

Midterm Review of Assistance in Developing the Electricity Sector in Timor Leste

NORAD COLLECTED REVIEWS 21/2008

Arne Dahlen and Peder Gjerde

Norad collected reviews

The report is presented in a series, compiled by Norad to disseminate and share analyses of development cooperation. The views and interpretations are those of the authors and do not necessarily represent those of the Norwegian Agency for Development Cooperation.

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**Ministry of Natural Resources, Minerals and
Energy Policy**

**Norwegian Agency for Development
Cooperation**

**Midterm Review of Assistance
in Developing
the Electricity Sector
in Timor-Leste**

Final Report

27 August/ 01 October 2007

COWI

Timor-Leste: Ministry of Natural Resources,
Minerals and Energy Policy

Norwegian Agency for Development
Cooperation

Midterm Review of Assistance in Developing the Electricity Sector in Timor-Leste

Final Report

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Project Sheet

Country		Timor-Leste
COWI AS Project No		124002
Program		Assistance in Developing the Electricity Sector in Timor-Leste
Projects/ Sub- Projects	TIM-2014	Support to the Power Sector I
	02/007	Institutional Strengthening of the Power Sector,
	04/010	Extension/additional funding
	05/003	Ira Lalaru Hydropower Project – Feasibility Studies
	06/004	Construction of Gariuai Mini Hydropower Project
	06/012	Ira Lalaru Core Drilling and Geotechnics
		Security Fence around Fomento building
	TIM-2018	Support to the Power Sector II
	02/012	Emergency Installation of 6 Diesel Generators
	02/013	Training in Connection with Emergency
	TIM-2019	Prepayment Meters (Dili)
	02/014	Installation of Prepayment Meters
	03/004	Interim Management Contract (EdTL)
	04/001	Additional prepayment meters
	05/004	Additional prepayment meters
	05/007	Additional prepayment meters (emergency repair of electrical network)
	TIM-2043	Emergency Repair of Electrical Network (Dili)
	06/016	
Client		State Secretary for Electricity, Water and Urbanization (hydropower and electrification) and State Secretary for Natural Resources (hydrometeorological monitoring) from 10 August 2007
		Ministry of Natural Resources, Minerals and Energy Policy (MNRMEP) – from 01 July 2005 to 09 August 2007
		Ministry of Transport, Communication and Public Works (MTCPW) – from Nov 02 – to end June 2005
		Ministry of Planning and Finance (MPF) – to Nov 02
Executing Agency		As above
Implementing Agencies TIM-2014		National Directorate of Administration and Finance (NDAF) – from 01 July 2005 to 09 August 2007
		National Directorate of Water and Energy (NDWE) – as above
		National Directorate of Petroleum and Gas – from Feb 03 – to 01 July 2005
		Electricidade de Timor-Leste (EdTL) – changed before commencement of field work
Implementing Agency TIM-2018, 2019, 2043		Electricidade de Timor-Leste (EdTL)
Consultant		Norwegian Water Resources and Energy Directorate (NVE)
Sub-Consultants		Joint-venture Norconsult/Norplan
Contractor		Jacobsen Electro
Funding Agency		Norad
Contract dates		TIM-2014: 18 Feb 2003 – end 2008
Program dates		03 Feb 2003 – end 2008 (tentative)
Program costs		NOK 101,7 million (projects subjected to midterm review)
Midterm review Consultant		COWI AS, Norway
Midterm review dates		See Appendix 4a

Assignment, Acknowledgement and Disclaimer

Norad awarded the assignment of the midterm review to the Norwegian consulting company COWI AS under the "Framework Contract between Norad and COWI AS regarding procurement of consulting services" of 06 January 2005. Two company senior advisors, Mr. Arne Dahlen (Team Leader), and Mr. Peder Gjerde were consequently approved by Norad to carry out the work.

The review team started working on 18 June 2007 with a preliminary briefing by Norad. Interviews were conducted with stakeholders in Norway, document collection and further preparations during 25 – 29 June. The field work with visits to Jakarta, Indonesia and to Timor-Leste was done during two weeks from 06 to 18 August. A stopover of two days was made in Denpasar on advice from the Norwegian Embassy in Jakarta (Noramb), Bali due to the prevailing security risks in Timor-Leste attributed to the swearing in of the new Government. From 20 August the review team made some follow up interviews in Norway and prepared the first draft report until delivery of this to Norad on 31 August 2007.

The midterm review team was accompanied by the Norad program officer (Senior Advisor), Mr. Tor Morten Sneve. Although formally an observer to the midterm review, the review team benefited from his knowledge and insight in the various projects in the program. Noramb provided useful information and documentation and arranged a meeting with the Timor-Leste Ambassador to Indonesia, Mr. Ovido de Jesus Amaral who was Minister of TCPW at the time of program commencement.

The review team received valuable assistance and support from Timor-Leste Government officials in MNRMEP, including EdTL and the new State Secretary for Electricity, Water and Urbanization. NVE, Jakobsen Electro, Norplan and other Norad representatives also provided useful information and documentation. The review team is especially grateful to Mr. Alf Adeler, the Long Term Advisor of NVE in Timor-Leste, and his "counterpart" team for logistical and other support and assistance during the field work.

The review team is fully responsible for the content of the report, the findings, analysis and conclusions, and for any errors and mistakes contain herein. The opinions expressed and recommendations made are those of the review team alone and should not be attributed to any officials of the Norwegian or Timor-Leste Governments, or to any individuals.

Abbreviations

ADB	Asian Development Bank
CEM	Compania Electricidade de Macao
DSMA	Directorate of Environmental Services
EdTL	Electricidade de Timor-Leste, MNRMEP
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
GWh	GigaWatt hour
IA	Implementing Agency
IDA	International Development Association
IFC	International Finance Corporation
ILO	International Labour Organisation
J-V	Joint Venture
JICA	Japan International Cooperation Agency
kV	KiloVolt
kW	KiloWatt
kWh	KiloWatt hour
LTA	Long Term Advisor (from NVE)
MCA	Millennium Challenge Account
MCC	Millennium Challenge Corporation (of USA)
MNRMEP	Ministry of Natural Resources, Minerals and Energy Policy
MPF	Ministry of Planning and Finance
MTCPW	Ministry of Transport, Communication and Public Works
MW	MegaWatt
NDAF	National Directorate of Administration and Finance, MNRMEP
NDP	National Development Plan
NDPEAC	National Directorate of Planning and External Assistance Coordination
NDWE	National Directorate of Water and Energy, MNRMEP
NGO	Non Governmental Organisation
NOK	Norwegian Kroner
Norad	Norwegian Agency for Development Cooperation
Noramb	Royal Norwegian Embassy in Jakarta
NPD	Norwegian Petroleum Directorate
NVE	Norwegian Water Resources and Energy Directorate
PAND	Program for Accelerated National Development
PFMCMP	Public Financial Management Capacity Building Program
PLN	Governmental Electricity Company of Indonesia
PM	Project Manager
PPIAF	Public Private Infrastructure Assistance Facility
PS	Permanent Secretary
Sida	Swedish Agency for Development Cooperation
SIP	Sector Investment Program
SoW	Scope of Work
SWAp	Sector Wide Approach
TA	Technical Assistance
TF	Trust Fund

TFTL	Trust Fund for Timor-Leste
ToR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
WB	World Bank
WRM	Water Resources Management

Executive Summary

The present midterm review of Norwegian assistance in developing the electricity (power) sector in Timor-Leste covers Project agreements totalling NOK 101,7 million since 2002 within institutional cooperation, expanding power production capacity, management support, electricity metering and billing, rehabilitation of electricity grid, development of a small scale hydropower scheme and planning of a medium scale hydropower project with transmission line.

The review covers a total of 4 project agreements with 9 additional and extension agreements in two main components of a Program. The objective of the institutional component is to assist in developing the management of the hydropower sector in Timor-Leste through an institutional cooperation arrangement with the Norwegian Water Resources and Energy Directorate (NVE), and the objective of the technical/commercial component is to establish a viable economic base for electricity supply in the country through support to Electricidade de Timor-Leste (EdTL) and introduction of an effective revenue collection system.

In the midterm review report the Program is described according to the 4 Project agreements and additions/extensions with i) purpose, ii) the logic, iii) history of the project, iv) organisation, and v) stakeholders. Other donor assistance noted in the sector includes inter alia; ADB, the WB Group, UNDP, Japan, USA, Thailand and Australia (through ADB TF).

The main Findings and Conclusions of the review report cover the following Projects and sub-projects:

- TIM-2014 Support to the Power Sector I: i) Institutional cooperation and training, ii) Gariuai mini hydropower project, iii) Ira Lalaru feasibility studies, iv) Ira Lalaru core drilling and geotechnics, and v) Security fence around Fomento building. In addition the report deals separately with assessment of environmental impact and sustainability of investment projects, e.g. Gariuai.
- TIM-2018 Support to the Power Sector II.
- TIM-2019 Prepayment Meters, including the Interim Management Contract and an issue related to return of vehicles.
- TIM-2043 Emergency Repairs of the Electrical Network, including Street Lights.

The main findings and conclusions also cover: i) Donor coordination, ii) Emergency plans, health and safety, and iii) Procurement procedures. Findings and conclusions are in general reflected in the chapter on lessons learned and in the recommendations of the report.

Lessons Learned

Revenue from the petroleum sector in Timor-Leste is increasing and the Government has indicated that they do not need to borrow money from the development banking system and that they are willing to invest own funds in development of the country's infrastructure. However, there is a lack of human resources with competence and capacity to plan, implement and operate development interventions, and donors are increasing the technical assistance more to add capacity than to build capacity.

Due to this lack of human resources, NVE's partner (first MTCPW, later MNRMEP) in the Institutional cooperation contract has not been able to fulfil its obligations of providing sufficient own staff to work on the Project. Two "counterparts" were engaged with Project funding, and they were recently finally refused employment by MNRMEP. The situation also led to the LTA becoming responsible PM for both the Ira Lalaru and the Gariuai hydropower sub-projects, as well as for the hydro meteorological monitoring sub-project.

The roles of the key stakeholders in the contract are not clear, neither for the PM of MNRMEP, nor for NVE and the LTA based in Dili. There is also a need to structure the Program on the power sector in line with relevant guidelines for the development concept of institutional cooperation and in line with Norad's Development Cooperation Manual. Proper planning is needed, e.g. definition of objectives and purpose, and outline of activity schedules, inputs, expected outputs, reporting and progress monitoring procedures. Procedures for follow up of NVE recommendations need in general to be better structured and agreed upon.

NVE's involvement in developing the legal framework for the sector has not produced the expected results. Important lessons from this engagement, as well as from other similar projects, are that legal frameworks development are long term processes, which need to reflect political consensus on policies and strategies and a common understanding of purpose and planned outputs, and that too strong donor driven processes will result in failures.

Involvement of local leadership and communities in the two hydropower projects is a success story and an example to be followed. This also supported realistic environmental assessments, reflecting relevant Timor-Leste legislation, with the involvement of relevant local authorities.

All the three Projects related to upgrading of the electricity supply system in Dili were planned, contracted and implemented in reference to a perceived emergency situation, which was true for installation of small diesel generators and to a degree also for emergency repair of electrical networks and replacement of broken street lamps.

However, there is no emergency aspect related to the replacement of ordinary meters with prepayment meters. Normal planning procedures were not followed, which would have included analysis of the potential customer base,

institutional, operational, economical, and risk aspects related to potentials for further civil unrests. The present situation is that an escalating number of customers arrange bypass of their meters (allegedly with the help of EdTL staff, which if proven correct is a breach of the Project Agreement). This was made worse by the EdTL management contract consultant (CEM) not taking charge of the situation.

All the contracts totalling NOK 79,5 million over a period of 3 – 4 years were awarded to one company with the Ministry/EdTL applying the emergency procedures of the procurement regulations in force at the time. For the prepayment meter project, Norad has later concluded that this should not have been regarded as an emergency issue.

The sustainability is questionable for the prepayment meter project and the emergency repair projects. This is due to lack of maintenance of equipment and installations, which in this case is the result of ignorant EdTL management. To keep the emergency generators still operational as backup for the permanent generators with the use of one as spare parts seems an appropriate solution, although the original intention was to install some of them in other areas in the country.

There has been some lack of communication regarding donor coordination in the sector. Norway participates in annual Development Partners Meetings, but not in fortnightly coordination meetings arranged by the local WB mission. It turned out that the two NVE and NPD representatives in Dili were not aware of the meetings.

Recommendations presented in the review report include:

The main stakeholders should jointly appraise this review report and its recommendations and prepare the necessary amendments of project documents, plans and budgets in a preparatory meeting for the January 2008 annual meeting. It is assumed that the ongoing projects towards the end of 2007 will be under TIM 2014 the institutional cooperation, the Gariuai mini hydropower project, finalisation of bidding documents for Ira Lalaru hydropower project with transmission line, and finalisation of feasibility studies for Atsabe and Malina projects. TIM-2018 is completed, and the remaining amount for TIM-2019 should be used to reinstall damaged meters, replace cables and install new meters. No more grants should be allocated for installation of prepayment meters.

The suggestion to reallocate some of the remaining amount of NOK 8.5 million on TIM-2043 for a master plan for the high voltage grid of Timor-Leste, alternatively a master plan for the Dili electricity supply is supported by the review team. However legal aspects of the present contract may prevent this. The suggested master planning may be incorporated in the future Norwegian assistance to the sector.

In principle, future Norwegian assistance should be in the form of TA as added capacity, combined with capacity building/ training where this will make an

impact on institutional strengthening and capacity improvement. Further grants for investments should be limited to installations and equipment directly related to the TA. Related to requests already presented, and after adequate appraisal, Noramb should allocate funds for: i) Tendering process for Ira Lalaru including the power transmission line to Dili, and ii) Completion of Gariuai. Any further requests should be dealt with as new projects. The request for investment funds to the Ira Lalaru – Dili transmission line should be turned down.

The Decree-Law on Procurement Legal Regime from 2005 should be applied for further procurements under the Norwegian assistance, possibly with offer of TA to provide training and assistance regarding procurement.

Future support to the power sector should focus on hydropower development and WRM under the twinning arrangement with NVE as the channel for Norwegian power sector professional knowledge. The institutional cooperation project should be reviewed and further developed and structured with the following main components: i) TA on a) further development of the policy and strategic framework, including master planning for the power sector, b) project management for hydropower development, c) electricity and transmission company operations (the EdTL Board), d) hydropower and WRM legal frameworks, and e) WRM and hydrology; ii) training arrangements; and iii) cooperation arrangements between the partners.

Engagement of consultants for feasibility studies, design and supervision should be under separate project allocations following international standards for project identification, planning, implementation and monitoring, using the Timor-Leste procurement regulations.

Noramb/Norad should participate in the fortnightly cooperation arrangement chaired by WB. SWAp should be considered introduced in the power sector. A reactivated Power Sector Group may form the nucleus for development of SWAp.

1 Introduction

1.1 Background for the Midterm Review

Norway has since 2002 supported the electricity sector in Timor-Leste within institutional cooperation, expanding power production capacity, management support, electricity metering and billing, rehabilitation of electricity grid, development of a small scale hydropower scheme and planning of a medium scale hydropower project. The support has been governed by several bilateral agreements between Timor-Leste and Norway. The current midterm review covers agreements totalling NOK 101,7 million, exclusively for projects financed in the planning period 2002-2008.

The cooperation has an institutional component and a technical/commercial component. The goals of the former are to assist in developing the management of hydro power sector in Timor-Leste through an institutional cooperation arrangement with the Norwegian Water Resources and Energy Directorate (NVE), and the goal of the latter is to establish a viable economic base for electricity supply in the country through support to Electricidade de Timor-Leste (EdTL) and introduction of an effective revenue collection system.

The power system in Timor-Leste is small and fragmented and mainly based on medium and small diesel power plants. The installed capacity in Dili is 19 MW, in the rest of the country the capacity is about 16 MW. Another 10 MW is installed by large consumers as their sole supply or as backup. The present power system supplies some 32 % of the households, however, it is estimated that 90 % of the population uses firewood for cooking¹.

The Government has recently established a flat tariff across the board of US\$ 0.12 per kWh, although existing regulation stipulates the price to US\$ 0.20 for commercial and 0.16 for domestic customers². For various reasons, among others the serious civil unrests after independence, a large number of customers do not pay for electricity at all. It is estimated that for the fiscal year 2003/04 EdTL revenue covered less than 35 % of recurrent spending, with Government subsidies and donors filling in the gap of close to US\$ 7 million³. It is assumed that the Government subsidies since then have increased with an escalating

¹ WB document on the Energy Sector, 2007

² Diploma Ministerial No 1/2003/MTCPW, 30 January 2003

³ The Power Sector Investment Program, February 2006

number of customers not paying, and with the estimated cost of electricity production at present close to US \$ 0.40 per kWh.

