



Learning from AMEC's Oil and Gas Asset Support Operations in the Asia Pacific Region *with case-study of the Bayu-Undan Gas Recycle Project, Timor-Leste*

Report II – Local Economic and Social Performance in Low Income Regions

January 2007



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AGAINST
POVERTY**



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This report is a collaboration between Engineers Against Poverty (EAP) and the Overseas Development Institute (ODI). EAP is an independent NGO established by the UK's foremost professional engineering institutions, supported by the UK Department for International Development. ODI is Britain's leading independent think-tank on international development and humanitarian issues. The publication of this report would not have been possible without the generous cooperation of the Clough AMEC Joint Venture. Whilst we are grateful for this assistance, the authors retain full responsibility for the report's contents, and any errors it may contain.

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Table of Contents

About the Authors	ii
Acknowledgements	ii
Executive Summary	vii
1 Introduction	1
1.1 Purpose	1
1.2 Approach and Report Structure	2
2 Economic and Social Performance Framework	3
2.1 Rationale	3
2.2 Economic and Social Performance Strategies	3
2.3 Economic and Social Performance Framework.....	6
3 The Bayu-Undan Gas Recycle Project and Contract Scope	9
3.1 Overview	9
3.2 Overview of the Bayu-Undan Operations and Maintenance Contract	11
3.3 Scope of Work of the Clough AMEC JV Operations and Maintenance Services Contract	12
4 Regulatory and Policy Drivers for Enhanced Local Economic and Social Performance	15
4.1 Economic and Social Policy in Timor-Leste	15
4.2 Policy and Regulatory Drivers of Economic and Social Performance from Oil and Gas Development	16
4.3 Other Drivers of Economic and Social Performance from Oil and Gas Development in Timor-Leste	26
5 Current Strategies of the Clough AMEC JV in Delivering Local Economic and Social Performance on the Bayu-Undan Project.....	27
5.1 Operating and Contract Drivers of Timor-Leste local-content	27
5.2 Internal Clough AMEC JV Drivers of local-content	29
5.3 Limits to Enhancing Local Economic and Social Performance	30
5.4 Current Strategies of ConocoPhillips and the Clough AMEC JV around Local Economic and Social Performance	31
6 Lessons Learned for Enhancing the Local Economic and Social Performance of Lead Engineering Services Contractors	45
6.1 Reforming the Regulatory Framework	45
6.2 Opportunities to Strengthen the Clough AMEC JV Resourcing Strategy.....	54
6.3 Opportunities for Collaboration on a Skills and Enterprise Support Programme	55
6.4 Lessons Learned on Establishing a Common User Supply Base.....	60
7 Conclusions.....	67
7.1 Embedding the Opportunities	67
7.2 Broader Conclusions	67
Annex A Interviewees	69
End Notes	71

Tables

Table i	Framework for Investigating the Role of Lead Engineering Contractors in the Local Economic and Social Performance of Oil and Gas Developments	x
Table 1	Categorisation of Strategies for Oil and Gas Lead Engineering Services Contractors to Enhance the Local Economic and Social Performance of Oil and Gas Developments....	4
Table 2	Framework for Investigating the Role of Lead Engineering Contractors in the Local Economic and Social Performance of Oil and Gas Developments.....	7
Table 3	Operations and Maintenance Services Contract: Scope of Work (Summary)	13
Table 4	Contribution of Public Policy to the Local Economic and Social Performance of the Bayu-Undan Project.....	25
Table 5	Training of Timor-Leste Nationals: Economic Performance (to end 2006)	42
Table 6	Employment of Timor-Leste Nationals: Estimated Economic Performance (2005/06).	42
Table 7	Timor-Leste Suppliers to the Bayu-Undan Project: Economic Performance (2005/06)	43
Table 8	Options for Regulatory Reform to Enhance the Local Economic and Social Performance of Oil and Gas Developments in Timor-Leste.....	50

Figures

Figure 1	Timor-Leste Australia Joint Petroleum Development Area.....	10
Figure 2	Acreage Release in the Joint Petroleum Development Area	10
Figure 3	Bayu-Undan Gas Recycle Facility	11
Figure 4	Supply Chain Transport Logistics.....	14
Figure 5	Timor-Leste Resourcing Strategy – Bayu-Undan Gas Recycle Project.....	32
Figure 6	Geography of Supplier Sources on the CAJV Operations and Maintenance Contract...	34
Figure 7	Decision Tree for Investigating Constraints to Local Content and Infrastructure Development through the Clough AMEC JV Contract.....	38
Figure 8	Economic Performance of the Clough AMEC JV Contract in Timor-Leste	43
Figure 9	Timor-Leste, Inaugural Offshore Acreage Release ‘(in yellow)	46

Boxes

Box 1	Case-study Highlights of the Social and Local Economic Performance of the Bayu-Undan gas recycle project, Timor Sea.	ix
Box 2	Timor-Leste Investment Promotion Strategy.....	17
Box 3	Proposed Timor-Leste Petroleum Fund.....	18
Box 4	Securing Economic Benefit from Offshore Gas Development: Supply-Side Constraints in Timor Leste.....	20
Box 5	Model Production Sharing Contract, Timor-Leste (Selected Extracts)	23
Box 6	Caltech: Dili, Timor-Leste	36
Box 7	Regional And Northern Maintenance Services (RANms): Darwin, Northern Australia .	37
Box 8	BHP Billiton in Trinidad.....	47
Box 9	Policy Statement by the Prime Minister on Expectations of Local Economic Performance from the Oil and Gas Sector in Timor-Leste.....	47
Box 10	Options for a Clough AMEC JV to Promote Enterprise Development in Timor-Leste as part of a Dedicated Skills and Enterprise Support Programme	57
Box 11	Enterprise Centre, Azerbaijan	58
Box 12	Anglo American Zimele Model of Financial Support to Suppliers.....	59
Box 13	Expectations for the CUSB	61
Box 14	SME Support Services of the International Finance Corporation.....	65

Executive Summary

“While petroleum will be the dominant revenue stream in our nation’s economy for the foreseeable future, we look to it for more than a source of funds. We look to the sector to be a much broader and dynamic contributor to the national economy. This contribution will come in many forms: in capital investment, in employment generation..... In addition it will be seen in personnel training and education, in infrastructure development and as an agent of change for the enhancement and development of Timor-Leste’s society as a whole.”

Keynote address by Prime Minister Mari Alkatiri, Timor Leste
Inaugural Acreage Release ‘Roadshow’, Singapore, 2nd September 2005

This is the second in a series of evidence-based reports on the role of large engineering contractors in strengthening the positive local economic and social impact of capital investment projects in oil and gas sector in developing countries¹. The first report looked at the operations in a low-middle income economy – the Philippines. This report looks at the asset support services of AMEC and its joint venture partner to an offshore gas development project in Timor-Leste; a low-income economy, with poor literacy and skills levels, an undeveloped private enterprise sector, an absence of physical infrastructure and weak government capacity.

Our report comes at a time when many international oil and gas companies are challenged by ever more stringent ‘local content’ requirements – the preference of employment, training and supplier opportunities to nationals – and/or are increasingly aware that local content is a priority for those governments from whom they wish to win new concessions.

The trend is particularly marked in low-income countries and economically disadvantaged regions. Here, it is not only revenues from oil and gas production that offer an opportunity for the government to achieve its economic development and poverty reduction goals. In addition, the capital and operational expenditure of operating companies and their joint venture partners represents a direct means for the sector to contribute to the country’s local economic and social development. This more immediate contribution can come through direct and indirect employment, advancement of productive skills, a more competitive local enterprise sector, local infrastructure development (transport, water, power, waste management etc.), and more effective local institutions.

But there are also constraints to realising these opportunities. Whilst in middle and middle-to-low income countries suppliers often enjoy an increased competitive advantage in global markets because of lower operating costs, a skilled workforce and growing domestic customer base, in many low-income countries the level of existing enterprise and market development is often so poor that these potential advantages are lost. Local firms are often uncompetitive in the energy sector for reasons that include a lack of relevant experience, poor production quality and reliability, low health, safety and environmental standards, and the wrong technical capabilities. Weak public sector regulation and enforcement, and slow and inefficient bureaucracies, are also major limiting factors. In addition, political instability can be a source of significant risk, reducing the appetite for financial investment in the sector.

Some oil and gas companies operating in low-income regions understand that overcoming these obstacles and designing local content strategies that contribute directly to domestic local economic and social goals, can secure a competitive advantage over rivals. Examples are emerging of the operators of oil and gas development projects providing business management and financial support to their local suppliers, not only to meet the immediate terms of their contracts, but also to help them break into other markets, both within the energy sector and in sectors such as construction and manufacturing. In other cases, operators, through their human resourcing strategy, supplier support programmes or local community investment programmes, are providing technical and vocational training programmes that reach out to both potential employees and suppliers as well as communities adversely affected by operations or enterprises unrelated to the project. Operators are also beginning to design and construct their operational infrastructure – roads, port developments, power suppliers, etc. – in partnership with government authorities to deliver both operational requirements and a public service.

As part of these operational strategies, international and large domestic engineering services contractors are in a strong position to deliver a range of local economic and social performance benefits. It is often these ‘lead’ contractors, rather than governments or the project operator, who have most physical contact with communities and local suppliers, and whose core business competencies are particularly well developed in the tasks of skills training, technology transfer, supplier management and infrastructure construction.

This report explores the proposition that lead engineering contractors offer an as yet underutilised resource to governments and project operators in delivering local economic and social performance in the context of oil and gas development projects. The proposition is explored in the context of the Bayu-Undan Gas Recycle Project in the Timor Sea. The Bayu-Undan project is under the joint jurisdiction of both the Democratic Republic of Timor-Leste (hereinafter referred to as Timor-Leste) and Australia, located in the Joint Petroleum Development Area (JPDA). Gas production commenced in 2004. The project operator, ConocoPhillips, has awarded an Operations and Maintenance Services contract for the gas recycle phase of the project to a joint venture involving two international engineering companies: Clough Limited and AMEC plc.

The Clough AMEC JV is one of a growing number of forward-looking global oil and gas engineering services companies pursuing a long-term regional business development strategy based in part on delivering higher standards of local economic and social performance. This strategy is informed by the experience of AMEC on the *Shell Malampaya Gas-to-Power* project in The Philippines, as well as experiences elsewhere in Asia. The Clough AMEC bid included a number of innovative proposals, including: a ‘national employee pipeline’ (a training programme to provide a continuous supply of skilled personnel); and the staged development of a common user support base (CUSB) in Timor-Leste to provide goods and services to the project. These strategies were considered by AMEC as material factors in reaching the final stages of the contract bidding process. According to the Timor Sea Designated Authority (TSDA), these were also key factors in the Authority approving the Clough AMEC JV tender² under Article 10 of the Production Sharing Contract (PSC)³.

Box 1 highlights some of our analysis of the economic and social performance of this project.

Box 1 Case-study Highlights of the Social and Local Economic Performance of the Bayu-Undan gas recycle project, Timor Sea.

- By the end of 2006 around 25 Timorese nationals will have received training or be in training as part of the Clough AMEC JV contract.
- At present around US\$60,000/year of contracts are being awarded to second tier suppliers based in Timor-Leste.
- Under the Clough AMEC JV contract, total annual economic value of training and third-party spend in Timor-Leste is around US\$170,000, compared to a total annual revenue to the JV of between US\$6-10million.

This low level of expenditure, relative to total contract value, is explained by four factors:

- The geographic location of the Bayu-Undan field, midway between Timor-Leste and Australia, with Darwin an established supplier base for the offshore energy sector.
- The exceptionally low quality of existing facilities and supply support capacity in Timor-Leste, which substantially increases the relative costs and commercial risks of developing asset support capacity in Timor-Leste.
- The 'clean customs' requirements under Australian regulations, which is prohibitive to transport movements between the offshore platform and Timor-Leste.
- The continuing political unrest, which, during the completion of this report escalated into violence.

Looking forward, from the perspective of the Clough AMEC JV, the business advantages of pursuing improvements in their local economic and social development performance in Timor-Leste remain strong. The recent resolution of the maritime boundary dispute with Australia will allow rapid progress on development of the new Greater Sunrise field. There are also prospects of exploration and development in the newly released acreage north of the JPDA.

Economic and Social Performance Framework

Building on an earlier study conducted with AMEC, in connection with the *Shell Malampaya Gas-to-Power* project in the Philippines⁴, an Economic and Social Performance Framework (ESPF) was developed to support this new study in Timor-Leste (see Table i). The ESPF guides a systematic investigation of opportunities and strategies to optimise the contribution of lead engineering contractors to local economic and social performance of oil and gas development projects.

Based on concepts of risk and opportunities analysis, supply and demand-side market factors and governance constraints, the framework can be readily embedded within the performance management systems of both operators and contractors, for example within Health, Safety and Environmental systems and/or project risk assessment procedures. This report documents the application of the ESPF to the oil and gas sector in Timor-Leste, and in particular the work of the Clough AMEC JV in delivering the Bayu-Undan Operations and Maintenance Services contract. The lessons learnt from the use of the framework are summarised below.

Lessons Learned

NGO Timor-Leste is ranked 140 out of 177 countries by the United Nations in terms of its overall development⁵. The country is a poor performer against many economic and social development indicators, including life expectancy, literacy and GDP per capita. Lessons from studying the involvement of the Clough AMEC JV in the Bayu-Undan Project may therefore have application to other low-income countries and economically and socially disadvantaged regions, where the oil and gas development sector is growing. This might include other parts of South East Asia (including Indonesia and Cambodia) and West Africa.

Table i Framework for Investigating the Role of Lead Engineering Contractors in the Local Economic and Social Performance of Oil and Gas Developments

Type	General Strategies	Contract Scope	Constraints and Drivers	Existing Strategies	Opportunities		
On-Project		Contract type	<ul style="list-style-type: none"> • Current contract and contract extensions • Future business opportunities 	Demand-side players	<ul style="list-style-type: none"> • Current contract and contract extensions • Future business opportunities 		
Employment	Local recruitment	<ul style="list-style-type: none"> • Front end design 					
Training	Prior training, on-the-job training, apprenticeships						
Supplier support	Support to community suppliers to meet project standards	<ul style="list-style-type: none"> • Engineering design 					
Local infrastructure	Project infrastructure utilised by local population						
Institution strengthening	Project-driven interaction with local government agencies (e.g. for licences and permits) resulting in capacity strengthening	<ul style="list-style-type: none"> • Procurement 					
Project-Link		<ul style="list-style-type: none"> • Construction and fabrication • Construction Management • Operations management • Asset Maintenance 	Demand-side	Supply-side players	<ul style="list-style-type: none"> • Demand-side opportunities • Regulatory reform • New contract terms • New economic policy • Partnerships to strengthen Institutions and governance capacity • Various support for human resource and business development 		
Employment	Inward-linkage – outreach recruitment programmes					<ul style="list-style-type: none"> • Legal, regulatory and contractual framework • Economic policy • Institutional and governance capacity • Human resource capacity • Business capacity 	<ul style="list-style-type: none"> • Operator • Host government • Official Development Agencies • NGOs
	Outward linkage – enhancing post-project employment prospects, e.g. assisted job seeking						
Training	Inward-linkage – outreach training programmes					<ul style="list-style-type: none"> • Supply-side • Commercial cost and risks • Minimum competency requirements • Technical limits on supplier quality and reliability • Health, safety requirements • Operational infrastructure priorities 	<ul style="list-style-type: none"> • Lead contractor • Other suppliers • Potential trainees and employees
	Outward linkage – training specifically to enhance post-project employment prospects						
Supplier support	Inward-linkage – outreach enterprise support					Design Parameters	<ul style="list-style-type: none"> • Skills • Materials • Services • Infrastructure/utilities • Finance • Land/property • Equipment • Approvals
	Outward linkage – support to existing supplier's to access external markets, e.g. business plans, market surveys, financial support						
Local infrastructure	Aligning project infrastructure with government infrastructure development plans/policies and other investments				<ul style="list-style-type: none"> • Supply-side opportunities • Cost savings to client • Partnerships with government and donors to rapidly build human and supplier competencies • Cooperation with government to strengthen in-country regulatory regime • PPPs involving the client to develop operational or business-critical infrastructure 		
Institution strengthening	Project-driven interaction with local government agencies aligned with government or donor institution strengthening programmes						
Off-Project							
Employment	Job seeker service						
Training	Technical and vocational training, alternative incomes training						
Supplier support	Micro enterprise business support and finance						
Local infrastructure	Unilateral or PPP infrastructure projects unrelated to contract – builds reputation of contractor with future clients / government						
Institution strengthening	Support to local institutions to develop competencies and capacity						

Three principal types of local content strategies were identified as relevant in the context of low-income economies: (i) contributing to the establishment of a common user supply base (CUSB); (ii) initiating a dedicated Skills and Enterprise Support Programme within the country, and (iii) strengthening the lead contractor's human resourcing programme through building the capacity of local trainers. At the policy level, a number of modifications to the regulatory framework for the oil and gas development sector were also identified that would provide incentives for these strategies to be adopted.

Establishing a Common User Supply Base (CUSB)

The concept of a CUSB represents an innovative approach to achieving local content in the context of the constraints to supplier capacity faced by economically disadvantaged regions. In essence, a CUSB overcomes the logistical, infrastructure and financial inefficiencies that come from having many geographically disbursed supplies across a region seeking contracts with the same or similar clients. It also provides a geographic focus for providing business, technical and financial support to grow the competitiveness of local firms.

A CUSB is a form of integrated industrial estate, providing infrastructure, leased buildings, and the advantages of economies-of-scale to local suppliers. At one extreme such a base might host local suppliers of a single oil or gas development project, with on-site facilities targeted to support firms in meeting the needs of a single client. At the other, the base might host and support suppliers of many different private and public sector clients, both in the energy sector and beyond.

Most problematic is when such a base serves only a single project and where the capabilities of local suppliers is particularly weak, since here there are often difficulties in ensuring a sufficient and regular revenue stream to maintain the commercial viability of the base and its firms. This has been the key challenge facing proposals for a CUSB in Timor-Leste in relation the single Bayu-Undan Project.

Looking beyond the single project scenario, developing a broader CUSB requires the opening of a dialogue on two fronts: one with potential financial investors in the base itself, the other with private and public clients who might place orders for goods and services with firms on the base.

With regard to financial investors, bilateral and multilateral development banks are an obvious target. In Timor-Leste for example, the German financial development institution (GMZ) has made overtures in this direction. Other possible investors in the wider Asia Pacific region might include the Asian Development Bank (ADB) and International Finance Corporation (IFC). More generally, discussions on investment should also be entered into with operators of other oil and gas fields.

At least two types of finance are required to develop such a base. Investment capital is needed to establish the site, the storage, utilities, port transfer, security, office and workshop buildings and other support facilities. This could be in the form of equity investment in a

CUSB holding company, either a Special Purpose Vehicle (SPV) or as a subsidiary of the operator, or as lead (most likely international) contractors. The holding company would own the assets and issue leases. If a lead contractor anticipates a long term presence in the region, then both it and its clients might consider taking an equity share, be that controlling or not. Some type of concession agreement or management agreement could then be offered for the management aspects of the base (similar to an industrial estate management role).

The second type of finance is some form of risk guarantee instrument to protect investors in the base against slow rates of revenue accumulation, volatility and defaults (e.g. on lease payments) across the CUSB as a whole. A number of development finance institutions, including the World Bank's Multilateral Investment Guarantee Agency specialise in this type of instrument.

A key role for the government authorities in this proposal is to engineer the required expansion of utilities 'outside-the-fence', for example in extending power lines, telecommunications, water supplies, port facilities, roads and expansion of municipal waste disposal capacity to the base. World Bank finance channelled through the relevant government department could be a likely source of support for this, or other public sector bilateral or multilateral development agencies. Alternatively, if sufficient capital has built up within government from the sale of gas and oil, a portion of this revenue could be released through the national budget and prioritised to extend infrastructure to the base. Such public sector initiatives would presumably fall under policy for private sector development, and would constitute a productive public investment.

With regard to a reliable revenue stream for suppliers located in the base: first a comprehensive supplier capacity survey is needed to gauge the potential for support services to meet market demand, be that in the energy sector or other related sectors, such as engineering, construction, light manufacturing, ship repairs, etc.

At the same time, a dialogue might be opened up between the lead contractor and Ministry of Public Works, if not directly, then via some suitable intermediate agency such as the country UNDP office. One purpose of this would be to look for ways to modify the terms of public sector procurement contracts and public private-partnership arrangements. For example, it might be possible for public tendering procedures to incorporate incentives for the preferencing of machine, vehicle and equipment maintenance services from suppliers located in the CUSB, thus generating a parallel revenue stream.

Further, local firms in economically weak regions frequently have low levels of capitalisation, and suffer high interest rates and risk-adverse domestic financial institutions. This can present a major obstacle to the potential occupants of a CUSB, in that they may be unable to raise affordable working capital to cover both equipment costs and the other costs of gearing up to meet contract terms. One option to consider is for the Ministry of Public Works (or equivalent) to require that their contractors sign long term (five to seven year) maintenance service contracts with suppliers within the CUSB. Such contracts would secure future revenues and thus aid suppliers within the CUSB firms to raise capital on the local financial

markets. As the capabilities of these firms develop, it might also be possible for government to enter into long term lease arrangements for equipment and vehicles for undertaking public works, further contributing to both the revenues of the firms and to their ability to raise expansion capital.

A single site invoicing (clearing-house) arrangement for the CUSB might provide additional security to external financing institutions by spreading the default risks.

Consideration should also be given to applying for Special Economic Zone or Business Development Centre (BDC) status for the CUSB, and thus securing tax incentives, the fast-tracking of regulatory permits and eligibility for the similar exemptions from customs duties and taxes. Even if such status is not secured, there may be scope for negotiating a waiver or reduction in the cost of leasing the CUSB site with the government (if the site is government-owned land). The leasing costs for the CUSB site can constitute the single biggest cost item associated with its development.

One means of attracting enterprises to the CUSB is to provide a training and enterprise support service, similar to that discussed below. The BP Enterprise Centre (Box 11 in the main report) and the Anglo American *Zimela* enterprise financing model (Box 12) are options to consider. In addition, a number of international development assistance agencies provide enterprise and small to medium size enterprises (SMEs) support services, for example the services of the IFC and the co-financing arrangements for SMEs provided by the ADB.

Collaboration in a Skills and Enterprise Support Programme

Another type of initiative is for the lead contractor to initiate some form of skills and enterprise support programme, most likely in collaboration with other parties. Such a programme could be dedicated to supporting skills and enterprise development within the broader oil and gas sector in the country, ie beyond the immediate needs of the project and related asset service contracts. This could take the form of an enterprise or business centre registered within the country (similar to the BP Enterprise Centre in Azerbaijan) or a freestanding programme (such as BG's vendor assistance programme in Kazakhstan).

Seeking collaboration on the programme would enable delivery of a wider range of services than would be possible were the lead contractor to develop the initiative alone. It would also assist the contractor consolidate its reputation for supporting public policy and priorities for enhanced local content in the sector. Collaboration on the initiative might include the project operator and its joint venture partners, government agencies with mandates to support private sector and enterprise development, and multilateral and bilateral international development agencies with similar mandates. Such a partnership approach may also mean that a permanent staff presence in the country by the lead contractor is *not* necessary. For example, the contractor might be able to position itself within the collaboration as the provider of intermittent specialist support, e.g. in training in design, engineering and business and financial management, as and when needed.

An advantage of this proposal is that the activities of the programme could be made independent of any specific oil or gas development project or related contract. The programme could be targeted instead to strengthen the wider services supply sector for oil and gas development in the country. This would reduce the risks posed by the programme to the delivery of the contractor's commitments to its client, and enable the programme to be more rapidly developed. The focus of early activities for the programme might include working with the contractor's existing local suppliers to enable them to access other clients and markets.

Strengthening the Human Resourcing Strategies of Lead Contractors

In low-income regions, the training element of an international contractor's human resourcing strategy is often delivered by professional training providers whose principal residence is outside the country of operation. In the medium-term, contractors could possibly do more to investigate building the capacity of local training providers to meet their internal training needs. With the right support such local providers would be in a position to provide services not only on the immediate contract and project, but also to other operators and contractors in the oil and gas development sector.

External financial and technical support for such a strategy could be investigated through relevant government agencies (e.g. the country's Investment Promotion Board) and units within development assistance agencies such as UNDP, the regional offices of the International Finance Corporation, and various bilateral country offices. Many of these agencies already support programmes of vocational training and enterprise development. The strategy could also form the basis of a permanent localised Training Resource Centre, which, in the case of Timor-Leste, could possibly be located in the proposed CUSB.

