost. The management company should be in total charge of the power station, operations and maintenance under such a contract. The problem with this recommendation, they concluded was that the lack of a budget for maintenance meant that no company would be prepared to take on this task without additional financial support from the government or donors.

12. To overcome the cash problem HT proposed a strategy based on enforcing the payment of all bills, to improve EDTL's cash flow and to encourage domestic customers to use less electricity. It would also have the effect of freeing up capacity during the evenings and improving the reliability of supply. It would then create the cash flow to allow scheduled maintenance, tree clearing and generator maintenance, further improving reliability. In the tariff review, HT showed that it was possible to lower the tariff over time, provided that EDTL adopts appropriate investment and marketing strategies. They suggested different tariffs for commercial and domestic consumers providing an incentive for large consumers to connect to EDTL. This is possible if diesel generators are converted to heavy fuel oil (instead of the automotive diesel used currently).

13. HT's Manpower and Salary Structure Review recommended a new salary scale, to provide above-scheduled public service salaries in the technical areas with salary increments as peoples' competencies improve. The asset register and Final Asset Valuation Report concluded that the EDTL assets have a replacement value of US\$ 52 million but in their run state were worth just US\$ 20 million. During the period 20 – 28 September 2002, HT also provided a diesel engine expert to review the functioning of the Comoro Power Station. This report also reflected the run down state of the EDTL assets and concluded that the power station with an asset value of US\$ 7 million would fetch US\$ 2 million or less because of the major repairs and maintenance required. It proposed an emergency plan costing approximately US\$ 1.1 million to tackle all deferred maintenance and stabilize the operation of Comoro Power Station.

14. Given that in August 2002 there was no money to provide for the scheduled maintenance or any of the improvements proposed, HT also postulated a new management option, as financially viable as a management contract, but seen by some local people, as less risky. This involved a management component and a revenue component. The revenue component was to progressively install prepaid meters, commencing with customers with the highest debt first. This would address the "enforce payments" component of the market strategy. Converting EDTL into an autonomous entity with a number of expatriate contractors managing executive functions for 2-3 years was the alternative. At the time it was proposed, it seemed like a reasonable compromise between conflicting political priorities.

15. The HT recommendations were referred to the Steering Committee, Headed by the Secretary of State, Egidio de Jesus. This Committee comprised a mixture of Timorese Government Representatives, Donors, officials of other, concerned ministries such as Finance. This very unwieldy committee makes effective action very difficult. For example, it voted down a modest proposal to sub-contract revenue collection in one Dili suburb on a trial

basis. With the Committee sidelining important HT recommendations, a new approach was called for and the Consultant joined the HT Team.

## **7. THE CONSULTANT'S ASSIGNMENT**

16. The Consultant arrived in Dili on the 15 September and after a brief orientation entered consultations with the ADB Mission, Sirpa Jarvenpaa and Richard Phelps of the EIRP. The following day the ADB/HT team had a lengthy interview with the Secretary of State and the Minister of Transport, Communications and Public Works. At the request of the Consultant, the Minister provided office space close to his own office facilitating Informal consultations that proved very useful.

17. The Minister of Transport Communications and Public Works has consistently taken a strong interest in the work of the mission. He has made himself available several times a day, on some occasions, has provided useful feedback and lent his names to the consultation meetings held in the week of the 7-11 October. Since the ADB October mission, he has received and asked for additional copies of the bound collection of the mission report, draft contract and TOR documents. The work of the Mission has been greatly simplified by the policy paper the Minister of Transport Communications and Public Works, presented to the Council of Ministers. It increased the mission effectiveness by focusing its efforts on the Management Contract. Specific aspects of the TOR have been address as follows.

### **7.1 Strategic Objectives**

TOR:

“The first goal was to identify strategic objectives, appropriate, viable, sector structures to achieve them, a viable sector management structure and systems and develop a consensus on the optimal strategy for presentation to ministers and the donor community.”

18. The strategic objective identified by HT proved to be robust. Their conclusion was that increasing the reliability and availability of a high quality power supply at the least economic cost will require:

- assurance of continuing operation of the Comoro Power Station (including maintenance and overhauls),
- letting the proposed Management Contract to a competent power enterprise, coupled with a renewed program to collect money from consumers, and
- careful consideration of long-term supply options

19. In view of the failure of the UN, the Interim government and the donor community to arrive at a consensus over several months, there were concerns about the ability of the team to develop a consensus with one month. The failure to agree about the appropriate management strategy in August (a Management Contract, or an Independent Authority with contracted expatriate managers) meant that HT had been unable to develop a single model management contract.