The present situation leads to higher electricity consumption than would be required should all customers have to pay a reasonable price. Apart from the Government spending money on wasting energy, the higher consumption of fuel increases pollution and CO₂ emission. With reference to the Power Sector Investment Program (SIP) and a proposal to strengthen the institutional framework and capacities in the sector⁴, the Government intends to transform EdTL from the present national directorate in MNRMEP to a public company and eventually make it financially sustainable. From September 2007 a new Canadian company takes over the management of EdTL under a 5 year contract with the Government. The contract replaces the 4 year management contract with a Macao company (CEM), which did not leave EdTL and its operations in any better shape than when the company took over⁵.

Development of hydropower, which can deliver cheaper electricity (Ira Lalaru - 27 MW, and mini hydropower), as an alternative to diesel power, is an important element of the Government's power development strategy.

1.2 Purpose of the Midterm Review

A total of 4 Project agreements with 9 additional agreements were signed between Norway and Timor-Leste in the period of 2002 to 2007, see *Appendix 2*. Although the Norwegian Government, through Noramb and Norad, has been able to monitor the program through annual reports and meetings, all parties involved agree that the time is ripe for a more thorough review of the Program.

The Terms of Reference (ToR) *Appendix 2*, state that the purpose of the midterm review is to review the overall progress of the project (e.g. program) and assess the extent to which the Program is achieving its objectives, as well as to make recommendations regarding steps to be taken that would enhance the overall efficiency and effectiveness of the Program. In reviewing the progress, the review team should give due consideration to administrative, technical, and institutional aspects of implementation respectively.

The ToR for the midterm review use the term "Project", although the review covers a total of 4 projects with 9 additional and extension agreements. In this review we use the term "Program" for all 4 projects, whereas the term "Project" is used for each of the individual projects, and the term sub-project used for the additional project agreements attached to three of the four individual projects.

In reference to the scope of work (SoW) the review team will identify the overall status of the Program in relation to its objectives and goals. The review team will identify areas of concern, as well as areas of good performance in relation to the Program progress. The conclusions of the review will form a

⁴ WB-PPIAF: Strengthening the Institutional Framework and Capacities in the Power Sector in Timor-Leste, Norplan/Econ November 2006.

⁵ The review team's assessment based on several sources of information.

basis for the remaining part of the Program and also for the decision of a possible new agreement period.

In addition to the introductory Chapter, this report covers a description of the Program and separate Projects in Chapter 2, findings and conclusions with review criteria and scope of work in Chapter 3 (with some details of the findings presented in Appendix 3), lessons learned in Chapter 4 and the review team's main recommendations in Chapter 5.

A new Government was taking office during the review. This led to that the relevant ministerial portfolios covering the present cooperation Program in the power sector were changed. Since it was not yet clear at the time of the review how these portfolios would be reallocated, the review team has used the Government structure as reflected in the ToR as the reference frame for this report. For instance, the term Ministry is used for the MNRMEP, although that ministry no longer exist as in the former Government structure.

(Allocation of ministerial portfolios will presumably be in place at the time of receiving comments to the draft report, and this may as appropriate be worked into the final report).

2 Assistance in Developing the Electricity Sector

2.1 Description of the Program

The Terms of Reference (ToR) in *Appendix 2* provide an overview of projects in the Program, which is the basis for the midterm review. There are some small allocations in addition to the ones listed in the table in *Appendix 2* that are not included in the SoW for the midterm review team.

In table 2.1 below we have linked the Program elements identified for review in the ToR with individual projects and sub-projects.

Table 2.1 Program elements as related to Projects

1.0	The program consists of the following elements:	Project/sub-project
1.1	<i>Institutional support</i> ; Based on agreement between the Ministry of Natural Resources, Minerals and Energy Policy (MNRMEP) (previously the MTCPW) of Timor-Leste and NVE of Norway institutional support is given within management of the hydro power sector. A long term adviser from NVE has worked in the Ministry permanently and short term assistance has also been given from NVE when needed. Procurement of consultancy services has been done through NVE on the development of plans for new hydro power projects.	TIM-2014-02/007, -04/010
1.2	<i>Support to the power sector – new diesel generators</i> . Jakobsen Electro has installed and put into operation 6 small diesel powered generators as an emergency to secure the electricity supply for Dili in 2002, and has provided training in connection with the emergency installations.	TIM-2018-02/012, -02/013
1.3	<i>Revenue collection</i> ; Jacobsen Elektro has provided installation of an electricity metering	TIM-2019-02/014, -03/004, -04/001, -

	and billing system (prepayment meters) as well as training of personnel in EdTL under an Interim management contract .	05/004, -05/007
1.4	<i>Grid upgrading</i> ; Jacobsen Elektro has performed upgrading of low and high voltage distribution systems in Dili.	TIM-2043-06/016
1.5	<i>Street lights</i> ; Jacobsen Elektro has rehabilitated/ built 820 new street lights in Dili.	TIM-2043-06/016
1.6	<i>Feasibility studies</i> : Feasibility studies have been conducted for small hydro power projects and for the medium size Ira Lalaru project by a joint-venture (J-V) of Norconsult/Norplan.	TIM-2014-02/007, 04/010, 05/003
1.7	<i>Coordination with other donors</i> ; Timor-Leste is in a situation where several donors assist in the restructuring and building of the country. Coordination between the donors in the power sector is an important task.	TIM-2014, 2043
1.8	<i>Construction and procurement</i> ; Norway has financed the construction of Gariuai mini hydropower project, core drilling and geotechnical surveys for the Ira Lalaru project, and a security fence around the Ministry's Fomento building.	TIM-2014-05/003, 06/004, 06/012

In the following we present the two main components of the Program with the description following the pattern of: i) Purpose, ii) Logic, iii) History (sequence of key milestones in the respective project cycles), iv) Organisation and v) Stakeholders.

2.1.1 Support to the Power Sector I (TIM-2014)

i) Purpose. The objective stated in the Agreement is to provide institutional cooperation between NVE and the relevant Ministry in Timor-Leste. The purpose stated in the NVE-MTCPW contract is to improve significantly the efficiency and effectiveness of power sector management in Timor-Leste through institutional cooperation.

ii) The Logic of the Project follows from the need to develop the power sector after independence and to identify appropriate energy sources as alternatives to the expensive and polluting diesel generating electricity production, which is the present main source of electric power in Timor-Leste.

iii) History of the Project

Sub-projects identified under separate agreements (addenda to the original agreement) are listed separately in the overview in *Appendix 3A*. Although covered under the original agreement, the Ira Lalaru project is also separately listed.

iv) Organisation

The Institutional cooperation is organised with an NVE Coordinator based in Oslo and a Project Manager (PM) responsible on the Timor-Leste side. The contract was signed with the Minister for Transport, Communication and Public Works (MTCPW). Originally the Director of EdTL was named as the Timor-Leste PM, but the Director position was taken over by CEM from September 2004 on the then one year old management contract, and the EdTL Director was appointed as Permanent Secretary (PS) in the Ministry. Consequently the Ministry took over as Implementing Agency (IA) for the NVE cooperation contract, although the PS became too busy to function as PM for the Project.

The NVE Long Term Advisor (LTA) was supposed to set up office in EdTL, but was initially assigned office facilities in the MTCPW building. When the IA responsibility was shifted to MNRMEP, the LTA and his two “counterparts” set up office in a house close to the EdTL premises, where also the Norconsult/ Norplan J-V consultants were established.

v) Stakeholders

Key stakeholders of the Institutional Cooperation Project are on the Timor-Leste side (former Government set up):

- MNRMEP with two National Directorates – NDAF and NDWE, and EdTL
- MPF – National Directorate of Planning and External Assistance Coordination (NDPEAC)
- Directorate of Environmental Services (DSMA)
- Customers of EdTL, present and future
- Socu Chiefs and population in areas affected by Project interventions
- District level Ministry administrations

At the time of preparing this report it was not entirely clear how the change of Government from 09 August 2007 will establish a new set up of key stakeholders. However, the new State Secretary for Electricity, Water and Urbanization will be the partner institution for hydropower development as he will take over the portfolio of NDAF, NDWE and EdTL. It is assumed that the new State Secretary for Natural Resources will be responsible for water resources management, hereunder the hydrometeorological network. Where the NDPEAC will be placed is not yet clear, but a likely place is the new Ministry of Economy and Development.

On the Norwegian side, the main stakeholders are:

- Noramb/Norad
- NVE

2.1.2 Support to the Power Sector II (TIM-2018), Prepayment Meters (TIM-2019) and Emergency Repair of the Electrical Network (TIM-2043)

i) Purpose

The objective defined for the three projects was to assist in developing the power sector in Dili. For TIM-2018 the purpose was to assist Dili through an emergency package containing 6 MW diesel generation capacity to be in operation before Christmas 2002. The defined outputs included personnel training for operation, management and maintenance.

For TIM-2019 the purpose was to establish a viable economic base for electricity supply in the country and maintain social and economic stability through continued supply of power to the commercial sector and vital governmental installations. The purposes of the Project were further to strengthen the administrative and management capacity at EdTL, and instituting an efficient and effective revenue collection system. The outputs would be installation of a new metering system and an intermediate management arrangement for the power sector in Dili.

The purpose of the new project TIM-2043 was to expand on the emergency repair of the electrical network in Dili started under Addendum IV to the prepayment meters project. The purpose was expanded to cover installation of street lights for central parts of Dili.

ii) The Logic of the Projects TIM-2018 - emergency generators and TIM-2043 - emergency repair of the Dili electrical network is clear, as the electricity supply was about to fall apart. The same applies to the part of the budget for emergency repair being used to install 820 new streetlights.

However, the logic of shifting from ordinary meters to prepayment meters (TIM-2019) is not equally clear. It was argued that ADB had recommended the ordinary meters to be exchanged with prepayment meters to improved revenue collection efficiency, but any serious appraisal of alternatives was not done before the first allocation was made. This issue is further elaborated in Section 3.4.

iii) History of the Projects

The history of the three Projects is outlined in *Appendix 3B*.

A comparison of Agreements signed between Norway and Timor-Leste and the contracts awarded by the Ministry/EdTL to Jakobsen Electro, also included in *Appendix 3B*, indicates that the Government of Timor-Leste has financed NOK 16,745 million (US \$ 2,4 million) of the total investments of NOK 79,545

million in emergency generators and network repair, and in prepayment meters and street lights.

iv) Organisation

All the three Projects: Support to the Power Sector II; Prepayment Meters, including the Interim Management Contract; and Emergency Repair of the Electrical Network were administered in principle by EdTL. However, the contractor Jacobsen Electro operated to a large degree on his own. Agreements with EdTL on allocation of staff to work with the contractor were not fully honoured. The contractor made contact with Soku leaders and arranged community meetings to achieve acceptance on the shift from ordinary to prepayment meters.

v) Stakeholders

On the Timor-Leste side the key stakeholders for the three Projects are:

- MNRMEP with two National Directorates – NDAF and NDWE, and EdTL
- Customers of EdTL, present and future
- Soku Chiefs and population in areas affected by Project interventions
- District level Ministry administrations in Dili

On the Norwegian side the key stakeholder is Noramb/Norad.

2.2 Other Donor Assistance to the Electricity Sector

2.2.1 Asian Development Bank (ADB)

ADB supported the power sector from independence to 2003 with inter alia a rural electrification rehabilitation plan, when the Bank withdrew further assistance due to the EdTL management contract issue⁶. ADB is preparing to take up Technical Assistance (TA) again through a multi-donor Trust Fund for Timor-Leste (TFTL) of US \$ 15 million. This will be to inter alia follow up on the Power Sector Development Plan for Timor-Leste from September 2004 (work ongoing from 2002), which resulted in a proposed Sector Investment Program (SIP) for the Power sector in Feb/April 2005. ADB TA will assist in reviewing and updating the Power SIP.

2.2.2 World Bank (WB) Group

At an early stage in its support to Timor-Leste, a Consolidation Support Program was initiated by WB with budget support financed by ten partners, and supported by others (Norway's role in this?). An annual cross-Governmental

⁶ The contract was awarded CEM without public tendering due to the emergency situation, in reference to a Council of Ministers decision on 18 September 2002.

results matrix was used as a principal instrument for dialogue between Government and development partners. A WB and ADB administered TFTL provided assistance for rehabilitation of electricity generation and distribution in Dili and a district and sub-district rehabilitation program respectively.

In the Country Assistance Strategy for 2006 – 08 the WB highlights what it terms “the new nation’s remarkable achievements”, while also striking a note of caution on the need to consolidate this early progress. Under the strategy the WB in December 2006 initiated a multi-donor grant Public Financial Management Capacity Building Program (PFMCBP) to support the goals of the National Development Plan (NDP), the Stability Program (SP) and relevant Sector Investment Programs (SIP) for: i) creating productive employment, ii) delivering sustainable services, and iii) strengthening governance (ADB supports the Power SIP).

The PFMCBP is administered by the WB with financial assistance from a multi-donor TF, including IDA, AusAid, USAID and others with US \$ 40 million to be disbursed over a 5 year period. A long range of international specialists will be engaged to assist the Government of Timor-Leste in planning and execution of projects, more under the concept of adding capacity than developing capacity.

In reference to the review team’s SoW, in particular items 6, 9, 10 and 11 it is of relevance to make an assessment on how the Program fits into the Power SIP which reflects both the NDP with the SP⁷, as well as how it complies with the WB strategy for the multi-donor grant program, of which the Norwegian support is a part (WB TF?). An attempt to review coordination efforts is made in Section 3.6

Of direct relevance for the Norwegian supported power sector program are the following development interventions supported by the WB Group:

- Power sector investment program of US \$ 1.4 million, including:
 - i) Supply of fluorescent saving lamps, delivered together with installation of prepayment meters
 - ii) Rural electrification⁸
 - iii) Low voltage network upgrading in Dili, coordinated with TIM 2043, which was executed by Jakobsen Electro
 - iv) Gas seepage collection and thermal power development in Aliambata (south coast) – planned same size as Gariuai mini hydropower project, approximately 300 kW.
- PPIAF financed study for EdTL on institutional strengthening of the power sector, resulting in i.a. a new management contract for EdTL.

⁷ The NDP and the SP have been presented to the WB/IMF as a Poverty Reduction Strategy.

⁸ Two studies were carried out by Norplan under WB finance: Rural Electrification in Timor-Leste of 2006, Network Survey Report (excluding Dili) of July 2007.

- Legal assistance for developing a Public Enterprises Law and regulation of the power sector, that will be statutory instruments related to the Electricity Supply Law⁹.
- WB has shown interest in funding a new micro, mini and small hydropower study. Funding of this has also been discussed with Noramb/ Norad.
- Some assistance has been provided through the Asia Alternative Energy Program (ASTAE), which is a program of cooperation between WB and bilateral donors, and the Energy Sector Management Assistance Program (ESMAP), which is cooperation between WB and UN.

2.2.3 Other Donors

UNDP has funded a rural energy development project, introducing solar panels.

Japan, through the Japan International Cooperation Agency (JICA) has supported Timor-Leste since independence with investments in the sector for diesel generators, transformers etc., as well as a gas seep project.

USA provided some minor assistance to the power sector in 2002-04. Recently a Program for Accelerated National Development (PAND) was designed to upgrade key infrastructure, including the power sector (financing US \$ 28,8 million for the Ira Lalaru – Dili transmission line suggested). US \$ 360 million have tentatively been allocated from the Millennium Challenge Account (MCA), which is administered by the Millennium Challenge Corporation (MCC), in parallel to USAID. The Government has pledged to raise an additional US \$ 90 million of the PAND, making the total US \$ 450 million. However, it is a chance that the amount may be cut back by Congress and the strict due diligence requirements of MCC may lead to further delays in releasing funds.

Thailand has provided a small amount to the sector. It is assumed that this may be connected to a biomass/coal thermal power plant and bio fuel project proposed to be constructed by a Thai commercial company west of Dili. The Government's contribution of 10 % of the cost, amounting to US \$ 8 million was due to be paid recently, but the new Minister of Finance postponed payment, pending further assessment. The proposed project is not included in the SIP. However, as explained in Section 3.2 NVE was involved in preparatory work for the project on request from MNRMEP.

Australia (AusAid) provides assistance to the sector through the ADB TFTL.

⁹ Establishing the Basis for the National Electricity System, Decree-Law No 13 of 24.09.2003

3 Findings and Conclusions

3.1 Review Criteria and Scope of Work

In the following we present a matrix whereby we attempt to match the key review criteria (see *Appendix I*) with relevant questions of the SoW from the ToR for the Consultant, as they relate to the review criteria.