Reforming the Regulatory Framework

The Government of Timor-Leste has made substantial progress in establishing a transparent and development-driven regulatory environment for the oil and gas industry. This has had some success, for example in incentivising the Clough AMEC JV to propose an employee pipeline training programme and to develop proposal for a CUSB for Timor-Leste.

The possibilities arising from the Greater Sunrise development and the prospect of development of new acreage under the jurisdiction of Timor-Leste give cause to look again at how the regulatory framework might be further strengthened to ensure that proposals for local content are optimal with respect to the skill and supplier capabilities in Timor-Leste, and are implemented in practice. Work has almost certainly already been carried out in this respect, although the research team for this report was unable to substantiate this. This noted, we suggest a number of modifications to future PSCs (both for the Greater Sunrise field and the new acreage release). These suggestions are included in our report since they may be of relevance to other national jurisdictions in low-income countries and economically disadvantaged regions.

The suggestions include:

- A broader definition of support for local content that includes project-link and off-project strategies, combined with an incentive whereby these strategies are cost recoverable from oil and gas production, up to financial ceilings for (i) training, (ii) development of local economic infrastructure, and (iii) support to local enterprises.
- Pursuant to World Trade Organisation Trade-Related Investment Measures (TRIMS) agreement on local content requirements, allow the operator or its lead contractors to procure from non-competitive supplier firms based within Timor-Leste, on condition that firms (i) meet minimum standards for health and safety and (ii) pose no material risk to the effective operation of critical facilities and assets. As an incentive, non-competitive procurement costs could be made recoverable up to a financial ceiling.

Details of these and other opportunities to modify the articles and clauses in the model PSCs and related documentation are given in Table 9 in the main report.

This report is the second in a series on the role of engineering services contractors in poverty reduction and economic development jointly prepared by Engineers Against Poverty and the Overseas Development Institute. With regard to the energy sector, the authors continue to explore the proposition that part of a successful strategy for enhancing the local economic and social performance of oil and gas development developments in economically poor regions lies in unleashing the underutilised resources and innovation within lead engineering contractors.

1 Introduction

1.1 Purpose

This is the second in a series of evidence-based reports on the role of large engineering contractors in strengthening the positive local economic and social impact of capital investment projects in oil and gas sector in developing countries⁶. The first report looked at the operations of the Fluor AMEC joint venture in support of the assets of the *Shell Malampaya Gas-to-Power* project in the Philippines. This report looks at the asset support services of AMEC and its joint venture partner to an offshore gas development project in Timor-Leste; a country with a significantly less developed economy, lower literacy and skills levels, a substantially weaker private enterprise sector, very poor physical infrastructure and weak government capacity.

The proposition underpinning this overall research programme is that engineering construction and services companies who develop capabilities to maximise the positive local economic and social benefits of their operations, and who effectively communicate this to clients, will increasingly secure commercial advantage.

This report is aimed at engineering contractors, oil and gas operators, regulatory authorities, investors, development agencies and others with an interest in the oil and gas industry and its potential for contributing a positive impact on international development and poverty reduction.

The authors fully acknowledge, and indeed are actively involved in, research on the potential for natural resource revenues and upstream oil and gas operations to impact adversely on local society, its economy (e.g. through Dutch Disease effects) and the environment. However, this particular study is an investigation of the potential for a positive contribution of the sector. Further, we focus on direct local economic and socio-economic impacts. The report makes no attempt to assess or offer recommendations regarding the management and distribution of natural resource revenues by governments. Public sector management of resource revenues through expenditure and savings, and through efforts to stabilise volatility and national budgets, constitute a considerable, if not *the* principal, economic impact from upstream oil and gas development projects. However, the ability of operators, investors and, above all, engineering contractors to influence the way in which these revenues are managed is limited. The report also does not look at mid-stream, indirect, economic impacts, such as the provision of power or liquid natural gas (LNG) processing plants for example.

The topic of non-renewable natural resource revenue management and its indirect economic impact on Timor-Leste society and economy is therefore not the central theme of this report. Instead, we focus only on direct and local economic impacts arising from employment, training, procurement and operational infrastructure of 'upstream' oil and gas development projects. In short, we have concentrated our investigation and recommendations on the areas of economic and social development where engineering contractors either exercise control or have significant influence.

1.2 Approach and Report Structure

The central proposition above is explored in this report through an analysis of the Bayu-Undan gas recycle project in the Timor Sea. The operator, ConocoPhillips, has awarded an Operations and Maintenance Services contract for the gas recycle phase of the project to a joint venture involving two international engineering companies: Clough Limited and AMEC plc.

The approach for this study has been structured around the application of an Economic and Social Performance Framework (ESPF) further developed for this study (see Section 2). The ESPF is a methodology for the systematic investigation of the opportunities to optimise the contribution of lead engineering contractors to project social and local economic performance. This report documents the application of the ESPF to the oil and gas sector in Timor-Leste and the work of the Clough AMEC JV in delivering the Bayu-Undan Operations and Maintenance Services contract. In line with the ESPF, the field research was designed to answer three core questions:

- What strategies does the Clough AMEC JV and its client ConocoPhillips currently have in place to deliver economic and social performance in the Bayu-Undan project (Section 5)?
- How might the economic and social performance of large international engineering services contractors such as the Clough AMEC JV be enhanced in ways that create commercial and business benefits and manage the risks (Section 6)?
- What conclusions can be reached on broader lessons from the study for those involved in upstream oil and gas operations and international development (Section 7)?

In October and November 2005 a joint research team visited Timor-Leste, Perth and Darwin. A series of interviews and focus group discussions were held with representatives from the operators, suppliers, various government agencies and community and charity groups (see *Annex A*). The research was conducted by a multi-disciplinary team drawn from EAP and ODI with the cooperation of staff from the CAJV. The team comprised expertise in corporate responsibility, engineering, business management, community development and social planning.

Section 2 provides an explanation of the ESPF. Section 3 give background to the case used in this study: the Bayu-Undan Gas Recycle Project in the Timor Sea, and identifies those aspects of the scope of work that might support enhancements in economic and social performance in Timor-Leste. Section 4 examines the regulatory and policy drivers for enhanced local economic and social performance in Timor-Leste and places Bayu-Undan in its broader economic, social and political context. Section 5 summarises the strategies currently being used to deliver local economic and social performance in the country. Section 6 draws out the lessons from Bayu-Undan and considers their wider applicability. Section 7 offers some general conclusions.

2 Economic and Social Performance Framework

2.1 Rationale

A number of the world's trans-national energy companies are experiencing a geographic shift in their upstream growth centres towards regions with emerging or transitional economies. This shift carries new risks for both near-term profits and long term access to business opportunities. The risks are tied in part to a local social and economic 'benefits gap'⁷ emerging between the real and anticipated positive economic and socio-economic rate of return of the investment for the host society, particularly those populations in the region where operations are based.

A benefits gap can emerge because of, *inter alia*: the long cost-recovery period for capital investment, inefficiencies in public sector expenditure management at the national and provincial level, the short term nature of the majority of employment opportunities, technical constraints to supply chain access for local firms, community investment narrowly targeted at directly affected people, and relatively low-level direct tax receipts by municipal and provincial authorities.

A range of innovative strategies to enhance local economic and social benefits are currently being experimented with, both by governments, for example, through the legal framework and within development and production agreements, and by operators, including regional development initiatives (in partnership with government and international aid agencies), financial and business management support to local suppliers, public-private partnerships around operational infrastructure, strengthening for local regulatory institutions, and new obligations and incentives for lead contractors via contract tendering.

It is also being realised that lead engineering construction and asset services contractors, who often control a substantial portion of capital or operational procurement expenditure, and who may have a long term local presence, are an underused resource for enhancing the positive local economic and social impact of upstream oil and gas projects.

2.2 Economic and Social Performance Strategies

A range of local economic and social enhancement strategies are available to lead contractors, including: skills/competency development; support to small and medium suppliers, both on-the-job and via outreach financing and business advisory programmes; local infrastructure development, and support to local institutions. These are summarised in Table 1.

Table 1 Categorisation of Strategies for Oil and Gas Lead Engineering Services Contractors to Enhance the Local Economic and Social Performance of Oil and Gas Developments⁸

On-Project	
Employment	Local Recruitment
Training	Prior training, on-the-job training, apprenticeships
Supplier support	Support to community suppliers to meet project quality standards
Local infrastructure	Project infrastructure utilised by local population
Institution strengthening	Project-driven interaction with local government agencies (e.g. for licences and permits) resulting in capacity strengthening
Project Link	
Employment	Inward-linkage – outreach recruitment programmes
	Outward linkage – enhancing post-project employment prospects, e.g. assisted job seeking
Training	Inward-linkage – outreach training programmes
	Outward linkage – training specifically to enhance post-project employment prospects
Supplier support	Inward-linkage – outreach enterprise support
	Outward linkage – supporting existing supplier's to access external markets, e.g. business plans, marketing surveys, interface with financial institutions, direct financial support, regulatory navigation, etc.
Local infrastructure	Aligning project infrastructure with government infrastructure development plans/policies and other investments
Institution strengthening	Project-driven interaction with local government agencies aligned with government or donor institutional capacity strengthening programmes
Off-project	
Employment	Job seeker service
Training	Technical and vocational training, alternative incomes training
Supplier support	Micro-enterprise business support and finance
Local infrastructure	Unilateral or PPP infrastructure projects unrelated to contract needs, but builds reputation of contractor with future clients and government
Institution strengthening	Support to local institutions to develop competencies and capacity

2.2.1 On Project Strategies

On-project strategies utilise project employment requirements, works schedules, supplier quality and reliability specifications, health, safety and environmental performance standards, etc. as the basis for strengthening the competencies of individuals and local enterprises. These strategies are usually a response to the 'local content' requirements of the regulatory and contractual regime. They often take the form of a preference in recruitment to nationals (which in low-income economies may mean individuals who are below the necessary skills levels), and similar preferencing of contract labour and other supplier services to local firms (again, in low-income economies these firms may not initially meet the quality standards of the project). In on-project strategies, training and supplier support programmes are essentially geared towards rapidly bringing the performance of

individuals and firms up to meet the requirements of the project. Increased marketability for these employees and suppliers is a likely, but usually unintended, consequence.

2.2.2 Project-Link Strategies

Project-link strategies are practices that treat the oil and gas development project as a springboard for local people and firms to access other economic opportunities. They recognise that in many economically disadvantaged countries and regions, a short term employment or supplier contract with an international investment project is not only of benefit in terms of increasing immediate household or firm incomes, it also represents a rare (possibly unique) opportunity for skills and technology transfer and as such needs to be strategically exploited to the fullest extent. Project-link strategies relevant to lead engineering services contractors (and also to may project operators) can be divided into three types, as follows:

- *Inward linkages* – where employment or supplier requirements of the project frame an external, outreach, programme of recruitment, skills development or community enterprise development by the lead contractor. Some, but not all, of the beneficiaries of this programme will go on to secure contracts with the lead contractor its client, ie the project operator. Others will benefit by being able to better access external markets. From the contractor's perspective, the ultimate aim of inward strategies is to service the needs of his contract and the wider project.
- *Outward linkages* – where the lead contractor builds on a particular employment or supplier sub-contract to develop skills or supplier competencies for utility outside the immediate contract, i.e. either on another aspect of the same project, or more likely in other markets, be that related or unrelated to the project, public or private, national or international. An example might be a community-based catering and hospitality start-up enterprise who has won a sub-contract with a lead contractor, and who is supported in the last six months of the contract to market its growing competency in food and beverage quality control to the local tourism sector. From the contractor's perspective, the aim of outward strategies is to develop off-project markets in order to assist the client reduce the dependency of local supplier firms on the project as its only main customer.
- *Infrastructure linkages* – aligning operational infrastructure (or temporary construction works) with the infrastructure development plans of government authorities and project-affected communities priorities (e.g. power, water, telecoms, transport, waste management, etc.). It is unlikely that a lead contractor would undertake this work without collaboration with the client or local authorities in some form of public-private partnership (PPP). The design, construction and maintenance of this local infrastructure is also an opportunity for enhanced local employment, training and local enterprise development.

2.2.3 Off Project Strategies

Off-project strategies utilise the competencies of the lead contractor to enhance local skills, employment opportunities and community enterprise and infrastructure opportunities outside the needs of the project. This might be undertaken within the context of a community

investment programme of the contractor, or, more likely, as a costed service of the lead contractor, e.g. as part of contractual obligations to implement measures to mitigate aspects of the adverse effects of the project on local livelihoods. If the contractor is absorbing some or all of the costs, the expectation is of an enhanced reputation with the client, future clients or the government.

2.3 Economic and Social Performance Framework

Table 2 provides an overview of an Economic and Social Performance Framework (ESPF) designed to guide the systematic investigation of opportunities and for prioritising strategies to enhance the local economic and economic and social performance of oil and gas development projects. The framework could be used by both operating companies and engineering services contractors.

For contractors, it can be used at the stage of preparing tenders – whether that be for engineering, construction, procurement, construction management, operations or maintenance contracts – and as a means to prepare proposals for contract extensions. It can also play a role in the periodic scanning by contractors of opportunities as part of contract risk (and opportunities) analysis⁹, for example, enhancing the implementation or redesign of resourcing strategies, supplier support programmes and other types of local content and sustainable development strategies.

The left-hand axis of the framework is based on the division of economic and social performance strategies into on-project, project-link and off-project. Each of these is subdivided into employment, training, supplier development, local infrastructure and institution strengthening. The top axis prompts an investigation of project requirements that might offer the basis for enhancing local content. It also seeks to capture the baseline of existing strategies, and prompts enquiry into both supply-side constraints, risks and opportunities from the perspective of local employees, potential trainees and local suppliers, as well as demand-side constraints, risks and opportunities from the perspective of the operator, host government, and the donor and NGO community.

The structure of this report follows the principal steps of the ESPF methodology. While much of the analysis is project and/or contract specific, the report demonstrates the broader lines of enquiry that could readily be applied to other oil & gas developments in developing countries. The key outputs of the application of the methodology, ie. opportunities for enhancement in the local economic and social performance of the Bayu-Undan Project, are detailed in Chapter 6.

Table 2 Framework for Investigating the Role of Lead Engineering Contractors in the Local Economic and Social Performance of Oil and Gas Developments

Type	General Strategies	Contract Scope	Constraints and Drivers	Existing Strategies	Opportunities
On-Project		Contract type	<ul style="list-style-type: none"> • Current contract and contract extensions • Future business opportunities 	Demand-side players <ul style="list-style-type: none"> • Operator • Host government • Official Development Agencies • NGOs 	<ul style="list-style-type: none"> • Current contract and contract extensions • Future business opportunities
Employment	Local recruitment	<ul style="list-style-type: none"> • Front end design 			
Training	Prior training, on-the-job training, apprenticeships	<ul style="list-style-type: none"> • Engineering design 			
Supplier support	Support to community suppliers to meet project standards	<ul style="list-style-type: none"> • Procurement 			
Local infrastructure	Project infrastructure utilised by local population	<ul style="list-style-type: none"> • Construction and fabrication 			
Institution strengthening	Project-driven interaction with local government agencies (e.g. for licences and permits) resulting in capacity strengthening	<ul style="list-style-type: none"> • Construction Management 			
Project-Link		<ul style="list-style-type: none"> • Operations management • Asset Maintenance 	Demand-side <ul style="list-style-type: none"> • Legal, regulatory and contractual framework • Economic policy • Institutional and governance capacity • Human resource capacity • Business capacity 	Supply-side players <ul style="list-style-type: none"> • Lead contractor • Other suppliers • Potential trainees and employees 	Demand-side opportunities <ul style="list-style-type: none"> • Regulatory reform • New contract terms • New economic policy • Partnerships to strengthen Institutions and governance capacity • Various support for human resource and business development
Employment	Inward-linkage – outreach recruitment programmes	<ul style="list-style-type: none"> • Design Parameters 			
	Outward linkage – enhancing post-project employment prospects, e.g. assisted job seeking	<ul style="list-style-type: none"> • Skills • Materials • Services • Infrastructure/ utilities • Finance • Land/property • Equipment • Approvals 			
Training	Inward-linkage – outreach training programmes				
	Outward linkage – training specifically to enhance post-project employment prospects				
Supplier support	Inward-linkage – outreach enterprise support				
	Outward linkage – support to existing supplier's to access external markets, e.g. business plans, market surveys, financial support				
Local infrastructure	Aligning project infrastructure with government infrastructure development plans/policies and other investments				
Institution strengthening	Project-driven interaction with local government agencies aligned with government or donor institution strengthening programmes				
Off-Project					
Employment	Job seeker service				
Training	Technical and vocational training, alternative incomes training				
Supplier support	Micro enterprise business support and finance				
Local infrastructure	Unilateral or PPP infrastructure projects unrelated to contract – builds reputation of contractor with future clients / government				
Institution strengthening	Support to local institutions to develop competencies and capacity				

3 The Bayu-Undan Gas Recycle Project and Contract Scope

3.1 Overview

There are currently six producing oil fields in the Timor Sea. In addition to current investments, between US\$5.7 and US\$14 billion is proposed as capital expenditure for potential oil and gas resource development in the region¹⁰. The Joint Petroleum Development Area (JPDA) lies within the Timor Sea in the Northern Bonaparte Basin. Here technically recoverable reserves have been discovered of more than 5 trillion cubic feet of gas, with 500 million barrels of oil, condensate and LPG¹¹. Timor-Leste holds the majority ownership portion of the JPDA reserves, with Australia the minority shareholder. The JPDA is administered by the Timor Sea Designated Authority (TSDA), comprising representatives appointed by both Australia and Timor-Leste. Two active fields are located in the JPDA: Bayu-Undan and Elang/Kakatua¹² (see Figures 1 and 2).

The Bayu-Undan gas field is a first-phase development, involving the production and processing of wet gas, the separation and storage of condensate, propane and butane and the re-injection of dry natural gas back into the reservoir. The field began production in 2004. An interim Timor Sea Treaty¹³, entered into force in April 2003 between Timor-Leste and Australia, provides for a 90%–10% split in tax and royalty revenues from the field in favour of Timor-Leste. The two other elements of the project are a 500km sub-sea gas pipeline from the field to Darwin, and an LNG plant at the same location. Each element is owned by a separate joint venture and each is operated by an affiliate of ConocoPhillips. The Clough AMEC JV recently won a contract with the operator to provide operations and maintenance services for the gas recycle element of the project.

The facilities that comprise the Bayu-Undan development incorporate three offshore fixed platforms: a drilling, production and processing platform; compression, utilities and quarters platform; a wellhead platform and a floating storage and offloading vessel, permanently moored (see Figure 3). The Wellhead platform consists of a single deck with 12 well slots. The platform is not normally manned. The compression, utilities and quarters (CUQ) platform has accommodation for 80 beds. The CUQ is linked to the drilling, production and processing platform by an access bridge. A floating storage and offloading vessel has been purpose built for handling the produced condensate and LPG. The vessel has accommodation for 60 persons, and capacity for 130,000 m³ of condensate and 95,000 m³ of LPG. Major offshore equipment and systems in need of maintenance includes: pumps, motors, air compressors, valves, actuators, cranes, instruments, switch gear, entertainment systems and lighting.

Figure 1 Timor-Leste Australia Joint Petroleum Development Area¹⁴

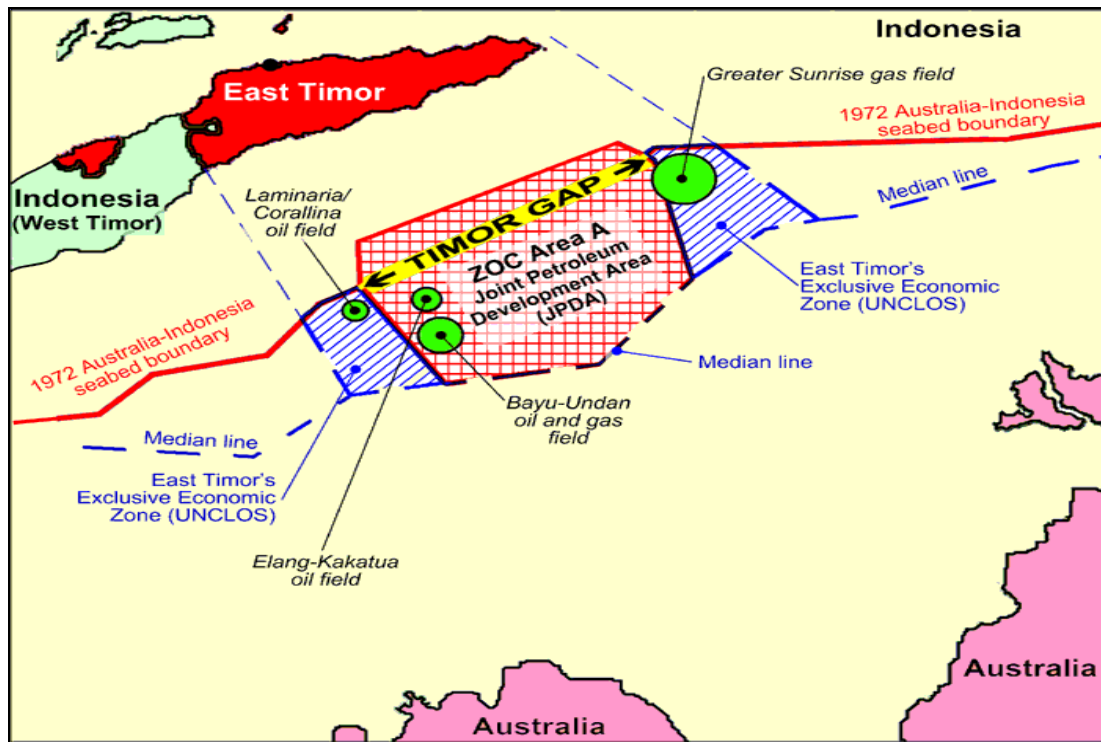


Figure 2 Acreage Release in the Joint Petroleum Development Area¹⁵

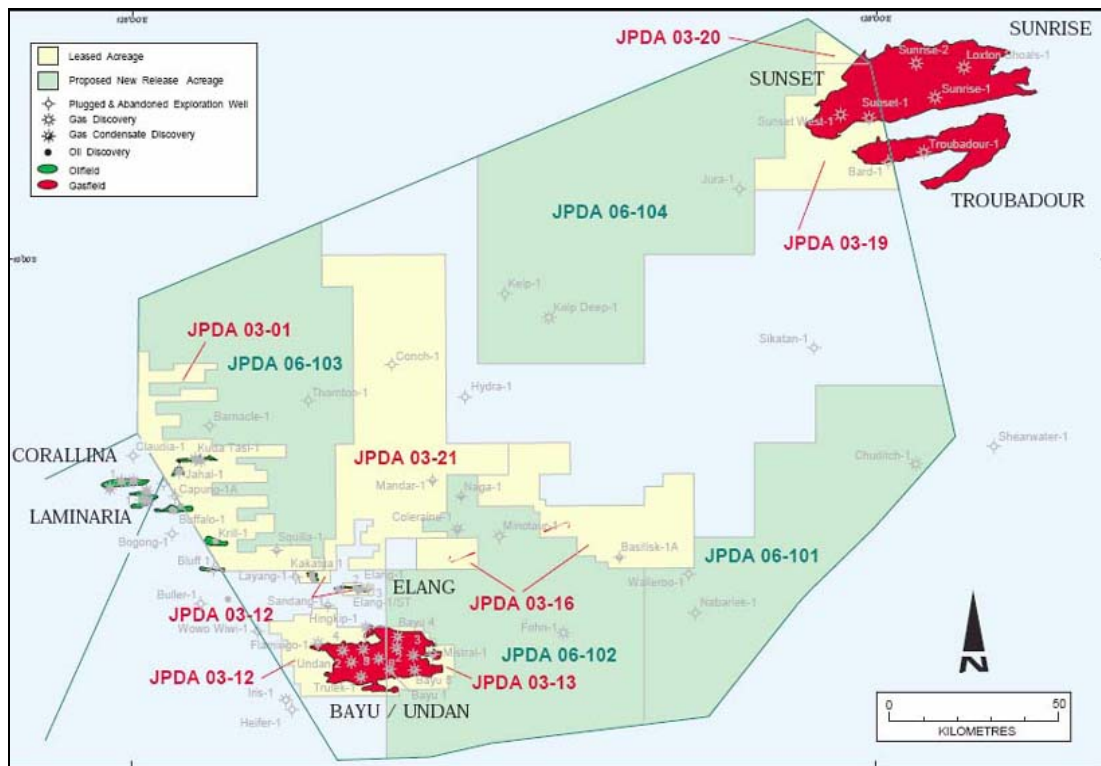
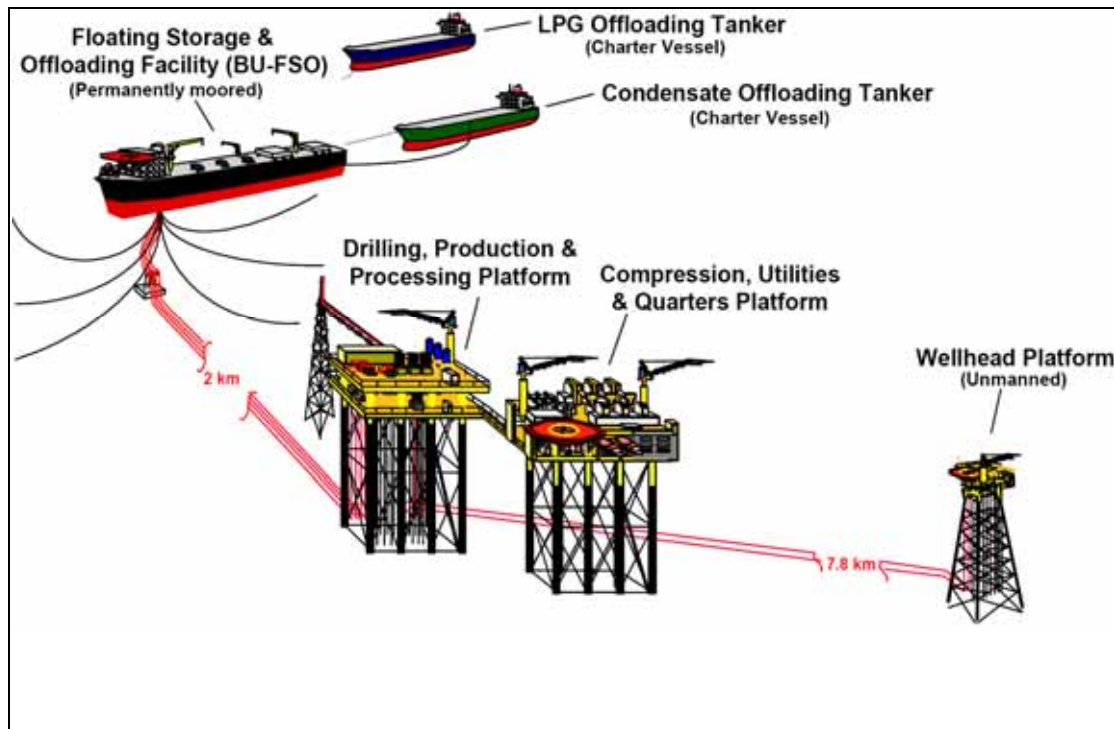


Figure 3 Bayu-Undan Gas Recycle Facility¹⁶

3.2 Overview of the Bayu-Undan Operations and Maintenance Contract

The Clough AMEC JV company was created for the purpose of winning the ConocoPhillips operations and maintenance contract to service the gas recycle production facilities at the Bayu-Undan gas and condensate field¹⁷. Ownership of the joint venture is split evenly between Clough and AMEC. Clough Limited is one of Australia's largest multidisciplinary engineering, construction, operations and maintenance contractors, headquartered in Perth. AMEC plc is an international engineering services company providing design, project delivery and maintenance support to clients in the oil and gas, transport, infrastructure and industrial sectors, with headquarters in London. The contract, awarded in July 2004, runs for three years with an option to extend a further two years.