20. The Consultant understands that the lack of a strategy became a matter of political controversy in early September 2002. As a result, the Minister commissioned and proposed a policy paper to the Government on 18 September and this resolved the issue of the policy direction. The policy paper closely resembled the HT recommendations. It comprised:

- short term lease to buy of generation capacity to allow maintenance to take place,
- medium-term a management contract and turning EDTL into a State Enterprise,
- long-term consideration of other production options.

21. One further proposal, to organize a short-term contract for the billing and collection system, has not been proceeded with, as it would be difficult to implement. A program to install prepaid meters can attain the result sought by the RDTL more easily. Neither the ADB nor the Consultant agrees with every aspect of the policy paper, but the sector strategy is a coherent basis on which to take future decisions and formed an appropriate basis on which to conduct a dialogue.

## **7.2 Viable Sector Management Options**

### TOR

“Conduct a process of review and dialogue with the government, power sector authorities and the relevant ministries on the details of the issues, implications, advantages and disadvantages of the identified management options. Include the examination in detail of the issues, implications, advantages and disadvantages of the various options.”

22. With the government resolving the policy issue with respect to sector management options, on the 18 September, further consideration of other options ended. The focus moved to the documents providing the basis for international competitive bidding for short-term capacity and management contracts. This work aimed to identify the resource requirements, risks and obligations assumed by the Government in, implementing the management contract and short-term addition to generation capacity. While some commercial risks have been identified, the biggest risk of current practices is the ongoing lack of maintenance at the Comoro Power Station. It carries a high risk of damage to the seven million dollar asset there and a political backlash against the government following a total failure in the public power supply in Dili.

23. The exact sector resource requirements remain a matter of some debate. What is clear is that unless more than a million dollars (US\$ 1 million) of urgent repairs and maintenance are undertaken the future of the generation machines could not be guaranteed. Similarly, unless RDTL make an investment in prepaid metering, focusing at first on the larger users, there would be no revenue base to provide for ongoing maintenance, rehabilitation or even operation.

### 7.3 Appropriate Legal Framework

TOR:

“The consultant will review and conduct a constructive dialogue with the Government power sector authorities and the relevant ministries on the legal framework under development and guidance in concluding a legal structure for the sector and support to completion of the relevant documentation.”

24. The consultant received and read the legal framework prepared by a Portuguese Legal expert. The framework seemed to be unsatisfactory from many perspectives, not the least being that neither the Minister, nor the Ministry were defined, the objectives of the law were not spelt out and crucial aspects such as independent regulation and who was to do it were left out. Similarly, while the draft foreshadowed a number of decree laws to give practical effect to some of these issues, no decrees have been drafted.

25. The consultant and the legal expert attended a meeting at the Justice Ministry to discuss the draft law, but the Justice Ministry people did not arrive, probably due to the fact that the meeting date was a public holiday. Despite several attempts to reschedule the meeting, the legal expert’s contract expired before the meeting occurred.

26. In the meantime, Minister Ovidio Avaral requested his adviser, a Portuguese trained lawyer to prepare a revised draft of the Electricity Law. The consultant provided the adviser with several laws that could be helpful to this process, including laws from Armenia, Cambodia, Bhutan and the New Zealand State Owned Enterprises Act. The dialogue with the adviser has been ongoing.

### 7.4 Guidance to Consultants

TOR

“The consultant will give guidance to the team of experts on the analysis needed to successfully complete the above discussions, prepare and conduct clear presentations in verbal and written format on each issue.”

27. In August the HT team completed most of the groundwork on which the dialogue with the government was based. During the consultant’s mission, the HT team focused their work in four areas. These were: the preparation of a draft management contract, the preparation of a financial model of the sector so that resource requirements could be identified, the preparation of a TOR to accompany the draft management contract when issued to likely bidders, proposed Key Performance Indicators (KPI) and an analysis of risks. Notwithstanding the fact that HT has not been involved in developing a management contract before, the team worked hard with the October ADB Mission<sup>1</sup> to compile appropriate draft documents. The ADB has now reviewed these and approved them for circulation.