Review criteria and question	Scope of work
a) Effectiveness – has the program achieved its objectives or will it do so in the future?	1) Review the technical progress and the efficiency of the power assistance projects, and the extent to which activities have been implemented in accordance with agreed work plans and the project objectives stated in the agreement and contracts.
	2) Assess the use of inputs in relation to demonstrated results, both when it comes to institutional support and the procurements of installation equipment and services, constructions and consultancy services.
	3) Where possible assess which results have been achieved and which have not been achieved, and key reasons for achieving or not achieving results.
b) Impact – What are the overall effects of the intervention, intended and unintended, long term and short term, positive and negative?	(not specified in SoW)
c) Relevance – Is the intervention consistent with the needs and priorities of its target groups and the policies of the partner country and donor agencies?	4) Assess the relevance, as well as the quality of competence transfer, training, workshops and seminars aimed at strengthening the human resource capacity of the government ministries staff, including staff in EdTL. The need to develop a possible long-term training plan and its possible content, should be considered.
	5) Assess whether the planned activities for the remaining project period are relevant given the overall purpose of the project and whether MNRMEP and EdTL have the necessary human, physical and financial resources to carry out these activities within the project period.
d) Sustainability – will the benefits produced by the intervention be maintained after the cessation of	(Not specified in the SoW, but may be related to Impact and the above item)

external support?	
e) Efficiency – can the costs of the intervention be justified by the results?	6) Review the financial progress of the Project and the extent to which the activities have been implemented in accordance with agreed budgets.
f) Performance (additional criteria)	7) Assess the set-up of the organisation of the Norwegian project team, how they functions within the MNRMEP and EdTL. Special focus on interaction between the Norwegian team members and the local employees, and coordination between Norwegian team members.
	8) Assess the level of coordination between different donors and donor countries in the power sector.
	9) Assess to what extent MNRMEP has made human capacity available for the co-operation and training.
Additional Scope of Work (not directly linked to the review criteria)	10) On an aggregate level assess the environmental impacts of the investment projects (in particular the Gariuai mini hydro) compared to alternative approaches.
	11) Recommend on how to achieve transparency and adherence to local procurement guidelines in the remaining part of, and potential new agreement period.
	12) Give advice to improvements of the Project for the remaining agreement period.
	13) Make recommendations on the relevance of a renewed support to the electricity sector in Timor-Leste, with emphasis on focus areas for such support.
	14) Briefly review the Project's emergency preparedness plans and Health & Safety issues relating to the Project staff. Make recommendations to possible further measures to be evaluated or implemented prior to a project extension.

In the following sections we present factual evidence, data and observations relevant to specific questions in the SoW for the review team, as related to individual Projects. Assessment of the effectiveness, impact, relevance, sustainability and efficiency is done to the extent these review criteria are reflected in the SoW.

3.2 TIM-2014 Support to the Power Sector I

3.2.1 Main Tasks of the NVE – MTCPPW/MNRNEP Contract

The ToR with SoW for the Institutional cooperation are integral parts of the contract of 18 February 2003 between NVE and MTCPPW (later MNRNEP). The SoW for Phase 1 carried out during the first year of the Institutional cooperation included among other things: i) arrangement of mutual visits, ii) assessment of the need for hydrological network and detailed plans for same, iii) procurement of consulting services for two medium hydropower schemes (Ira Lalaru and Lacro), and detailed plans for one mini hydropower scheme (Gariuai), iv) commencement of the work of the NVE LTA – he was fielded mid October 2003, v) start of training activities, and vi) planning of Phase 2. In

addition, the NVE Legal Advisor made the first visit to establish a framework for the future legal assistance.

Specific tasks outlined for Phase 2 in the NVE-MTCPW contract include items 1 – 9 below. Items 10 – 12 were added in the work plan for 2005-08 incorporated in the Phase 1 progress report.

No	Task	Review team comments
1	Develop MTCPW's (later MNRMEP) organisational structure and key functions within the power sector and water management sector	<i>No detailed plan, no output defined, not carried out in a consistent way</i>
2	Human resources development and capacity building in the following identified fields:	
	Hydrological monitoring and analysis	<i>Training provided</i>
	Hydropower resources development, management and licensing	<i>Training provided, not on licensing?</i>
	Evaluation of projects related to licensing	<i>No training?</i>
	Harmonising legal framework for water, hydropower, irrigation etc. *)	<i>Partly covered</i>
	Simplified regulatory framework *)	<i>Partly covered</i>
	Contracts used in the power sector *)	<i>No training?</i>
	Structuring of tariffs and regulation *)	<i>No training yet – to be provided</i>
	Accounting principles, financial reporting	<i>No training?</i>
	New and renewable energy resources	<i>To be provided</i>
	Procurement procedures	<i>On-the-job, Norway</i>
3	Updating previous feasibility and pre-feasibility studies	<i>Achieved</i>
4	Initiating pre-feasibility studies in new areas	<i>Achieved for Ira Lalaru and Gariuai, two potential projects being worked on</i>
5	Improving/upgrading of hydrological network	<i>Commenced, good progress</i>
6	Develop a database and information system	<i>ADB sponsored Hydromet system not adequate New Hydata suggested</i>
7	Preparation of a national basin based water resources (management) plan	<i>Not yet applicable</i>
8	Upgrading of office equipment and establish a small library	<i>Small library established</i>
9	Organise study tours and mutual visits (should be under item 2)	<i>Partly achieved</i>
10	Prepare for and attend annual meetings	<i>Partly achieved</i>
11	Follow up/assist J-V with feasibility studies, including core drilling for Ira Lalaru	<i>Partly achieved</i>
12	Prepare for and carry out tender process for Ira Lalaru and Lacro, evaluation, contract	<i>MNRMEP instead requested for the J-V to</i>

	negotiations and signing	<i>do this, add. NOK 3 mill.</i>
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*) Although appearing only as training activities, NVE has provided legal advise and comments to the legal framework and has prepared draft legal documents (see below).

3.2.2 Institutional Cooperation

In addition to the technical assistance provided by the LTA over close to a 4 year period (from 14 October 2003), the following specialists from NVE have provided TA in Timor-Leste.

2002, Jan	Hydrologist and Civil Engineer	Identification survey, report on proposed cooperation (prior to commencement of Program)
2002	Civil engineer	Several short trips
2002, Oct-Nov	Hydrologist Network expert, Civil Engineer	Report on Institutional Cooperation
2004, Jan-Feb	Legal Advisor	Annual meeting, start of legal work
2004, Feb-Mar	Two Hydrologists (one the NVE coordinator)	Hydrometeorological reconnaissance, prepared mission report.
2005, Jan-Feb	Legal Advisor	Annual meeting, legal work continued
2005, April	Hydrologist and Energy Specialist	Planning of hydrometeorological services, report on Water resources monitoring and organisation Conducted 2 workshops on hydrology and water resources management
2005, Oct	Legal Advisor	Legal work and project coordination
2006, Jan-Feb	Legal Advisor	Legal work
2006, Oct-Nov	Hydrologist	Location of gauging stations
2007, Jan-Feb	Energy Specialist	Annual meeting, project coordination, training program

The Legal Advisor has been involved in inter alia the following tasks:

- Preparation of a Power Purchase Agreement and Implementation Agreement regarding a proposed biomass power plant and bio fuel project (in addition to the work of the Legal Advisor, NVE contracted a local legal consultant and Norplan to assist with this work);
- Comments to the Electricity System Decree-Law No 13/2003 and recommended a new law to be developed (after the change of Ministry, this was finally not accepted),
- Review of the draft Water Resources Policy, initially assisted by ADB (it is assumed that ADB will be involved in the further work).

In addition to (or in connection with) development of the hydropower potential of Timor-Leste, NVE has under the Institutional cooperation also focused on upgrading, installation and operation of the hydrometeorological network in the country. However, this activity did not originally cover the wider scope of water resources management (WRM) as expressed in the SoW for NVE, to prepare of a national basin based water resources plan. Although WRM as such was not focussed on as a key component in the Phase 2 work program, the NVE hydrological mission in April 2005 made a set of recommendations, which if followed up, in the long term would establish a new government agency for WRM, autonomous from sector ministries, including hydrological monitoring and analysis¹⁰.

3.2.3 Training Program

In *Appendix 4* an overview of training activities conducted and/ or sponsored under the Institutional cooperation Project is presented, as reported by the LTA to the review team (*Refer to SoW 4,9*). From the number of identified staff included in the training program it is clear that MNRMEP (and previously MTCPW) has not been able to make sufficient number of staff available for training activities, apparently for the simple reason that there are very few professional staff in the relevant Directorates.

Beside that, the overview shows that:

- i) A number of training activities have taken place in Norway. In case adequate training is available closer to Timor-Leste, for example in Indonesia, this is not an efficient use of resources. The LTA and EdTL deputy director made positive contact with PLN (the Indonesian Electricity Company) in 2005, but so far this has not resulted in any concrete training arrangements.
- ii) Mainly senior staff from EdTL and MTCPW/ MNRMEP, including the Minister and the State Secretary have received training.
- iii) The two “counterpart” staff working with the LTA and who have so far been refused permanent employment in MNRMEP, have received most of the training offered.

Taken the very limited number of staff available into account, the training offered seems to be relevant. The review team has not been able to assess the quality of the various training activities, however, the two “counterparts” appear to be well trained and capable of performing their jobs.

As long as the low number of staff available for training prevails, the review team cannot see the need to develop a comprehensive long term training program, apart from planning of training activities as part of other components of the Program, based on training needs assessment of identified staff. In case Norwegian funds will be made available for medium and long term scholarships, a program should be prepared based on perceived needs of the

¹⁰ Water Resources Monitoring and Organization in Timor-Leste, NVE August 2005.

key institutions of cooperation, including bonding arrangements for students receiving scholarships.

3.2.4 TIM-2014 Some General Findings and Conclusions

Project Planning. The Project was not planned in accordance with the Norad Development Cooperation Manual, thereby causing uncertainties on some aspects of the Project. This has also created some difficulties for the review team to get a clear picture of the purpose, detailed description, expected outputs and planned deliverables for each of the activities/tasks listed in the NVE-MTCPW contract's SoW¹¹.

The contract set up is a mix of obligations and SoW. Obviously it would have been more appropriate to separate the ToR with activity description, budget and personnel/activity schedules in appendices to the contract, which ideally should reflect an international standard contract framework.

The ToR are not clear, neither for NVE as institutional development partner for MTCPW/ MNRMEP, nor for the Long Term Advisor (LTA). The Annual meetings have repeated requests for improved work planning, budgeting and reporting, which only partly have been followed up.

The budgeting and accounting system in use by NVE and the LTA makes it difficult to monitor results against the use of financial and human resources (e.g. efficiency), to periodically measure expenditure against separate budget lines on an aggregate level, and to assess progress against implementation time and use of resources.

For example, the NVE record on hours invoiced does not distinguish between field and home office work or between coordination and training work. Of a total of approximately 23 person months professional input provided by NVE (in addition to the LTA) by the end of second quarter 2007, it is assumed that some 14 – 17 person months relates to professional assistance and training, the rest relates to coordination and administration. Whether this is reasonable or not will at best be a calculated guess as long as there is no originally planned personnel schedule to relate to.

Another example: Water resources management with development of the hydrometeorological network and data base, which is an important component of the Institutional cooperation, is not indicated in the budget/accounts set up with a separate line.

The development concept applied by Norway in this Project has left almost the whole project cycle for the institutional cooperation to be developed and implemented by NVE, from fact finding, through feasibility studies, preparation of ToRs, budgets and contracts for its own engagements, to implementation and completion.

¹¹ Contract between NVE and MTCPW of 18 February 2003, with additional tasks added for Phase 2.

Monitoring and reporting procedures are confusing, both with regard to who shall report to whom, and with regard to contents of the reports. The contract states that NVE shall present quarterly reports to MNRMEP. However, a half yearly report (Jan-July 2007) was prepared by the NVE coordinator from home office, covering the same periods as the LTA quarterly reports to MNRMEP (although the LTA states that he does not regard himself as representing NVE, see below). The Ministry shall prepare annual reports to Noramb (the reports are drafted by the LTA).

NVE's role in institutional strengthening (*Refer to SoW 7*). There have existed some misunderstandings regarding NVE's role related to reforms, institutional development and capacity building for EdTL. The purpose of the Project as specified in the contract is to improve significantly the efficiency and effectiveness of the power sector management in Timor-Leste. And this is reflected in the NVE's SoW main task 1 on development of MTCPW's organisational structures and key functions within the power sector and water (resources) sector.

Since EdTL at the time was an integral part of the MTCPW organisational structure and as it is the main institution formally identified to produce, distribute and sell electricity (e.g. management) in Timor-Leste it was assumed that EdTL should be one of the two main targets for the NVE institutional assistance. In addition to institutional strengthening, this would also be related to facilitation of hydropower development as an alternative to the present diesel based power production in the country and development of the hydro meteorological network.

LTA functions and office. Initially it was therefore planned that the LTA should be placed with an office in the EdTL. At the commencement of project operations in October 2003 it was learned that the MTCPW had entered into a management contract for EdTL with the Macao based company CEM. This was done in reference to a Council of Ministers decision on 18.09.02 authorising the Ministry to exempt the contract from public tendering due to the emergency situation¹². It was therefore agreed that the LTA should set up office on the premises of MTCPW. The LTA was, however, appointed to the Supervisory Committee set up for the management contract until the committee was suspended by the Minister upon request from the second EdTL Director from CEM.

The LTA and his "counterparts" moved to the MNRMEP after the EdTL was transferred to that Ministry in 2005, although with an office separate from the Fomento building where the Ministry is housed.

Given the situation regarding EdTL the review team has found it reasonable that NVE in collaboration with its partner in Timor-Leste concentrated its work on hydropower development and the hydrometeorological network. On the other hand, the Ministry apparently did not ask NVE to assist in developing a

¹² ADB had assisted in preparing the contract and bidding procedures. The Council of Ministers' decision led ADB to tentatively withdraw from further assistance to the Power sector.

strategy for institutional strengthening of the power sector, this was done by a WB/PPIAF financed consultant¹³. However, the training program includes some trainees from EdTL and covers subjects directly related to EdTL operations (see *Appendix 4*).

The Ministry indicated for the review team that they would prefer to have an NVE advisor on a higher level of the Ministry (although the LTA throughout his assignment has had direct access to the Minister, both the MTCPW and the MNRMEP). The Ministry raised concern that the LTA devotes too much of his time to hand-on supervision of field and construction operations. The review team finds that although this may be defined to be on the side of the contractual institutional arrangements, the hand-on supervision has been instrumental in both the timely implementation of the Ira Lalaru feasibility surveys and studies and in particular of the Gariuai project.

Timor-Leste Project Personnel. Apparently there are also some misunderstandings regarding “counterparts”. The contract specifies that the MTCPW should appoint a Project Manager (PM) to lead the project and be responsible for coordination. In addition the Ministry should make available sufficient and qualified personnel to cooperate with NVE and its personnel. The word “counterpart” is not used in the contract, and it is not clear whether the PM should be the direct counterpart to the LTA or only act as the Ministry’s liaison with the NVE home office coordinator. This uncertainty is, among other things, a clear weakness of the contract.

Originally the EdTL Director was identified as PM, but when he was appointed State Secretary in the Ministry, a new PM was apparently not identified. During meetings with Ministry officials, the review team was not presented for any identified PM. It is, however, assumed that an official at Director level in the Ministry has been given the NVE contract as part of his portfolio, but it is not clear to the review team whether this is the Director of NDWEP or Director of NDAF.

On the other hand, MNRMEP has not yet met its contractual obligation regarding identification of staff to work with the NVE personnel. The staff working with the LTA (counterpart and accountant of the Hydropower Project respectively) are remunerated from Project funds¹⁴.

In reference to a decision by the Minister of MTCPW in June 2005 to employ the two “counterparts” engaged by NVE under the Project within 6 months, the LTA has repeatedly stressed the need for the Ministry to employ on a permanent basis the two “counterparts”. After the change of Ministry, the new Minister did not feel obliged to honour the decision of the former Minister, and he recently finally turned down the request for employment.

¹³ Strengthening the Institutional Framework and Capacities in the Power Sector in Timor-Leste, Norplan/Econ, November 2006.

¹⁴ The term “Hydropower Project” seems to have replaced the original Project title “Institutional Strengthening of the Power Sector in Timor-Leste”.

