# 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**






Overseas Development Institute

ENGINEERS AGAINST POVERTY

# SUMMARY REPORT

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## *with case-study of the Bayu-Undan Gas Recycle Project, Timor-Leste*

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

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# 1 Introduction

> "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 impacts of capital investment projects in the oil and gas sector in developing countries. 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, limited 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 are increasingly aware that local content is a priority for 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.

However, 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 a 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 because they lack relevant experience, have poor production quality and reliability, low health, safety and environmental standards, and the wrong technical capabilities. Weak public sector regulation and enforcement, 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 others 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 potential employees, suppliers, communities adversely affected by operations, and enterprises entirely 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 a key factor in the Authority approving the Clough AMEC JV tender under Article 10 of the Production Sharing Contract (PSC).

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 $60,000/year of contracts are being awarded to 2nd suppliers based in Timor Leste.
- Under the Clough AMEC JV contract, total economic value of training and 3rd party spend in Timor Leste is around $170,000.

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

- The geographic location of the Bayu-Undan field, mid-way between Timor Leste and Australia, with Darwin an established supplier base for the off-shore 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 has implications for transport movements between the offshore platform and Timor Leste; and
- 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.

# 2 Economic & Social Performance Framework: A Tool for Optimising the Contribution of Engineering Contractors

Building on an earlier study conducted with AMEC, in connection with the Shell Malampaya Gas-to-Power project in the Philippines, an Economic and Social Performance Framework (ESPF) was developed to support this new study in Timor-Leste (see Table 1). 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.

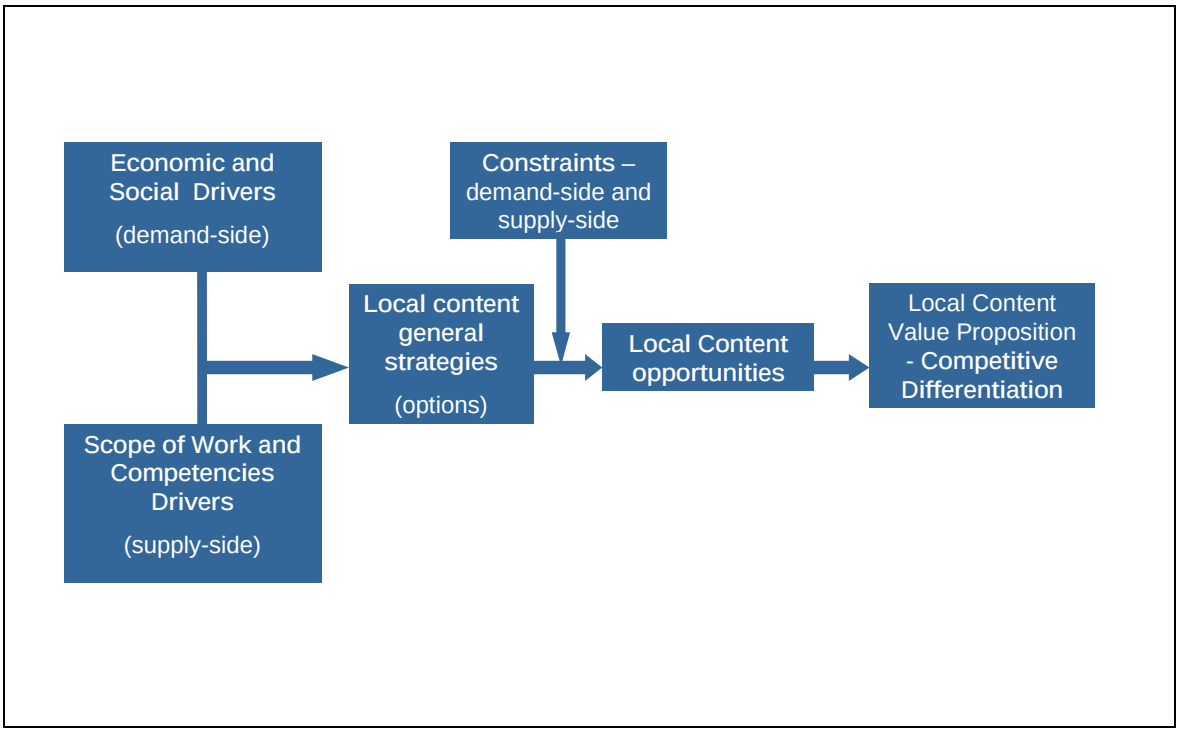
Based on the concepts of risk and opportunities analysis, supply and demand-side market factors and governance constraints, the framework can be readily embedded within the performance management systems of both operators and contractors, for example within Health, Safety and Environmental systems or in project risk assessment procedures. This report applies the ESPF to the oil and gas sector in Timor-Leste, and particularly to 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.