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<sup>1</sup> Sirpa Jarvenpaa

**7.5 External Financial Support for Power**

TOR

“The consultant will analyze the need for external support for power production including investment requirement and whether or not ‘take-off’ guarantees of some kind is required.”

28. Appendix 1 contains the Final Cash Flow Budget prepared by the HT team<sup>2</sup>. Table 1 summarizes the planned external support for the power sector. Committed donor money amounts to US\$ 4 million for 2002-2003 and US\$ 2 million for 2003-2004. In addition, the October ADB Mission has recommended to Donors that they provide additional funding to the sector of US\$ 1.2 million, towards the cost of urgent repairs and US\$ 2.5 for the capital cost of installation of pre-paid meters. Income figures are based on the assumption that pre-paid meters will begin to be installed from April 2003. Even on these positive assumptions, under the model the sector will continue to run cash deficits until 2005-2006.

29. The Budget numbers include provision for an estimated annual cost of hiring the management contractor of US\$ 1.2 million a year<sup>3</sup> and for maintenance budget of at least a half million US dollars a year. Some advisers believe that this remains an underestimate of the true requirements. Additional external support for the sector is now focusing on a funding package associated with the management contract. The funding will address to key issues: improved management, pre-paid meters and immediate maintenance needs.

**Table 1 External Financial Support for Power**

<u>M\$USD</u>	<u>2002-2003</u>	<u>2003-2004</u>	<u>2004-2005</u>	<u>2005-2006</u>	<u>2006-2007</u>
<b>Operating Cash Flow</b>	<b>-\$6.53</b>	<b>-\$2.68</b>	<b>-\$1.50</b>	<b>-\$0.55</b>	<b>\$0.42</b>
<b>Donor Contribution</b>	<b>\$4.00</b>	<b>\$2.00</b>			
<b>Net Operating Cash Flow</b>	<b>-\$2.53</b>	<b>-\$0.68</b>	<b>-\$1.50</b>	<b>-\$0.55</b>	<b>\$0.42</b>

Summary of Schedule C of the Draft Management Contract

30. The Indicative Cash Flow Budget in Appendix 1 assumes that in the meantime there will be no commitment to Build, Operate, Transfer (BOT) proposals. Typically, all forms of investment in power sectors need one or two foundations on which an investment can be made. Traditionally, private investors will enter the sector if they can gain a power purchase agreement from the host government. With a power purchase agreement, the government carries most if not all of the investment risk. BOTs are just another form of private investment. The benefit is that private ownership and management of the power station is possibly more efficient than government ownership. During the effective working life of the station, it is under private ownership. Operators put up the capital for the power station and expect good compensation for taking the capital risk for several years.

31. BOT ventures’ first disadvantage is that contractors expect a good margin for taking this risk. The cost of this margin makes power generated relatively expensive. Purchase under a PPA means that apart from the original bidding process for the BOT, the power price

<sup>2</sup> Particular note should be made of the work of Brian Flemming in preparing this budget.

<sup>3</sup> If the contractor’s performance is excellent, the cost of the contract will be higher but income will be larger too. If the contractor’s performance is bad, the cost will be lower but income will be below target.

ceases to be contestable. It becomes a cost plus arrangement with no incentive built in to restrain costs. Secondly, when the power station is nearing the end of its economic life it is returned to the government by the investor. By this time, maintenance costs and the cost of dismantling the power station or replacing its machines will be close to their peak.

32. An alternative arrangement that may encourage private investment is to have an electricity spot price and encourage generators to supply in to an electricity market. In this situation, the generator absorbs the price risk. Price risk is the difference between the cost of supplying the market and the spot price on the occasions when the former is lower than the latter. The danger for an investor is that institutional arrangements, particularly access to transmission may keep it from delivering power to its customers.

33. The development of a formal electricity market in Timor Leste is some way off<sup>4</sup>, so any BOT or other private involvement (apart from own use generators) is likely to be use a potentially very expensive PPA. Should at some future time a BOT be considered it should be a result of an international tender. In this way, the BOT partner absorbs some of the risks and has some incentives to make cost effective proposals. This incentive remains weak and it is for this reason that the Consultant and the ADB both advised Timor Leste that currently there are more cost effective options than BOTs.

## **7.6 EDTL – Statutory Authority**

### **TOR**

“The need to develop EDTL as a Statutory Authority to carry out distribution, districts and sub-districts, commercial, and corporate management with a management contract, under a carefully designed performance based remuneration scheme.”