The main difficulty faced by the Ministry to identify permanent staff to work with the Project is that there simply is not enough staff available. One would assume that some of the staff being trained under the Project eventually would be given responsibilities related to the NVE contract. A review of the training activities conducted under the Project up to middle of 2007, however, shows that a total of 8 staff members of EdTL and the two Ministries involved have received one form of individual training or other (the two “counterparts”, workshops and English training not included). Of these, there is one Minister, one State Secretary and three Directors. It seems to the review team that the relevant paragraphs in the contract were too optimistic, and not sufficiently reflecting any prior institutional analysis.

The Role of the LTA. On top of the apparent ambiguities of the contract regarding identification of staff to work with the Project, the role of the LTA in relation to NVE is neither clear. His ToR states that he should have his loyalty to, work for and report to the Minister. On the other hand, he is employed on a contract with NVE and is provided by NVE to the Ministry as an advisor, not to fill a line function. His NVE representative functions are further substantiated by a statement in the contract (Article 5) that NVE shall follow up of the consultant firms’ work on two medium and one mini hydropower schemes. For practical purposes the main part of this work can be done only by NVE personnel based in Timor-Leste, here mainly the LTA. His ToR further state that he shall follow up the implementation of the contract, understood to be on behalf of NVE, as the partner Ministry appointed PM would follow up on behalf of the Ministry.

Status of EdTL. There seems to be various opinions regarding the status of EdTL. The Ministry representatives argue that EdTL already is “semi-autonomous”. This is contrary to the fact that EdTL does not maintain accounts separate from the Ministry, revenue collected from customers is paid to the MPF, EdTL receives its budget allocation from Ministry of Planning and Finance (MPF) through MNRMEP and the staff of EdTL are Government employees.

3.2.5 Planning and Construction of Gariuai Mini Hydropower Project (05/003) in Baucau

The Project started in September 2005 and was then planned to be completed for commissioning one year later. Originally it was assumed that the project would be contracted out as a turnkey project, but this was later changed to several contracts. Due to a boom at the world market for steel the turbine could not be delivered at site before in May 2007. Also the price for the turbine was higher than budgeted. The delivery time for the penstock was also longer than planned. During the civil unrest it was not possible to get transport for the penstock from Dili to the site. Together with the start of the rainy season, this slowed down the work on the penstock. Presently the plan is to complete the project by March 2008.

In principle, the MNRMEP has the responsibility for the project through EdTL.

In practice it is the LTA and his “counterparts” who are supervising implementation of the project. They have done a very good job so far and should be credited for bringing the project up to the status of today.

Manpower to do most of the work comes from the 8 small villages in the project area. Several teams are working at the same time at different locations. Each team, consisting of 5-15 workers, works for two weeks. After the second week, a new team takes over. The teams are set up after discussions with the Soku Chief for the 8 villages. Several information meetings were arranged to inform of the project and recruit workers. So far more than 1200 local workers have participated in the construction work. The additional income of the workers, who mainly are farmers, is mostly invested in improving agricultural practices and better household equipment.

Students from the vocational training centre, Fatumaka Training Institute, close to Gariuai, also participate in the work on the power project, including the transmission power line as part of their education.

At the day of the review team’s visit the following progress was noted:

- A simple access road, adequate for construction is completed;
- The transmission line for connection to the local grid is completed;
- Work on the power house is ongoing and will be completed by September 2007;
- Work on the penstock is almost completed;
- The cost of the Project will exceed the budget. The Government has requested for additional grants to complete the Project;

The main conclusions noted for the Gariuai Project so far are:

- The project is delayed compared with the original plans. This is explainable due to the circumstances. So are also the extra costs;
- With regards to involvement of local workers and training of these the project has been a success. Engagement of local manpower has improved the quality of life of the local people, and given them knowledge and training for further construction work;
- The cooperation with the local leaders is an example to be followed;
- With the power station in operation it will produce 1,5 GWh annually and replace some of the expensive and polluting production by diesel generators.

3.2.6 Ira Lalaru Feasibility Studies (02/006-04/010)

The contract with the Norconsult/Norplan J-V was signed on 25 June 2003 and the consultants were fielded from August the same year. In addition to the Ira Lalaru project, the J-V consultant’s ToR originally covered a potential project

in Lacle and the Baucau (Gariuai) project. During the work it was found that Lacle probably would not be financially feasible, and therefore it was tentatively put aside. Instead work started on two other potential small projects, the Atsabe with a potential of 3 – 7 MW and Maliana with a potential of 1 – 1,5 MW. In addition, the consultant has identified a potential project in the neighbouring district of Bobonaro with a potential of 1 – 1,5 MW.

An Australian consultant company was engaged to conduct the environmental impact assessment (EIA) for Ira Lalaru, and Norad recently engaged a separate consultant to do quality assurance on the EIA report. It was reported that the Timor-Leste Directorate of Environmental Services (DSMA) recently approved of the EIA report and the environmental management plan (EMP) with some comments. The decision will be presented in meetings with the affected local communities and authorities. Noramb has been requested for additional funding of the EIA consultant due to changes in the Timor-Leste EIA regulations after commencement of the work.

The J-V consultant is presently working on the bidding documents for the Ira Lalaru project and the feasibility studies of the Atsabe and Maliana projects. The consultant has requested Noramb for additional funding for the Ira Lalaru work due to more complex geological conditions than initially expected.

The J-V consultant advises against a turnkey contract for the Ira Lalaru project and recommends that three contracts should be awarded, i) construction works, ii) electro-mechanical, and iii) the transmission line. The main reason for this recommendation is the uncertainty regarding the geological karst conditions in the mountain range, through which the canal tunnel shall be constructed. Neither the core drilling nor the tracing tests were conclusive (see Section 3.2.7 below) and a bidder in a turnkey proposal will be expected to include a big risk component to cover for all eventualities.

The review team supports the J-V consultant's recommendation.

3.2.7 Ira Lalaru Core Drilling and Geotechnics (06/004)

The sub-project was approved by Norad as an addendum to the Institutional cooperation project (TIM-2014). The rationale for carrying out core drilling in the line of the proposed water canal tunnel through the mountain range was uncertainties regarding quality of the rock. Tracing tests had indicated water leakages in the rock, and the purpose of the core drilling was to establish the need for watertight lining of the canal.

The drilling job was contracted out to a local company and the exercise was used also for training of students from the National University of Timor-Leste and Dili Institute of Technology. People from villages in the area were engaged as workers in the operation.

As mentioned, the tests from the drilling operation were not conclusive due to the fact that one of the two holes drilled did not reach to the depth of the

planned tunnel because the drill shaft broke. The data regarding rock quality are still not sufficiently accurate to estimate the need for lining of the canal with some degree of certainty, which therefore make the efficiency of this sub-project questionable.

On the other hand, there were a number of positive spill-off effects from the project; e.g. the mentioned training of university students and increased income for the local population, as well as improved operations of the engaged company with new drilling equipment, which the company now uses in other projects such as investigations in connection with development of the harbour.

3.2.8 Security Fence Around Fomento Building (06/012)

Norad approved of an allocation in an addendum to the TIM-2014 Agreement in August 2006 to be used for cleaning up and construction of a new fence around the government building Fomento housing the MNRMEP, after the civil unrest in May-June the same year. The cleaning up was carried out by unemployed youth, organised by the LTA and construction of the fence was contracted out to a local company.

During the visit of the review team it was observed that the construction work seemed to be of good quality and occupants of the building stated that the new fence had prevented new attacks on the building.

3.2.9 Assessment of Environmental Impact and Sustainability of Investment Projects

In reference to SoW item 10) the review team is asked – on an aggregate level, to assess the environmental impacts of the investment projects compared to alternative approaches. This included originally the relatively large investments in the new 27 MW hydropower project in Ira Lalaru, and a planned 132 kV transmission line to Dili. During the midterm review it was known that the Government of Timor-Leste had decided to go ahead with the Ira Lalaru project and had requested Norad for additional funding to assist in the bidding process.

However, Norad engaged a separate consultant for quality assurance of the EIA and EMP reports on the Ira Lalaru project, including the core drilling and these projects are therefore not included in the SoW of the review team. This assessment of the EIA work includes only the Gariuai mini hydropower project under TIM-2014.

For the Gariuai project, an environmental screening was carried out by the DSMA in reference to guideline No 6, in January 2005. The Project was classified as Category B due to: i) the project requires a new road of approximately 2 km to be constructed, ii) the project is located in a cultural and traditionally sensitive area (Lulik), and iii) the diversion of water from the river might have a negative impact on a small 500 m² paddy field downstream of one of the two intakes. A category B project requires an EMP to be prepared,

and this was done in conformity with the Screening Decision of DSMA. The EMP was eventually approved by DSMA.

The EMP includes a number of formal and procedural matters to be observed by the project, as well as technical conditions and mitigating actions under the overall responsibility of EdTL as the owner of the project. The review team finds that the EMP takes care of all relevant environmental and social/cultural issues. The LTA, functioning as the PM of the project, confirmed that the EMP is being adhered to during construction.

For the installation of the 6 small diesel generators in Dili (TIM-2018) an environmental assessment was not regarded as required due to the fact that it was an emergency situation – the city of Dili was virtually without electric power, and the new generators would replace worn out and broken down larger generators.

Various donors, mainly the WB, have come up with ideas regarding potential energy sources for Timor-Leste apart from hydropower, hereunder the onshore gas and oil potential (gas-seep in the south), gas and oil from offshore exploration, wind and solar power, heavy oil generators, and biomass/bio fuel. There are available documentation on some of these alternatives, and the Power SIP presents an overview¹⁵. The conclusion made some time back was that there is an unknown potential from oil and gas-seeps (further documentation was not made available), a decision on possible onshore pipelines from the offshore fields is still pending, wind power will not be economically competitive with other sources, only subsidised small scale solar power would be feasible on a local level, and there is insufficient biomass reserves in Timor-Leste to allow for commercial utilization in power production.

In considering alternative power sources, the emission of CO₂ and other pollutants from diesel and heavy oil generator plants, in addition to the high cost of oil, are factors, that alone has lead the government to search for alternatives. Although environmental impacts are unavoidable regarding hydropower projects, in particular during the construction period, experiences show that serious impacts can be mitigated and that the end result is a long lasting, reliable and environmentally friendly power source.

The work done on the Ira Lalaru and Gariuai projects is regarded as highly relevant – the intervention is consistent with the needs and priorities of Timor-Leste and its people and with the policies and priorities of the country.

Provided the projects are being implemented, commissioned and operated in a professional manner, there are all reasons to assume that they will continue to produce clean, inexpensive and environmentally friendly electricity to the beneficiaries for the foreseeable future.

Regarding efficiency, with the electricity costs indicated per kWh to be delivered from the two projects, the investments will be justified by the

¹⁵ Power – Priorities and proposed sector investment program, MNRMEP Feb/April 2006.

expected results. The cost per kWh delivered in Dili from Ira Lalaru is estimated to US \$ 0.065 and for the Gariuai somewhat higher, but still within future affordability levels.

3.3 TIM-2018 Support to the Power Sector II

6 Cummins 50 KTA generators were delivered as a turnkey contract in the period from November 2002 to January 2003 (5 in the original contract, 1 additional as a variation order, as the budget for the training program later was made additional to the original budget of NOK 14 million). The 5 first of the 1 MW generators were installed and connected to the grid on 24 December, just in time for the Christmas Holiday as planned, and the last one some time later. All 6 generators were commissioned and handed over on 24 January 2003. The Turn key contract was executed within the agreed contract sum of NOK 14 million.

The addendum 02/013 to the TIM-2018 agreement represented an additional Norad allocation of NOK 420,000 for the training program (3 % of the contract sum). The Training Support Program was completed by the end of March 2003 and this completed the Project. However, the amount invoiced on Variation Order nr. 1 was NOK 286,965. This sum is not reflected in the audit report from Les Johnsen FCA of 27 November 2005. The auditor stated that he did not get access to the required Government records. The auditor's report was filed by Noramb without comments.

During the review team's visit to the Comoro Power Plant it was found that two of the generators were disconnected due to lack of maintenance. One of the generators has been used as spare parts for the others. Presently the remaining generators are used as backup should one of the larger generators fall out.

The main conclusions for the Project at Comoro Power Plant are the following:

- Implementation of the contract reflected the goals, objectives and the scope of delivery as stated in the contract;
- The Project was delivered within the allocated time and the agreed contract sum;
- The equipment has good quality and it was installed properly;
- To achieve sustainability of project benefits in general, it is necessary to set aside sufficient financial and human resources for proper maintenance.
- The emergency generators were supposed to operate in Dili only until the larger, permanent generators were installed and put into operation. The original intention was then to install the small generators in other areas of the country. Why this was not done is not known to the review

team. The solution to use the small generators as backup, using one as spare parts for the others may seem to be adequate if there is nowhere else they may be of use.

3.4 TIM-2019 Prepayment Meters and Interim Management Contract

3.4.1 Prepayment meters

The total number of prepayment meters supplied are about 35,000. In addition to the meters all necessary installation equipment, software, servers, terminal, printers etc. are purchased. All the necessary equipment and software for management of the EdTL billing system are properly installed. One Customer Centre is build up at Caicoli. Two points of sale of power is established, one in the south and one in the north of Dili.

During the implementation of the first contract it was discovered a lot of illegal connections. This combined with an insufficient customer register and the principle that all potential customers in Dili should be connected, lead to an increased estimate of required number of meters from 10,000 to 35,000. This also indicates that the project was not properly planned from the start.

At the start of the installation period the contractor had to struggle to get access to the houses due to scepticism from the local Soku Chiefs as well as the customers. In order to rectify this situation and to teach the people about the prepayment meters and the metering system, an intensive information campaign was started. The campaign included repeated information on TV and radio, advertising in all three newspapers in Dili and 40 meetings with the Soku Chiefs and the communities.

After the public campaign, installation of meters made good progress with training of customers in how to use the meters. So far 24,300 of the total of 35,000 meters are installed. 5 installation teams engaged locally by the contractor worked in parallel under one supervisor during the installation period. The contractor reported that counterpart staff promised by the EdTL management normally did not show up for work.

Addendums II and III to the TIM-2019 Agreement financed 17,000 and 10,000 additional prepayment meters. The additional allocation in Addendum II of NOK 15,68 million is reflected in a Variation Order No. 1, and the allocation of NOK 5 million in Addendum III is reflected as part of the total budget of US \$ 1,559,000 in the Contract Variation Order No 2 to the Installation of Pre-payment Meters Contract between the Ministry and Jacobsen Elektro.

Addendum IV of NOK 6 million partly financed additional prepayment meters and the first emergency repair of the electrical network in several parts of Dili. This was necessary as the voltage drop was so large that the prepayment meters could not operate. This sum is reflected in the Contract Agreement for

Improvement of the Low Voltage Network in Dili and the Contract Variation Order NO 1 to this Contract, between the Ministry and Jakobsen Elektro.

The total investment cost for the 35,000 meters is NOK 36,8 million (rate 1 US \$ = NOK 7,00), of which NOK 25,8 million was grant from Norway. The remaining budget for installation of the remaining approximately 8-9,000 meters in store is NOK 0,8 million.

Main results of the investments in prepayment meters:

In the first period after installation (late 2004, beginning 2005) the collection rate was up to US \$ 240,000 per month. Bypassing of meters started towards the end of 2005, and after the civil unrest started again in May 2006 the collection rate fell to approximately US \$ 100.000 per month. During the unrest it was difficult for the customers to get to the sales points to buy cards. In addition the Government declared that bypassing of meters was acceptable due to the unrest situation. Presently it is estimated that up to 90 % of the installed prepayment meters have been bypassed.

People interviewed indicated to the review team that EdTL staff are involved in bypassing the meters and get paid by the customers for the work. In case the allegations are correct, the corrupt practice is a violation of the Project Agreements between Norway and Timor-Leste.

As a consequence of the fact that most people do not pay anything for their electricity consumption the power demand has increased by some 3 MW to 14-15 MW, which is about 20 % of the total production at Comoro Power Plant. This results in higher costs for fuel and increased air pollution.

It was indicated for the review team that some 3,000 meters have been damaged beyond repair as a consequences of burned houses and damaging bypass practices. So far very little have been done by the EdTL management to stop the bypassing of meters and to raise the collection rate.

In order to make it more difficult to bypass the meters the contractor and EdTL have developed a new installation standard. This will be used for future installations and repair of existing meters, especially for customers where the meter is placed indoors.

The main conclusions for the Prepayment meters project are:

- Up to the civil unrest started again in May 2006 the installation of prepayment meters was regarded as a success. However, bypassing of the new meters started even before the civil unrest, and after the unrest the collection rate fell dramatically.
- No assessment was done of risks related to installation of prepayment meters in an environment of evident potentials for civil unrest. The situation whereby customers found it too dangerous to venture out to buy new cards to load the meters could have been foreseen in a risk analysis during planning of

the Project. Ordinary meters could have continued functioning without need to individually cut the electricity supply in an emergency situation.