When compared to other oil and gas asset support contracts, the Clough AMEC JV contract is considered relatively small, with projected revenues in a normal year (i.e. without major facility shutdowns) of between US\$6–10million¹⁸. Nonetheless, with annual national public expenditure in Timor-Leste totalling only US\$73 million¹⁹, the operations and maintenance contract represents a significant opportunity for the country to enhance economic growth and development.

3.3 Scope of Work of the Clough AMEC JV Operations and Maintenance Services Contract

The intended scope of the Clough AMEC JV Operations and Maintenance Services contract can be divided into its offshore and onshore components. These are described briefly below²⁰. A summary of required services is given in Table 3.

3.3.1 Onshore Scope of Work

The Clough AMEC JV is required to have the onshore capability and resources to support the Bayu-Undan facilities. This capacity, which includes maintenance, servicing and repair facilities for all disciplines, and fabrication and module construction, may be provided either directly by Clough AMEC personnel, or through the Clough AMEC JV supplier network.

The operations strategy of ConocoPhillips seeks to maximise offshore maintenance where possible, removing serviceable assemblies to local onshore facilities for repair and refurbishment only when necessary, or to regional servicing centres if local support capability is insufficient. This is so because in some cases maintenance may only be practical via the original equipment manufacturer's approved service agents that are found in regional centres. The Clough AMEC JV is also required to undertake material procurement and testing, and provide a general fabrication capability to support maintenance and repair activities. Examples of work carried out through sub-contractors include the repair of corroded spool pieces and the fabrication of replacement walkways components and piping. The contract terms allows for Clough AMEC to provide, as required, fabrication of more substantial packages of works, for example in relation to major shutdowns.

The Clough AMEC JV is also responsible for the onshore packaging of offshore maintenance campaigns, based on the utilisation of common, grouped, resources, and for servicing major plant shutdowns. The first major shutdown took place in June 2005.

3.3.2 Offshore Scope of Work

The contractor is required to operate and maintain offshore field facilities – wellhead; compression, utilities and quarters; and drilling, production and processing platform – as well as the floating storage and off-loading vessel. All personnel deployed by the contractor and its sub-contractors, are required to have a recognised trade or other qualification appropriate to the activity, and possess a minimum standard of fluency in English. In addition, the contractor is to provide premium quality 'tools of the trade' with deployment of personnel and sub-contractors, maintained in good order. For shutdown work, larger quantities of tools are needed, and for campaign work certain supplementary tools. The contractor is not required to provide utilities, power, air, water or fuel. These are provided by ConocoPhillips.

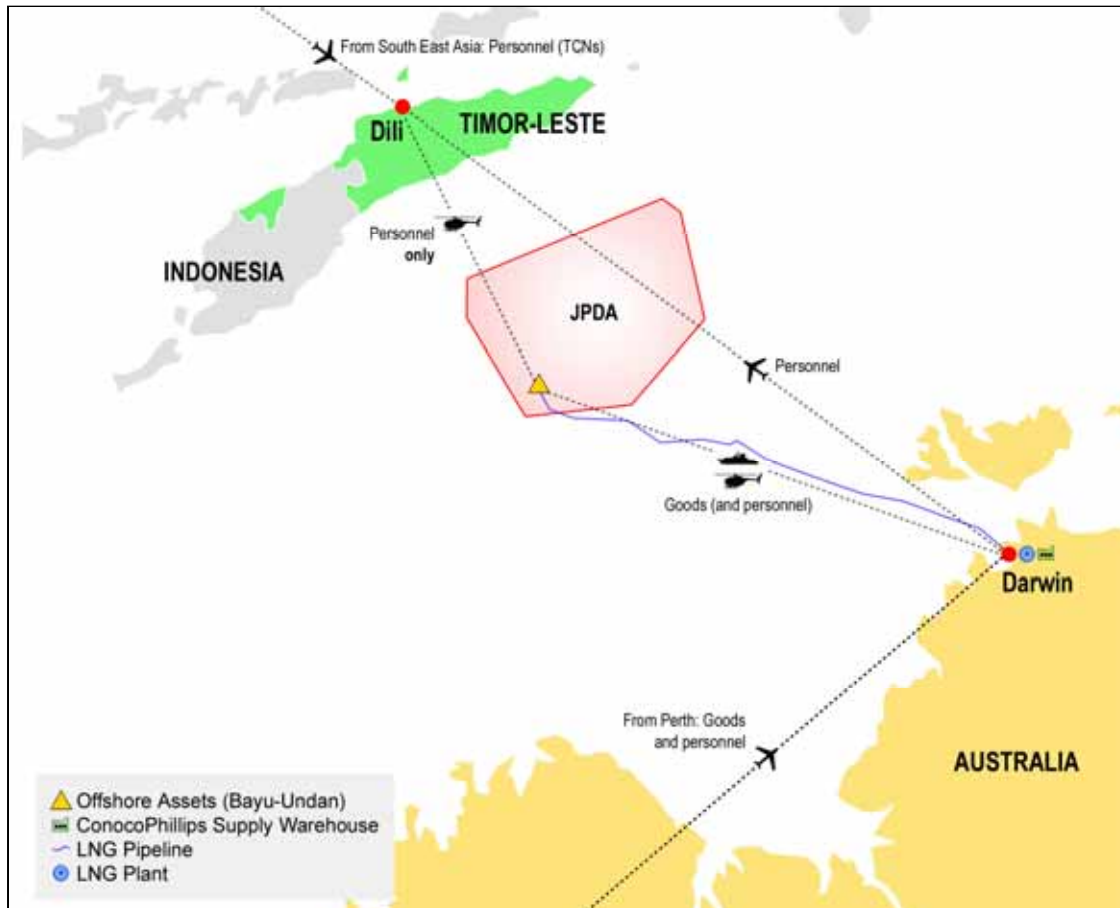
Table 3 Operations and Maintenance Services Contract: Scope of Work (Summary)

Key Services	Specific Services	Currently provided by CAJV personnel	Currently provided by sub-contractors	
		Darwin	Darwin	Timor-Leste
Routine maintenance, servicing and repair facilities for all disciplines – full time personnel	Continuous Mechanical fitting Boiler making Welding Instrument and electrical technicians Rigging Scaffolding and scaffolding equipment (to specification) for offshore platforms	Yes	Yes	No
Routine minor fabrication – full time personnel	Rope access offshore Flange management, including ongoing supervision, training and competency checking	Yes	Yes	No
Routine maintenance, servicing and repair facilities for all disciplines – call-off personnel	Blasting and painting Insulation and lagging Frequent Supervisors Coded pressure welders HVAC Services General maintenance plant and equipment rental arrangements	Yes	Yes	No
Larger fabrication services – Packaged worksopes – call-off labour	Occasional Provision of support spares and consumables Packaging and dispatch	Yes	Yes	No
Campaigns – grouped delivery of service packages	Demobilising back to shore Cleaning and repairs Supervising (various) Project Engineering Planning HSE Supervision	Yes	Yes	No
Shut-down maintenance	Administration assistance Materials coordination Welding Inspection Crane Driving (offshore certified)	Yes	Yes	No

As noted, the required services are not as substantial as in some other operations and maintenance contracts. For example, ConocoPhillips retains management control and establishes its own service contracts with suppliers and sub-contractors in some areas, including: lifting equipment, NDT testing and pressure leak testing. A separate major operations contract also been awarded for engineering services, including data and document management.

Most spares, materials and equipment storage is handled from Darwin, and materials transport to the offshore facilities is by regular supply vessel (every two weeks) from ConocoPhillips' supplier base, also in Darwin. Transport of personnel and light special equipment is by chartered fixed wing from Darwin to Dili, then by helicopter to the offshore facilities (see Figure 4). The original Scope of Work for the Clough AMEC JV contract noted that future arrangements for supply chain logistics *may* include the ability to move materials from storage facilities based in Dili, but this has yet to be realised.

Figure 4 Supply Chain Transport Logistics



4 Regulatory and Policy Drivers for Enhanced Local Economic and Social Performance

This section provides an overview of the Bayu-Undan Gas Recycle Project in the broader economic, social and political context of Timor-Leste. The emphasis is on demand side incentives and constraints as part of public policy, regulatory requirements and contractual obligations for enhancing the local economic and social economic impact of the investment.

4.1 Economic and Social Policy in Timor-Leste

Timor-Leste is one of the least developed countries in East Asia. The country gained independence in 2002 after 450 years of continuous foreign occupation. Its history before independence is one of violent social and political upheaval. In the period of Indonesian rule from 1975, almost a quarter of the population were killed, three quarters of the extant population were displaced and housing, schools, churches and farms destroyed. During the violence around the referendum in 1999, two thirds of the country's physical infrastructure was destroyed²¹.

Timor-Leste continues to face a range of developmental challenges. More than two in five Timorese live on less than US\$0.55 per day. Life expectancy is 57 years. Half the population lacks a safe source of drinking water and 43% of the population is illiterate.²² The struggle for independence has led to a severe shortage of technical and professional skills to promote economic activities, not least of a private nature that might contribute to growth and job creation.

For a brief two-year period, from 2000 to 2001, inclusive, GDP growth was in double figures, due mainly to the expenditure of UN personnel and the financial support of the international community²³. As the UN presence was withdrawn, GDP has fallen back, with 2.0% growth in 2002, and -3.0% in 2003. 2004 saw a return to a growth of 1.0% due mainly to better performance in the agriculture sector²⁴.

Timor-Leste, through its national development plan for economic growth, and with support from the international development community, has established a policy and a legal framework to improve the country's economic performance, in part by promoting and encouraging foreign direct investment. It is intended that this policy assist in reconstructing the economy, reducing unemployment, bringing technical and vocational training for the national workforce, promoting industrial development and increasing productivity, and the rehabilitation of economic infrastructure²⁵.

4.2 Policy and Regulatory Drivers of Economic and Social Performance from Oil and Gas Development

Since independence Timor-Leste has made significant progress in establishing democratic political institutions and in building the fundamental regulatory and policy environment for economic growth and development. These efforts are supported by the prospect of financial revenues from the country's oil and gas reserves in the Timor Sea. The National Development Plan anticipates revenues from the Bayu-Undan field to strengthen sharply from the year 2005 to reach an average of US\$100 million a year in the last two years of the Plan²⁶. If prices stay above US\$55/barrel oil equivalent this is likely to be a substantial underestimate. If revenues from development of the Greater Sunrise field materialise, national income will rise still further. To put this in context, within two years government revenues from the Bayu-Undan project are likely to double total national income.

The regulatory and policy environment in Timor-Leste provides a range of obligations and incentives for extracting economic and social development benefits from oil and gas developments. These are discussed below.

4.2.1 Legal and Fiscal Framework

Timor-Leste has established a transparent and development-focused regulatory environment and fiscal framework for the oil and gas industry. A key part of the fiscal framework is the Timor-Leste Petroleum Fund.

Timor-Leste has also committed itself to mainstreaming poverty reduction in public policy and to encourage state, business and civil society sectors to integrate their efforts to help reduce poverty. Timor-Leste's Millennium Development Goal (MDG) targets for example, include reducing the number of people living in poverty from 21% in 2001 to 14% by 2015, an average annual reduction of 2.73%. Bayu-Undan will provide significant upstream revenues to Timor-Leste to help meet this and other MDG targets.

As with other smaller countries economically dependent on the upstream oil and gas sector (such as Trinidad and Tobago and São Tomé and Príncipe), Timor-Leste has identified the development of an onshore oil and gas support industry in Timor-Leste as a direct means of utilising these investments to contribute to its commitments to economic growth and reduce poverty²⁷. To this end, Timor-Leste has established a legal framework, the 2005 Law on Foreign Investment. The Law establishes a set of guarantees, obligations and incentives on investors intended to strike the right balance between ensuring the country's competitiveness to attract foreign investment within the Southeast Asian region, and ensuring that exploitation of the country's non-renewable natural resources brings direct economic benefits to the population. A number of specific clauses and articles within the Law are directed towards enhancing the local economic and social development impact of foreign investments. These are summarised in Box 2.

Box 2 Timor-Leste Investment Promotion Strategy²⁸

Obligations and incentives within the 2005 Law on Foreign Investment intended to enhance direct the local economic and social development impact of investments.

Obligations

1. Employ Timorese workers and promote their vocational training and technical skills as required to perform managerial or supervisory functions.
2. Implement rules and procedures regarding the protection of the environment, health and occupational safety under the terms of applicable legislation.

Incentives

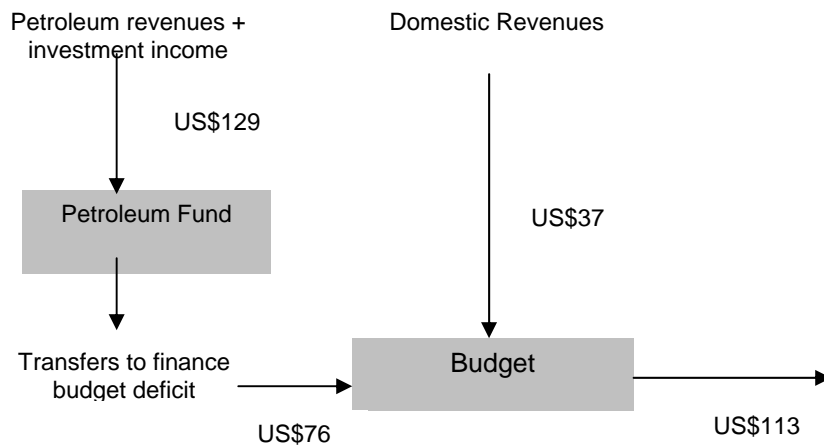
3. Entitlement to tax credit over taxable profits in the amount of 300 US dollars for each permanent Timorese worker for five years.
4. More generous periods of credit are given for investments:
 - located in rural or urban Timor-Leste
 - located in the District of Oecussi Ambeno or the sub-district of Atauro
 - whether the foreign investment is made into an economic infrastructure (including equipment, buildings and constructions) designed for the provision of services on an outsourcing basis
 - where foreign investment is mostly focused on export.
3. Exemption from customs duties and taxes on the import of capital assets, building materials, raw materials, half-completed products, components and spare parts, and fuel used for own production of electric power used by a business (provided that there is no public supply of such power).
4. Exemption from rent payment under leasing contracts of State buildings.

The Law also allows a business involving foreign investment to employ foreign workers under the terms of applicable law.

4.2.2 Proposed Timor-Leste Petroleum Fund

The proposed Timor-Leste Petroleum Fund is based on the petroleum fund model adopted in Norway. Thus, outflow from the Fund will essentially be the amount necessary to finance the government budget deficit. This design creates a direct link between the budget deficit (excluding petroleum) and the use of the Fund's capital. Increased government expenditure or lower tax incomes (from domestic activities) will result in smaller net allocations from the Fund. The anticipated workings of the fund for the periods 2007-2008 are given in Box 3.

Box 3 Proposed Timor-Leste Petroleum Fund²⁹

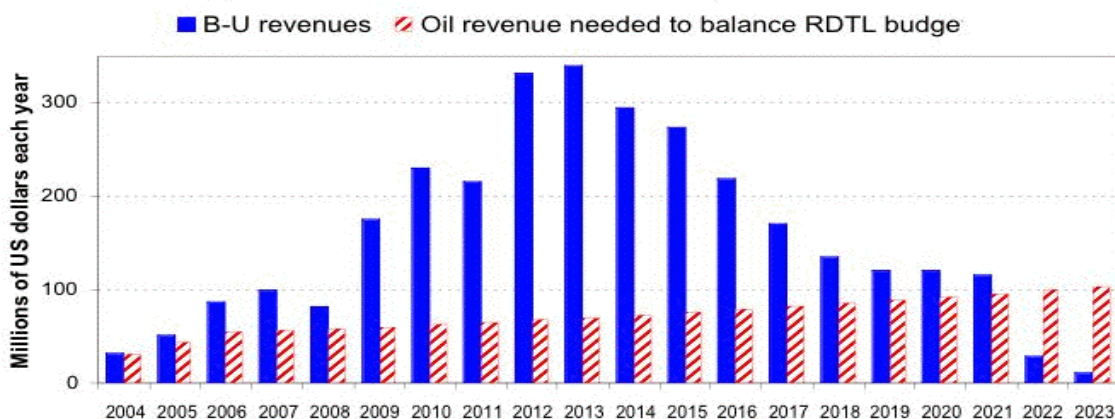


The Petroleum Fund's savings are to be invested in low-risk financial assets abroad, but with high liquidity. The Fund is not intended to be a separate institution, but fully integrated with government finances, however, savings will be deposited in a separate account with the Banking and Payments Authority (BPA), which carries out central bank functions.

The Minister of Planning and Finance will have overall responsibility for management of the Fund, and will report to the Prime Minister. The Minister of Planning and Finance will be advised by an Investment Steering Committee. Members of the committee will be key staff from the Ministry of Planning and Finance and the BPA, supplemented by external members, some of whom will have experience from the financial services sector. The intention of the committee is to strengthen the quality of advice preceding decision making on the management of the Fund.

Some argue that given revenues from the Bayu-Undan project, the government has no anticipated requirement for additional revenues from the adjoining (but as yet undeveloped) Greater Sunrise field for at least 17 years³⁰. Key is the challenge of how to handle revenues from Greater Sunrise if they arrive before economic growth or institutional absorptive capacity has evolved to be able to effectively utilise them.

Bayu-Undan revenue available and required 2004-2023



4.2.3 Private Sector Development Policy

The largest portion of Timor-Leste's private sector is its micro-enterprises and small- and medium-scale businesses. As noted in a recent IMF report³¹, it is the needs of this sector that dominate industrial and investment policy-making at present. The main challenge is to find ways to both exploit the private sector development opportunities that may follow from offshore oil and gas operations, and to develop the country's non-oil and gas tradable and non-tradable sectors. This includes building the capacity of local enterprises to support these markets by promoting more relevant domestic supply chains, broadening the business infrastructure base in terms of skills, physical infrastructure and utilising more advanced technology.

The private sector currently accounts for about two-thirds of GDP in Timor-Leste (US\$220 million), with the agricultural sector contributing about half of this³². The extent to which private investment can be increased over the next five years depends on overcoming the many constraints acting on business. The principal supply-side constraints to business development in Timor-Leste are listed in Box 4. Reframing local content in the context of these constraints provides a reference point for identifying opportunities to enhance the contribution of the Clough AMEC JV to local economic and social development. This idea is explored in more detail in Section 5.

As at 2004, 2,208 commercial enterprises were registered in Timor-Leste. Of these, 50% are trading (retail, wholesale and import/export) in rice and coffee processing, wood furniture and crafts, textiles and weaving and baking; 21% are in construction and 7% hotels and restaurants. Only 4.2% – 93 enterprises – are specialised in industry and manufacturing, and includes iron works, dyeing and salt production³³. Not only is the private sector underdeveloped, but salaries also jumped during the period of UN presence, making wage competition for the tradable sectors more difficult. As a result, today, some manufacturing remains in most sectors, but at such low levels and with such marginal resources that it is difficult to classify any activity as self-sustaining³⁴. To illustrate further, field research undertaken for this report found that there are no sandblasting workshops in Timor-Leste; the main wharf is only open five days of the week, and for only seven hours a day; and the largest crane in the country can only lift a maximum of 30 tonnes.

With domestic demand insufficient to ensure high levels of economic growth, a strong emphasis is being placed by Timor-Leste on foreign direct investment and the development of export markets. In this way strong growth is anticipated not only in the oil and gas development sector, but also in the commercial forestry and fisheries sub-sectors, in industry and construction, and in private services, including banking, tourism and transport.

Box 4 Securing Economic Benefit from Offshore Gas Development: Supply-Side Constraints in Timor Leste³⁵

- **Legal**
 - Incomplete legislative framework in essential commercial areas
 - Uncertain property and land rights
- **Economic Policy**
 - Imminent reduction in international presence and resulting demand distortions
 - Uncertainty about areas of national competitiveness advantage
 - Adverse implications of protective trade, e.g. high trade tariffs may lead to corruption at border areas or increase smuggling
 - Persistence of Current Account deficit
 - Import-dependency without growth in domestic production may lead to unsustainable trade deficits
 - Appreciating/strong US dollar relative to currency of key export markets may result in macroeconomic and monetary imbalances
 - Limited alternative tradable sectors to oil and gas, e.g. no inward/outward passenger/tourist ships from Indonesia, and lack of supporting systems and infrastructure to develop tourism
- **Institutional and Governance Capacity**
 - Lack of civil servant policy-making experience
 - Minimal experience in the practice of sovereignty
 - Non-compliance of domestic businesses for payment of tax and utilities continue to act as constraint on infrastructure and commercial development.
 - Future dependence on oil and gas royalties may result in failure to develop other industries and lead to a distorted and narrowly based economy (Dutch Disease effects)
 - Undeveloped business services sector for enterprise support
 - Unclear incentives for business
- **Human Capacity**
 - Lack of literacy skills – 46% of the population has never attended school
 - High population growth rate placing pressure on labour market.
 - Insufficient inclusion of women in private sector development activities
- **Business Capacity**
 - Low levels of technology and productivity in all sectors
 - Low levels of production efficiency – notably in agricultural
 - Continuing lack of physical capital, plant and equipment
 - Relatively high wage rates relative to probable international competitors
 - Small domestic market for absorption of domestic goods and services
 - Lack of functional banking and financial intermediation, e.g. Insufficient access to, and levels of, credit for small business; and inability of lenders to take collateral against loans
 - Limited domestic experience with entrepreneurship and business
 - Underdeveloped infrastructure, especially telecommunications and energy

Government economic and industrial policy for enterprise development also includes expansion of publicly-funded construction activity to rehabilitate and expand infrastructure and facilities, with an emphasis on labour-intensive methods³⁶. Specific policies are being promoted for the construction sector as follows³⁷:

- incentives for equipment leasing arrangements for small- and medium-sized domestic construction firms
- improved information for the private sector on the expected flow of new construction contracts for the public sector

- early completion of the Government's procurement guidelines
- improved access to working capital lines of credit from the banking sector
- increased emphasis on skills development in the labour force and for local entrepreneurs.