34. The TOR asked the consultant to make recommendations on the form and nature of the Governance Structure for a possible statutory authority to replace EDTL. The idea was to subject the activities of what is, in practice, a branch of a government ministry, into a business with supervision of commercial and corporate management subjected to a management contract with incentives and penalties built in for good and bad performance respectively.

35. The future governance structure of the sector was determined on 18 September. As agreed, it comprises a Minister (supported by Ministry of Transport Communication and Public Works officials), a State Enterprise and eventually (2003) a regulatory authority. Some time in the future, the Regulatory Authority will merge with the recently established regulatory authority for Telecommunications. In practice, in the meantime, the Minister remains as the regulatory authority.

36. Currently the UN has resident advisers in Dili assisting the inexperienced managers to perform their functions. Given their different backgrounds and differing agendas there is a possibility that advice to the RDTL may be conflicting in some respects. In particular, when moving to new institutional structures staff concerns must be addressed but they must not

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<sup>4</sup> David Hinde, the UN adviser on distribution has floated a proposal that would encourage to existing private generation in Dili to absorb some base load generation. It would be achieved by a two way metering system that allows private generators to receive credit for power provided to the EDTL grid. This private capacity would provide some competition for EDTL. The Management Contractor should seriously consider this proposal.

exercise a veto over effective management options. Given the on the ground strength of the UNDP it is important that the DB make efforts to ensure that all resident advisors are fully briefed on developments and committed to making the management contract work. As many of the concerns focus on the needs of existing staff members, the ADB should support an amendment to the draft management contract so that it will contain a clause requiring the contractor to hire all current staff and guarantee their salaries for at least one year,

37. With these reservations, the Consultant concluded that the proposed institutional structure was appropriate for a country the size of East Timor. Given that the Council of Ministers had made decisions stretching out two to three years, it is important to stimulate an ongoing dialogue with the government rather than to seek early commitments to particular configurations. The devil is in the detail. The final configuration of the law and enacting decrees will determined many features of the structure. The focus should be on getting a flexible law that safeguards the interests of RDTL.

## **7.7 Investment and Tariff Implications**

TOR

“investment requirements and tariff implications of the formation of EDTL as a Statutory Authority, to carry out distribution, supply to districts and sub-districts, commercial and corporate management with a management contract, under a carefully designed performance based remuneration scheme.”

38. The HT Team produced a draft contract, based on a successful model previously applied outside RDTL. The Consultant referred the HT draft to the ADB, in Manila, for review by legal and technical experts. HT from Hobart provided additional legal input. Experienced contracts officers of from HT made suggestions for refinement. The assumption was made that either before or soon after the signing of the contract the government will move to make EDTL a statutory authority, with the character of a business enterprise, including a legal personality and autonomous management.

39. HT reported on Tariff issues in August and nothing put in the Management Contract or EDTL Indicative Cash Flow Budget substantially changed the recommendations made then. The Consultant counseled against one HT proposal, to refund the sales tax on fuel supplied to EDTL. His concern was that such arrangements open up opportunities for rent seeking, discriminate against private sector ventures, take some of the pressure off EDTL to improve its performance and amount to the government shuffling money from one pocket to another. HT abandoned this recommendation.

40. The HT Team’s analysis shows that future tariffs will come down if there is investment in lower cost fuel options. The negotiations between RDTL and the successful contractor will have more influence on future revenue needs, revenue collections, tariff paths and adjustment processes than the clauses of the draft management contract. The government proposal to organize a short-term contract for the billing and collection system has not so far proceeded. The time envisaged is too short to have any measurable impact on collections. Pre-paid meters can achieve the same result more effectively.

41. HT Team in Dili led and supported by the October ADB Mission, discussed three different models of remuneration, linkages to KPI monitoring and incentive and penalty payments. Finally, a simple model based on six technical performance indicators and one based on financial performance was included in the final draft Management Contract.

Financial models show that while a successful contractor can increase his remuneration by more than twenty percent, an unsuccessful contractor will barely cover his estimated costs. Documents were completed on 10 October and copies distributed to key personnel within the government and donor community in Dili.

## 7.8 Optimal Treatment for Comoro

TOR

“...preparation for an optimal treatment option for the rehabilitation of the Comoro power station and leadership with comprehensive and results-oriented dialogue on the issue with the Government staff.”