- As the situation is at present, the review team concludes that shifting from ordinary to prepayment meters was not a relevant approach under the circumstances. It turned out not to be sustainable, given the technology used, which made it very simple to bypass the meters in different ways. The cost of the intervention can therefore not be justified by the results as at present.
- The company engaged on a management contract with EdTL for 4 years has not done much to rectify the situation and has not made much effort to increase revenue collection. Aside from this, the EdTL managing director from CEM was personally not in favour of installing prepayment meters. Evidently there has been very little communication between the EdTL management and the contractor, as the managing director was not even aware of which type of data is stored in the customers' registry of the EdTL Commercial Department, on the computer installed by the contractor.
- The situation with CEM in charge of EdTL on a management contract during implementation of the Prepayment meters Project makes it very difficult to assess the effectiveness of the Project, e.g. to what degree the Project intervention has achieved its objectives of establishing a viable economic base for the electric supply. The civil disturbances and political interference in tariffs setting and the revenue collection procedures add to this difficulty.
- However, If the Project is to achieve its objectives, the Ministry and EdTL must increase their efforts to increase the revenue collection rate as a matter of high priority. This may be done by a combination of several measures, such as: i) new campaigns to change the attitude of the customers, ii) better organization of the revenue collection system, iii) regular inspections to detect and avoid bypassing of meters, and iv) new technology for installation of meters to make it close to impossible to make a working bypass, and v) investigation (independent from EdTL) of the present practice of engaging EdTL staff to conduct bypass operations and institute necessary measures to rectify the situation.

3.4.2 Interim Management Contract (02/014-03/004)

When the contractor installed the emergency generators (TIM-2018) towards the end of 2002 and during installation of prepayment meters from 2003 the need for improved management, operation and maintenance for the electricity supply was evident. The Ministry entered into an interim management contract with Jakobsen Electro, funded with approximately NOK 2 million from the first Norad allocation to prepayment meters.

An Addendum I to the Agreement on TIM-2019 financed an extension of the interim management contract between Jakobsen Electro and the Ministry. The additional Norad allocation was confirmed in a variation order of US \$ 100,000 to the contract. The contractor prepared technical reports, which proposed the establishment of two maintenance teams, one for emergency repairs and one for ordinary maintenance. During the contract period the efficiency of the electricity production and distribution from the Comoro power station

reportedly improved significantly.

For the main contract sum of US \$ 295.000 the review team has found no audit report. For the Variation Order no 1 (additional 0,7 million), the audit report from Les Johnson FCA confirm that the funds were spent according to the contract.

The main conclusions regarding the management contract are that:

- The goals, objectives and the scope of delivery are in accordance with the contract, the grant from Norway and the contract sum correspond.
- The recommendation in the report from the contractor should be followed up by EdTL regarding organization and budget allocation for maintenance of the power station and distribution network.

3.4.3 Return of Vehicles to EdTL

A total of 3 second hand vehicles (2 hi-lux pick ups and 1 forerunner) were purchased under two of the contracts. One vehicle was handed over by Jakobsen Electro to the EdTL Commercial Department at the completion of phase II (Addendum 2), whereas in accordance with the contract of 17.10.05 between Jakobsen Electro and EdTL, 2 vehicles should be retained by Jakobsen Electro until completion of the whole project and then be handed over to EdTL by the end of 2008.

However, in a letter of 08.06.07, the MNRMEP State Secretary requested one vehicle to be handed over to the Ministry, and an agreement to that effect was signed between him and the EdTL Director on 28.06.07. This resulted in that the EdTL Commercial Department had to return the vehicle they used for inspection of meters to Jakobsen Electro. It was reported to the review team that the vehicle on number plates 02-375 G requested by the State Secretary, later was observed registered on Government plates and presently it is reported to be registered on private plates.

Norad requested the review team to look into the issue. We have concluded that the transaction between the State Secretary and the EdTL Director was a breach of the EdTL contract with Jakobsen Electro, and also contrary to the principles of Norwegian assistance to the Project. It is, however, outside the SoW of the review team to present any recommendations in the case.

3.5 TIM-2043 Emergency Repairs of the Electrical Network – Street Lights

The poor conditions of the low voltage network in some parts of Dili causes voltage drop of more than 50 Volts. Under these conditions the prepayment meters cannot operate. The repair of the electrical network started in February 2006. Due to the security situation, all work was suspended in two periods

between May and August. The work was carried out area by area divided in two phases. Phase 1 contains 36 areas and phase 2 12 areas. The areas were allocated by EdTL and additional areas were allocated for repair under a WB financed project.

All materials for phase 1 and 2 are delivered. The equipment used and installation work are based on Indonesian standards. This makes it easy and not so costly to purchase spare parts for maintenance of the electrical network. The installations delivered comply with the contract with the contractor with respect to quality, quantity and price.

The installation of Phase 1 was completed by the end of 2006. The installation of phase 2 is planned to be completed by August 2007. The work done is documented in accordance with EdTL standard for documentation of contractual work. Up to now about NOK 800,000 are remaining from the budget (TIM 05/007). This is planned used for ending phase 2 and to buy some spare parts.

In November 2006 the project for installation of about 820 street lights on 40 km of streets/roads started with a system design report and with an agreement on the scope of work for the contractor. Part of the budget for emergency repair was used. The UN police was involved in discussing areas for installation of street lights together with the Ministry and EdTL. Installations then followed the priority list prepared by EdTL and the contractor in reference to the discussions.

The installation of all 820 street lights was completed in July 2007, an impressive achievement. The equipment used are of good quality, especially the lamps, which are built to withstand rough treatment.

After the installation of street lights the security situation has improved. Children are playing outdoor after dark, and people walk in the streets by night. The people and the local Soku Chiefs look after the street lights and prevent the youngsters' attempts to destroy the lights.

About NOK 8,5 million remain from the TIM-2043 Agreement and contract. The new State Secretary for Electricity, Water and Urbanization has indicated that the remaining funds may be reallocated for development of a master plan for the high voltage grid of the country, alternatively for a master plan for the electricity network in Dili.

The main conclusions for the Emergency Repair and Street Light project in Dili are as follows:

- The goals, objectives and the scope of delivery are in accordance with the contracts.
- Various project elements have been delivered within acceptable time schedules and budgets.
- Installation of the 820 street lights has been a success.

- As the maintenance organization in the country is weak it is important to use equipment and standard for installations which are rather simple and easy to maintain. Availability of spare parts is also important. These impotent tasks have so far been taken care of in this Project.

3.6 Donor Coordination

Refer to SoW 8). The MPF arranges the Timor-Leste Development Partners Meeting in Dili, normally in April each year. The last meeting was held in April 2006 and the WB prepared a background paper for the meeting. The 2007 meeting was postponed due to disturbances and is rescheduled to October – November. Norway is represented at the meeting by Norad at Department Director level and with a representative from Noramb. The review team learned about this first from the LTA on arrival in Dili as the Norad Program responsible was not aware of this coordination arrangement.

At the local level the WB organises informal donor coordination meetings once every fortnight. Neither Norad nor Noramb are on the mailing list of participants in the meetings. Noramb has thus not asked the LTA (nor any NPD representative) to attend as observers, which would have been appropriate given the importance of the power and petroleum sectors and the magnitude of the Norwegian assistance to Timor-Leste. The LTA first learned about the coordination meetings at the review team interview with the WB representative. However, he was aware of the annual high level development partners meetings.

In addition to WB itself, the WB mailing lists of participants contain representatives of: UN, UNDP, IFC, ADB, Brazil, USA/USAID, Ireland, Australia/AusAid, Japan/JICA, United Kingdom, New Zealand, Portugal, France and a Portuguese NGO. The WB routinely inform the MPF after the meetings.

Noramb is presently preparing to set up a representation in Dili to be opened in September 2007. It is assumed that Norway from then on will be appropriately represented at the WB sponsored fortnightly meetings.

A Sector Working Group for the Power Sector was established in connection with development of the Power SIP in 2004 – 05. It is assumed that the Group will be reactivated during the review and updating of the SIP to be assisted by ADB TA from September 2007, and that the LTA will be a member of the Group.

3.7 Emergency Plans, Health and Safety

Refer to SoW 14). The Noramb has agreed with the Australian Embassy in Dili that the latter shall be responsible for Norwegian citizens in case of emergency evacuations, and on 12 May 2006 Noramb distributed a letter to that effect to

the Norwegian citizens. Noramb guarantees for any travel expenses incurred during evacuations. Norwegians are issued with a renewable one year visa for Australia. The meeting place for Norwegians is the Norwegian Refugee Council premises, which is better accessible than the Australian Embassy.

The UN sends out SMS regularly to foreign nationals in Timor-Leste with update of the security situation, news of particular incidents and travel advice.

The precaution measures taken seem adequate for the present situation in Timor-Leste. The new Government was sworn in on the scheduled arrival date for the review team, and arrival was postponed by Noramb with one day due to the potential for disturbances. There were a number of incidents related to the swearing in, as well as during the review team's field visit, with stone throwing and burning of Government offices, houses and car tyres. However, it seems that the UN police force present is able to prevent the situation from spinning out of control.

The local hospital in Dili is reported to give adequate medical service and health care. However, medical services outside Dili are presumably not adequate. It is further assumed that Norwegian travel insurances cover medical air transport to Darwin in case this should be needed.

There was not sufficient time for the review team to study health and safety issues related to domestic staff engaged with the Program, e.g. technicians and workers engaged by Jakobsen Electro in Dili and by NVE on the Gariuai project. The review team assumes that local regulations are adhered to.

Health and safety issues regarding domestic staff should be built into the construction and other contracts for the Ira Lalaru project. This should refer to Timor-Leste workers health and safety regulations. In case these are not regarded as sufficient, reference should be made to appropriate ILO guidelines. Special considerations regarding preventive measures against the spread of HIV and Aids should also be built into the contracts in reference to the relevant EMP.

3.8 Procurement Procedures

The UN procurement regulations for Timor-Leste were in force when the first Project Agreements were signed between Norway and Timor-Leste.

WB consultants assisted in drafting the new Procurement Legal Regime, which was enacted as a Decree-Law in 2005. Government officials complain that the procurement procedures in the Decree-Law are difficult to understand and they are cumbersome, complicated and time consuming to follow. With donor assistance funds officials feel they may try to simplify procedures, particularly when the donor has no other objection than to state that he assumes this will be in conformity with the Timor-Leste's own procurement regulations, without really checking that the regulations are actually followed.

For most procurements done under the Program, the emergency procedures of the regulations were applied. However, for the Gariuai, Core drilling and Fomento fence projects, as far as the review team was able to check, MNRMEP with assistance from the LTA, has complied with the general local procurement regulations.

With regard to the engagement of NVE in an institutional cooperation arrangement this was done by Norad in conformity with applicable Norwegian procurement regulations. The NVE procurement of consultants for hydropower feasibility studies was presumably carried out in accordance with Norwegian guidelines and not with the prevailing Timor-Leste regulations. The Minister requested NVE to carry out procurement on behalf of the Ministry. This request was approved by Norad and the NVE-MTCPW contract was amended accordingly. Procurement was confined to Norwegian companies in reference to a previous request from the Timor-Leste Prime Minister at the time (the review team has not been able to find any written reference to this statement).

Over a period of 3 – 4 years, all contracts under the three projects for upgrading of the electricity supply in Dili were awarded to one Norwegian company, with the Client (here MTCPW/EdTL) applying the emergency procedures of the procurement regulations in force at the time – first the UN sponsored regulations, which were then replaced by the Procurement Decree-Law in 2005. The contracts represent approximately NOK 79,5 million, of which NOK 62,8 million have been financed by Norad grants. Although in particular the prepayment meter project representing 25,8 of the 62,8 million could not be regarded as an emergency project, Norad and Norad at the time concluded that the Timor-Leste emergency arguments were appropriate. Later, however, Norad has stated that procurement of prepayment meters should not have been regarded as an emergency issue.

For future procurement under Norwegian grant agreements, the review team will presume that regulations of the present Decree-Law on procurement shall prevail. New Agreements and Addenda should refer to this in particular. If required, and not provided by for example WB, the NVE institutional cooperation may include TA to review and simplify the regulations, and training of officials involved in procurement.

4 Lessons Learned

In this Chapter we have collected the most important (in our view) strategic and operational lessons/conclusions with a potential for wider application and use, which may be drawn from findings and conclusions of the review. For easy reference they are numbered from 4.1 onwards.

General

4.1 The present financial situation of Timor-Leste is such that the Government is not able to execute projects planned in the annual state budget, where the total state budget represents less than two months worth of revenue from the petroleum sector. The petroleum fund (Norway Plus) is presently approaching US \$ 2 billion and it is increasing with a speed of US \$ 100 – 150 million per month. The Government of Timor-Leste has repeatedly indicated that they do not need to borrow money from the development banking system, WB Group and ADB, and that they are willing to invest own funds in development of the country's infrastructure.

4.2 On the other hand, what the country has in financial strength, is not mirrored in its human resources with competence and capacity needed to plan, implement and operate development interventions for the benefit of its population.

4.3 Taking these realities into account, both the WB and the ADB have come around and designed programs, which mainly consist of TA designed to add capacity for project and program execution, not necessarily to build on the existing capacity. One of the main lessons learned from the four year period of implementing the Institutional cooperation program is that Timor-Leste not yet has sufficient human resources to include in a capacity building program. There are simply not enough people around to train. In this situation, development of comprehensive training programs do not make much sense and training activities should therefore be planned as part of other program components based on training needs assessment of identified staff.

4.4 A number of students, sponsored by various donors, are presently studying abroad, and when these young graduates start coming back with their degrees, it is assumed that the Government will employ most of them. However, they will still need working experience to fully master their responsibilities and

foreign TA will be needed for the foreseeable future in all public (and private) sectors.

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4.5 NVE and the LTA has over the past four years planned and arranged training for the few staff available and for the “counterparts” assigned to the LTA by the cooperation partner. The cooperation partner realised that he would not have sufficient capacity to supervise consultant contracts and manage complex projects. He requested NVE to act as contract partner for the feasibility study and design consultant on Ira Lalaru and Gariuai (and two others), and the LTA soon found him self as the PM for both projects, assisted by his two “counterparts”. For all practical purposes he is also the PM for the hydrometeorological monitoring project, although a hydrologist from the Ministry has been assigned the formal responsibility.

4.6 The problems experienced regarding appointment of a PM and other Ministry staff to work on the Institutional cooperation Project could have been foreseen by both partners to the contract at an early stage in developing the cooperation concept, with a more thorough and realistic assessment of the institutional and capacity issues. With a more realistic capacity assessment and more detailed identification of the responsibilities of both partners, the functions of the Ministry PM and staff could have been better detailed in the contract. In the situation where the capacity problems of the Ministry must have been evident for all, an alternative solution could have been outlined and agreed upon in the contract.

4.7 Similarly, the role of NVE as a partner for institutional cooperation is neither clearly detailed in the contract nor in the ToR. The lesson learned from this project mirrors lessons learned from a number of other institutional capacity building projects. It is of utmost importance that both partners in a cooperation arrangement have a common understanding of each others roles, duties and functions in the arrangement, and of the expected and planned deliverables and results, that is that expectations on both sides are realistic and clearly reflect what has been agreed.

4.8 There is a clear need to structure the Program on the power sector in line with a coherent and uniform strategy and relevant guidelines for the development concept of institutional cooperation, whereby NVE as a professional institution in Norway enters into a twinning arrangements with its partner institution in Timor-Leste. The objective, purpose, activity schedule, inputs (budgets and personnel plans) and expected outputs (planned deliverables) should reflect this twinning concept of cooperation.

4.9 There is also a need to structure the Program’s (and thus the individual projects) in accordance with Norad’s Development Cooperation Manual, which as it seems, have not been consulted nor adhered to in full by neither Norad, nor the project planners (here NVE and Jakobsen Electro). Although Annual meetings are arranged between representatives of Timor-Leste and Norway in accordance with the Manual, formal progress monitoring on the level of the

institutional cooperation seems to be rather weak. Some of the problems indicated above regarding the institutional cooperation arrangement, could possibly have been solved by for example proper quarterly progress reports from the NVE Coordinator to the partner Ministry, followed by quarterly progress meetings at decision making levels between the institutional cooperation contract partners, where formal minutes are taken and agreed upon.

4.10 The important task of developing a simple and realistic legal framework for the power sector, hereunder hydropower development, as well as for WRM, is reflected in the SoW of NVE only as part of the human resources development and capacity building program. The NVE legal advisor has worked in Timor-Leste on 4 occasions during a two year period 2004 – 06 and the most concrete result so far is a draft Power Procurement Agreement for a private sector project that may not be realised. Important lessons from this, as well as from other similar projects are: i) development of legal frameworks are long term processes that involve much more than drafting laws and other legal documents, ii) a legal process must reflect political consensus on policies and strategies, and a common understanding of purpose and planned output among the recipient and donors, and iii) too strong donor driven processes will eventually result in failures.