Public policy is also aimed specifically at local enterprise development. This includes policy directives to³⁸, *inter alia*:

- develop the onshore hydrocarbon potential and minerals industry
- build on the existing economic sectors to foster demand for local services and products and
- strengthen and develop further agri-businesses, including increased production of specialty crops for export and import replacement and building capacity of cooperatives, specially related with agriculture production and credit
- develop forestry and fisheries products for domestic and export markets;
- encourage private participation in public infrastructure, including perhaps power and water supply
- develop the tourism potential of the country.

With regard to technical and vocational training, the ongoing EU-funded US\$5 million employment training program is playing a key role. It is also accepted that the programme may require increased use of foreign contractors, preferably under joint-venture and other partnership arrangements such as sub-contracting, that will strengthen the domestic industry.³⁹

Timor-Leste is also considering establishment of Special Economic Zones (SEZ) aimed at encouraging foreign direct investment. Options are being assessed by Imani Development, an Australian-based consultancy group appointed by Timor-Leste. An SEZ steering committee has been established that comprises senior personnel from Government Ministries and State Institutions that are deemed relevant to the establishment and eventual operation of the SEZ

Finally, the Ministry of Education is promoting the idea of Business Development Centres (BDCs). This initiative is intended to provide entrepreneurial support to Timor-Leste businesses. To date, the majority of support has been targeted to develop local agricultural produce markets in 73 sub-districts.

4.2.4 The Petroleum Mining Code and Production Sharing Contracts

The Petroleum Mining Code (draft 2004)⁴⁰ governs the exploration, development, exploitation and export of the Petroleum within the JPDA and the sovereign territory of Timor-Leste. Specific obligations in the code are designed to enhance the contribution of the oil and gas projects to Timor-Leste's economic development. With reference to the Petroleum Mining Code, the guidelines for applicants of Production Sharing Contracts under the JPDA also adopt the same specific obligations. These are as follows⁴¹:

Health, Safety and the Environment

- Inclusion of proposals for securing health, safety and welfare of persons involved in petroleum activities.
- Inclusion of proposals for protecting the natural and marine environment, and for preventing, minimising and remedying pollution and other environmental harm.

Training, Employment and Local Goods and Services

- Inclusion of proposals for training, and, with due regard to occupational health and safety requirements, preference in employment, to nationals and permanent residents of Timor-Leste.
- Inclusion of proposals for the acquisition of goods and services from persons based in Timor-Leste.

The guidelines for applicants of PSCs also require: (i) inclusion of proposals for the improvement of the technical capabilities of Timor-Leste through research to be undertaken in Timor-Leste; and (ii) inclusion of proposals for the transfer of technology and skills to Timor-Leste nationals and permanent residents.

The PSC for the JPDA 03–13 is based on a model contract⁴². The model PSC contains a number of obligations and incentives for enhancing the positive local economic and social impact of the project (see Box 5).

Box 5 Model Production Sharing Contract, Timor-Leste (Selected Extracts)⁴³

The following obligations and incentives within the contract are relevant to the local economic and social performance of the development.

Sharing of Petroleum

Determination for the sharing of grade and quality Petroleum as and when it is delivered at the Field Export Points is as follows:

- 95% to the Contractor (but not more than is equal in value to Recoverable Costs for the Calendar Year concerned) + 50% of balance after Cost Recovery
- 5% to the Designated Authority + 50% of balance after Cost Recovery

Recoverable Costs

Pursuant to agreement between Contractor and the Designated Authority, Recoverable Costs may include:

- **Exploration Costs** – drilling well, surveys including materials, and services, auxiliary or temporary facilities, workshops, power and water facilities, warehouses, site offices, access and communications facilities, floating craft, automotive equipment, furniture and office equipment, employee and welfare housing, recreational, health and meals facilities.
- **Appraisal Costs** – those exploration costs that directly relate to appraisal.
- **Capital Costs** – workshops, power and water facilities, warehouses, site offices, access and communication facilities; production facilities including offshore platforms (including the costs of labour, fuel hauling and supplies for both the offsite fabrication and onsite installation of platforms, and other construction costs in erecting platforms), wellhead production tubing, sucker rods, surface pumps, flow lines, gathering equipment, delivery lines, storage facilities, all other equipment, facilities and modules on platforms, oil jetties and anchorages, treating plants and equipment, secondary recovery systems, gas plants and steam systems; pipelines and other facilities for transporting Petroleum produced in the Contract Area to the Field Export Point; movable assets and subsurface drilling and production tools, equipment and instruments, and miscellaneous equipment; floating craft, automotive equipment, furniture and office equipment; and employee and welfare housing, recreational, educational, health and meals facilities.
- **Operating Costs** – after the start of Commercial Production, those costs of an operating nature incurred in respect of activities carried out substantially in accordance with an approved Development and Production Work Programme and Budget.
- **Decommissioning Costs** – Estimates of the monies required for the funding of the Decommissioning Plan shall be charged as Recoverable Costs, beginning in the Calendar Year following the Calendar Year in which Commercial Production first occurs. It is the intention of this provision that the total accumulated provision allowed, including interest calculated to the Calendar Year of Decommissioning at the rate of Uplift rate, will equal the total Decommissioning Costs.

Goods, Services, Training and Employment (Local Content)

The Contractor shall:

- give preference to the acquisition of goods and services from persons based in Timor-Leste, provided they are offered on competitive terms and conditions
- with due regard to occupational health and safety requirements, give preference in employment in Petroleum Operations to nationals and permanent residents of Timor-Leste.

Continued/...

.../

Provision of Goods and Services

Notice – The Contractor shall draw to the attention of suppliers based in Timor-Leste, in such manner as the Designated Authority agrees, all opportunities for the provision of goods and services for Petroleum Operations

Contracts not Requiring Designated Authority Approval

The Contractor may make contracts for goods and services for Petroleum Operations without the Designated Authority's consent (but not if for property to be leased to the Contractor) where:

- the contract (or related series of contracts) is expected to involve expenditure of less than two million United States Dollars or such other amount that may be specified by regulation; or
- the contract (or related series of contracts) is expected to involve expenditure of less than five million United States Dollars or such other amount that may be specified by regulation and the goods or services are required in respect of a Development Plan, the cost of which is expected to exceed one hundred million United States Dollars or such other amount that may be specified by regulation.

Health, Safety and Environment Requirements

- The Contractor shall employ in regard to (i) the health, safety and welfare of persons in or affected by Petroleum Operations; and (ii) the protection of the environment (including the marine environment and the atmosphere and the prevention of pollution), such standards, practices, methods and procedures.
- and shall do (and refrain from doing) all such other things, as are the most stringent of such standards, practices, methods, procedures and things as: (iii) are employed by others exploring for, developing or exploiting Petroleum in the JPDA, Timor-Leste or Australia, with due and proper consideration for special circumstances.

4.2.5 Gap Analysis of the Policy and Regulatory Drivers of Economic and Social Performance from Oil and Gas Development

Table 4 below provides a indicative gap analysis of the extent to which the regulatory and policy environment promoted by Timor-Leste through the Law on Foreign Investment, the model Production Sharing Contract, the proposed Petroleum Fund and public policy for private sector development, provide incentives (or obligations) that enhance the positive local economic and social performance of the Bayu-Undan investment (shading indicates incentives are in place).

Table 4 Contribution of Public Policy to the Local Economic and Social Performance of the Bayu-Undan Project

Category of Economic or Social Impact	Law on Foreign Investment	Production Sharing Contract	Revenue Management (the design of the Petroleum Fund)	Private sector development policy
On-Project				
Employment				
Training				
Supplier development				
Local infrastructure				
Institution strengthening				
Project link				
Employment				
Training				
Supplier support				
Local infrastructure				
Institution strengthening				
Off-project				
Employment				
Training				
Supplier support				
Local infrastructure				
Institution strengthening				

As common to many Foreign Investment Laws and production sharing contracts and agreements around the world, the primary focus of these in the context of Timor-Leste and the JPDA model PSC is for on-project strategies. This includes giving preference to the acquisition of goods and services from persons based in Timor-Leste, the promotion of technical and vocational training, and allowing the recovery of costs for economic infrastructure linked to the needs of the project.

It is noticeable that unlike some other PSC contracts, the model JPDA contract seems to have no requirement for establishing a social fund, with payments from this recoverable as operational expenditure. Indeed, the model PSC is explicit that donations relating to public relations or enhancement of the operator's corporate image and interests⁴⁴ are ineligible for cost recovery for production revenues.

With regard to project-link strategies, the Law on Foreign Investment does seem to provide incentives for the operator to invest in broader economic infrastructure (equipment, buildings and construction). However, there is an absence of explicit clauses in the model PSC to operationalise this intent. It could be argued that there is disjoint between the terms of the model PSC and government policy for the oil and gas development sector to act as an engine for promoting private sector development. This is addressed again in Section 5.

4.3 Other Drivers of Economic and Social Performance from Oil and Gas Development in Timor-Leste

External to oil and gas development sector and to government policy for the oil and gas and related sectors, other parties are also driving the demand for increased economic and social performance from oil and gas developments in Timor-Leste.

4.3.1 Development Finance Institutions

International financial institutions, including the World Bank, the International Monetary Fund and the Asian Development Bank, have previously provided technical assistance grants to Timor-Leste in support of the commercial exploitation of its oil and gas reserves. These institutions recognise the importance of oil and gas revenues to the future development of the country and are aware of the dangers associated with oil-dependent economies. For these reasons, it is likely that the same institutions will continue to monitor and retain an involvement in the oil and gas industry in Timor-Leste.

Direct investments in the oil and gas sector by official development finance institutions have traditionally been limited and confined for the most part to the construction of pipelines. However, such institutions are likely to be involved in the development of public and private infrastructure associated with the oil and gas industry, such as roads, power generation and ports, and these too provide opportunities for engineering service contractors working in the region.

4.3.2 Communities and Civil Society

With no onshore facilities or significant infrastructure, the Bayu-Undan project does not currently affect local communities, other than via the Airthorn, SDV and Caltech supplier contracts. However, the importance of the oil and gas development industry to development in Timor-Leste means that all citizens are in effect stakeholders and their development priorities need to be understood and where possible, factored into investment and operational decisions.

Timor-Leste, the World Bank and others have undertaken a detailed poverty assessment, providing a baseline of the extent, nature and dimensions of poverty in Timor-Leste.⁴⁵ This research included a survey of households to determine the personal and national development priorities of the population⁴⁶. The overwhelming personal concern, quoted by three fifths of the respondents, was for employment. Other pressing concerns included access to education, health care and affordable housing. Of the national priorities, education was seen as the key priority for national prosperity. Given the current high levels of unemployment and the low levels of the skills and knowledge necessary for a modern economy, it seems likely that employment opportunities and access to education and vocational training opportunities will remain a priority for some years to come.

5 Current Strategies of the Clough AMEC JV in Delivering Local Economic and Social Performance on the Bayu-Undan Project

5.1 Operating and Contract Drivers of Timor-Leste local-content

ConocoPhillips manages the Bayu-Undan Gas Recycle Project using a set of key operating principles. These include⁴⁷:

- Encouraging and facilitating the development of offshore industry support capabilities, both facilities and skills, within the local community, particularly in Timor-Leste and Darwin, where these benefit the project.
- Recognition of the experience and expertise of its support contractors and actively encouraging them to apply innovative mechanisms, both technical and commercial, to maximise the effectiveness and efficiency of operations support.

Further, ConocoPhillips are committed to working constructively with the Timor-Leste government to identify opportunities for sustainable development and to encourage steady and realistic growth in the nation's capacity to support the Bayu-Undan and future oil and gas developments.

The Clough AMEC JV contract also carries a number of specific obligations and expectations on the contractors to optimise local content, as follows:

- Implement a sub-contractor development programme as part of the overall Contract Execution Plan, which (i) provides local suppliers with the opportunity and ability to clearly understand the requirements for supplying services via the contractor, and (ii) actively promotes the development of those capabilities.
- Commit to a realistic programme of practical local infrastructure development and resourcing from Timor-Leste in the provision of the services over the medium term⁴⁸.
- Continue to identify areas where ConocoPhillips may be able to provide indirect assistance, which may support or encourage the Contractor's Timor-Leste developments. These may include: (i) altered personnel and material supply logistics; (ii) facilitation of training support and services; (iii) facilities infrastructure e.g. warehouse/industrial areas in Dili.
- In the Contract Execution Plan, consideration of: (i) the establishment and development of resources, personnel and infrastructure in Timor-Leste; (ii) staged engagement of Timor-Leste personnel within the contractor's organisation; and (iii) provision of training

for Timor-Leste personnel in trades and supervisory skills relevant to the industry in general and the Contractor's provision of services.

- Retain the option for ConocoPhillips to make use of the Clough AMEC JV's facilities in Timor-Leste for executing work by other contractors, with the aim of offsetting costs and introducing a broader range of skills to the Timor-Leste operation.

In addition, as part of its bid to ConocoPhillips for the Operations and Maintenance Services contract, Clough AMEC JV proposed the staged development, construction, ownership and operation of a CUSB in Timor-Leste. The terms of the contract require an in-principle commitment to examine the viability of a CUSB, but they do not impose an obligation to establish it.

Remuneration for Clough AMEC JV for basic operations and maintenance servicing is based on a fixed fee. The contract also contains a number of performance incentives for call-off labour, packaged worksopes, campaigns and shutdowns. It is not known whether the performance incentive structure explicitly rewards enhanced contributions in the context of the Timor-Leste Content provisions.

The ConocoPhillips operating principles and the Timor-Leste Content provisions form the basis for the Clough AMEC JV to continue to innovate to enhance the local economic and social performance of the Bayu-Undan project. Together, they seem to strongly support the notion of implementing on-project strategies, covering all the principal economic and socio-economic areas: employment, skills development, supplier support (via the proposed sub-contractor development programme) and local infrastructure (i.e. a realistic programme of local [infrastructure] development. The only area lacking is perhaps consideration of support to strengthen local institutions, for example building capacity within health, safety and environmental regulators.

To a lesser extent, the operating principles and contract terms advocate project-link strategies, i.e. where the Bayu-Undan project becomes a springboard to encourage growth in the nations capabilities and facilities, not only for this project but more broadly. For example, Clough AMEC JV is required to include in their Contract Execution Planning consideration of the establishment and development of resources, personnel and infrastructure in Timor-Leste. However, the terms of the contract also specifically instruct the contractor to prioritise local-content contributions to assure provision of project requirements over and above programmes for sustainable development in Timor-Leste (see Section 5.3 on technical limits below). This latter clause may explain in part the uncommitted status of the Common User Support Base proposal, which carries certain commercial risks. Finally, there is little guidance on what mechanisms might be acceptable for operationalising project-link or off-project (i.e. sustainable development) strategies, such as encouraging collaboration with the public sector and not-for-profit organisations to share costs and risks, or working with international donor agencies.

ConocoPhillips currently have no community investment or sustainable development programme in Timor-Leste. However, the terms of the contract with Clough AMEC JV

include provisions for ConocoPhillips to work with Clough AMEC to encourage development of infrastructure and capabilities in Timor-Leste in relation to project needs, as well as requiring Clough AMEC to continue to identify areas where ConocoPhillips may be able to provide such assistance.

5.2 Internal Clough AMEC JV Drivers of local-content

Beyond compliance with contract terms and related remuneration, a key driver for the Clough AMEC JV to strengthen its delivery of local economic and social performance in Timor-Leste lies with the pursuit of new business.

Both Clough and AMEC wish to establish a long term relationship with ConocoPhillips to access repeat business, including an extension to the current Operations and Maintenance Services. They view excellent performance on the Bayu-Undan project as a key part of this strategy, and this includes meeting and exceeding, where practicable, the provisions for local-content. Both parties also wish also to position themselves as leading contractors in the region offering engineering services to operators of future developments in the Timor Sea⁴⁹. This in turn means developing a reputation with the TSDA and Timor-Leste Oil, Gas and Energy Directorate – the authorities who approve or are consulted on major construction and asset support contracts under the terms of PCSs.

As evident in its original bid to ConocoPhillips, Clough AMEC JV is itself amongst one of the few global oil and gas engineering services companies pursuing a long term regional business development strategy based in part on delivering higher standards of local economic and social performance. This strategy is informed by the experience of AMEC on the *Shell Malampaya Gas-to-Power* project in The Philippines⁵⁰, as well as experiences elsewhere in Asia. The Clough AMEC bid documents included two innovative proposals: a national employee pipeline and the staged development of a CUSB in Timor-Leste.

5.2.1 National Employee Pipeline

The Clough AMEC JV anticipate that by 2010 the oil and gas industry in the Timor Sea, will require a significant number of trained personnel. As such, the Clough AMEC JV stated in its tender its preparedness to invest in future business opportunities by creating a national employee pipeline. This proposal, not yet actualised, was to enable the JV to place additional recruits, over and above the Bayu-Undan requirements, in training programmes to support the future needs of the supply chain in the oil and gas development sector. It had been noted that those who pre-invest in conventional training are likely to lose out as the skills and experience of these employees become highly marketable commodities amongst competing firms. Hence, the Clough AMEC JV proposal was to generate a continuous 'pipeline' of trained personnel that could replace the employees as they move on. To operationalise this idea, some sharing of the investment costs among the private and public sectors could be envisaged.

5.2.2 Common User Support Base

The vision for a CUSB in Timor-Leste from which the Bayu-Undan project and in the future other planned oil and gas developments could be serviced, has likewise yet to be realised. The original proposals make explicit recognition of the interdependency and joint commitment needs of others for its execution. Parties for collaboration were identified, including (potentially): ConocoPhillips, local companies in the supply chain, Don Bosco training centre, future operators within the Timor Sea, universities, the TSDA, local and national government in Timor-Leste, Northern Territory Government in Australia, international donors and NGOs. It also included two companies each of whom has expressed an interest in the possibility of establishing a facility in Timor-Leste: CAPE East (who currently provides hook-up and commissioning services from Darwin and are accredited to provide training), and DESCO (based in the Philippines, and who bring capabilities in minor fabrication and maintenance repair and machining). The bid document noted the need to develop various forms of partnerships in pursuit of the CUSB, and laid out an approach to multi-stakeholder partnering drawn from the work of the World Bank's industry-supported Business Partners for Development programme⁵¹.

Just as the Clough AMEC JV is seeking competitive advantage in future business from its local economic and social performance, so the same is true of at least one of the contracts main suppliers. RANms is a successful cluster of ten small and medium sized engineering services companies based in Darwin. The cluster has expressed a willingness to consider locating part of their operations to Timor-Leste, and/or to provide training for Timor-Leste nationals in Darwin⁵².

Overall, the sustainable development strategies proposed in the bid documents were considered by AMEC as one of the primary reasons for reaching the final stages in the bidding process. According to Einar Risa, Executive Director of the TSDA, these were also a material factor in the TSDA approving the Clough AMEC JV tender⁵³ under Article 10 of the Production Sharing Contract⁵⁴.

5.3 Limits to Enhancing Local Economic and Social Performance

In contrast to some asset support contracts (such as the primary healthcare contract with Fluor AMEC on the *Shell Malampaya Gas-to-Power* project in the Philippines)⁵⁵, the contract between ConocoPhillips and the Clough AMEC JV passes only limited management authority to the Clough AMEC JV. ConocoPhillips retains management control over operations, production, engineering, maintenance, procurement and offshore field management. The emphasis is on a competency-based approach to work execution, requiring a single, centrally managed, asset maintenance group that draws on capabilities of ConocoPhillips and the Clough AMEC JV and other contractors as needed. To some extent, the Clough AMEC JV is constrained in how far it can unilaterally drive its own local economic and social performance in Timor-Leste solely through the Bayu-Undan contract.

As is common to the upstream oil and gas sector, the contribution of such projects to the development of onshore support capabilities (skills, suppliers, infrastructure, etc.) within host

countries is also constrained by commercial, technical, temporal and safety considerations. These include ensuring reliability and quality of suppliers, a focus on priority work, and minimising onerous bureaucratic processes and direct labour costs. For example, the Clough AMEC JV Operations and Maintenance Services contract is explicit in prioritising reliability and quality assurance in the provision of the Services ahead of efforts by the contractor to promote practical and sustainable development in Timor-Leste⁵⁶. This is standard practice in the industry. Further, the terms of contract require the contractor to undertake transparent and appropriate cost benefit management of identified sustainable development initiatives (in relation to delivery of the Scope of Work, not the quality of sustainable development outcomes). Both of these decision-making criteria are important practical constraints on the potential for the Clough AMEC JV to enhance its local economic and social development.

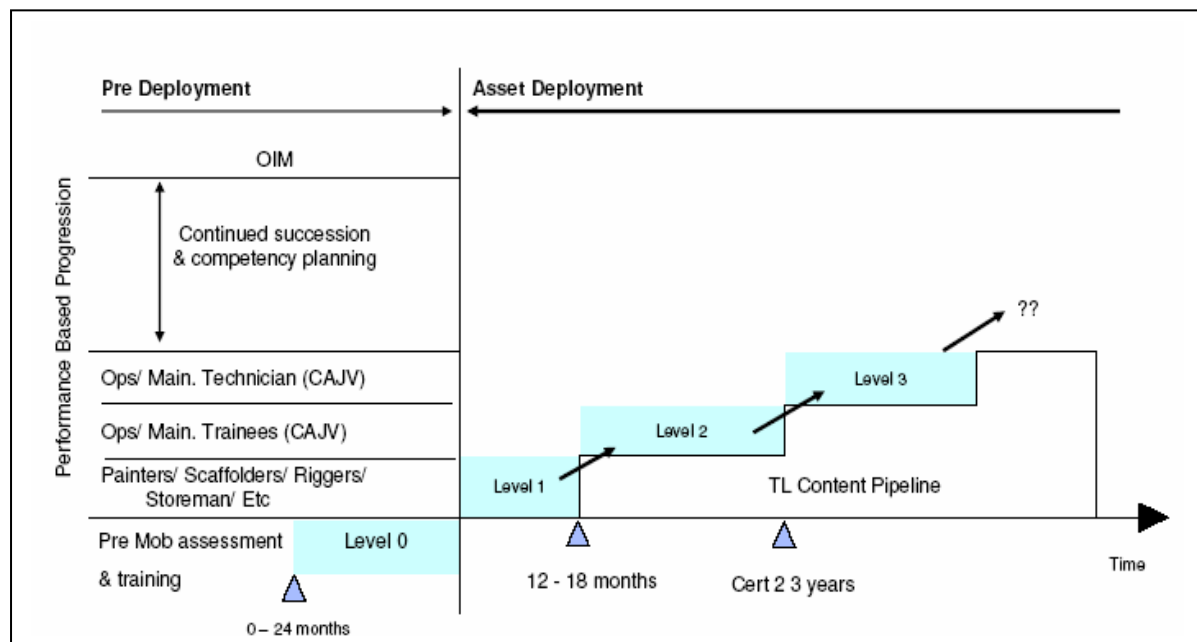
The geographic location of the Bayu-Undan field, and the low quality of the existing facilities and supply capabilities in Timor-Leste, substantially increases the relative costs of developing asset support capacity in Timor-Leste. These constraints were predictable at the time of the bid, and it is understandable that progress towards the CUSB and national employee pipeline has been slow.

A final limitation is possibly the relatively low level of competition between major foreign operators over oil and gas development over the JPDA at present. For example, in comparison, in Trinidad and Tobago, BP, BG, BHP Billiton and other international oil companies are actively competing with each other to maximise their local-content contributions, seeing close alignment in their strategies with public sector policy for economic and private sector development. In Timor-Leste, the relatively recent development of the upstream sector, and the limited number of blocks exploited at present reduces the potential for such competition. Given recent progress on resolving territorial disputes between Australia and Timor-Leste and development of the Greater Sunrise field, as well as the new acreage just released, this situation may be about to change.

5.4 Current Strategies of ConocoPhillips and the Clough AMEC JV around Local Economic and Social Performance

5.4.1 Training and Employment – the Resourcing Strategy

The Clough AMEC JV has moved ahead with a Resourcing Strategy, based on the original national employee pipeline proposal, absorbing the existing ConocoPhillips trainees and promoting skills development for Timor-Leste nationals. The Resourcing Strategy (see Figure 5) is the combined approach of ConocoPhillips, Clough AMEC JV and their respective supply chain members in meeting the Timor-Leste local content requirements for the Bayu-Undan asset⁵⁷.