42. As noted in section 6 during the period 20 – 28 September 2002, HT also provided a diesel engine expert to review the functioning of the Comoro Power Station. The Consultant believed that this review was appropriate given that a wide range of opinions were being expressed about the power station and its management and operations were being criticized because of the declining quality and quantity of outputs. Table 2 summarizes the HT expert’s findings:

**Table 2 Comoro Capacity 19/9/02**

Generator Make	Load MW		
	Full	%	Output
Mak 1	2.4	75%	1.8
Mak 2	2.4	0%	0
Niigata 1	3	67%	2.01
Pal-Mak 3	2.8	84%	2.35
Pal-Mak 4	2.8	0%	0
Cummings 1	1	90%	0.9
Cummings 2	1	90%	0.9
<b>TOTAL</b>	<b>15.4</b>	<b>90%</b>	<b>7.96</b>

Information supplied by EDTL

43. The Japanese Government paid for substantial, but partial rehabilitation of the major generation machines in 2001. The Japanese program ended partly because the donor was unhappy about the management situation at the Station. Since then very little regular maintenance has taken place. Two generators are out of action because of damage caused by bad management, incomplete rehabilitation and lack of maintenance. One is not economically repairable. Notwithstanding the state of the machines and the accumulation of problems, the findings of the HT diesel expert were that:

- the machines are in bad shape, because of delayed maintenance and lack of repair, but they are basically good quality machines with some useful economic life remaining and will respond well to better housekeeping,
- it is possible to rehabilitate a number of smaller machines (such as the English Electric and MVM V12 units at Caicoli) their age, poor condition and the difficulty of obtaining spares probably makes their rehabilitation unviable, but if resources are available it should be considered,

- conversion to cheaper fuel is possible for all the machines (with the possible exception of the high speed 1 MW Cummins units)
- new investment should immediately focus on at least 4 MW of additional capacity so that the other units can be shut down, maintained and overhauled,
- the appointment of a competent station manger at Cormoro, with the power to manage, is urgent, and
- appointment of a station manager is consistent with the concept of a management contract.

44. All stakeholders now accept that the most urgent treatment of Comoro is repair and rehabilitation, followed by competent management and regular maintenance. The HT diesel specialist identified US\$ 1.2 million of deferred maintenance, and basic station operation equipment that is urgently required just to stabilize the station and to shut down machines that urgently need repair and overhaul. Putting the draft management contract on the table has had the desirable effect of generating some interest from Norway and Japan in funding the necessary work. The Indicative Cash Flow Budget of EDTL, attached to the draft management contract provides for at least US\$ .5 million a year of maintenance. UN adviser David Hinde (Distribution adviser to EDTL) and Valter Galvan (Consultant to the EIRP) also reviewed the recommendations and the consolidated ideas for Comoro were incorporated in the folder of documents relating to the preparation of the power sector management contract.

45. The HT expert proposed four phases of implementation at Cormoro:

- very short-term - purchase of 4 MW additional base load capacity to enable repairs to be carried out,
- short-term - tendering rehabilitation works
- short to medium term - management contract tendering process
- medium term - finalization of the management contract

46. These proposals formed part of the ADB Mission recommendations to the Minister of Transport Communications and Public Works. For the much longer term, the ADB has advertised, shortlisted and is now selecting a contractor to undertake a power sector planning exercise to study and identify cost effective development strategies that employ local people and resources but remain consistent with the country's strategic goals of increasing the reliability and availability of a high quality power supply at the least economic cost.

47. Once the delayed maintenance is underway and a regular maintenance programs are in place, the HT recommended best option for Cormoro is to convert to the larger machines to the cheaper heavy fuel oil. The items listed are not "options" but parts of an integrated package. While HT undertook an analysis of the EOIs for the management contract, at the request of PMU it ignored the unsolicited proposals for BOTs, as there were no benchmarks against which to evaluate them.

## 8. CONCLUSION

48. The Consultant understands that when the Australian military arrived in RDTL they found that the power sector management (all levels above the most basic education) had departed taking with them all the records and expertise of the sector. They secured the Caicoli and Comoro Power stations in Dili and sent teams into the country to secure and try and repair the damaged local power systems outside Dili.

49. UNTAET had two priorities: restoring service to the people of Dili and trying to help the people outside Dili. The emphasis was on "who pays is not important yet, the ordinary people need power now!" This was an understandable response but one that has caused many problems to those responsible for subsequent reconstruction. The actual engines at the power stations were damaged but not too difficult to get going again so the emphasis there was on providing technical assistance to replace the vanished Indonesian experts rather than putting in place a sustainable management structure.