4.11 Procedures for appraisal and follow up of proposals from the NVE specialists need to be better structured and agreed upon. For example, the response from the partner Ministry to the proposals presented in the NVE report on water resources monitoring and organisation and the two workshop presentations in 2005 seems not have been recorded. In case the proposals were accepted and in line with the Government's strategy on WRM, a natural follow up would be an action plan for implementation of the agreed proposals.

4.12 Involvement of local leadership and communities in development/ construction of hydropower projects has proven to be a success story under the Institutional cooperation in Timor-Leste. This has resulted in more accurate information about physical and other parameters based on local knowledge, better and more realistic environmental assessments, and income opportunities for an impoverished population.

4.13 The EIAs carried out for the two hydropower projects Gariuai and Ira Lalaru have reflected relevant Timor-Leste legislation and with proper involvement of the relevant authorities, hereunder the DSMA, District level administration and local Socu Chiefs. As indicated above, involvement of local communities has also been successful, and the processes should be copied for other projects in Timor-Leste.

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4.14 All the three Projects related to upgrading of the electricity supply system in Dili have been planned, contracted and implemented in reference to a perceived emergency situation. This was true for the first project on installation and operation of small diesel generators. To a large degree the emergency

aspect may also be applied to the emergency repair of the electrical network and to replacement of street lights broken during the civil unrests.

4.15 However, we do not see any emergency aspects related to the replacement of ordinary meters with installation of new prepayment meters. No assessment was done of risks related to potential new civil unrests and thus available technical solutions were not used, which could have made it close to impossible to make bypasses of the meters. Normal procedures would have involved an independent analysis of the appropriateness and feasibility of installing prepayment meters, including analysis of the potential customer base, institutional, operational, economical and risk aspects.

4.16 Collection of revenue from sale of electricity cannot be solved by installing technical systems alone. The legal, institutional and operational framework must be in place. By applying proper planning procedures, many of the later problems (excluding those resulting directly from the civil unrest situation) affecting the prepayment meter project could have been avoided.

4.17 The review team has noted that all the contracts under the three projects have been awarded to one company, over a period of 3 – 4 years, with the Client (here MTCPW/EdTL) applying the emergency procedures of the procurement regulations in force at the time – first the UN sponsored regulations, which were replaced by the Procurement Law in 2005. Although in particular the prepayment meter project could not be regarded as an emergency project, Noramb and Norad at the time accepted the Timor-Leste emergency arguments. Later, however, Norad has concluded that procurement for the prepayment meter project should not have been regarded as an emergency.

4.18 The situation whereby an escalating number of customers arrange bypass of their meters (allegedly with the help of EdTL staff) is made worse by the EdTL management contract consultant not taking charge of the situation, possibly because the management was against installation of prepayment meters in the first place. The sustainability is thus questionable of the prepayment meter project.

4.19 Regarding the emergency diesel generators, these were supposed to be operational in Dili only until the permanent larger generators were commissioned. Thereafter the intention was to install them in other areas of the country. Why this was not done is not known to the review team. The solution to use parts from one to repair the others and keep them as backups for the permanent generators seems appropriate if there is no other place in the country some of them may be of use.

4.20 It is understood that proper maintenance practices in the country in general are weak. Also for this reason it is important to use equipment and standards for installations which are rather simple and easy to maintain. Availability of spare parts is also important. These aspects are so far taken care of in the emergency network repair and street lamp project. However, questions may be raised concerning the sustainability of these projects. The main reason is EdTLs lack of maintenance of equipment and installations, which again normally is a result

of ignorant management and/or lack of revenue funds. EdTL presently receives its budget from MPF, regardless of revenue collected, and in light of the fact that the Government is not able to utilise its full fiscal budget over the year, the reason for lack of maintenance is most likely not lack of funds.

Donor coordination

4.21 Apparently there has been some lack of communication regarding donor coordination. Norway participates in annual Development Partners Meetings with a high level Norad and Noramb representation, where supposedly the power sector is discussed. The review team was, however, not made aware of this before arrival in Dili, and did not receive any minutes or other documents from the meetings. WB sponsored fortnightly donor coordination meetings have so far not included Norwegian participation (the two Norwegian representatives for support of the power and petroleum sectors in Timor-Leste were not aware of the meetings).

Emergency plans

4.22 The emergency plans established for Norwegian citizens in Timor-Leste and other precautions taken seem to be adequate for the situation.

Procurement procedures

4.23 A major part of the procurements under the power sector Program, with an exception for the Gariuai, Core drilling and Fomento fence projects, was conducted under emergency procedures of the applicable Timor-Leste procurement regulations. The review team has concluded that it was appropriate to use the emergency procurement procedures for the generators and the emergency repair projects, but that the prepayment meter project not could be regarded as emergency procurement. This view reflects also a conclusion drawn by Norad in the beginning of 2007. For future procurements under Norwegian grant agreements, the review team will presume that regulations of the present Decree-Law on procurement shall prevail.

5 Recommendations

The SoW for the review team requests recommendations to be made for the existing projects during the remaining Program period up to the end of 2008, and to recommend on any future assistance to the power sector. As our recommendations for the future relates very much to parts of the existing Program we present our recommendations as one set. The recommendations are numbered from 5.1 onwards for easy reference.

5.1 The review team recommends that the parties (e.g. main stakeholders) jointly appraise this report and its recommendations and prepare the necessary amendments of project documents, plans and budgets for tentative recommendation in a preparatory meeting for the January 2008 Annual Meeting. For the sake of order, it is assumed that the remaining part of the agreement period is up to the end of 2008. Following the 2008 annual meeting, future assistance should be planned for revised ongoing and new projects to take effect during 2008.

5.2 In addition to the Institutional cooperation, including training (remaining NOK 2,5 million out of 12,8 at the end of 1st quarter 2007), the review team assumes that the ongoing projects under TIM-2014 towards the end of 2007 will consist of the Gariuai mini hydropower project, finalisation of bidding documents for Ira Lalaru hydropower project with transmission line to Dili, and finalisation of feasibility studies for the Atsabe and Malina projects (possibly with additional funding). The TIM-2018 is completed. For the two other projects, there remains NOK 0,8 million on TIM-2019 for upgrading/repair of prepayment meters and for TIM-2043 NOK 8,5 million for emergency network repair and street lamps.

5.3 The remaining budget of NOK 800.000 for prepayment meters should be used to reinstall damaged meters, replace cables (use new installation standard to ensure that future bypass will be close to impossible to do), and install new meters as far as the remaining budget will allow. The installation shall not start before the situation is normalized, bypassing of meters has been stopped by appropriate efforts from the Government and EdTL, and that there is a clear statement from the Government to the effect that electricity supply is a commodity that customers shall be obliged to pay for.

5.4 No more grants from Norway should be allocated for installation of prepayment meters when the present agreed and contractual obligations are complied with. It is assumed that the cost of further procurement, if required,

operation and maintenance shall be covered by revenue from electricity sales and/or budget allocation from the Government. Any surplus meters remaining in stock when the remaining funds are exhausted should be installed by EdTL on their own expense.

5.5 In principle, the review team supports the new State Secretary of Electricity, Water and Urbanization's suggestion to use part of the remaining NOK 8.5 million from the TIM-2043 budget to engage a consultant to prepare a master plan for the high voltage grid of the country. Due reference should in case be made to the recent countrywide survey of electrical networks. Alternatively, available funds may finance a master plan for the Dili electricity supply. This work should in case not commence before a district development plan for Dili, presently being worked on, is completed. However, it is assumed that the legal aspects of the contract with Jakobsen Electro would prevent this diversion of funds. The State Secretary's suggestion should in that case be considered for incorporation in the future Norwegian assistance to the sector.

5.6 In case funds cannot be diverted for other purposes, the remaining funds should be used for installation of additional 300 lights covering the main streets in the centre of Dili and at the Comoro Power Station, and further repair of the electrical network. The exact scope of work for the remaining budget must be agreed upon by Ministry/EdTL and the contractor, subject to approval from Noramb.

5.7 The review team recommends that Norwegian assistance in principle should consist mainly of TA as added capacity, combined with capacity building/training where such assistance will make an impact on institutional strengthening and capacity improvement. Further grants for investments should be limited to installations and equipment etc. directly related to the respective TA.

5.8 New procurements related to TIM-2014 in the remaining of the agreement period should be limited to requests already presented to Noramb. The review team recommends that Noramb should allocate funds for: i) Consultant assistance to the tendering and contracting process for the Ira Lalaru project, including the power transmission line to Dili, and ii) Completion of the Gariuai project. The request to finance a feasibility study on extension of the power transmission line from Dili, should await the high voltage grid master plan. The proposals should be adequately appraised. Any further request should in case be dealt with as new projects.

5.9 In line with the principle stated in 5.7, the review team recommends that the request for investment funds as a grant for construction of the Ira Lalaru – Dili transmission line should be turned down. Arguments for this are given in Chapter 4.

5.10 The SoW requests the review team to recommend on how to achieve transparency and adherence to local procurement guidelines in the remaining part of the agreement period and eventual future project period and give advice to improvements of the program for the remaining agreement period. Although

Ministry officials complain that the prevailing procurement regulations are complicated and difficult to understand, it is recommended that relevant regulations of the Decree-Law on Procurement Legal Regime from 2005 are applied for further procurement under the Norwegian assistance to Timor-Leste. If deemed necessary, Noramb may offer TA under the Institutional cooperation contract to assist and provide training in connection with procurements, and if required, also to assist in reviewing and simplifying the regulations. Transparency will automatically be achieved by adherence to these procurement guidelines.

5.11 The review team's recommendations on future support to the power sector in Timor-Leste is that this should focus on hydropower development and WRM with strong emphasis on TA, capacity support and institutional strengthening, under the twinning arrangement with NVE as the channel of Norwegian power sector professional knowledge.

5.12 The present Institutional cooperation project should be reviewed and further developed and structured in a project document with terms of reference, definition of roles, functions and representation, and progress monitoring in line with findings and recommendations of this report. The following main components of the twinning arrangement are recommended:

i) Technical Assistance (TA) consisting of senior advisors on: a) further development of the policy and strategic framework, and master planning for electricity supply in the country, b) project management for hydropower development (the contract of the present LTA should be extended up to commissioning of the Gariuai project), c) electricity and transmission company operations with boardroom experience (to inter alia sit on the proposed EdTL Board for monitoring of the new management contract), d) hydropower and WRM legal frameworks¹⁶, and e) on WRM and hydrology, including experience in institutional development. The TA may be provided as part time engagements with planned working sessions in Timor-Leste of minimum 4 weeks at the time. The respective TA may be organised as sub-projects under the Institutional cooperation project with separate budget lines.

ii) Training arrangements as agreed upon between the partners to be planned in a 6 monthly rolling plan. External training shall as a rule be arranged in the region, preferably Indonesia. Training activities shall be planned in collaboration with and coordinated by the NDAF. Due consideration shall be given to training offered by other donors in the sector.

iii) Cooperation arrangements with exchange visits between the partners.

5.13 Engagement of consultants for feasibility studies, design and supervision should be under separate project allocations following international standards

¹⁶ It is not recommended to establish a regulator for the power sector, rather the sector should be regulated through licensing and performance agreements with electricity supply producers and service providers. The assistance needs to be coordinated with other donors, hereunder WB.

for project identification, planning, implementation and monitoring (project cycles). The Timor-Leste procurement regulations shall be applied as a rule.

5.14 It is recommended that Noramb/Norad start participating actively in the fortnightly coordination meetings arranged by WB for exchange of information and avoidance of overlapping projects and donor support. The possibility of introducing the Sector Wide Approach (SWAp) concept in the power sector should be presented for the Ministry/State Secretary responsible for the Power SIP and the other donors in the sector. A reactivated Power Sector Group with representation from NVE advisors may form the nucleus for development of SWAp.

Appendices

- Appendix 1 Midterm Review Methodology and Terminology
- Appendix 2 Terms of Reference
- Appendix 3 History of Projects
- Appendix 4 Training Program – Institutional Cooperation
- Appendix 5 Personnel and Activity Schedules
- Appendix 6 People/Institutions Met and Consulted
- Appendix 7 Reference Documents

Appendix 1 Midterm Review Methodology and Terminology

Midterm Review Methodology

The ToR state that in reviewing the performances, the review team shall take due consideration to the difficult political and social conditions under which the Program has been carried out, and in particular the availability of Program participants and counterparts from the Timor-Leste side.

Sources of Data and Information

The main sources of data and information for this mid-term review have been of three types:

- i) **Desk studies of documents**, printed and available electronically, both general and project specific. A reference list containing relevant documents used as data sources is appearing as *Appendix 7* to the report. Direct document references are identified throughout the text in footnote references.
- ii) **Interviews** were conducted with key informants of Norad, Noramb, NVE and contracted companies, and with representatives of Timor-Leste and other stakeholders connected to the four Projects. A list of people interviewed and the institutions they represent is contained in *Appendix 6*.
- iii) **Site visits** were conducted to the areas of the Gariuai mini hydropower project in Baucau, the proposed Ira Lalaru hydropower project (Los Palos), and the power station and sites of street lights and prepayment meters in Dili.

Terminology

Although the Midterm review is not an evaluation of the Program, the review team has found it relevant and useful to use similar terminologies as in evaluation exercises. The terminology used in this report follows what is commonly used with definitions understood internationally. More specifically, the key terms used are defined as in the Sida Evaluation Manual¹⁷ (which is also used by Norad), as follows:

Effectiveness	A measure of the extent to which a development intervention has achieved its objectives, taking the relative importance into account.
Impact	The totality of the effects of a development intervention, positive and negative, intended or unintended.
Relevance	The extent to which the a development intervention conforms to the needs and priorities of target groups and the policies of recipient countries and donors.

¹⁷ Sida: Looking Back, Moving Forward, Sida3753en, 2004.

Sustainability The continuation of longevity of benefits from a development intervention after the cessation of development assistance.

Efficiency Project productivity, the extent to which the costs of the development intervention can be justified by its results, taking alternatives into account.

Additionally, the following terms are used in the report:

Midterm Review An assessment of performance of the Program half way into the implementation period. The review is more extensive than the periodic monitoring by Norad and the Executing Agency (EA) through progress reports and meetings, but less than an evaluation. An evaluation is more comprehensive and places greater emphasis on impact, relevance and sustainability.

Objective The higher-order sector objective to which the Program is supposed to contribute.

Purpose The positive improved situation which the Program is expected to contribute significantly. The purpose is the objective expressed in terms of benefits to be achieved by the target group, e.g. a detailed description of the objective.

Outputs The tangible immediate and intended results to be produced through sound management of the agreed inputs in the Program.

Inputs The financial human and material resources that are necessary to produce the intended outputs of the Program.

Institutional Development Impact The midterm review report attempts to assess positive and negative impacts, intended or unintended, of the Program interventions. This is with regard to fostering institutional changes and development, as well as institutional capacity building, as related to expressed objectives and sustainability considerations.

Outcome A generic term which refers to the combination of outputs, purpose-level and goal-level impacts of all types. The midterm review evaluates outcomes from the Program so far by considering three factors: i) relevance of the Project's objectives in relation to Timor-Leste's needs and institutional priorities, ii) effectiveness - achievement of objectives, and iii) efficiency - achievements of results related to input of resources.

Performance The degree to which the Program and the Implementing Agencies (IA) operate according to specific criteria or quality standards. The midterm review report makes an attempt to assess the performance of the main actors (excluding the donor, his institutions and staff). The performance of the actors can, however, with some degree of certainty only be measured against sustainability considerations and institutional development impact, i.e. against the performance of the EA and IA in assuming ownership and responsibility, compliance with grant covenants and agreements, and performance towards the achievement of development objectives, which for most parts may be measured after completion of the development intervention.

To the extent possible attempts were made to apply the guidelines offered by the Sida manual. The guidelines reflect commonly used approaches in evaluation studies and they are therefore to a degree also appropriate for this midterm review. In reference to the guidelines, this approach has three major advantages: i) it enhances accountability, ii) it promotes efficiency and iii) it allows comparisons.