Figure 5 Timor-Leste Resourcing Strategy – Bayu-Undan Gas Recycle Project

The training component of the strategy is closely linked to the Clough AMEC Competency Assurance Programme, which maintains and progresses the competency profile for all personnel deployed on the Bayu-Undan asset. The strategy promotes the staged progression of trainees through various levels of skills and competencies. The ultimate aim is to enable Timor-Leste nationals to reach supervisor positions. At the time of writing, four Timorese nationals had completed their Certified II training, with seven more in the process. At the same time, 15 Australian nationals and 48 Filipino personnel are also receiving various forms of training. By December 2006 it is anticipated there will be ten Timorese trained to Level 0, 20 to Level 1 and four to Level 2.

Trainees for Level 0 are of a number of types: (i) students from secondary (diploma) level schooling, (ii) graduate scholarships sponsored by Clough AMEC JV; (iii) apprentices or (iv) those with previous trade experience. Level 1 involves specific training, in particular for scaffolders and riggers. Level 2 involves further training as part of the ConocoPhillips certified training courses and additional specific vendor or equipment training as an integral part of the Clough AMEC JV Competency Assessment and Development plan.

Training for Level 0 is currently being undertaken by two companies (TAPS & AST) in Dili at the premises of Caltech (the principal project supplier in Timor-Leste). All the trainees reside locally and are trained by three expatriates who travel from Darwin. The training is of high quality, with the objective of providing a robust and auditable training and competency system that provides the business unit with integrity assurance⁵⁸. Training complies with Australian standards.

A key constraint to expanding the training programme is the accommodation space on the offshore asset. The practical needs of the training means that certain modules cannot currently be completed in Timor-Leste. To resolve this, Clough AMEC are developing

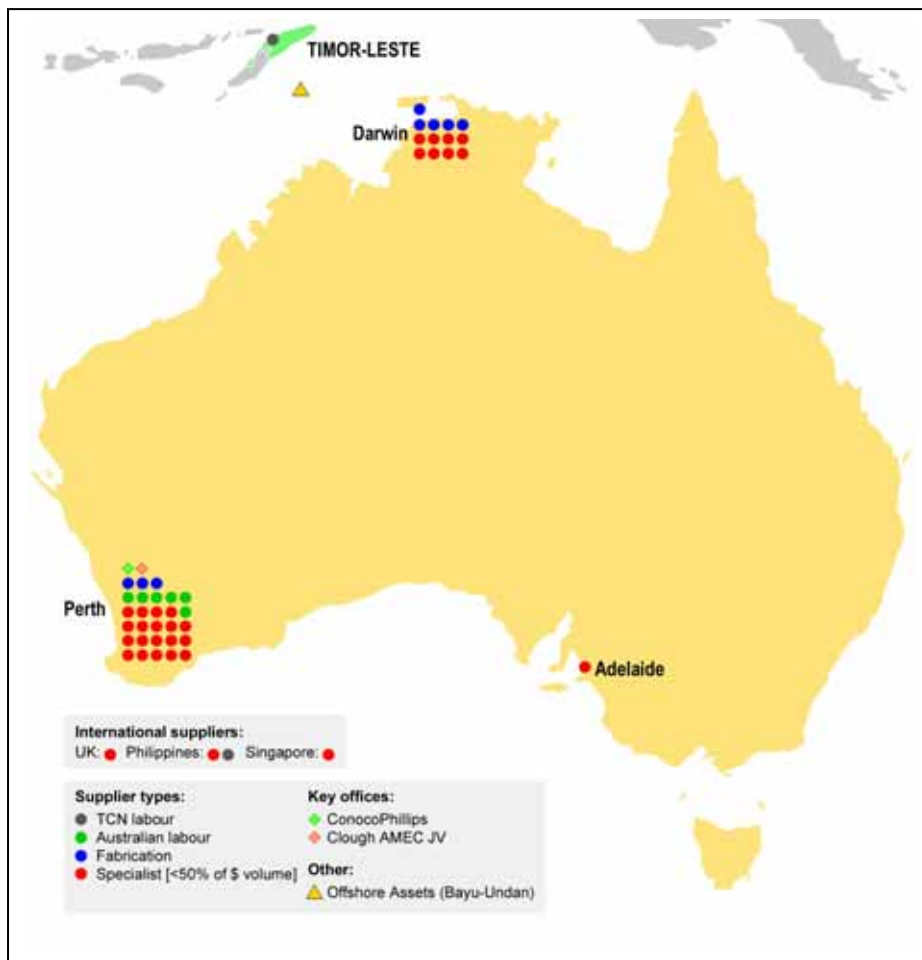
associations with a number of current suppliers based in Darwin – notably RANms and Score Pacific – as well as Cape East in the Philippines. Following dialogue with these parties, two Timorese materials controllers have begun an eight-week training secondment at the Darwin supply base, to be followed by deployment offshore. Other secondment opportunities look likely. Such training will be aligned to both competency profiles for technician positions on the Bayu-Undan offshore asset, and also to the required Australian National Vocational Standards⁵⁹.

Another way to overcome the problem of insufficient accommodation space on the offshore asset is possibly to use the Darwin LNG plant as the location where they can conduct the supervised on-the-job component of their training, i.e. for those training modules that would in other circumstances be completed offshore. In this case, Timor-Leste nationals would need temporary rights to work in Australia.

5.4.2 Supplier Chain

Total revenues for Clough AMEC JV in 2005/2006 approximate to US\$10million, with an additional US\$9million for the shutdown in late 2005. Management and coordination of the operations and maintenance services contract is undertaken from the Clough AMEC JV office in Perth – an arrangement that fosters close interaction with ConocoPhillips managers. The firm Caltech – a Timorese-owned company based in Dili – is regarded as a Clough AMEC JV satellite office in Timor-Leste. Caltech represents the JV in Timor-Leste, organising and accommodating third-country nationals (TCN) as they transfer through Dili to the Bayu-Undan offshore facility and providing training facilities.

The AMEC resource centre in the Philippines (part of the Clough AMEC JV supplier network) supplies personnel as required, for example, during campaign maintenance and major shutdowns⁶⁰. Steady state maintenance personnel are directly employed by the Clough AMEC JV and based in either Perth or Darwin. Material suppliers and sub-contractors involved in delivering the operations and maintenance contract are sourced both regionally, in Perth and Darwin and in Timor-Leste (see Figure 7).

Figure 6 Geography of Supplier Sources on the CAJV Operations and Maintenance Contract

ConocoPhillips does not maintain a full-time presence (i.e. site office) in Timor-Leste, although it has a local contract in Dili with Airnorth (a fixed wing aviation service) and another 100% utilisation contract with SDV (a helicopter service). Field visits for this report suggest that both Airnorth and SDV currently each employ six full-time equivalent Timor-Leste nationals, proportioned to the size of contract. SDV is wholly utilised by the Clough AMEC JV, but the JV uses only approximately 10% of Airnorth's capacity, i.e. around one employee equivalent. While the gross economic value of these contracts is likely to be significant in the context of the Timorese economy, the realised economic value to Timor-Leste from direct employment is small. An estimate by the authors of total annual wage and benefits of employment for the seven Timorese full-time equivalent employees with Airnorth and SDV is (gross) US\$14,000 per year (present value).

The criticality of the Clough AMEC JV contract to the safety and integrity of the Bayu-Undan facility dictates that supplier quality and dependability is of the highest standard⁶¹. In part, this means international sourcing to ensure that suppliers meet original equipment manufacture (OEM) stipulations. For other suppliers, it means a close, supportive, relationship with the Clough AMEC JV. Where needed the JV provides information and

management time to enable suppliers to deliver on project specifications. However, at present Clough AMEC JV provide no other supplier support, such as financial assistance, or support designed to enhance broader supplier marketability⁶².

The Clough AMEC JV has nearly 50 first-tier suppliers. Of these, only one supplier (Caltech) is a Timorese-owned company. These suppliers are predominantly involved in providing third country nationals⁶³ (TCNs) and Australian nationals, or in fabrication services and other specialist goods and services. Of Clough AMEC JV's suppliers, 60% can be considered specialist, accounting for around 50% of total supplier costs. Details for two suppliers – Caltech in Timor-Leste and RANms in Darwin – are given in Boxes 6 and 7, respectively.

The overwhelming majority of suppliers are located in Australia, with two supplier clusters present in Perth and Darwin (see Figure 6). Perth, as the location of the Clough AMEC JV and ConocoPhillips offices, has a natural 'centre-of-gravity', particularly for specialist suppliers.

Darwin, as the principal transport hub and logistics base for Timor Sea operations, is of growing importance. From here, Australian nationals can travel directly to the asset. TCNs however travel via Dili. This is three hours by helicopter or 18 hours by supply vessel. Key asset support capabilities in Darwin include helicopter support, supply vessels and high specification servicing and maintenance facilities. Because of its closer proximity, Darwin is also the designated emergency evacuation point from the asset, e.g. during cyclone winds. The East Arm Port has enhanced Darwin's ability to service offshore facilities. As the terminus of the LNG pipeline⁶⁴ from the Bayu-Undan field and site of the LNG plant,⁶⁵ investment in oil and gas asset support services in Darwin is likely to continue.

The current economic contribution in Timor-Leste from the Clough AMEC JV is via Caltech. The owner of this Timorese firm estimates revenues from the JV at US\$60,000 per annum (see Box 5). Of this, US\$36,000 is derived from the Venture Hotel (owned by Caltech), in part to manage the passage of TCNs, and in part (US\$12,000) resulting through the provision of training facilities in relation to Bayu-Undan. The remaining US\$24,000 covers the wages and benefits of two Timorese employees who provide services to the Clough AMEC JV, as well as other management overheads. Importantly, the nature of Caltech's business model increases the likelihood that this value is captured and multiplied within the local economy, not least through a number of second- and third-level suppliers in Timor-Leste. While revenue from the Clough AMEC JV represents only around 12% of Caltech's annual revenue, it is of a predictable nature – a quality of significant value to Caltech as it reduces operational risk and encourages investment by the company⁶⁶.

Box 6 Caltech: Dili, Timor-Leste

Caltech is a Timorese-owned company and a major engineering contractor in Timor-Leste. Revenues are approximately US\$500,000 per annum. In addition to undertaking civil engineering and construction work (which accounts for around 70% of revenues), it also owns the Venture Hotel. Caltech's revenues derive from foreign clients: either from the Clough AMEC JV (~12%) or from embassies and international NGOs. It uses innovative methods to develop the skills base of its workforce through a combination of core and non-core business activities. Coupled with an entrepreneurial willingness to undertake a wide range of services and projects, Caltech has been able to grow in a challenging business environment.

Caltech is committed to pursuing local content wherever possible. With the exception of the Operations Manager all Caltech employees, around 35, are Timor-Leste nationals. Based on the ratio of revenues from the JV to total revenues, this equates to approximately four full-time equivalent employees supported by the Clough AMEC JV (full time is equal to two weeks' work per month). Wage rates in the company vary, for example, from US\$9/day for skilled workers to US\$4/day for unskilled labour. Employees are guaranteed a minimum of two weeks' work each month. Caltech has progressively built a pool of increasingly skilled labour, though this has been a long term process. The company specialises in on-the-job training, which allows it to rapidly expand into new market areas. The company is distinguished in Timor-Leste by its approach to quality and safety, for example, as the first company to equip (and mandate employees to wear) hardhats and safety shoes.

Caltech's suppliers – 60% of total supplier spend from Caltech is received by eight local supplier companies (see below). In aggregate, around five full-time equivalent employee positions are supported by spend with Timorese suppliers via the Clough AMEC JV (four directly within Caltech, and one derived from Caltech spend with its suppliers). Some of the suppliers are owned by non-Timorese nationals, although all are resident in Dili. Discussions with these suppliers suggest that only intermittent and very low levels of revenues from Caltech could be linked to goods or services provided to the Clough AMEC JV.

2 nd Level Suppliers	TL Employees	Proportion of revenue from Caltech?	Proportion of stock (by value) from TL	Notes
Construction supplies				
Holiwono/BTIC	~20	~10%	~10%	
Lay Shop	~15	~5%	~10%	Indonesian owned
Vietori Shop	~20	~10%	~10%	TL owned
Vietoria Shop	~10	~5%	~10%	Indonesian owned
Fuel supply				
EDS	~28 (skilled and non-skilled workers)	~15%	0% (100% Aust.)	Plus supply heavy equipment. Has a mechanical workshop. Fuel delivered to them every few weeks. Mainly expatriate clients.
Tiger Fuel	~12	~5%	0% (100% Aust.)	Mainly expatriate clients.
Parjamina	~50 (1 expat.)	~5%?	?	
Electrical				
ESSET (hardware shop, 1 warehouse – mainly expat clients)	~6 (1–2 expats)	2–3%	0% (50% Aust./50% Indonesian)	Hardware shop/warehouse. Mainly expatriate clients.

Box 7 Regional And Northern Maintenance Services (RANms): Darwin, Northern Australia

RANms is a successful cluster of ten enterprises based in Darwin, which in part support the Bayu-Undan project. The cluster has developed a capability to tender for larger contracts by creating a single trading entity. The cluster was formed in late 2000 in response to the vision of the Australian Northern Territory Government of Darwin as the regional supply and service centre for defence, mining, oil and gas sectors, inclusive of all industries necessary to support such a centre⁶⁷. RANms has succeeded in building a 'whole pile of skill sets which can be utilised in all industries'⁶⁸.

As a key supplier to the Clough AMEC JV, RANms undertakes approximately US\$3–4 million of Clough AMEC JV-related work per annum (which is around 30–40% of total ConocoPhillips third-party spend via the CAJV)⁶⁹. RANms provides much of the Clough AMEC JV's capability in relation to maintenance, servicing and repair of facilities, fabrication and module construction.

The RANms cluster is represented in Timor-Leste by TransHose (a RANms shareholder). Established in Dili since 1999, TransHose like Caltech, has evolved a flexible business model that enables it to undertake a range of services in addition to its core business as a steel and poly-pipe distributor for community water and sanitation projects⁷⁰. TransHose has a warehouse that supports large stocks, and is keen to build this capacity further. The company employs four Timor-Leste Nationals, several of which are in training. At present, no services are provided by TransHose in respect of sub-contracts from the Clough AMEC JV.

5.4.3 Local Infrastructure Development

The contribution of the Clough AMEC JV contract to infrastructure development in Timor-Leste is to date limited to the transport of third-party nationals to the offshore facilities by air, and the investments by Caltech and its suppliers in delivering contract requirements for personnel movement, and electrical, fuel and minor construction services. At present, no supply vessels operate from Timor-Leste to the offshore facilities.

Constraints on Third-Party Spend in Timor-Leste

Box 4 listed some of the generalised supply-side constraints on business development in Timor-Leste. Constraints specific to the Clough AMEC JV contract resulting in a low-level of third-party expenditure in Timor-Leste, include the following:

- Very low levels of support capability for the oil and gas development sector in Timor-Leste, including low skills base, poor port facilities and other critical physical infrastructure, and lack of basic storage facilities, and engineering, fabrication and manufacturing services.
- An established and growing asset support capability in Darwin, and the prospects of the location becoming a regional hub for servicing the oil and gas development sector.
- The asset critical nature of the Clough AMEC JV operations and maintenance contract, which by necessity prioritises reliability and quality of services over sustainable development contributions.
- The strict Australian quarantine rules which affect the transport of goods and services to the offshore facilities (the facilities are considered clean by Australian Customs).

A decision-tree for investigating these constraints is provided in Figure 7.

Figure 7 Decision Tree for Investigating Constraints to Local Content and Infrastructure Development through the Clough AMEC JV Contract.

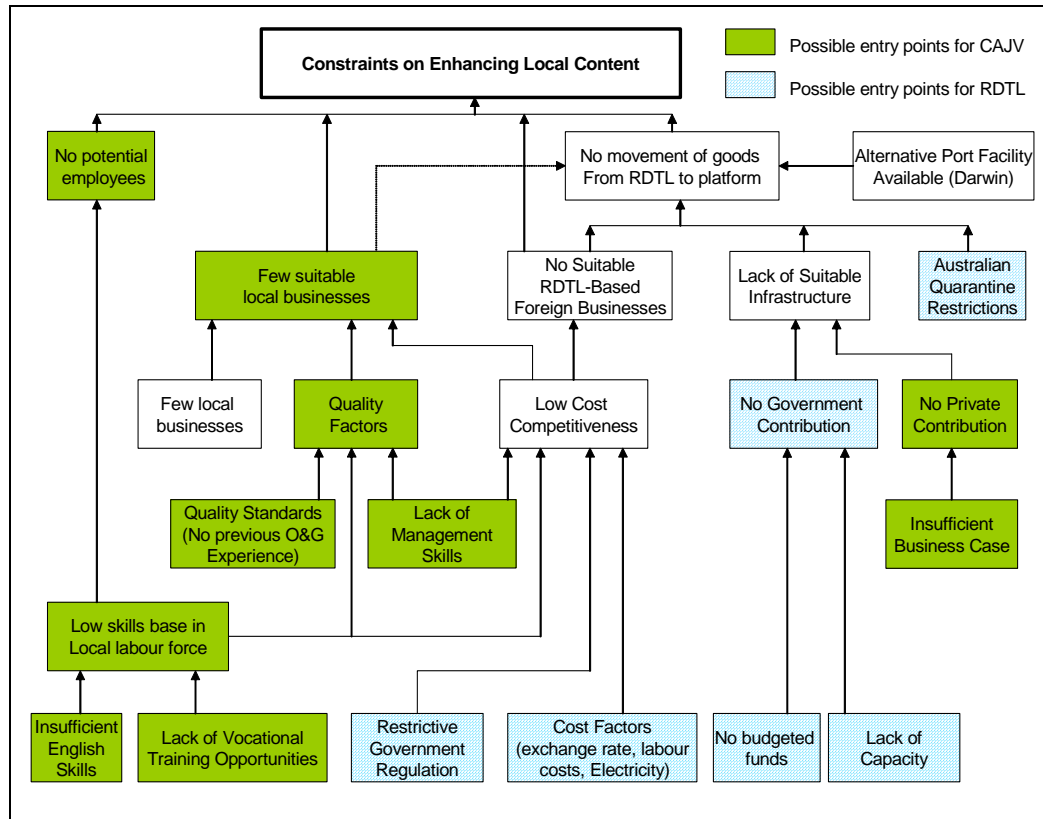


Figure 7 suggests a broad range of factors constraining the development of local content for the Bayu-Undan project. While these factors are significant, the situation should not be considered intractable particularly in the context of the long project life and the opportunities for Government of Timor-Leste and the CAJV to address most of the root problems affecting local supply.

Obligations, Principles and Policy on Local Infrastructure Development

Against this reality are a wide range of legal and contractual obligations, principles, considerations and public policy intended to promote investment in local infrastructure. These are summarised below:

Obligations

- Timor Sea Treaty⁷¹ (Article 11: Employment), requires East Timor and Australia to ensure that preference is given in employment in the JPDA to nationals or permanent residents of East Timor; and facilitate, as a matter of priority training and employment opportunities for East Timorese nationals and permanent residents.
- The Clough AMEC JV operations and maintenance services contract (Scope of Work) requires the contractor to: (i) implement a sub-contractor development programme as part of the overall Contract Execution Plan; and (ii) commit to realistic programme of local

development and resourcing from Timor-Leste in the provision of the Services over the medium term.

Principles

- ConocoPhillips' operating principles for the Bayu-Undan Gas Recycle Project include encouraging and facilitating the development of offshore industry support capabilities, both facilities and skills, within the local community, particularly in Timor-Leste and Darwin, where these benefit the project.

Considerations

- The Timor Sea Treaty⁷², 'is conscious of the importance of promoting East Timor's economic development', and emphasises 'the importance of developing petroleum resources in a way that ...is economically sustainable, promotes further investment and contributes to the long term development of East Timor and Australia'.
- The Clough AMEC JV operations and maintenance services contract (Scope of Work), requests the contractor to consider, in the context of the Contract Execution Plan, the establishment and development of resources, personnel and infrastructure in Timor-Leste.

Public Investment and Private Investment Promotion Policy

- Specific reference in the Ministry of Planning and Finance's medium term sector investment programmes to: (i) expand publicly-funded construction activity to rehabilitate and expand infrastructure and facilities, with an emphasis on labour-intensive methods; and (ii) support the construction sector, including: incentives for equipment leasing arrangements for small and medium-sized domestic construction firms, and improved access to working capital lines of credit from the banking sector.
- Specific reference in the Ministry of Planning and Finance's sector investment priorities for development of the onshore hydrocarbon potential and minerals industry, and to enable private participation in infrastructure, including power and water supply.
- An initiative of the Ministry of Education to promote Business Development Centres (BDC) to provide technical and vocational training.
- Ongoing consideration by Timor-Leste of establishing Special Development Zone (SDZ) aimed at encouraging foreign investment, and of Business Development Centres to provide entrepreneurial support to businesses in Timor-Leste.

Incentives

- Under the 2005 Law on Foreign Investment: (i) an entitlement to tax credit over taxable profits in the amount of 300 US dollars for each permanent Timorese worker for five years; (ii) more generous tax credit rates given to investments made into economic infrastructure; (iii) exemption from customs duties and taxes on the import of capital assets, building materials, raw materials, half-completed products, components and spare

parts, and fuel; and (iv) exemption from rent payment under leasing contracts of state buildings.

- Terms of draft (model) Production Sharing Contract, which inventories cost recovery allowances for capital expenditure, including: workshops, power and water facilities, warehouses, site offices, access and communication facilities.

International Donor Considerations

- An ongoing EU-funded US\$5 million employment training programme.

Common User Support Base

It is in part in light of these policy and regulatory drivers that Clough AMEC JV proposed to integrate within their scope of work the staged development of a CUSB. This would operate as a multi-purpose facility to provide local logistic and support services to the Joint Petroleum Development Area Oil and Gas Operations⁷³. The facilities would be located on a single site, providing a range of commercial services: fabrication and machining services, office leasing services, warehouse storage, training facilities, utilities services (electricity, water supply, telecommunications, waste disposal) and lifting and freight services. The overarching aim of CUSB is to engage Timor-Leste nationals in a sustainable long term business with potential for growth beyond the current needs of the Bayu-Undan Project.

The CUSB is seen in part as a mechanism for overcoming the significant start-up costs faced by businesses wishing to locate in Timor-Leste. Such costs can be as high as US\$250,000⁷⁴, not least because of the need to cover provisions for basic services such as power, communications, water and waste disposal and the high running costs resulting from the need to generate power to offset the unreliable supply. The CUSB would initially offset and then distribute these costs among a wide range of users, increasing the viability of business ventures and start-ups.

The estimated capital investment required for the CUSB would be US\$2.9m, the majority of this (US\$2.4m) it is proposed would be funded by ConocoPhillips, the remainder (US\$0.5million) by Clough AMEC JV⁷⁵. With 70% utilisation of the available space on the site and with throughput volume sufficient to support one supply vessel to Bayu-Undan every three weeks, it is anticipated that break even on cash flow could be achieved within 12 months of commencing operations.

In summary, the advantages of the CUSB include the following:⁷⁶

- a unique facility in Timor-Leste
- closest supply base to JPDA by 150km
- helicopter flights to the asset through Dili
- labour rates in Timor-Leste lower than in Darwin
- shipping lines currently servicing Darwin from Singapore stop over in Dili on the way to Darwin giving a time advantage to deploy urgent spare parts to the JPDA assets
- advantages with streamlined and flexible customs and quarantines procedures in Timor-Leste (according to some sources, but disputed by others)

- significant potential to attract a wider range of services for the CUSB as it becomes known and the level of service to ConocoPhillips is proven
- ability to pick up future work, for example for the Greater Sunrise development
- the suitability of Caltech as potential project managers for the venture.

The viability of the CUSB is dependent upon ConocoPhillips operating a regular supply vessel from Dili to the Bayu-Undan offshore facilities, as well as diverting a proportion of the stock currently held in the Darwin supply base to the Dili facility. It also requires ConocoPhillips to guarantee a proportion of the fabrication/services work to the CUSB.

5.4.4 Economic Cash Value Added (CVA)

The current local economic performance of the Bayu-Undan project in Timor-Leste is summarised in the Tables below. Table 5, captures the anticipated costs of the Resourcing Strategy to end of 2006. It is common practice to use this figure as a surrogate for the economic value of the training to the participants (i.e. rather than predicting future discounted personal income). The numbers of direct and indirect Timorese full-time equivalent employees resourced by the project are given in Table 6. Table 7 gives a break down of the economic contribution accruing at the household level (as net income) and also to government (through personnel income tax and corporate tax).