50. It was quickly realized that most of the Caicoli station was uneconomic to repair and although the diesel engines at Comoro (the newer of the two stations) were functioning they needed major overhaul. The Japanese government took Comoro under its wing and repaired the engines and the turbines (but curiously closed down the program when it came to repairing radiators and other auxiliary equipment like fuel lines cleaning equipment). In the meantime, nothing substantial was happening on the institutional front and collecting outstanding bills only happened sporadically.

51. While the UNTAET was in charge of Comoro, it had a management structure, a maintenance budget existed and the system ticked over. Since that time, the power sector seems to have fallen through the cracks. The 2002-03 Budget provided no money for maintenance and suddenly only the relatively new and untested EDTL was responsible for the power system but had neither money, nor management structure, including a billing and collection system, in place. Technical assistance from KPMG created a billing system but failed in the broader issues mandate of institutional development. Putting advisers in place to help run a power station did not solve the problems there. Power systems eat money. EDTL has only slowly developed a management infrastructure in place to try and generate the cash required.

52. When the ADB assumed responsibility for the institutional side of the power sector they hired several consultants, including HT to help the RDTL. HT filed their August reports and waited to learn the government's reaction before they did too much work on developing a particular management model. The policy decision in favor of a management contract was made on the 18 September, and since then the HT Team has focused on that option. This meant that the Consultant could make little progress in this area until the HT consultants (confined to Hobart until the 22 September, by the Australian Government Travel Ban) could come up with management contract and TOR texts. Preliminary drafts were supplied to the ADB and during the week 4-10 September the whole HT team worked with the ADB October Mission to refine the drafts. In the Mission report to Minister Amaral, the October ADB Mission provided a timetable allowing the management contractor to mobilize in April and assume full control in July.

53. During the week of 7-11 October 2002, several meetings were held with donors, advisers, officials and staff of EDTL. The Minister of Transport Communications and Public Works participated fully in these sessions. Notwithstanding some problems, useful messages did get across. One important point was made when the middle managers of EDTL said it would be better to put "the money" into improving service than spending it on

meters. We pointed out that no money was available at present; money still had to be found and no donor would put in money until they could be sure that the Timorese were committed to cleaning up their own act.

54. By the conclusion of the consultant's Mission, he had a firm impression that the combination of the Policy Decision of 18 September and the availability of the draft Management Contract can be a "circuit breaker," allowing several positive solutions to come together at the same time. However, while everyone in Dili is currently focusing on the power sector, a number of serious risks remain:

- the Policy Decision has provided a good foundation on which to proceed, but some of the terminology in the statement is loose and capable of being used to support sub optimal solutions (such as BOTs),
- the combination of the Policy Decision and the availability of the Management Contract draft have created an opportunity to make decisions, but some people (possibly including advisers) see their positions of influence threatened and have incentives to derail the process,
- the Prime Minister and Finance Minister are overloaded with taking decisions that in a more mature system, should be handled at a lower level, leaving them with less energy and time to focus on what has the potential to be a political disaster,
- the Minister and Government are giving the power sector a lot of their time and requiring officials to focus on the issues, but the absence of the Minister of Transport Communications and Public Works at this crucial time means that the initiative will remain in the Steering Committee that has not performed well in the past,
- some of the newly appointed middle managers in EDTL see opportunities in the future management structure, but many are worried for their personal situations,
- some influential people are using these worries to put pressure on the Minister to slow down the process, thereby securing their own positions,
- the Finance Ministry reported that they are budgeting an extra US\$ 2 million a year for the power sector, which is a positive development but even this will not be enough if management does not improve and pre-paid meters are not installed,
- with the draft of a management contract on the table some donors have rekindled their interest in the sector and Norway and Japan, in particular are interested in playing an important part in restoring Comoro, but nothing has yet been decided and the three people who can make decisions are going to be out of the country during the run up to the ADB mission timetable,
- risk of wholesale failure of the power system in Dili remains high and while the ADB is not responsible for this, it is widely regarded as being the lead agency in the power sector and this impression is reasonable from impressions gained from a casual reading of the claims on the ADB web site, and
- the Country Manager for the World Bank and the Resident Representative of the ADB have been fully briefed on the issues in the power sector and are keen to help. However,

neither has a power sector background and both are new to their jobs. This may hamper their effectiveness at this crucial stage.