Appendix 2 Terms of Reference

Midterm Review Assistance in Developing the Electricity Sector in Timor-Leste

Project#	Agreement#	Agreement name	'000 NOK	Totals
TIM-2014	TIM-02/007	Support to the power sector	21 000	38 900
	TIM-04/010	Extension of power cooperation	5 800	
	TIM-05/003	Construction of Gariuai mini hydro	8 000	
	TIM-06/004	Core drilling and geotechnics	3 500	
	TIM-06/012	Security fence around Fomento building	600	
TIM-2018	TIM-02/012	Support to the Power sector	14 000	14 420
	TIM-02/013	Training in connection with emergency	420	
TIM-2019	TIM-02/014	Prepayment meters	7 500	34 880
	TIM-03/004	Interim management contract	700	
	TIM-04/001	Additional prepayment meters	15 680	
	TIM-05/004	Prepayment meters 2005	5 000	
	TIM-05/007	Prepayment meters	6 000	
TIM-2043	TIM-06/016	Emergency repair electricity network	13 500	13 500
				101 700

1. INTRODUCTION AND BACKGROUND

Norway has since 2002 supported the electricity sector in Timor Leste within institutional cooperation, expanding power production capacity, management support, electricity metering and billing and rehabilitation of electricity grid under several agreements totalling agreed amounts of approx NOK 102 million. The support has been governed by several bilateral contracts between Timor-Leste and Norway. The current mid term review covers agreements exclusively for financing projects in the planned period 2002-2008.

The cooperation has an institutional component and technical/commercial component. The goals of the former are to assist in developing the management of hydro power sector in Timor-Leste through a cooperation with NVE, and the goal of the latter is to establish a viable economic base in the country through support to Electricidade de Timor-Leste and introduction of an effective revenue collection system.

The programme consists of the following elements:

- *Institutional support*; Based on agreement between the Ministry of Natural Resources, Minerals and Energy Policy of Timor-Leste and NVE of Norway institutional support is given within management of the hydro power sector. A long term adviser from NVE has worked in the Ministry permanently and short term assistance has also been given from NVE when needed. Procurement of consultancy services has been done through NVE on the development of plans for new hydro power projects.
- *Revenue collection*; Jacobsen Elektro has provided installation of an electricity metering and billing system as well as training of personnel in EDTL.
- *Grid upgrading*; Jacobsen Elektro has performed upgrading of low and high voltage distribution system in Dili.
- *Street lights*; Jacobsen Elektro is rehabilitating/building 800 new street lights in Dili.
- *Feasibility studies*; Feasibility studies have been conducted for small hydro power projects and for the larger Iralalaru project.
- *Coordination with other donors*; Timor-Leste is in a situation where several donors assist in the restructuring of the country. Coordination between the donors in the electricity sector is an important task.
- *Construction and procurement*; Norway has financed the construction of Gariuai mini hydroelectric power project.

This Mid-term review is initiated to determine whether the assistance to the Timor-Leste power sector is on track. The results of the review will be used to recommend a possible extension of the programme, and will be used to help define a scope for a possible extension of the programme, including making any improvement to the programme considered necessary.

2. PURPOSE

The purpose of the mid-term review is to review the overall progress of the project and assess the extent to which the Project is achieving its objectives, as well as to make recommendations regarding steps to be taken that would enhance the overall efficiency and effectiveness of the Project. This must be seen in relation to the planned and large investments in Iralalaru and a 132 kV ring. In reviewing the progress, due consideration should be given to administrative, technical, and institutional aspects of implementation respectively.

3. SCOPE OF WORK

The Consultant will identify the overall status of the Project in relation to its objectives and goals. The Consultant will identify areas of concern, as well as areas of good performance in relation to the Project progress. The conclusions of the review will form a basis for the remaining part of the projects and also for the decision of a possible new agreement period.

Specifically, the Consultant shall:

- Review the technical progress and the efficiency of the power assistance projects, and the extent to which activities have been implemented in accordance with agreed work plans and the project objectives stated in the agreement and contracts.
- Review the financial progress of the Project and the extent to which the activities have been implemented in accordance with agreed budgets.
- Assess the use of inputs in relation to demonstrated results, both when it comes to institutional support and the procurements of installation equipment and services, constructions and consultancy services.
- On an aggregate level assess the environmental impacts of the investment projects (in particular the Gariuai mini hydro) compared to alternative approaches.
- Where possible assess which results have been achieved and which have not been achieved, and key reasons for achieving or not achieving results.
- Assess the relevance, as well as the quality of competence transfer, training, workshops and seminars aimed at strengthening the human resource capacity of the government ministries staff, including staff in EDTL. The need to develop a possible long-term training plan and its possible content, should be considered.
- Assess whether the planned activities for the remaining project period are relevant given the overall purpose of the project and whether MNRMEP and EDTL have the necessary human, physical and financial resources to carry out these activities within the project period.
- Assess the set-up of the organisation of the Norwegian project team, how they functions within the MNRMEP and EDTL. Special focus on interaction between the Norwegian team members and the local employees, and coordination between Norwegian team members.
- Assess the level of coordination between different donors and donor countries in the power sector.
- Recommend on how to achieve transparency and adherence to local procurement guidelines in the remaining part of , and potential new agreement period.
- Assess to what extent MNRMEP has made human capacity available for the co-operation and training.
- Briefly review the Project's emergency preparedness plans and Health & Safety issues relating to the Project staff. Make recommendations to possible further measures to be evaluated or implemented prior to a project extension.
- Give advice to improvements of the Project for the remaining agreement period.

- Make recommendations on the relevance of a renewed support to the electricity sector in Timor Leste, with emphasis on focus areas for such support.

4. IMPLEMENTATION OF THE REVIEW

The review will consist of a study based on existing information and a field visit with interviews and discussions with relevant authorities, institutions and stakeholders in Timor-Leste. The Consultant will outline the approach and methodology for the review in the report.

The Consultant shall acquaint himself with the existing contractual arrangements and plans for the Project and the reporting related to the agreements/contracts. Some of the key information is attached to this document. Information shall also be sourced through meetings with the various relevant stakeholders, beneficiaries, the Embassy, Norad etc.

In reviewing the past performances the review team shall take due consideration the difficult political and social conditions under which the projects have been carried out, and in particular availability of project participants and counterparts from the Timor-Leste side.

The Embassy will support in logistical arrangements, setting up meetings with stakeholders in Timor-Leste, and provide other information and documents as considered relevant for the review. A Norad representative will follow the review as an observer.

5. TIME FRAME AND REPORTING

Tentative schedule for the review:

June	Interviews with Norad, NVE, Jacobsen Elektro and other relevant personnel and institutions in Norway and other team members in Norway.
Week 32-33	Interviews with the Embassy in Jakarta (if possible in Dili), interviews with the Norwegian adviser in Ministry Natural Resources, Minerals and Energy Policy (MNRMEP) in Dili, interviews with Minister for Energy, Director Oil, Gas & Energy Directorate (DNPG) and other relevant personnel with the Ministry and Directorate. Interviews with other organisations of relevance such as World Bank, IMF and UN organisations

Also, the team should interview Mr. Ovidio de Jesus Amaral, who was the Minister for Transport, Communication and Public Works when the agreements were signed. The agreements were connected to his ministry until July 2005, when they were

transferred to the Ministry of Natural Resources, Minerals and Energy Policy. Mr. Ovidio de Jesus Amaral is today the Timorese Ambassador to Indonesia, based in Jakarta.

A draft report in English language shall be presented to Norad within 27.8. The draft report shall be submitted electronically. The draft report shall not exceed 30 pages, whereas the details of findings, working papers, tables etc. may be presented as an enclosure. The Timor-Leste Ministry of Natural Resources, Norad and the Embassy in Jakarta will submit comments to the report no later than 20 days after the receipt of the report. After further 10 days the final report shall be submitted electronically and in 10 paper copies to Norad.

Appendix 3A – History of TIM-2014 Support to the Power Sector I

TIM-2014	Institutional cooperation
2001, Oct 19	Original request from Timor-Leste for energy development (petroleum and hydropower).
2002, March	A number of meetings preceding a Norwegian delegation to Timor-Leste in March 2002. Resulted in the NVE report of July 2002 (below).
2002, May 20	Memorandum of Understanding between Timor-Leste and Norway.
2002, July	NVE: Proposed Cooperation between East Timor and Norway on the Development of Hydropower.
2002, Sep 10	Norad allocation document of <i>NOK 21 million</i> , approved, based on the NVE report of July 2002. Two phases, NOK 6 million and 15 million respectively up to the end of 2008 (not later than 2009).
2002, Oct-Nov	NVE mission, resulting in the report: Preparation for Institutional Cooperation, January 2003.
2003, Feb 3/4	Agreement on Assistance in developing the management of the power sector in Timor-Leste.
2003, Feb 18	Contract between MTCPW and NVE regarding Institutional Strengthening of the Power Sector in Timor-Leste.
2003, Oct	Commencement of field operations with posting of the LTA in Dili.
2004, March	NVE Mission – mission report
2004, Jan 30	Annual meeting, Agreed Minutes.
2004, Jun 16	Addition I – Request for additional funding due to higher costs than originally budgeted.
2004, Jul 26	Phase I Status Report.
2004, Dec 23	Annual report 2004 from MTCPW to Noramb.
2005, Jan 25	Annual meeting, Agreed Minutes.
2005, April	NVE Mission –Report on Water Resources Monitoring and Organization (August 2005)
2005, Oct 07	Norad allocation document approved, <i>NOK 5,8 million</i> , increasing the NVE budget from NOK 7.0 to 12,8 million.
2005, Oct 15	Addendum No I to Agreement signed.
2006	Annual Report 2005 from MNRMEP.
2006, Jan 25	Annual meeting, Agreed Minutes.
2007	Annual Report 2006 from MNRMEP.
2007, Jan 30	Annual meeting, Agreed Minutes.
02/007-04/010	Ira Lalaru Hydropower Project – Feasibility Studies
2003, June 25	Procurement of consultancy services in Norway for feasibility studies of 3 potential hydropower projects. Contract signed with a J-V Norconsult/Norplan, including both Ira Lalaru and Gariuai with transmission lines, <i>NOK 14 million</i> .
Dates?	EIA procedures

2014-05/003	Construction of Gariuai mini hydro project
2005, Apr 07	Norad allocation document approved, <i>NOK 8,0 million</i> .
2005, May 05	Addendum No ? to Agreement signed.
2005, Jan 13	Environmental Screening Report by DSMA, and Environmental Management Plan.
2006, Dec 15	Annual Report Gariuai.
2014-06/004	Core Drilling and Geotechnics
2004, Nov 14	Addition II – Request for additional funding of core drilling on the Ira Lalaru site, attached project description.
2006, ??	Norad allocation document approved, <i>NOK 3,5 million</i> .
2006, Jan 27	Addendum No II to Agreement signed.
2006, Dec 17	Annual report Core Drilling.
2014-06/012	Security Fence around Fomento Building
2006, July 06	Addition III – Request for additional funding for construction of fence around Fomento building and cleaning up after the disturbances in May – June.
2006, Aug 24	Norad allocation document approved, <i>NOK 0,6 million</i> .
2006, ??	Addendum No III to the Agreement signed.
	Additional Requests, not yet considered
2006, Feb 23	Transmission line (195 km 132 kV line from Ira Lalaru to Dili), <i>US\$ 28,8 million</i> (NOK 172,8 million at rate NOK 6.00).
2006, Nov 07	Request for <i>NOK 5,0 million</i> for feasibility study on extension of transmission line from Dili to Suai, ?? km.
2007, Feb 20	Request for <i>NOK 3,0 million</i> for Consultant assistance during tendering process for Ira Lalaru hydropower project and transmission line to Dili.
2007, Mar 19	Gariuai project, request for additional funds of <i>NOK 2,15 million</i> .
2007, Mar 30	Ira Lalaru, request from NVE for additional funds: a) revised budget due to new EIA guidelines NOK 2,5 million, b) supplementary work due to different geology from anticipated NOK 1.1 million, total <i>NOK 3,6 million</i> (in addition to request of 20 Feb 2007).
2007, August	Development of a master plan for the high voltage grid of the country, alternatively a master plan for electrification of Dili. The issues were raised with the review team. In case, the master plan for Dili should not be developed before the district plan for Dili, presently being worked on, is completed.

Appendix 3B – History of TIM-2018 Support to the Power Sector II, TIM-2019 Prepayment Meters, TIM-2043 Emergency Repair of the Electricity Network

TIM-2018	Support to the Power Sector II
2002 Sep 17	Request, Project document
2002 Oct 23/27	NVE/Norad appraisal of request
2002 Oct 31	Norad allocation document approved, <i>NOK 14 million</i>
2002 Nov 05	Agreement signed
2002 Nov 01	Contract Jakobsen Electro – MTCPW
2004 Jan ?	Final report
02/013	Training in connection with emergency
2003, Feb 10	Norad allocation document <i>NOK 420,000</i> (3 % of 2018 contract). NOK 286,965 invoiced by Jakobsen Electro
TIM-2019	Prepayment meters
?	Request
2003, Jan 22	Norad allocation document approved, <i>NOK 7,5 million</i>
2003, Feb 10	Agreement signed
2003, Feb 06	Contract Jakobsen Electro – EdTL, US\$ 2,7 million (NOK 18,9 million (rate NOK 7.00), Noramb: NOK 7,5 million
	Status Report 1
03/004	Interim Management Contract
2003, Feb 10	Contract Jakobsen Electro – Ministry, US \$ 295,000 (NOK 2,065 million at rate NOK 7.00)
2003, May 21	Request extension Management contract
2003, July 11	Norad allocation document extension, <i>NOK 0,7 million</i>
2003, Jul-Aug	Agreement extension (I ?) signed
Date ?	Variation Order No 1 to contract of Feb 10, US \$ 100,000
04/001	Additional prepayment meters
2004, Feb 16	Request for extension
2004, Mar 25	Norad allocation document, <i>NOK 15,68 million</i>
2004, Mar 19 ?	Addendum II to Agreement signed for 17,000 meters
Date ?	Variation Order No 1 to contract of Feb 06, (US \$ 2,240 million = NOK 15,68 million)
2004, Apr 20	Status Report 2
2004, Sep 21	Transfer note from Norad to Noramb, Jakarta
05/004	Additional Prepayment meters
2005, May 05	Request for extension NOK 11,82 million
2005, Jun 24	Noramb allocation document, <i>NOK 5,0 million</i>
2005, Jul 06, Oct 15	Addendum No III to Agreement signed
Date?	Variation order No 2 to the contract of Feb 06, representing US \$ 1,559 million, e.g. NOK 10,913,000 at rate 7.00

05/007	Emergency Repair of Electricity Network (part of request regarding 05/004 above)
2006, May 16	Noramb allocation document <i>NOK 6,0 million</i>
2006, May 16, Jul 24	Addendum No IV to Agreement signed
2006, Jan 28	Contract Jakobsen Electro – Ministry NOK 3,5 million
2006, Aug 09	Variation order No 1 to contract 28 Jan, NOK 2,5 million
2006, Dec 31	Status Report 3, latest report from Jakobsen Electro
TIM-2043	Emergency Repair of the Electrical Network
?	Project document and budget, by whom?
2006, Sep 29	Noramb allocation document <i>NOK 13,5 million</i>
2006, Oct 17, Nov 24	Agreement signed
2006, Aug 01	Contract Jakobsen Electro – Ministry, NOK 15,0 million
2006, Aug 09	Variation Order No 01 to contract 01 Aug 01, reduced to NOK 13,5 million

Comparison of Agreements signed between Norway and Timor-Leste and the contracts awarded by the Ministry/EdTL to Jakobsen Electro

Project reference		Norad Allocation – NOK	Jakobsen Electro contracts/var. ord. – NOK	
Project	Agreement		Date	Amount
TIM-2018	02/007	14,000,000	01.11.02	14,000,000
	02/013	420,000	Invoice ?	287,000
TIM-2019	02/014	7,500,000	06.02.03	18,900,000
			10.02.03	2,065,000
	03/004	700,000	V.o. ?	700,000
	04/001	15,680,000	V.o. ?	15,680,000
	05/004	5,000,000	V.o. ?	10,913,000
	05/007	6,000,000	28.01.06	3,500,000
			V.o. 09.08.06	2,500,000
TIM-2043	06/016	13,500,000	01.08.06	15,000,000
			V.o. 09.08.06	-1,500,000
Totals		62,800,000		79,545,000