With 13% of men currently wage earners in Timor-Leste⁷⁷, we have assumed the opportunity cost of employment via the Clough AMEC JV or its suppliers to be zero. This assumption is strengthened by the apprenticeship nature of the training provided by Clough AMEC JV. In other words, the opportunity cost of employment on the project can be taken as that wage likely to have been secured with a level of skill *prior* to the training provided by the JV. Because of the common practice of remittance payments by expatriates, no distinction is made in the economic performance of Timorese nationals resident in Timor-Leste as against those resident in Darwin.

Figure 9 shows that the average annual economic performance of the Clough AMEC JV Operations and Maintenance Services contract to the Timorese people is around US\$170,000 per annum⁷⁸. Of this value, 60% (US\$105,000) is the annual cost of the Resourcing Strategy, and 4% (US\$7,030) the net income to seven Timorese household equivalents, based on full-time equivalent positions within the Clough AMEC JV, Caltech and its suppliers. Of the value, 3% (US\$3,165) is tax revenue to Timor-Leste from personnel income tax and corporate (profit) tax paid by Caltech and its suppliers and employees. Within Timor-Leste, most of the remaining economic value (32%, US\$55,995) is taken through other payments by Caltech in (possibly) rents, materials, wages to non-Timor-Leste nationals and non-Timorese supplier costs, and through retained profits (dividends, reinvested earnings and retained earnings).

Regarding the Bayu-Undan project as a whole, i.e. including local economic performance of ConocoPhillips in Timor-Leste via its Airnorth and SDV contracts, we estimate household incomes to total around US\$15,030 per annum, spread across 14 household equivalents. (Note that this takes no account of possible Timorese suppliers to Airnorth and SDV, although we would assume this to be fairly low). Without knowing the value of the SDV and

Airnorth contracts, it is also not possible to calculate economic performance of the Bayu-Undan project as a whole.

Table 5 Training of Timor-Leste Nationals: Economic Performance (to end 2006)⁷⁹

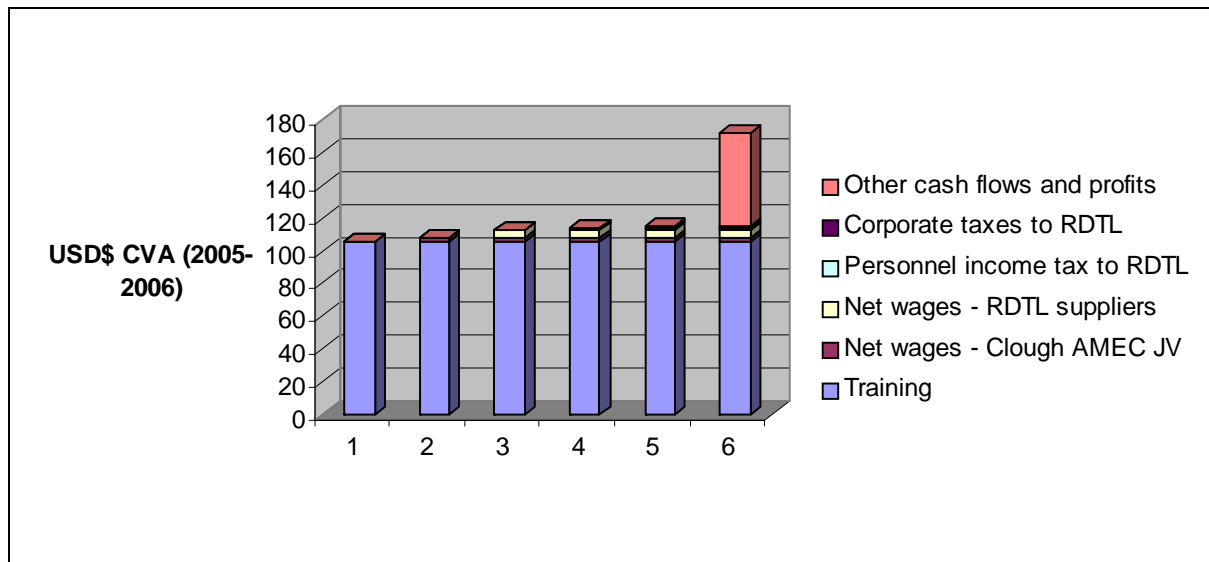
Training Type	Number of TL trainees (by end 2006)	Approx cost (US\$) of training to date (including retention payments, mentoring, accommodation, etc.)
Basic Training (Level 0)	10	122,000
Intermediate training (Level 1)	11	54,000
Advanced Training (Level 2)	4	37,000 ⁸⁰
Total		\$213,000
Assumed annual cost		Approx \$105,000

Table 6 Employment of Timor-Leste Nationals: Estimated Economic Performance (2005/06)

Timor-Leste Nationals	ConocoPhillips – TL permanent employees	ConocoPhillips – TL suppliers (direct suppliers, first-tier)	Clough AMEC JV – permanent TL employees	Clough AMEC JV – suppliers (all tiers)	Total
No of employees (permanent post equivalent)	0	SDV – 6 Airnorth – 1	CAJV – 2	Caltech – 4 2 nd tier – 1	14
Gross wages/year + benefits	0	SDV – US\$12,000 Airnorth – US\$2,000 (US\$11,200 net wages)	CAJV – US\$4,000 ⁸¹ (US\$3,200 net wages)	Caltech – US\$4,320 ⁸² 2nd tier – US\$480 ⁸³	US\$23,600

Table 7 Timor-Leste Suppliers to the Bayu-Undan Project: Economic Performance (2005/06)

Suppliers in Timor-Leste with proportion of revenues attributable to Clough AMEC JV	Total Annual Revenues attributable ⁸⁴	Gross Wages and benefits of Timorese employees in USD (from Table 5)	Net Wages and benefits of Timorese employees (less personal income tax)	Personal Income Taxes to Timor-Leste as proportion of attributable revenues ⁸⁵	Corporate Taxes to Timor-Leste, as proportion of attributable profit ⁸⁶	All other EBDIT ⁸⁷ items (rents, dividends, reinvested and retained earnings, wages and benefits to non-Timorese nationals + third-party spend on non Timorese suppliers (as proportion of attributable revenues).
SDV	?	12,000	9,600	2,400	?	?
Airnorth	?	2,000	1,600	400	?	?
Sub-totals (ConocoPhillips – direct)			11,200	2,800	?	?
Caltech	60,000	4,320	3,456	864	2,100	53,580
Caltech suppliers in TL	3000	480	384	96	105	2,415
Sub-totals (CAJV– direct)			3,830	960	2,205	55,995
Totals			US\$15,030			

Figure 8 Economic Performance of the Clough AMEC JV Contract in Timor-Leste

6 Lessons Learned for Enhancing the Local Economic and Social Performance of Lead Engineering Services Contractors

Timor-Leste is ranked 140 out of 177 countries by the United Nations in terms of its overall development⁸⁸. The country is a poor performer against many economic and social development indicators, including life expectancy, literacy and GDP per capita. Lessons from Timor-Leste are therefore likely to have some relevance in other low-income countries and economically and socially disadvantaged regions where the oil and gas sector is important. This might include, for example, other parts of South East Asia (including Indonesia and Cambodia) and West Africa. Three principle types of local-content strategies were identified as relevant to this context. (i) strengthening the lead contractor's human resourcing programme through building the capacity of local trainers; (ii) initiating a dedicated Skills and Enterprise Support Programme within the country, and (iii) contributing to the establishment of a CUSB.

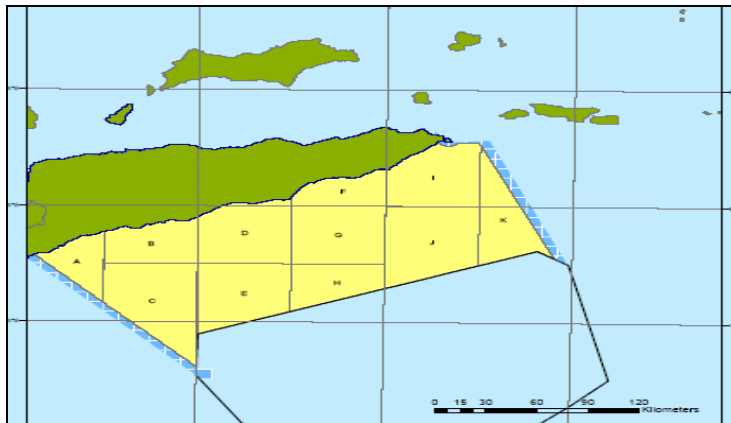
At the policy level, we suggest below a number of opportunities for reforming the regulatory framework in Timor-Leste. These suggestions are included in our report since they may be of relevance to other national jurisdictions in low-income countries and economically disadvantaged regions.

6.1 Reforming the Regulatory Framework

Looking beyond the Bayu-Undan project, a number of external factors have changed recently that provide an opportunity to restructure the regulatory environment for the energy sector. Most significant has been recent progress on resolving territorial disputes between Australia and Timor-Leste. With the question of territorial rights postponed for fifty years, the way is now open to develop the Greater Sunrise field, with a 50-50% division of revenues⁸⁹. The Greater Sunrise field will require a projected US\$12.5 billion in investment⁹⁰.

In addition, in August 2005 the TSDA launched a new offshore licensing round for acreage outside the JPDA (see Figure 9). The relevant area extends from the southern coastline of Timor-Leste to the northern edge of the Joint Petroleum Development Area (JPDA), and is the exclusive jurisdiction of Timor-Leste⁹¹. Four blocks have been offered for exploration and development, ranging in size from 3,770 square kilometres to 5,770 square kilometres. Each lies in water of 70 metres to 1,000 metres. Two areas contain gas discoveries, one area lies near existing oil fields and another near known gas fields. The deadline for bids was mid-March 2006 and awards will be made in the second quarter of 2006⁹².

Figure 9 Timor-Leste, Inaugural Offshore Acreage Release '(in yellow)⁹³



As noted, one estimate suggests that between US\$5.7 and US\$14 billion of capital investment is destined for the Timor Sea region to develop oil and gas⁹⁴. In addition, Timor-Leste plans the development of potential onshore natural resources after it has concluded the licensing of offshore exploration in 2006⁹⁵.

ConocoPhillips and other international oil companies may elect to compete for these new contracts. Some of the possible bidders have accumulated a substantial track record in finding creative solutions to enhance their local economic and social performance. BHP Billiton's investments in the Mozal aluminium smelter project in Mozambique and in offshore oil and gas in Trinidad and Tobago provide examples.

In Mozambique, the investment operates under a policy of outsourcing all non-core activities to local SMEs. In addition, loan capital for the project from the IFC has enabled financial support to be provided to local suppliers through the IFC's SME Capacity Building Facility. Further, the Mozal Community Development Trust (MCDT), established by BHP Billiton, expects to spend approximately US\$2 million annually on social and community initiatives in the local region to ensure the project's positive and beneficial impact on local people.⁹⁶

In Trinidad, BHP Billiton Petroleum recently became the first major international operator in Trinidad to require its contractor to work in collaboration with local firms to meet the projects offshore fabrication needs, receiving plaudits from the government in the process (see Box 8).

Given these and other examples, service contractors who have developed their own successful track record in innovating to enhance local supplier and asset support capability will likely be attractive to international oil and gas companies bidding for the new concessions in Timor-Leste. This lends considerable weight to Clough AMEC investigating new ways to contribute to supplier development and economic infrastructure, not only in the context of the Bayu-Undan contract, but in the context of gaining a position in the broader oil and gas industry in Timor-Leste.

Box 8 BHP Billiton in Trinidad⁹⁷

'One of the key challenges facing the Government of Trinidad and Tobago is the equitable distribution of the country's wealth to the benefit of the widest cross-section of its citizens. ...In this context, the Government of Trinidad and Tobago views the creation of local expertise in the energy sector which is transferable to other sectors of the economy, as critical to building local human resource capacity. In addition, the Government will institute measures to ensure that a significant portion of capital expenditure investment in the energy sector is channelled into the local for economy. ...the Government of Trinidad and Tobago has identified several strategies as the means of achieving this goal. Amongst these are increasing the productive capacity of local business for both domestic and export markets as well as increasing local enterprises' share in projects with heavy capital inflows from Foreign Direct Investment.'

'Let me firstly congratulate BHP Billiton and their partners in Block 2(C) Total and Talisman for the confidence they are demonstrating in the ability of local contractors and suppliers to meet their fabrication needs. As your development plans have progressed, I am pleased to note that Damus will be the local supplier for this contract, a marvellous opportunity for a local company to build capacity on the fabrication side of the energy industry. It is hoped that other local contractors will benefit from such transfers of technology and knowledge in the long run and I expect that this BHP Billiton initiative will be the first of many more to come'

On the occasion of BHP Billiton awarding a major fabrication contract to a local firm as part of a gas development in Trinidad and Tobago (Minister for Energy, Trinidad and Tobago, 2004).

Clearly, Clough AMEC JV or other major oil and gas service contractors are not going to invest in building broader asset support capability for the oil and gas industry in Timor-Leste without the right regulatory incentives. First and foremost, the strong economic policy commitment to an economic multiplier performance from the oil and gas industry made by the Prime Minister of Timor-Leste in September 2005, needs to be operationalised through regulatory reform (see Box 9).

Box 9 Policy Statement by the Prime Minister on Expectations of Local Economic Performance from the Oil and Gas Sector in Timor-Leste⁹⁸

'While petroleum will be the dominant revenue stream in our nation's economy for the foreseeable future, we look to it for more than a source of funds. We look to the sector to be a much broader and dynamic contributor to the national economy. This contribution will come in many forms: in capital investment, in employment generation – both directly in the oil and gas industry and indirectly as the increased investment and activity drives up demand for other goods and services. In addition it will be seen in personnel training and education, in infrastructure development and as an agent of change for the enhancement and development of Timor-Leste's society as a whole'.

Keynote address by Prime Minister Mari Alkatiri, Timor-Leste, Inaugural Acreage Release, Singapore, 2 September 2005

To achieve this, changes are needed not least to the terms of the bid application process for new Production Sharing Contracts as well as to the formulation of construction, operations and maintenance sub-contacts. At present, neither the Petroleum Mining Code nor the TSDA Guidelines carry a clear interpretation of what should constitute a proposal by applicants for a Production Sharing Contract in relation to the acquisition of goods and services from persons based in Timor-Leste. For example, no guidance is given on what the content of proposals might look like with regard to economic infrastructure, human resource training and supplier support programmes, nor is there a requirement to submit cost

estimates and schedules for third-party capital and operational expenditure in Timor-Leste, over the period of the contract term.

In addition, neither the model PCS for the JPDA⁹⁹ or the proposed PSCs for the inaugural acreage release (i.e. the non-JPDA zone)¹⁰⁰ is explicit about whether expenditure on training and economic infrastructure (e.g. including equipment, buildings and constructions), to support the acquisition of goods and services in Timor-Leste is eligible for cost recovery. Furthermore, the model PSCs are unclear as to the type of support envisaged, be that for training and economic infrastructure in direct relation to the petroleum operations bound by the PSC (i.e. on-project strategies), or for support more broadly directed at developing the oil and gas industry, or to economic activity consequential of the oil and gas industry, i.e. project-link and off-project strategies.

If future, PSCs were to adopt a broader definition of support for local-content that included project-link and off-project strategies (and therefore be consistent with the Prime Minister's address in September 2005), then it would be prudent to fix a ceiling on what is cost recoverable under these categories. A ceiling of US\$0.2million for training of Timorese workers, US\$0.5 million for development of local economic infrastructure and US\$0.3 million for support to local enterprises would provide a substantial incentive, and yet limit the risks of abuse.

Article 5.4(a) of both the JDPAs and non-JDPAs model PSCs – on Goods, Services, Training and Employment – is explicit in obliging a preference for the acquisition of goods and services from persons based in Timor-Leste, provided they are offered on [internationally] competitive terms and conditions. With regional sourcing, in particular competition from suppliers in Darwin, this explains in part why such low levels of sub-contracts have been awarded in Timor-Leste. Sound macro economic policy suggests that protecting national firms from international competition is, in the long term, unwise, and can lead to market distortions. However, with such a weak private sector in Timor-Leste and such very low capability in local firms to service the oil and gas sector, there may be justification, at least in the medium (five to ten year) term to allow some moderate protection.

Indeed, the WTO TRIMS Agreement¹⁰¹ makes just such allowances for non-competitive local procurement by an investing enterprise through its local content requirements, and provides transitional arrangements for suppliers to build up their international competitiveness (seven years for the category of least developed countries). Thus it seems plausible for provisions to be introduced to future PSCs to enable the contractor (or its principal sub-contractors) to preference the acquisition of non-competitive goods and services from Timor-Leste. Given the due concerns that this might cause the contractor and investors, it would be necessary to retain the general requirement in the PSC for internationally competitive terms and conditions, and require local bidding firms released from this clause to (i) meet minimum standards for health and safety and (ii) pose no demonstrable risk to the effective operation of critical facilities and assets. As an incentive, the contractor's third-party spend in Timor-Leste could be made eligible for cost recovery (from production revenues) up to a ceiling, e.g. US\$0.5million.

At present, the JPDA and non-JPDA model PSCs require the contractor (i.e. operator) only to draw to the attention of suppliers based in Timor-Leste opportunities for the provision of goods and services to the project. The same clauses in future PSCs could be strengthened by requiring the contractor to also configure such opportunities in such a way as to maximise the participation of local Timorese firms and nationals. Guidance issued by Shell International¹⁰², for example, recommends operators identify early civil works that might provide the basis for training, preparing smaller work packages tailored to the capabilities of local firms, and prepare model minor construction and service contracts that support joint ventures between foreign contractors and local firms.

Many international and national oil and gas companies voluntarily establish social funds, community development foundations or contribute to community (or social) investment programmes. This is both a strategy to go beyond direct asset compensation and create good will – an informal social licence to operate – with people adversely affected by construction or operational activities. It is also a means to bridge the economic benefits gaps (as discussed in Section 1.2), the situation that arises due to time lag between the commencement of physical activities and the visible realisation of development benefits to the broader population from production revenues. Activities within community investment programmes would generally be based around project-link or off project strategies of local economic and social enhancement; for example, outreach skills training and micro enterprise development. Even for offshore oil and gas developments, this trend of providing an additional social fund continues, as illustrated by BP in Angola and Trinidad and Shell in the Philippines.

In both the JPDA and non-JPDA model PSCs there is no requirement on the contractor/operator to establish a social fund. Indeed, costs and donations relating to public relations or enhancement of the Contractor's corporate image and interests are explicitly ineligible for cost recovery. One modification to future PSCs could be make a series of explicit exceptions to these ineligible costs. These exceptions could cover costs incurred in the provision of training, enterprise support or economic infrastructure in Timor-Leste in relation either directly to the oil and gas industry and indirectly to investment and activity consequential of the oil and gas industry.

Specific options for modifying the regulatory framework around local-content provisions and the enhancement of local economic and social performance are given in detail in Table 8.

Table 8 Options for Regulatory Reform to Enhance the Local Economic and Social Performance of Oil and Gas Developments in Timor-Leste.

Instrument	Recommendations (<i>in italics</i>)
Timor-Leste Petroleum Mining Code for JPDA	<p>By ministerial decree or other such instrument, publish an official interpretation of Article 5.4a(ii) of the Petroleum Mining Code relating to the terms by which applicants may enter into an Authorisation (such as a PSC), as follows:</p> <p>Current Article 5.4a(ii) on ‘Applicant’s Proposal in Respect of Training, Employment, and Local Goods and Services’, states that: ‘An application for an Authorisation shall include proposals for....the acquisition of goods and services from persons based in Timor-Leste’.</p> <p>Proposed additional Interpretation: ‘<i>The proposal shall include details of economic infrastructure, human resource training and supplier support programmes (costings, locations, activities and schedule), and estimates and schedule for third-party capital and operational expenditure in Timor-Leste, over the period of the contract term.</i>’</p> <p>The following definition of economic infrastructure should then also be included in the Definitions section of the code:</p> <p>‘Economic infrastructure’ <i>is any physical structure or set of physical structures, including equipment, buildings and constructions involved in structuring economic activities’</i></p>
TSDA Guidelines for Applications for Production Sharing Contracts and Criteria for Assessment of Applications (2003)	<p>Revise the TSDA Guideline issued under Article 5 of the Petroleum Mining Code for the purposes of assisting companies in lodging applications for production Sharing Contract Areas in the Joint Petroleum Development Area, as follows:</p> <p>2.3 Timor-Leste’s Economic Development:</p> <p>Article (b) currently states that: ‘Applications must contain the following information....proposals for the acquisition of goods and services from persons based in Timor-Leste’.</p> <p>Recommend change to:</p> <p><i>(b) ‘Applications must contain the following information....proposals for the acquisition of goods and services from persons based in Timor-Leste. The proposal shall include details of economic infrastructure (including equipment, buildings and constructions), human resource training and supplier support programmes (costings, locations, activities and schedule), and estimates and schedule for third-party capital and operational expenditure in Timor-Leste, over the period of the contract term.’</i></p>
Production Sharing Contracts ¹⁰³ (JPDA version) ¹⁰⁴	<p>Revise future PSC for the JPDA as follows:</p> <p>Pursuant to Article 6.2(a) – Recoverable Costs, include the following new articles in Annex C, Clause 2 Exploration Costs:</p> <p><i>2.1(g) training costs incurred in prioritising the acquisition of services from persons based in Timor-Leste</i></p> <p><i>2.1(h) economic infrastructure costs (including equipment, buildings and constructions) incurred in prioritising the acquisition of goods and services from persons based in Timor-Leste</i></p> <p>Repeat inclusion of the same article (g) and (h) under 2.3 [recoverable] Capital Costs and 2.4 [recoverable] Operating Costs</p>

Instrument	Recommendations <i>(in italics)</i>
<p>Production Sharing Contracts (JPDA version)</p>	<p>Pursuant to Article 6.2(a) – Recoverable Costs, include the following new articles in Annex C, Clause 3 – [recoverable] Costs, Expenses and Credits:</p> <p><i>3.2(h) and 3.4b (iv) training costs incurred in prioritising the acquisition of services from persons based in Timor-Leste for Petroleum Operations</i></p> <p><i>3.2(i) and 3.4b (v) costs incurred in the provision of training to persons based in Timor-Leste in relation both directly to the oil and gas industry and indirectly to economic activity consequential of the oil and gas industry, up to a maximum of no more than two hundred thousand United States Dollars</i></p> <p><i>3.8(e) and 3.4b(iv) economic infrastructure costs (including equipment, buildings and constructions) incurred in prioritising the acquisition of goods and services from persons based in Timor-Leste for Petroleum Operations</i></p> <p><i>3.8(e) and 3.4b(iv) costs incurred in the provision of economic infrastructure (including equipment, buildings and constructions) to persons based in Timor-Leste in relation both directly to the oil and gas industry and indirectly to economic activity consequential of the oil and gas industry, up to a maximum of no more than five hundred thousand United States Dollars.</i></p> <p>The following definition of economic infrastructure should be included in the Definitions section of the model PSC:</p> <p><i>‘Economic infrastructure’ is any physical structure or set of physical structures, including equipment, buildings and constructions involved in structuring economic activities’</i></p>
<p>Production Sharing Contracts (JPDA version)</p>	<p>Pursuant to Article 5.4(a) – Goods, Services, Training and Employment:</p> <p>Current Article 5.4(b) states: ‘preference to the acquisition of goods and services from persons based in Timor-Leste, provided they are offered on [international] competitive terms and conditions’.</p> <p>Recommend modifying to:</p> <p><i>5.4(b) preference to the acquisition of goods and services from persons based in Timor-Leste, within the borders of Timor-Leste, provided such provision does not compromise health and safety requirements (including customs requirements) nor the effective operation of critical facilities and assets. Expenditure under this provision is eligible for the recovery of costs up to a limit in any one year of not more than 500,000 United States Dollars.</i></p>