## **9. RECOMMENDATIONS**

The important issue now is to sustain this momentum.

- ADB should ensure that support for the RDTL is sustained during the next six months so that an effective power sector manager is put in place,
- the ADB should urgently seek the help of the UN to ensure that all its resident advisers are fully briefed on developments and committed to making the management contract work,
- to head off the staff concerns, the ADB should support an amendment to the draft management contract so that it will contain a clause requiring the contractor to hire all current staff and guarantee their salaries for at least one year,
- there may be a need for temporary augmentation of the ADB and World Bank energy expert presence on the ground to ensure that there are properly briefed energy experts to work alongside the resident officers and the government while the management contract is put in place,
- if the additional donor support for the power sector is not forthcoming or is delayed, there should be a fallback position whereby by emergency loan or grant money is available to sustain service in Dili,
- there should be a review of the material on the ADB web site to ensure that it emphasizes properly the role the ADB is playing in RDTL.

**Appendix 1 Indicative Cash Flow Budget of EDTL (Schedule C of Draft Management Contract)**

<u>M\$USD</u>	<u>2002- 2003</u>	<u>2003- 2004</u>	<u>2004- 2005</u>	<u>2005- 2006</u>	<u>2006- 2007</u>
Dili - Revenue from Commercial & Government	\$1.47	\$5.20	\$5.07	\$5.07	\$5.07
Dili - Revenue from Domestic & Social	\$0.52	\$2.20	\$3.34	\$3.72	\$3.77
District Revenue	\$0.00	\$0.18	\$0.34	\$0.47	\$0.61
Sub-District Revenue	\$0.01	\$0.11	\$0.16	\$0.20	\$0.25
Other Revenue (e.g. Connection Fees)	\$0.33	\$0.33	\$0.33	\$0.33	\$0.33
<b>Total revenue</b>	<b>\$2.37</b>	<b>\$8.02</b>	<b>\$9.24</b>	<b>\$9.80</b>	<b>\$10.03</b>
Dili Network Fuel & Lubrication. Cost	\$6.08	\$5.73	\$5.35	\$5.00	\$4.81
Other Goods and Services (see Notes)	\$0.34	\$0.54	\$0.81	\$0.75	\$0.73
Wages and Salaries	\$0.32	\$0.32	\$0.32	\$0.32	\$0.32
Maintenance of Comoro	\$0.26	\$0.53	\$0.53	\$0.53	\$0.53
Meter Administration	\$0.02	\$0.06	\$0.05	\$0.05	\$0.01
Distribution Replacement	\$0.00	\$0.17	\$0.33	\$0.33	\$0.17
District Fuel & Lubrication.	\$1.19	\$1.19	\$1.19	\$1.19	\$1.19
Maintenance	\$0.00	\$0.21	\$0.21	\$0.21	\$0.21
Local Operation & Maintenance	\$0.00	\$0.12	\$0.12	\$0.12	\$0.12
Subs-District Fuel & Lubrication.	\$0.30	\$0.48	\$0.48	\$0.48	\$0.48
Maintenance	\$0.02	\$0.04	\$0.04	\$0.04	\$0.04
Local Operation & Maintenance	\$0.02	\$0.05	\$0.05	\$0.05	\$0.05
Contract Start -Up Cost	\$0.10	\$0.00	\$0.00	\$0.00	\$0.00
Management Fee (indicative only)	\$0.00	\$0.24	\$0.24	\$0.24	\$0.18
Management Cost	\$0.24	\$0.96	\$0.96	\$0.96	\$0.72
Regulatory Audit Fees	\$0.00	\$0.08	\$0.08	\$0.08	\$0.06
<b>Total Expenses</b>	<b>\$8.90</b>	<b>\$10.70</b>	<b>\$10.75</b>	<b>\$10.35</b>	<b>\$9.61</b>
<b>Operating Cash Flow</b>	<b>-\$6.53</b>	<b>-\$2.68</b>	<b>-\$1.50</b>	<b>-\$0.55</b>	<b>\$0.42</b>
<b>Donor Contribution</b>	<b>\$4.00</b>	<b>\$2.00</b>			
<b>Net Operating Cash Flow</b>	<b>-\$2.53</b>	<b>-\$0.68</b>	<b>-\$1.50</b>	<b>-\$0.55</b>	<b>\$0.42</b>