Appendix 4 Training Program - Institutional Cooperation

Position of Trainee	Training Activities	Year	Duration
Minister	Tender evaluation, contract negotiation	2003	2 weeks
	Energy and economy course, site visits, Norway	2003	1 week
UN Energy Advisor	As for the Minister above	2003	
UN Project Advisor	ICH Hydropower 05, Norway	2005	2.5 weeks
Director Gen EdTL	As for the Minister above		
	HydroAfrica 03, conference, Tanzania	2003	2 weeks
	Energy site visits		
Director, MNRMEP	Congress on advanced sustainable hydropower, Turkey	2007	5 days
Hydrologist, MNRMEP	Work at NVE Norway, hydrology etc.	2004	4 weeks
	Hydromet. field work training	2005-07	
State Secretary	Rural electrification course, NVE Oslo	2004	1 week
Staff, Civil engineer	Hydropower, environment, ICH Norway, NVE course	2004	4 weeks
Techn Dir., EdTL	ICH Hydropower 05, field trip, Norway	2005	2.5 weeks
Electrical engineer, EdTL	Study tour Thailand and Lao PDR, rural electrification	2006	8 days
Various ministries, donors and projects	2 Workshops – hydrology, IWRM	2005	2 days
EdTL staff, WB trainees, instit. Staff	Training lessons in hydropower planning, electricity sector regulation etc.	2005	2 weeks
10 staff MTCPW, EdTL	English training beginners	2004	3 months
Various participants	Open meetings (4) Ira Lalaru hydropower/ transmission line feasibility reports	2005	1 day each meeting (4)
Electrical Engineer/ counterpart	On-the-job training on supervision of management contract	2004-05	
	Hydropower, hydrology, environment field work training	2004-07	
	ICH Hydropower 05, Norway	2005	2.5 weeks
	Hydropower development management course, Norway	2005	3 weeks
	Study tour Thailand and Lao PDR, rural electrification	2006	8 days
	GPS in field work, course by Land and Property department	2006	2 days
	Small hydropower development, Hangzhou, sponsored by China	2006-07	6 weeks
Accountant/counterpart	On-the-job training on supervision of management contract	2004-05	
	General English and computer training, Bali, Indonesia	2005	3 months

	Study tour to Thailand and Lao PDR, rural electrification	2006	8 days
	GPS in field work, course by Land and property department	2006	2 days
	English training	2007	5 hrs/week
	On-the-job training for accounting, registry and hydrological field work	2005-07	
Trainee/Secretary	Studies in economics and accounting, National University	2005-07	Ongoing
	English training	2007	5 h/week
100 students, EdTL/ Ministry staff, company staff	2 workshops, introduction to core drilling, technical analysis, equipment, site demonstrations	2006	2 days
Local workers, vocational school students	Construction of Gariuai mini hydropower plant, penstock, transmission line	2005-08	







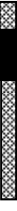
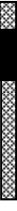
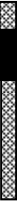


Appendix 5A - Work and Travel Program



Dates	Activity
<u>June 2007</u>	Meeting with Tor Morten Sneve, Senior Advisor, Norad
18 Monday	
25 Monday	Review Team (RT) meeting
26 Tuesday	Interview with NVE representatives and Norad officials at Norad
27 Wednesday	Interview with Norad officials continued, and with Jakobsen Electro representatives
28-29 Thu-Fri	Preparatory work, collection of documents
<u>August 2007</u>	AD travel from Vientiane (Lao PDR) to Jakarta
04-05 Sat-Sun	
05-07 Sun-Tue	PG travel from Trondheim, Norway to Denpasar, Bali
06 Monday	Meeting with Norwegian Ambassador and Councillor Meeting with Timor-Leste Ambassador to Indonesia
07 Tuesday	Collection of documents at the Embassy Travel Jakarta-Denpasar
08 Wednesday	Preparatory work in Denpasar due to Embassy restriction on travel to Dili
09 Thursday	Travel Denpasar – Dili, Timor-Leste Meeting with NVE Long term Advisor (LTA) and his designated counterparts Meeting with Director of NDWEP
10 Friday	Meeting with Director of NDAF and State Secretary of MNRMEP (previous EdTL Director and Project Manager) Travel Dili-Los Palos by car
11 Saturday	Travel to Com by car, by boat to site of Ira Lalaru power station on south coast, return to Los Palos in the evening Visit to Los Palos power station (diesel)
12 Sunday	Travel to Ira Lalaru lake by car, Moshes gauging station, Walking to proposed intake in Ira Lalaru river close to the sinkhole. Meeting with Socu Chief, return to Los Palos in the evening Meeting local Head of Environmental department
13 Monday	Travel from Los Palos to Gariuai (Baucau), visit construction site for power plant. Meeting with Socu Chief, continue to Dili in the evening
14 Tuesday	Meeting with WB and ADB representatives Meeting with Director General of EdTL Meeting with Hydrologist, NDWEP
15 Wednesday	Holiday declared. Meeting with Jakobsen Electro project manager, site visits in Dili (PG) Meeting with LTA (AD)
16 Thursday	Meeting with Director of NDPCFA, MPF, and with AusAid advisor to MNRMEP (AD) Meeting with Jakobsen Electro project manager (PG)

	Meeting with new State Secretary for Electricity, Water and Urbanization Dinner at Discovery restaurant
17 Friday	Document collection and report writing
18 Saturday	Meeting with NPD Petroleum Advisor to MNRMPPE Return to Norway
19 Sunday	Arrival in Norway
20-24 Mon-Fri	Drafting the report
27-28 Mon-Tue	Editing the draft report
29 Wednesday	Meetings with NVE and Norplan representatives (AD)
30-31 Thu-Fri	Finalise first draft

Appendix 5B

Appendix 5B - Personnel and Activity Schedules

2007																
Name/Position	Week no	June			July	August			Sept					Hrs	Int trips	
		24	25	26		31	32	33	34	35	36	37	38			
Personnel Schedule																
Mr. Arne Dahlen, Team Leader, Inst. Dev. Specialist															238	1
Mr. Peder Gjerde, Power/Electricity Specialist															158	1
Total hrs/trips														396	2	
Activity Schedule																
Preparations, interviews in Oslo																
Jakarta, interviews																
Timor-Leste field work																
Draft report																
Comments from MNRMEP, Norad, MFA/Noramb																
Final report																
Legend:		Continuous activity: 				Intermittent activity: 										

Legend: Continuous activity: Intermittent activity: 

Appendix 6 - People/Institutions met and consulted

Name	Title/Position
Norad, Oslo	
Mr. Tor Morten Sneve	Senior Advisor
Mr. Morten Svelle	Policy Director
Ms. Marit Roti	Senior Advisor
Mr. Even Sund	Senior Advisor (retired?)
Mr. Karl Arne Støvik	Planning Manager, NTE (Norad Consultant)
Norwegian Water Resources and Energy Directorate, Oslo	
Mr. Kjell Repp	Director, NVE International division
Mr. Egil Skofteland	NVE Coordinator
Jakobsen Electro, Oslo/Dili	
Mr. Olav Dugstad	Commercial Manager
Mr. Rolf Strømnes	Director Pre-Payment Systems
Mr. Per Olav Ouff	Project Manager
Mr. Leo dos Santos	Deputy Project Manager
Norplan/Multiconsult, Ski	
Mr. Bjørn Steinseth	Head of Section
Royal Norwegian Embassy, Jakarta, Indonesia	
Mr. Bjørn Blokhus	Ambassador
Ms. Mette Kottmann	Councillor
Embassy of the Democratic Republic of Timor-Leste, Jakarta, Indonesia	
Mr. Ovidio de Jesus Amaral	Ambassador (previous Minister of MTCPW)
NVE, Timor-Leste	
Mr. Alf Adeler	Long Term Advisor
Mr. Kassius Klei	Counterpart of Hydropower Project
Ms. Maria M Moniz	Accountant of Hydropower Project
Ms. Maria Fatima	Trainee
MNRMEP, Timor-Leste	
Mr. Virgilio F. Guterres	State Secretary (prev Director of EdTL)
Mr. Gregorio Araujo	Director, NDWEP
Mr. Jose Mestre	Director, NDAF
Mr. Manuel de Rezende Pinto	Director, EdTL (CEM Macao SA)
Mr. Joaquim Ximenez	Dep Director, NDWEP (Hydromet Network)
Mr. Januario Pereira	State Secretary for Electricity, Water and Urbanization (from 09 August 2007)
Ms. Rosa Ribeiro	Budget Executing Advisor, AusAid
Mr. Roger White	Petroleum Advisor, NPD (Norad)

MPF, Timor-Leste	
Mr. Eusebio da Costa Jeronimo	Director, NDPCEA
Mr. Fernando da Silva	SIP Coordinator, NDPCEA
Ira Lalaru Hydropower Project	
Mr. Akasio da Silva	Socu Chief for Muapitine & Malahara
Mr. Carlos	Hotel and boat owner
Mr. Almeida F Xavier	Head Environmental Dep, Los Palos
Gariuai Mini Hydropower Project	
Ms. Anna Maria Belo	Socu Chief for Gariuai
Mr. Arlindo Sarmiento	Construction Supervisor
World Bank, Dili	
Mr. Joao Gomes	Operations Officer (Energy Advisor)
Asian Development Bank, Dili	
Mr. Charles T. Andrews	Resident Representative

Appendix 7 - Reference Documents

Project	Title	Date
	Official visits, meetings	
	Official requests with Embassy appraisals	19.10.01
	Memorandum of Understanding on Norwegian support to Timor-Leste (not available)	20.05.02
	NVE: Proposed Cooperation between East Timor and Norway in the development of hydropower	05 July 02
	Record of meeting NVE, ADB, WB (not available)	02.11.02
	Preparation for Institutional cooperation, NVE mission report	Jan 03
	NVE Mission report February-March 2004	No date
2014	Developing Management of Power Sector	
02/007	Bevillingsdokument <i>NOK 21 million</i>	11.09.02
2014	Project Agreement Timor-Leste – Norway, NOK 21 million	03/ 04.02.03
	Contract NVE – MTCPW	18.02.03
	Amendment to the contract	08.07.03
	Overføringsnotat TIM-2014 02/007 to Noramb	20.09.04
	Request for increase from Timor-Leste's PM, NOK 5.8 million	16.06.04
	NVE – Water Resources Monitoring and Organization in Timor-Leste, Mission April 2005	Aug 2005
04/010	Bevillingsdokument <i>NOK 5.8 million</i>	07.10.05
	Addendum 1 to Project Agreement	15.10.05
	Contract NVE-Herbert Dusabe re Power Purchase Agreement biomass power project	06.04.06
	Contract NVE-Norplan re the above	27.08.06
	Report on NVE's Legal Work in Timor-Leste	05.08.07
	Ira-Lalaru hydro power project	
	Contract, ToR NVE-Norconsult/Norplan, Ira-Lalaru, Lacle, Baucau, NOK 14 million	25.06.03
	Request for TA transmission line NOK 5,0 mill	07.11.06
	J-V new budget, total NOK 6,8 mill	08.01.07
	Request for NOK 3,6 mill, due to new environmental regulation and more difficult rock conditions	30.03.07
	Request for tender process assistance NOK 3,0 million	20.02.07
	Training Program	
	Part of work plan rest 07	08.08.07
	Overview of training under 2014	15.08.07

	Gariuai mini hydro power	
05/003	Bevillingsdokument Gariuai <i>NOK 8 million</i>	07.04.05
	Agreement Gariuai mini hydropower NOK 8 mill	05.05.05
	Environmental Screening Report	11.01.05
	Environmental Management Plan	No date
	Audit report Les Johnson	28.12.05
	Request for additional NOK 2,15 mill	19.03.07
	Core drilling for Ira Lalaru	
	Request for additional NOK 3.5 million	14.11.04
06/004	Bevillingsdokument <i>NOK 3.5 million</i>	No date
	Addendum II to Project Agreement	27.01.06
	Substitute of Article 1, clause 1	22.02.06
	Addendum 1 to NVE-MTCPW contract	??.01.06
	Addendum 2 to NVE-Norcons./Norplan contract	12.01.06
	Fomento fence	
	Request for additional NOK 0.6 million	?
06/012	Bevillingsdokument <i>NOK 0.6 million</i>	24.08.06
	Addendum III to Project Agreement	No date
	Audit report Les Johnson	28.06.07
2014	Phase I status report	26.07.04
	Quarterly Progress Reports NVE-Ministry	28.02,10.05, 20.07.06 12.03, 17.07.07
	Semi-annual report Jan-July 06 (no title)	08.08.06
	MNRMEP Annual Reports to Noramb	
	Annual report 2004	23.12.04
	Annual report 2005	?
	Annual report 2006	No date?
	Annual report 2006 Gariuai	15.12.06
	Annual report 2006 Core Drilling	16.12.06
	Mandat årlig mote 29-30.01.04	No date
	Agreed Minutes 04	01.04/ 12.03.04
	Mandat årlig mote 05	18.01.05
	Agreed Minutes 05	25.01.05
	Mandat årlig mote 25.01.06	?
	Agreed Minutes 25.01.06	Date meet
	Mandat årlig mote 07	30.01.07
	Agreed Minutes 30.01.07	Date meet
	Rapport fra tjenestereise 27.01-01.02.07 TMS	No date
	New work plan, budget & training plan, rest 07	26.07.07

	Other documents	
	Viable Option of Sectorial Policy for Power Sector, Council of Ministers	18.09.02
	Diploma Ministerial No 1/2003/MTCOP on EdTL metering, tariff and payment for electricity supply	30.01.03
	Establishing the Basis for the National Electricity System Decree-Law No 13/2003/	24.09.03
	Draft Decree-Law on creation of EdTL as a public utility company with draft statutes	2004
	Decree-Law No ?/2005 of the Procurement Legal Regime	2005
	Bidding documents for EdTL Management Contract (WB)	2007
	Power Priorities and proposed SIP, MNRMEP	April 06
	Strengthening the Institutional Framework and Capacity in the Power Sector in Timor-Leste, Norplan/Econ	03.11.06
	Rural Electrification in Timor-Leste, Norplan	2006
	Sirkulærbrev til norske borgere på Øst Timor fra ambassaden med garanti til Australian Embassy for flybilletter til Australia for norske borgere	12.05.06
	Network Survey Report in Timor-Leste, Norplan	July 07
	Lista dos Membros do Governo	10.08.07
	EdTL – ToR Comm. and Supervision Study (WB)	No date
2018	Diesel generators (5)	
	Project document, request	17.09/ 14.10.02
	NVE/Norad appraisal of request	23/27.10.02
	Bevillingsdokument <i>NOK 14 million</i>	31.10.02
	Project Agreement NOK 14 million	05.11.02
	Contract Jakobsen Electro-Ministry NOK 14 mill	01.11.02
2018	Final report Diesel generators (Minister)	Jan 04
02/012	Overføringsnotat to Noramb	No date
2019	Prepayment meters	
	Request	?
02/014	Bevillingsdokument <i>NOK 7.5 million</i>	22.01.03
	Memo of Understanding, ref to 20.05.02	?
	Project Agreement NOK 7,5 million	10.02.03
	Contract Jakobsen Elektro - EdTL US\$ 2,700,000	06.02.03
	Interim Management Contract Jakobsen Electro – Ministry US\$ 295,000	10.02.03
	Request for extension Interim Management Contract	21.05.03
03/004	Bevillingsdokument extension IMC, <i>NOK 0.7 million</i>	11.07.03

	Agreement/Acceptance of extension (Addendum 1?)	28.07.03/ 05.08.03
04/001	Request for extension Prepayment meters	16.02.04
04/001	Bevillingsdokument <i>NOK 15,68 million</i>	25.03.04
	Addendum 2 to Project Agreement	19.03.04
	Project account in Norway – MPF	25.05.04
	Variation order No 1 to contract 06.02.03 Jakobsen Electro – EdTL	?
	Overføringsnotat TIM-2019/ 02/014, 03/004, 04/001 to Noramb	21.09.04
05/004	Request for extension NOK 11.82 mill	05.05.05
05/004	Bevillingsdokument <i>NOK 5,0 million</i>	24.06.05
	Addendum 3 to Project Agreement	06.07.05/ 15.10.05
	Variation order No 2 to contract 06.02.03 Jakobsen Electro – EdTL	?
	Audit of TL Project accounts (Les Johnson FCA)	27.11.05
05/007	Bevillingsdokument <i>NOK 6,0 million</i>	16.05.06
	Addendum 4 to Project Agreement (emergency repair)	16.05/ 24.07.06
	Contract Jakobsen Electro – Ministry, NOK 3.5 mill	28.01.06
	Variation order No 1 to contract 28.01.06 Jakobsen Electro – Ministry, NOK 2,5 million	09.08.06
2019	Progress reports	
	Status report 1	?
	Status report 2	20.04.04
	Reports April 04 – end 05	?
	Status report 2(?) to AM 07	31.12.06
2043	Emergency repair of EI network	
	Project document	No date
	Budget (Jakobsen Electro)	No date
	Bevilgningsnotat, <i>NOK 13,5 million</i>	29.09.06
	Project Agreement emergency repair	17.10.06/ 24.11.06
	Contract Jakobsen Electro – Ministry, NOK 15 million	01.08.06
	Variation order No 1 to contract above, - NOK 1,5 million	09.08.06