Instrument	Recommendations (<i>in italics</i>)
Production Sharing Contracts (JPDA version)	<p>Pursuant to Article 10.1 (c) – Notice:</p> <p>Current Article 10.1(a) dates: ‘Except with the consent of the Designated Authority, the Contractor shall draw to the attention of suppliers based in Timor-Leste, in such manner as the Designated Authority agrees, all opportunities for the provision of goods and services for Petroleum Operations’.</p> <p>Recommend modifying to:</p> <p><i>10.1(a) Except with the consent of the Designated Authority, the Contractor shall draw to the attention of suppliers based in Timor-Leste, in such manner as the Designated Authority agrees, all opportunities for the provision of goods and services for Petroleum Operations, and shall configure such opportunities in such as way as to maximise the participation of local firms and nationals and permanent residents of Timor-Leste, by, inter alia, identifying early civil works that might provide the basis for training; preparing smaller work packages tailored to the capabilities of local firms, preparing model minor construction and service contracts that support joint ventures between foreign contractors and local firms, and restricting competitive tendering for selected goods and services from persons based in Timor-Leste .</i></p>
Model Production Sharing Contract under the Petroleum Act (non-JPDA, i.e. that applicable to the inaugural acreage lease ¹⁰⁵)	<p>Revise future non-JPDA PSCs as follows:</p> <ul style="list-style-type: none"> • Pursuant to Article 6.2(a) – Recoverable Costs, include the following text in Annex C, Clause 2 – same revisions as directly above. • Pursuant to Article 6.2(a) – Recoverable Costs, include the following new articles in Annex C, Clause 3 – [recoverable] Costs, Expenses and Credits – same revisions as directly above. • Pursuant to Article 5.4(a) – Goods, Services, Training and Employment – same revisions as directly above.
Model Production Sharing Contract under the Petroleum Act (non-JPDA version)	<p>Pursuant to Article 12.1 (a) – Notice:</p> <p>Current Article 12.1(a) states: ‘Except with the consent of the Ministry, the Contractor shall draw to the attention of suppliers based in Timor-Leste, in such manner as the Designated Authority agrees, all opportunities for the provision of goods and services for Petroleum Operations’.</p> <p>Recommend modifying to:</p> <p><i>12.1(a) Except with the consent of the Ministry, the Contractor shall draw to the attention of suppliers based in Timor-Leste, in such a manner as the Ministry agrees, all opportunities for the provision of goods and services for Petroleum Operations, and shall configure such opportunities in such as way as to maximise the participation of local firms and nationals and permanent residents of Timor-Leste, by, inter alia, identifying early civil works that might provide the basis for training; preparing smaller work packages tailored to the capabilities of local firms, preparing model minor construction and service contracts that support joint ventures between foreign contractors and local firms, and restricting competitive tendering for selected goods and services to persons based in Timor-Leste .</i></p>

Instrument	Recommendations (<i>in italics</i>)
<p>Model Production Sharing Contract under the Petroleum Act (non-JPDA version)</p>	<p>Pursuant to Article 12.3(b) Tender Invitations:</p> <p>Current Article 12.3(b) states: ‘..... all goods and services shall be procured on an arm’s length basis by competitive tendering, and the Contractors, before inviting any tender for goods or services, shall <u>consult</u> [emphasis added] with the Ministry in respect of:</p> <p>(i) the list of bidders which the Contractors propose to invite to tender; and (ii) the bid package to accompany the invitation, which shall include: (aa) a draft contract; (bb) the scope of work; (cc) a technical proposal form; (dd) a commercial proposal form; and (ee) the basis upon which bids will be evaluated’.</p> <p>Recommend modifying to: <i>12.3(b)..... all goods and services shall be procured on an arm’s length basis by competitive tendering, and the Contractors, before inviting any tender for goods or services, shall submit to the Ministry, for its <u>approval</u> [emphasis added]:</i></p> <p><i>(i) the list of bidders which the Contractors propose to invite to tender; and (ii) the bid package to accompany the invitation, which shall include: (aa) a draft contract; (bb) the scope of work; (cc) a technical proposal form; (dd) the use of Timor-Leste content, training and economic infrastructure (ee) a commercial proposal form; and (ff) the basis upon which bids will be evaluated.</i></p>
<p>Approval of goods and services – contracts by the TSDA</p>	<p>Members of the TSDA to publish guidance for the TSDA on granting approval to contracts for goods and services under Article 10.3 of the JPDA model PSC.</p> <p>Recommendation on augmented guidance:</p> <p><i>‘Material considerations in granting approval shall include whether the draft contract:</i></p> <p><i>(a) has significant potential for realising practical training, employment, supplier development and economic infrastructure development opportunities for Timor-Leste both in the medium and long-term.</i></p> <p><i>(b) places an obligation on the Sub-contractor to commit to realistic programme of local development and resourcing from Timor-Leste in the provision of the Services over the medium term, and to report regularly to the Contractor on progress.</i></p> <p><i>(c) places an obligation on the Contractor to monitor implementation by the Sub-Contractor’s programme of local development and resourcing from Timor-Leste in the provision of the Services over the medium term, and to report regularly to the Designated Authority on progress.</i></p>
<p>Approval of sub-contracts by the Oil, Gas and Energy Directorate</p>	<p>Under Article 12.3(b) Tender Invitations of the model Production Sharing Contract for the inaugural acreage release, the Ministry has no rights of approval (only the right to be consulted) over draft contracts for procurement of goods and services.</p> <p>If this situation changes, the above guidance for approval of contracts for the procurement of goods and services could be applicable.</p>

Instrument	Recommendations (<i>in italics</i>)
<p>Cost recovery for social funds and community investment</p> <p>(Applicable to both the JPDA and non-JPDA model PSCs).</p>	<p>Pursuant to Article 6.2(a) – Recoverable Costs, under Annex C, Clause 2.8(r) – Ineligible Costs:</p> <p>Current Article 2.8(r) states: ‘Except with consent of the Designated Authority / Ministry, costs, including donations, relating to public relations or enhancement of the Contractor’s corporate image and interests’.</p> <p>Recommend modifying to:</p> <p><i>2.8(r) Costs, including donations, relating to public relations or enhancement of the Contractor’s corporate image and interests, except where these costs are:</i></p> <ul style="list-style-type: none"> <i>(i) with the consent of the Designated Authority / Ministry</i> <i>(ii) incurred in the provision of training, enterprise support or economic infrastructure (including equipment, buildings and constructions) to persons based in Timor-Leste in relation either directly to the oil and gas industry or indirectly to investment and activity consequential of the oil and gas industry.</i>

6.2 Opportunities to Strengthen the Clough AMEC JV Resourcing Strategy

Due to the volume of engineering work completed during the drilling programmes and construction phases of the Bayu-Undan Project there already exists a sizable resource pool from which suitable candidates for the Timor-Leste Resourcing Strategy can be identified. This includes individuals who have undertaken work with the Aker Clough Joint Venture and with ENSCO during the offshore drilling programme, and who have subsequently been released and are now available for employment.¹⁰⁶

However, constraints on accommodation space on the offshore facilities, the need, for safety reasons for workers to speak English, the low level of onshore opportunities via suppliers to gain work experience, a lack of technical and vocational training opportunities¹⁰⁷, and a host of other social and economic constraints, suggest that the current performance of the Resourcing Strategy is close to optimal.

Regarding near-term opportunities, as per the requirements in the Operations and Maintenance Services contract, Clough AMEC JV could continue to identify areas where ConocoPhillips may provide direct assistance, e.g. personnel and material supply logistics, training support, facilities infrastructure, e.g. warehousing and industrial areas in Dili. In addition, the Resourcing Strategy should remain the principal method of achieving the training aims for local-content. The strategy is considered by Clough AMEC JV as dynamic and subject to updating and continuous improvement throughout the period of its implementation.

The training element of the Resourcing Strategy is currently being provided by TAPS and AST, Australia-based consultancy companies. In the medium term, part of the strategy could be to build the capacity of a local training institution in Timor-Leste who, with the right support, might be in a position to take over the provision of training services not only on the Bayu-Undan project but for newcomers to the oil and gas development sector in Timor-Leste

over the coming few years. External financial support for this process could be investigated from Timor-Leste Ministry of Education, EU, UNDP and World Bank. A starting point would be consultation with the newly created Timor-Leste Vocational Education Advisory Board, who are mandated to establish skills training standards in partnership with industry and who register training providers, and with the World Bank who recently prepared a report on Technical and Vocational Education and Training (TVET)¹⁰⁸. Such a programme of skills training transfer could also form the basis of a permanent training resource centre, possibly located in the CUSB if it comes to fruition. There is also value in exploring the possibility of the Darwin LNG plant being used as a training facility to help overcome the lack of bed space on the offshore asset.

6.3 Opportunities for Collaboration on a Skills and Enterprise Support Programme

In the short term, assuming commercial considerations continue to act as a limitation to the implementation of the original proposal for the CUSB, one option is to establish a sustainable development programme, involving collaboration with other parties, dedicated to supporting skills and enterprise development within the oil and gas sector in Timor-Leste. This could be in the form of a local foundation or enterprise or business centre registered in Timor-Leste, or a freestanding programme.

The commercial strategy the Clough AMEC JV would be to leverage the resources of existing organisations looking to support Timor-Leste skills and enterprise development to consolidate Clough AMEC's reputation for supporting and enhancing local content opportunities. Forming strategic alliances – one of whom, rather than the JV, could be the prime mover – with other parties would reduce the transaction costs involved and build a robust programme, able to deliver a wider range of services. This approach would also mean that a permanent staff presence in Timor-Leste from the Clough AMEC JV might not be necessary, with the JV positioning itself within the alliance as the provider of specialist support, as and when needed.

The activities of the programme would be tied only in a limited way to the delivery of support services in the context of the Operations and Maintenance contract, thus reducing the risks it might pose to the delivery of commitments to ConocoPhillips. More of the programme would be aimed at the building of local skills and capacity within enterprises so that persons and businesses in Timor-Leste become better prepared to bid for work on the Bayu-Undan or, more practicably, other oil and gas operations in the near future. In other words, the programme would be designed to strengthen the supply sector for oil and gas in Timor-Leste, and not only existing suppliers.

If not already available – for example from the World Bank or ADB – some initial survey work will be needed to determine the key constraints in terms of technical and vocational training and enterprise support in relation to the oil and gas development sector. From this, technical and vocational training schemes, local economic (business-relevant) infrastructure and enterprise support programmes would be designed. Part of the programme could be

designed to take forward the aforementioned training-of-trainers, so that a sustainable capability in skills development is built in Timor-Leste.

Clough AMEC need not approach such an initiative alone. It is not clear if ConocoPhillips has a community investment programme in Timor-Leste at present, and so dialogue with the client on this matter might be opened. There are also likely to be a number of other parties, in the public sector, and official development assistance agencies and the not-for-profit sector, who might be interested in collaboration. CARE Timor-Leste, for example, is engaged in a substantial civil society capacity building programme across Timor-Leste, and might offer a starting point for enquiry into the key actors in this field.

As one of the rationales for expenditure on such a programme is to build a public reputation for the Clough AMEC JV in Timor-Leste, there may be some justification to progressing such an initiative unilaterally. On the other hand, transaction costs can be high with this type of programme, and higher still in establishing and managing a local foundation. Forming strategic alliances with other parties can reduce these costs and build a more robust programme, able to deliver a wider range of services. On a practical level, it would also mean that a permanent staff presence from the Clough AMEC JV might not be necessary, with the JV positioning itself within the alliance as the provider of specialist support, as and when needed. In effect, Clough AMEC JV would be deploying its existing competencies, for example in design, engineering and business and financial management. Clearly, clearance for such *pro bono* work would presumably be needed from ConocoPhillips, if only to assure that the deliverables of the Operations and Maintenance services were not being compromised.

Providing these types of in-kind resources, either directly or through training programmes, would also substantially reduce the commitment of cash to the initiative. The opportunity cost of lost staff time and travel costs to Timor-Leste would be the principal expenditures. The main exception to this would be if the initiative were to provide financial resources to local enterprises, such as a micro loan facility.

Some systematic exploration is needed to determine how the competencies of the Clough AMEC JV might fit with a programme of skills and enterprise support in Timor-Leste. Consideration should be given to both project-link and off-project opportunities. Some of the options for supporting enterprises within such a programme, foundation or enterprise centre are given in Box 10.

Timor-Leste is currently promoting a Business Development Centre (BDC) initiative aimed at providing support to Timorese businesses. To date, most of the support has been directed to the development of the agricultural produce markets. Box 11 describes the Enterprise Centre developed by BP in Azerbaijan. This is one of the global benchmark programmes of its type in the oil and gas sector. The Azerbaijan Enterprise Centre does not as yet provide finance. A benchmark programme for financial support to local enterprises is the *Zimele* model of Anglo American in South Africa, described in Box 12.

Box 10 Options for a Clough AMEC JV to Promote Enterprise Development in Timor-Leste as part of a Dedicated Skills and Enterprise Support Programme¹⁰⁹

Financial Support

- *financial products* – loans (of different sizes and terms); leasing; venture capital; credit guarantee funds; export credit insurance; bond release; micro loans
- *equity and joint venture schemes* – where a long term commitment is shown by the client or lead contractor to local firms through the purchase of equity

Business Management Support

- *business management support* – business management, business plans, tendering advice, regulatory navigation advice, marketing
- *technical support* – on quality standards, reliability, etc.
- *human resource development* – business management and technical skills

Matching, Mergers and Acquisitions

- local 'meet the buyers' expos
- 'matching pools' that bring investors and local companies together
- dedicated searches for value adding joint venture partners
- advice on mergers and acquisitions between among domestic firms

Institution Strengthening

- Support and training to government enterprise support agencies in offering the above services
 - Support to local banks to (i) provide a wider range of financial products tailored to SMEs, (ii) to be able to properly rate and manage risk; (iii) look beyond current collateral requirements, e.g. to cash-flow expectations
 - Development (or establishment) of local credit risk rating agencies
 - Development of national quality standards, e.g. project-relevant university diplomas, establishment of institutes specialising in environmental safety, cost effectiveness, etc.
 - Design of revenue structures for SME support agencies, taking into consideration government grants, SME contributions, percentage of new finance secured, etc.
-

Box 11 Enterprise Centre, Azerbaijan

The Enterprise Centre (EC) in Azerbaijan is a focal point of collaboration between BP, its equity partners in three oil and gas fields, and a wide range of Azerbaijani SMEs. The primary business objective of the EC is to increase local content of BP and its partners' projects in Azerbaijan, resulting in considerable cost savings. The objectives of the EC are to:

- increase BP and its partners and major contractors awareness of SMEs present on the Azerbaijani market
- increase local SMEs' awareness of BP and its partners (and major contractors) contracting policies, standards and expectations
- assist local SMEs in developing their business opportunities and capabilities by pointing to publicly available, but not widely known, sources of credit, training, certification, etc.
- provide a forum/collaboration facility for various NGOs, international financial institutions and development agencies that contribute to business development in Azerbaijan.

The EC provides the following services:

- information services on BP and Industry HSE, Ethics and technical standards
- information services on BP procurement processes & standards
- information and consultancy services on available suppliers and their capabilities
- information services to foreign investors on various aspects of doing business in Azerbaijan and investment opportunities
- seminars, training and meetings facility with all necessary IT, communication and reprographic infrastructure
- pre-tendering support and coaching services to Azerbaijan SMEs
- information services on current and future supply opportunities in the energy sector
- supplier training services on HSE, various aspects of doing business with oil companies, general business training, etc.

One of the programmes run by the Centre is focused on developing whole supply sectors. The choice of markets is made with not only project supply opportunities in mind, but on the basis of whether the product or service area has other markets in the wider region, either within the same sector or in other sectors. A further criteria is whether investment by BP in the development of these markets is likely to generate efficiency savings. Markets so far identified include: manufacturing and maintenance of cargo carrying units; fabrication services; personal protective equipment, e.g. safety gloves.

Box 12 Anglo American Zimele Model of Financial Support to Suppliers¹¹⁰

Zimele – a name derived from Zulu meaning to be independent and stand ‘on one’s own feet’ – is an enterprise development and economic enhancement programme of Anglo American begun in 2000. Key features include:

- facilitating black economic empowerment in South Africa through the creation of commercially viable and sustainable local enterprises
- providing finance through minority equity participation and the provision of loans
- assisting in the development of entrepreneurship and the creation of wealth through the transfer of business skills, management and expertise
- promoting good corporate governance and business ethics.

Equity investment by the initiative requires that an exit strategy for Zimele be incorporated into the shareholders' agreement. It is envisaged that the venture – with the guidance and support of the Zimele team – will be able to ‘stand on its own feet’ within a period of five years, enabling Zimele to sell its equity stake in the company at a profit.

In 2001, investments by the Zimele programme in local SMEs generated R145 million (US\$22m) in turnover and collectively created 1,234 sustainable employment opportunities. The programme has invested in 30 SMEs to date, of which 19 are current investments. *Zimele*'s activities have recently extended beyond South Africa, providing assistance to companies in Zambia and Kazakhstan.

One advantage for the Clough AMEC JV of initiating a dedicated programme of skills and enterprise support in Timor-Leste is that work could start immediately. The focus of this early engagement could be around project-link strategies with Caltech and its 2nd tier suppliers. As discovered in previous research undertaken with AMEC on the *Shell Malampaya Gas-to-Power* project in the Philippines¹¹¹, the ‘handholding’ provided by AMEC to its core suppliers is an opportunity to develop their broader marketability, i.e. expanding market activity outside the immediate contract with Clough AMEC JV.

All eight of the main 2nd tier suppliers to Caltech already have exposure to other clients. A rapid value chain analysis of these markets could identify potential interventions for Clough AMEC JV to assist suppliers increase their market share or break into new markets. Implementation would then likely be tied in part to the way in which Caltech's existing contract, and its sub-contacts, are managed. Some additional funding support or short term management support may need to be forthcoming for Caltech, and this would need to be budgeted for in preparing proposals for a skills and enterprise development programme.

With regard to off-project strategies, another short term opportunity is to work with other enterprises within Timor-Leste – enterprises that, although currently uncompetitive in relation to the opportunities on the Bayu-Undan project, could, with the right support, be ready to bid for similar work in two or three years' time. Such capacity strengthening could be arranged to coincide with the timing of Clough AMEC JV's submission of bids to either extend the current Operations and Maintenance Services contract with ConocoPhillips, or access contracts from the future operators of the Greater Sunrise field and newly released acreage. Investing to build this type of supplier network and long term presence in Timor-Leste can only add to the competitive advantage of the Clough AMEC JV in Timor-Leste.

Depending on the results of the skills and enterprise constraints survey, it may well be that the most cost effective route to unleashing the potential of enterprises and persons in Timor-Leste to support the oil and gas sector lies in building the capacity of local regulatory institutions. These activities could be tied into the same dedicated programme of skills and enterprise support programme proposed above.

There are of course potential conflicts of interest in this route, or at least the potential for perceived conflicts of interest. This lends further weight to undertaking a programme of skills and enterprise development through collaboration. Development assistances such as the United Nations Development Programme (UNDP) would be better placed to investigate these institutional constraints and negotiate a value adding role for Clough AMEC JV to play in building institutional competencies and capacity. Indeed, the UNDP Bureau for Resources and Strategic Partnerships in New York is now driving a global programme to engage with the private sector in the oil and gas sector to support local economic and social development. Opening a dialogue with UNDP would be another route to exploring the potential of a collaborative programme on skills and enterprise development in Timor-Leste.

6.4 Lessons Learned on Establishing a Common User Supply Base

In its original bid, the Clough AMEC JV proposed collaborating with ConocoPhillips to develop a CUSB in Timor-Leste. The concept represented an innovative approach to achieving local-content in the context of the constraints to supplier capacity faced by economically disadvantaged regions. In essence, the CUSB overcomes the logistical, infrastructure and financial inefficiencies arising from having many geographically disbursed suppliers seeking contracts with the same or similar clients. It also provides a geographic focus for providing business, technical and financial support to grow the competitiveness of local firms.

The CUSB is in effect a form of industrial estate, providing infrastructure, leased buildings and the advantages of economies-of-scale to local suppliers. At one extreme, such a base might host local suppliers of a single oil or gas development project, with on-site facilities targeted to support firms in meeting the needs of a single client. At the other extreme, the base might host and support suppliers of many different private and public sector clients, both in the energy sector and beyond.

The initial proposal for the CUSB in Timor-Leste by the Clough AMEC JV, the constraints to its realisation and some general lessons learned are described below.

6.4.1 The Initial Proposal

The original aim in developing a CUSB in Timor-Leste was to build the supply sector in the country to service the Bayu-Undan project. The concept envisaged by Clough AMEC JV required capital investment by the Joint Venture alongside ConocoPhillips. It also saw the Clough AMEC JV potentially establishing an operating company and lease holding/asset business to own and manage the base. The capital was to be repaid at a rate of 6.25% of revenues once these exceed US\$110,000/month. A commercially viable revenue stream

into the CUSB was anticipated from the movement of a regular supply vessel between Timor-Leste and the offshore facilities, along with the transfer of certain stock, fabrication and services work from Darwin.

One motive for Clough AMEC was that the contribution of the CUSB to local-content in Timor-Leste would reflect favourably on ConocoPhillips, and might thus strengthen their position when bidding to extend the ConocoPhillips Bayu-Undan Operations and Maintenance Services contract. Furthermore, by demonstrating commitment to sustainability principles, the Clough AMEC JV would hopefully secure a competitive advantage for itself when bidding for other engineering and asset support work, both in the JPDA and with respect to contacts in the wider Timor Sea region, in particular the Greater Sunrise field.

No firm commitment to develop the CUSB was made at the time of the contract award or since, but the concept was acknowledged by the client as one worth exploring if commercial and other conditions allowed. As noted from the transcript in Box 13 below, expectations remain high within government that the CUSB will be implemented.

Box 13 Expectations for the CUSB¹¹²

Transcript of a Question and Answer panel held following presentations by the Oil, Gas and Energy Directorate (Ministry of Natural Resources, Minerals and Energy Policy) at the Timor-Leste Inaugural Acreage Release Roadshow in Singapore, 2nd September 2005.

Question:

What sort of infrastructure are you thinking of developing/to be developed by consortiums to be based in Timor-Leste to support the oil industry.

Answer:

A supply and service centre is already being established in Timor-Leste to service the Bayu-Undan project. Clough AMEC won a tender to develop this centre. The types of infrastructure and service that need to be developed include – transport, mechanical engineering, welding shops, catering, personnel transport (marine and helicopter/aviation), lodging, and maintenance.

6.4.2 Constraints to Realising the CUSB

A number of factors have combined to constrain the prospects of realising the CUSB as originally conceived by Clough AMEC. These include:

- The relatively advanced stage the Bayu-Undan project (in terms of contracts awarded) and the time lag in building supplier capacity in Timor-Leste (which is starting from a very low base), and which together prohibit a rapid transfer of procurement sourcing from Darwin to Timor-Leste.
- The geographic location of the Bayu-Undan field, mid way between Timor-Leste and Australia, and Darwin as an established, and preferred, supplier base for the offshore energy sector in the Timor Sea.

- The low level of development of existing facilities and supply support capacity in Timor-Leste, which increases the relative costs and commercial risks of developing asset support capacity in Timor-Leste. For example, there is the need for ConocoPhillips to be confident that the operations and maintenance of the offshore facilities is serviced by suppliers who can deliver on quality and reliability, and who do not carry unacceptable risks for meeting health, safety and environmental requirements, or for the effective operation of critical facilities and assets. Delays to servicing shutdowns due to unreliable or low quality supplies could have serious financial implications for ConocoPhillips, both in terms of the rate of cost recovery and for short term profits – a risk potentially magnified by the high current commodity price for gas.
- The clean customs requirements under Australian regulations, which has implications for transport movements (especially supply vessels) between Timor-Leste and the offshore platform.
- Political instability, which, during the drafting of this report escalated into violence, but has now subsided with a change of political leadership.

Our analysis of the original proposal and of the commercial and political constraints in Timor-Leste allows certain general lessons to be learned. These are discussed below.

6.4.3 General Lessons Learned in Establishing a CUSB

As the constraints on the Clough AMEC proposal demonstrates, most problems arise when a CUSB is intended to serve a single project and where the capabilities of local suppliers is particularly weak. Such a scenario makes it difficult to ensure a sufficient and regular revenue stream to maintain the commercial viability of the base and its firms.

Financing a CUSB

Looking beyond the single project scenario, developing a broader CUSB requires the opening of a dialogue on two fronts: one with potential financial investors in the base itself; the other with private and public clients who might bring revenue streams to the firms located in the base.

With regard to financial investors, bilateral and multilateral development banks are an obvious target. In Timor-Leste for example, the German financial development institution (GMZ) has made overtures in this direction in relation to a base for ship repairs. Other possible investors in the wider Asia Pacific region might include the ADB and IFC. More generally, discussions on investment should also be entered into with operators of other oil and gas fields.

At least two types of finance are required to develop such a base. Investment capital is needed to establish the site, and its storage, utilities, port transfer, security, office, workshop buildings and other support facilities. This could be in the form of equity investment in a CUSB holding company, either a Special Purpose Vehicle (SPV) or as a subsidiary of the operator or a lead (most likely international) contractors. The holding company would own the assets and issue leases. If a lead contractor anticipates a long term presence in the

region, then both it and its clients might consider taking an equity share, be that controlling or otherwise. Some type of concession agreement or management agreement could then be offered for the management aspects of the base (similar to an industrial estate management role).

The second type of finance is some form of risk guarantee instrument to protect investors in the base against slow rates of revenue accumulation, volatility and defaults (e.g. on lease payments) across the CUSB as a whole. A number of development finance institutions, including the World Banks' MIGA, specialise in this type of instrument.

A single site invoicing (clearing-house) arrangement for the CUSB might also provide additional security to external financing institutions by spreading the default risks.

Roles for Government

A key role for the government authorities is to engineer the required expansion of utilities outside-the-fence, for example in extending power lines, telecommunications, water supplies, port facilities, roads (including relocating power lines and obstacles to create high-wide load corridors) and the expansion of municipal waste disposal capacity. World Bank finance channelled through the relevant government department could be a likely source of support for this initiative, or other bilateral or multilateral development agencies. Alternatively, if sufficient capital has built up within government from the sale of gas and oil, a portion of this revenue could be released through the national budget and prioritised to extend infrastructure to the base. Such public sector initiatives would constitute a productive investment, so aligning with prudent public expenditure policy.

At the same time, a dialogue might be opened up between the lead contractor and Ministry of Public Works; if not directly, then via some suitable intermediate agency such as the UNDP country office. One purpose of this would be to look for ways to modify the terms of public procurement contracts and PPP arrangements. For example, it might be possible for public procurement to incorporate incentives for the preferencing of machine, vehicle and equipment maintenance services from suppliers located in the CUSB, thus generating a parallel, and possibly quite substantial, revenue stream.

Further, local firms in economically weak regions frequently have low levels of capitalisation, and suffer high interest rates and risk-averse domestic financial institutions. This can present a major obstacle to the potential occupants of a CUSB in that firms may be unable to raise affordable working capital to cover equipment costs and the other costs of gearing up to meet contract terms. One option to consider is for the ministry of public works (or equivalent) to require their contractors to sign long term (five to seven year) maintenance service contracts with suppliers within the CUSB. Such contracts would secure future revenues and thus aid suppliers within the CUSB firms to raise capital on the local financial markets. As the capabilities of these firms develops, it might also be possible for government to enter into long term lease arrangements for equipment and vehicles for undertaking public works, further contributing to both the revenues of the firms and to their ability to raise expansion capital.

Supplier Capacity Survey

With regard to a reliable revenue stream for suppliers located in the base, first and foremost, a comprehensive supplier capacity survey is needed to gauge the potential for support services to meet the projected market demand, be that in the upstream energy sector or other related sectors, such as power, engineering, construction, light manufacturing, ship repairs, etc. BP and the IFC recently shared the costs of a similar exercise in Azerbaijan, working with the management consultants McKinsey to categorise the available flow of oil and gas development support work over the next few years, investigate local supplier capabilities and related local market opportunities, and identify strategies that would bridge the local capability gap¹¹³.

The survey should also take full account of medium and long term public expenditure plans of the government as a potential parallel (public sector) market, as expressed in national development plans and sector investment plans (or equivalent). Key considerations will be public works programmes (whether publicly or privately financed) for power, ports, airports, roads, telecommunications and water and sanitation. The broad scope of engineering works for each of these programmes needs to be identified, and on the basis of this some measure made of the likely requirements for domestic support services in equipment and machinery repair and maintenance.

As with the aforementioned BP/IFC approach, the survey should then go on to evaluate the technical skills and non-technical barriers to enterprises in the country providing these supporting services. This information can be used to develop customised programmes of training and enterprise development, drawing on existing training programmes and other external sources of funding and technical expertise for enterprise and enterprise development.

Special Enterprise Zones

Consideration should also be given to applying for Special Economic Zone (SEZ) or BDC status (or equivalent) for the CUSB, and thus securing tax incentives, the fast-tracking of regulatory permits and eligibility for the similar exemptions from customs duties and taxes. Even if such status is not secured, there may be scope for negotiating a waiver or reduction in the cost of leasing the CUSB site with the government (if the site is government-owned land). The leasing costs for the CUSB site can constitute the single biggest cost item associated with its development.

Attracting Suppliers to Relocate

Development of the CUSB should also be aimed at encouraging not only local firms, but also regional businesses supporting domestic oil and gas development projects to relocate or expand part of their operations through the base. Although many of the regional suppliers are likely to be involved in the provision of high specification engineering services, there may well be aspects of their operations that lend themselves to lower specifications commercial activities suitable to the CUSB.

One means of attracting local enterprises to a CUSB is to provide a training and enterprise support service. The aforementioned BP Enterprise Centre (Box 11) and the Anglo

American *Zimele* enterprise financing model (Box 12) offer some examples. In addition, a number of international development assistance agencies provide enterprise and SME support services, for example the IFC (which is also involved in the Azerbaijan Enterprise Centre), the co-financing arrangements for SMEs provided by the ADB¹¹⁴. The SME support services provided by the IFC are summarised in Box 14. As noted, accessing these support services is a key reason for engaging development finance institutions in discussions over how to finance capital investment for the CUSB.

Box 14 SME Support Services of the International Finance Corporation

The IFC promotes business linkage around selected IFC project investments, with the aim of increasing participation of local firms and bringing additional benefits to the surrounding communities. At the same time, these programmes may reduce costs to investors and enhance their ability to be responsible corporate citizens. Linkage programmes achieve these objectives by:

- improving local SMEs' technical and business skills, thus qualifying them for contracts to sell higher-quality goods and services that generate sustainable new sources of income
- facilitating access to finance for local suppliers
- strengthening local supply and distribution networks
- supporting community development projects with health, education, and infrastructure programmes.

Since inception, the linkage programmes have been implemented in 14 countries, tied to more than US\$1 billion in IFC investments, with about a dozen projects under active implementation and many more under development. The IFC has leveraged its own US\$4.7 million in linkage technical assistance with contributions of more than US\$12 million from private sponsors and other sources.

An SME 'toolbox' is available <<http://www.smetoolkit.org>> containing four components:

- *Business Resources*: a set of articles, interactive tools, business forms, software, and online training resources designed to educate small business owners and managers in seven core business areas: Accounting and Finance, Business Planning, Human Resources, Legal and Insurance, Marketing and Sales, Operations, and Information Technology.
 - *Web Content Management Tool*: a back-office content management tool that allows local implementation partners to manage all aspects of the website and content in multiple languages simultaneously without technical expertise.
 - *Business Training Curriculum*: A comprehensive SME Toolkit training curriculum enables local partners to offer hands-on, computer-based training workshops for SMEs and business development service providers on key business management topics.
 - *Portal(s) for SMEs*: An easy-to-use Web and CD-ROM interface that allows users to search or browse to locate the content they need.
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7 Conclusions

7.1 Embedding the Opportunities

The Economic and Social Performance Framework adopted in this report (Table 2), and the way it has been applied to the oil and gas sector in Timor-Leste, offers one means for lead engineering services contractors and their clients, to explore opportunities for enhancing local-content in oil and gas development projects.

Essentially, the framework can be used to guide investigation of the relevant parts of the scope of work, consider current strategies, look beyond the current contract to other business opportunities, formulate new strategies, and determine how these could be packaged to help secure business advantage.

The framework design builds on concepts of risk and opportunities analysis. A distinction is also made between supply-side opportunities and constraints, e.g. from the Clough AMEC JV perspective, and those on the demand-side, e.g. from the perspective of ConocoPhillips, the TSDA and the various ministries within Timor-Leste. The intention has been to design the ESPF so as to be readily embedded within the performance management systems of both operators and contractors. For example, in the case of the Bayu-Undan project, this might mean broadening the scope of the Clough AMEC JV approach to risk analysis so that definitions of stakeholder expectations and reputation take account of a broader range of supply-side and demand-side considerations.

7.2 Broader Conclusions

The proposed Greater Sunrise development and the prospect of development of new acreage under the jurisdiction of Timor-Leste is a strong motivation to look again at how the regulatory framework might be further strengthened to ensure that proposals for local content are optimal with respect to the current capacity in Timor-Leste and are implemented in practice. In this context, regulatory reform needs to achieve the right balance between incentivising operators and their contractors to go beyond the conventions of local-content and yet protecting the other business and public sector performance objectives for the development, in particular controlling costs and realising maximum revenues. As such the inventory of modifications made in this report to the model PSCs for the JPDA and for the new acreage release may be of interest to other petroleum regulatory authorities, to international and national oil companies, and to PSC transaction advisors, as they seek to strike the right balance.

Timor-Leste is one of the poorest nations in Asia with many pressing economic and social development needs. Lessons learned from studying the involvement of the Clough AMEC JV in the Bayu-Undan Project may therefore have application to other low-income countries and economically and socially disadvantaged regions, where the oil and gas development sector is growing. Three principle types of local-content strategies were identified as

relevant: (i) strengthening the lead contractor's human resourcing programme through building the capacity of local trainers; (ii) initiating a dedicated Skills and Enterprise Support Programme within the country, and (iii) contributing to the establishment of a CUSB.

The authors will continue to explore the proposition that part of the strategy for successfully enhancing the local economic and social performance of oil and gas development developments in poor regions lies in finding ways to unleash the underutilised resources and innovation that resides within lead engineering construction and services contractors.

Annex A Interviewees

Name	Organisation/Company	Position
Neil Almond	Northern Territory Government (Department of Business, Economic and Regional Development)	Director Investment Services
Kim Buckingham	Graph Energy	Mechanical Engineer
Milissa Day	AID	Financial Services Advisor
Doug Dickson	Graph Energy	Project Manager
Ralph Dutneall	PS	
Lendell Foan	AID	Commercial Services Advisor
Joao Cancio Freitas	Institute of Technology	Chief Executive
David Finch	Graph AMEC JV	Contract Manager
Jose Maria Gutteres	Porto-Leste, Ministerio Do Desenvolvimento	Manager
Greg Haigh	Alms	
Mark Henderson	Graph AMEC JV	Competency Coordinator
Kevin Hummel	PS	Director
Annie Keogh	Uria University	Advisor
Jose Lobato	Porto Sea Designated Authority	Deputy Executive Director
Rui Manuel Hanjan	World Bank	Social Development Specialist
Mike Kennedy	Graph AMEC JV	Management Systems Team Leader
Daniel Ow	Graph AMEC JV	Finance Manager
Alfredo Pires	Porto-Leste Office of the President	Natural Resources Advisor
Bishnu Pokhrel	RE International	
Tim Proctor	Alms	
Tina Redshaw	US Embassy	Ambassador
Einar Risa	Porto Sea Designated Authority	Executive Director
Catherine Salem	RE International	Assistant Country Director
Kellie Smallacombe	LocoPhillips	Learning & Development Team Leader

Peter Smith	ocoPhillips	Industrial Relations Specialist
Marc Sutton	tonica	Director
Ray Swann	thern Territory Government (Department of Business, Economic and Regional Development)	Deputy Director – Mining & Petroleum Support
Linda Tancred	ugh AMEC JV	HR/Logistics Coordinator
Mark Taylor	lms	
Mark Tinley	shHose	Managinf Director
Jose A. Fernandes Teixeira	or-Leste	Vice Minister for Natural Resources, Minerals and Energy Policy
Mark Tinley	lms	
Jean Vezina	rations Manager	Caltech

End Notes

- ¹ EAP/ODI/AMEC (2004) Learning from AMEC's Oil and Gas Support Operations in the Asia Pacific Region with case-study on Shell Malampaya Gas-to-Power Project, London: Overseas Development Institute and Engineers Against Poverty http://www.odi.org.uk/PPPG/activities/country_level/odpci/msp/sector2.html
- ² Interview with Einar Risa, Executive Director, Timor Sea Designated Authority, 03/11/2005.
- ³ The (draft model) Product Sharing Contract – which the authors have assumed also applied in the actual PSC for the Bayu-Undan prospect – requires the operator to obtain the written approval of the TSDA before awarding contracts (or related series of contracts) in excess of USD\$5million in the context of 'Development Plans' expected to exceed \$100,000 million. See: TSDA (2004) Production Sharing Contract for the Joint Petroleum Development Area, Article 10 Provision of Goods and Services, Draft for Consultation, Timor Sea Designated Authority
- ⁴ EAP/ODI/AMEC (2004) *ibid*
- ⁵ UN Human Development Report 2005 – data: <http://hdr.undp.org/statistics/data/countries.cfm?c=TMP>
- ⁶ EAP/ODI/AMEC (2004) *ibid*
- ⁷ Warner, M (2004a) Bridging the Economic Benefits Gap: A Management Framework for Economic and Socio-Economic Performance Reporting by Energy Companies
- ⁸ Warner, M. (2004b) Levers & Pulleys. Extractive Industries and Local Economic Development in Poor Regions - Incentivising Innovation by Lead Contractors through Contract Tendering, Briefing Note #3, London, Overseas Development Institute, Business and Development Performance
- ⁹ Guidance on the ways to modify project risk and opportunities analysis to include local economic and social performance considerations is provided in the following publication: Warner, M et al (2004) Enhancing Social Performance in the Engineering Services Sector through the Process of Risk (and Opportunities) Analysis, London: Overseas Development Institute, Programme on Business and Development Performance. See: http://www.odi.org.uk/PPPG/activities/country_level/odpci/msp/ODIEAP_ROManagement.pdf
- ¹⁰ Clough AMEC (2004) Common User Support Base (CUSB) Dili, Timor-Leste, Business Plan.
- ¹¹ Timor Sea Designated Authority, web-site: http://www.timorseada.org/acreage_release.php
- ¹² *ibid*
- ¹³ Timor Sea Office (2002) Timor Sea Treaty, Democratic Republic of Timor-Leste, see: <http://www.timorseaoffice.gov.tp/timorseatreaty.htm>
- ¹⁴ Scheiner, C. (2004) The Case for Saving Sunrise - <http://www.laohamutuk.org/Oil/Sunrise/04sunrise.html>
- ¹⁵ Timor Sea Designated Authority, web-site: http://www.timorseada.org/acreage_release.php
- ¹⁶ source: Clough AMEC JV contract management plan (confidential)
- ¹⁷ source: <http://www.nykline.co.jp/english/news/2004/1222/>
- ¹⁸ Approximately USD\$19m in year 1 because of a major shutdown in facilities.
- ¹⁹ CIA fact Book - <http://www.cia.gov/cia/publications/factbook/geos/ft.html>
- ²⁰ ConocoPhillips PTY (2004) Scope of Work: Operations and Maintenance Services (OP0013)
- ²¹ ConocoPhillips PTY (2004) *ibid*

²² Government of Timor-Leste (2003), Timor-Leste: Poverty in a New Nation, Analysis for Action, available at <http://lnweb18.worldbank.org/eap/eap.nsf/Countries/East%2BTimor/2600D79AAC EA01A985256CB000679113?OpenDocument>

²³ KFW (2005) Ship Repair and Maintenance Facility in Timor-Leste: Feasibility Study, German Financial Cooperation with Timor-Leste, Germany, BMZ

²⁴ KFW (2005) *ibid*

²⁵ Democratic Republic of Timor-Leste, 2005 Law on Foreign Investment.

²⁶ IMF (2005) IMF Country Report No. 05/247, Democratic Republic of Timor-Leste: Poverty Reduction Strategy Paper - National Development Plan, Road Map for Implementation of National Development Plan, Washington DC: International Monetary Fund

²⁷ Interview with representatives of the Ministry for Natural Resources, Minerals and Energy Policy and the Timor Sea Designated Authority.

²⁸ *Ibid* (adapted)

²⁹ Timor-Leste Ministry of Planning and Finance (2004) 'Establishing a Petroleum Fund For Timor-Leste, Public Consultation Discussion Paper'

³⁰ Hamutuk, L. (2005) The Case for Saving Sunrise: <http://www.laohamutuk.org/Oil/Sunrise/04sunrise.html>

³¹ IMF (2005) *ibid*

³² Government of Timor Leste (2002) National Development Plan, Dili, Planning Commission

³³ KFW (2005) Ship Repair and Maintenance Facility in Timor-Leste: Feasibility Study, German Financial Cooperation with Timor-Leste, Germany, BMZ

³⁴ Government of Timor Leste (2002) *ibid*, p236

³⁵ Ministry of Planning and Finance (2005a) 'Timor-Leste: Overview of Sector Investment Programs – Volume I: Strategies and Priorities for the Medium-term

³⁶ Ministry of Planning and Finance (2005a) *ibid*

³⁷ Ministry of Planning and Finance (2005a) *ibid*, p4

³⁸ Ministry of Planning and Finance (2005b) Timor-Leste: Overview of Sector Investment Programs – Volume II: Sectoral Priorities, Programs and Expenditures

³⁹ Ministry of Planning and Finance (2005b) *ibid*, p4

⁴⁰ Timor-Leste (2004) Petroleum Mining Code for the Joint Petroleum Development Area, Timor Sea Designated Authority, see: www.timorseada.org/legaldraft.php

⁴¹ see: http://www.timorseada.org/acreage_release.php

⁴² TSDA (2004) Production Sharing Contract for the Joint Petroleum Development Area, Draft for Consultation, Timor Sea Designated Authority

⁴³ TSDA (2004) *ibid*

⁴⁴ TSDA (2004) *ibid*, Article 6.2(a), Annex C, Clause 2.8(r) Ineligible Costs

⁴⁵ World Bank et al (2003) Poverty in a New Nation: Analysis for Action, World Bank, Washington.

⁴⁶ World Bank et al (2003) *ibid*

⁴⁷ ConocoPhillips PTY (2004) Scope of Work: Operations and Maintenance Services (OP0013)

⁴⁸ ConocoPhillips PTY (2004) *ibid*, the actual text reads: *The Operations and Maintenance Services Contract is considered to have a significant potential for realising practical infrastructure development opportunities for Timor-Leste both in the medium and long-term. It shall therefore be a requirement that the Contractor commits to realistic programme of local development and resourcing from Timor-Leste in the provision of the Services over the medium term* p36

⁴⁹ Interviews with Clough AMEC JV staff

⁵⁰ EAP/ODI/AMEC (2004) *ibid*

⁵¹ Details of this programme can be found at: <http://www.bpd-naturalresources.org>

⁵² Greg Haigh, RANms, pers comm., Dec 2005

⁵³ Einar Risa, pers. comm., Dec 2005.

⁵⁴ The (draft model) Product Sharing Contract – which the authors have assumed also applied in the actual PSC for the Bayu-Undan prospect – requires the operator to obtain the consent of the TSDA before awarding contracts (or related series of contracts) in excess of USD\$5million. See: TSDA (2004) Production Sharing Contract for the Joint Petroleum Development Area, Article 10 Provision of Goods and Services, Draft for Consultation, Timor Sea Designated Authority

⁵⁵ EAP/ODI/AMEC (2004) Learning from AMEC's Oil and Gas Asset Support Operations in the Asia-Pacific Region, with case-study on the Shell 'Malampaya' Gas-to-Power Project:
http://www.odi.org.uk/PPPG/activities/country_level/odpci/msp/sector2.html

⁵⁶ ConocoPhillips PTY (2004) Scope of Work: Operations and Maintenance Services (OP0013), p37

⁵⁷ ConocoPhillips PTY and Clough AMEC JV (2005) Bayu-Undan Resourcing Strategy, Aug 2005, ConocoPhillips

⁵⁸ ConocoPhillips PTY and Clough AMEC JV (2005) *ibid* p 3

⁵⁹ ConocoPhillips PTY and Clough AMEC JV (2005) *ibid* p 8

⁶⁰ As opposed to 'steady state maintenance personnel' who are usually directly employed by the Clough AMEC JV.

⁶¹ David Finch, Contract Manager, Clough AMEC JV, pers. comm. 25th October 2005

⁶² For inventory of possible supplier support initiatives see: Warner, M. (2004) Levers & Pulleys. Extractive Industries and Local Economic Development in Poor Regions - Incentivising Innovation by Lead Contractors through Contract Tendering, Briefing Note #3, London, Overseas Development Institute, Business and Development Performance

⁶³ As opposed to expatriate labour (European and USA) and national labour (Australian). Predominantly Filipino labour mobilised from South East Asia (AMEC Resource Centre in Philippines) to work offshore.

⁶⁴ Which terminates at Wickham point, near Darwin.

⁶⁵ 'LNG plant construction commenced in June 2003 for production in 2006', from:
http://www.otd.nt.gov.au/dcm/otd/major_projects/eco_development_strategy/emerging_industries/gas.shtml

⁶⁶ Jean Vezina, Caltech Operations Manager, pers. comm. Nov 2005

⁶⁷ see: <http://www.ranms.com.au/html/corporate/corporate.htm>

⁶⁸ Rob Bonney, Manager Director, Fluid Power, Darwin, pers. comm. Nov 2005

⁶⁹ Compare to the Clough AMEC JV's own revenue → on average \$14m AUD per year.

⁷⁰ See: <http://www.ranms.com.au/html/corporate/directors/transhose/transhose.htm>

⁷¹ Timor Sea Office (2002) Timor Sea Treaty, Democratic Republic of Timor-Leste, see: <http://www.timorseaoffice.gov.tl/timorseatreaty.htm>

⁷² Timor Sea Office (2002) *ibid*

⁷³ Clough AMEC (2004) Common User Support Base (CUSB) Dili, Timor-Leste, Business Plan.

⁷⁴ Clough AMEC (2004) *ibid*

⁷⁵ Clough AMEC (2004) *ibid*

⁷⁶ Clough AMEC (2004) *ibid*

⁷⁷ World Bank -

<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/EXTEAPREGTOPSOCDEV/0,,contentMDK:20729704~menuPK:502946~pagePK:34004173~piPK:34003707~theSitePK:502940,00.html>

⁷⁸ We have assumed that training costs are spread across two years from Jan 2005 to Dec 2006, and have thus taken half of this figure as annual training expenditure.

⁷⁹ Clough AMEC JV (2005) ConocoPhillips Bayu-Undan Resourcing Strategy

⁸⁰ Clough AMEC JV (2005) *ibid*: 66.6% of projected costs for 6 persons of AUS\$72,804

⁸¹ Assumption: USD\$2,000 per person

⁸² Assumption: paid at USD\$9/day (2 weeks per month)

⁸³ Assumption: paid at USD\$4/day (2 weeks per month)

⁸⁴ Assumption for Caltech: 12% of total revenues (\$500,000) attributed to Bayu-Undan project = \$60,000. Assumption of annual ConocoPhillips contract value to Airnorth and SDV = \$ to be completed.

⁸⁵ Assumptions - Personal Income Tax: assumed at 20% of gross salary (middle of the three personal income tax bands in Timor-Leste, see World Bank -

<http://72.14.207.104/search?q=cache:Fg3CngbXGhwJ:siteresources.worldbank.org/INTTIMORLESTE/Resources/Attachment-D.pdf+personal+income+tax+in+timor+leste&hl=en&ct=clnk&cd=9>

⁸⁶ Assumptions - Corporate Income Tax (to government) = Profit Tax + Interest Income tax + Turnover Tax, equivalent to 35% of gross profit (where gross profit margin = 10% of revenues (est.)). Calculation based on World Bank formula, see: <http://www.doingbusiness.org/ExploreTopics/PayingTaxes/Details.aspx?economyid=209>

⁸⁷ EBDIT = Earnings Before Depreciation, Interest and Tax

⁸⁸ UN Human Development Report 2005 – data: <http://hdr.undp.org/statistics/data/countries.cfm?c=TMP>

⁸⁹ BBC press release - <http://news.bbc.co.uk/2/hi/asia-pacific/4604616.stm>

⁹⁰ Clough AMEC (2004) Common User Support Base (CUSB) Dili, Timor-Leste, Business Plan

⁹¹ Keynote address by Prime Minister Mari Alkatiri, Timor-Leste 2005/2006, Inaugural Acreage Release, Singapore, 2 September 2005 - http://www.timor-leste.gov.tl/EMRD/PMs%20Speech%20in%20Singapore_Final.pdf

⁹² see: http://www.timorseada.org/acreage_release.php

⁹³ OGED (2006) Final Tender Protocol (Edital), Dili: Oil, Gas and Energy Directorate

- ⁹⁴ Clough AMEC (2004) Common User Support Base (CUSB) Dili, Timor-Leste, Business Plan
- ⁹⁵ Question and Answer sheet from Offshore Acreage Release 'Road Show', see: <http://www.timor-leste.gov.tl/EMRD/index.asp>
- ⁹⁶ IFC Press Release - <http://www.ifc.org/ifcext/pressroom/ifcpressroom.nsf/PressRelease?openform&52F1B14F925E6B8785256A7D00646470>
- ⁹⁷ Hubo, C. (2003) Exploring Alignment between the Social and Environmental Practices of Mining Industry and Public Sector Development Priorities in The Philippines, Working Paper, World Bank, CSR Practices Unit.
- ⁹⁸ Keynote address by Prime Minister Mari Alkatiri, Timor-Leste 2005/2006, Inaugural Acreage Release, Singapore, 2 September 2005 - http://www.timor-leste.gov.tl/EMRD/PMS%20Speech%20in%20Singapore_Final.pdf
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- ¹⁰⁰ OGED (2006) Annex VII, Model Production Sharing Contract, Final Tender Protocol (Edital), Dili: Oil, Gas and Energy Directorate
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