Table 1 – Framework for Investigating the Role of Lead Engineering Contractors in the Local Economic and Social Performance of Oil & Gas Developments

<table>
<tr><th>Type</th><th>General Strategies</th><th>Contract Scope</th><th>Constraints and Drivers</th><th>Existing Strategies</th><th>Opportunities</th></tr>
<tr><td colspan="2">On-Project</td><td rowspan="20">Contract type<br>❑ Front end design<br>❑ Engineering design<br>❑ Procurement<br>❑ Construction and fabrication<br>❑ Construction Management<br>❑ Operations management<br>❑ Asset Maintenance<br><br>Design Parameters<br>❑ Skills<br>❑ Materials<br>❑ Services<br>❑ Infrastructure/ utilities<br>❑ Finance<br>❑ Land/property<br>❑ Equipment<br>❑ Approvals</td><td rowspan="20">❑ Current contract and contract extensions<br>❑ Future business opportunities<br><br>Demand-side<br>❑ Legal, regulatory and contractual framework<br>❑ Economic policy<br>❑ Institutional and governance capacity<br>❑ Human resource capacity<br>❑ Business capacity<br><br>Supply-side<br>❑ Commercial cost and risks<br>❑ Minimum competency requirements<br>❑ Technical limits on supplier quality and reliability<br>❑ Health, safety requirements<br>❑ Operational infrastructure priorities</td><td rowspan="20">Demand-side players<br>❑ Operator<br>❑ Host government<br>❑ Official Development Agencies<br>❑ NGOs<br><br>Supply-side players<br>❑ Lead contractor<br>❑ Other suppliers<br>❑ Potential trainees and employees</td><td rowspan="20">❑ Current contract and contract extensions<br>❑ Future business opportunities<br><br>Demand-side opportunities<br>❑ Regulatory reform<br>❑ New contract terms<br>❑ New economic policy<br>❑ Partnerships to strengthen Institutions and governance capacity<br>❑ Various support for human resource and business development<br><br>Supply-side opportunities<br>❑ Cost savings to client<br>❑ Partnerships with government and donors to rapidly build human and supplier competencies<br>❑ Co-operation with government to strengthen in-country regulatory regime<br>❑ PPPs involving the client to develop operational or business-critical infrastructure</td></tr>
<tr><td>Employment</td><td>Local recruitment</td></tr>
<tr><td>Training</td><td>Prior training, on-the-job training, apprenticeships</td></tr>
<tr><td>Supplier support</td><td>Support to community suppliers to meet project standards</td></tr>
<tr><td>Local infrastructure</td><td>Project infrastructure utilised by local population</td></tr>
<tr><td>Institution strengthening</td><td>Project-driven interaction with local government agencies (e.g. for licenses and permits) resulting in capacity strengthening</td></tr>
<tr><td colspan="2">Project-Link</td></tr>
<tr><td rowspan="2">Employment</td><td>Inward-linkage - outreach recruitment programmes</td></tr>
<tr><td>Outward linkage - enhancing post-project employment prospects, e.g. assisted job seeking</td></tr>
<tr><td rowspan="2">Training</td><td>Inward-linkage - outreach training programmes</td></tr>
<tr><td>Outward linkage – training specifically to enhance post-project employment prospects</td></tr>
<tr><td rowspan="2">Supplier support</td><td>Inward-linkage - outreach enterprise support</td></tr>
<tr><td>Outward linkage – support to existing supplier's to access external markets, e.g. business plans, market surveys, financial support</td></tr>
<tr><td>Local infrastructure</td><td>Aligning project infrastructure with government infrastructure development plans/policies and other investments</td></tr>
<tr><td>Institution strengthening</td><td>Project-driven interaction with local government agencies aligned with government or donor institution strengthening programmes</td></tr>
<tr><td colspan="2">Off-Project</td></tr>
<tr><td>Employment</td><td>Job seeker service</td></tr>
<tr><td>Training</td><td>Technical and vocational training, alternative incomes training</td></tr>
<tr><td>Supplier support</td><td>Micro enterprise business support and finance</td></tr>
<tr><td>Local infrastructure</td><td>Unilateral or PPP infrastructure projects unrelated to contract - builds reputation of contractor with future clients / government</td></tr>
<tr><td>Institution strengthening</td><td>Support to local institutions to develop competencies and capacity</td></tr>
</table>

This report documents the application of the ESPF methodology, summarised in Figure 1. 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 – opportunities for enhancement in local economic and social performance – are discussed below.

Figure 1 – Economic & Social Performance Framework: Methodology Summary




## 3 Lessons Learned for Oil & Gas Developments in Low Income Countries

Timor-Leste is ranked 140 out of 177 countries by the United Nations in terms of its overall development. 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.

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.

## 3.1 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, infrastructural and financial inefficiencies that come from having many geographically dispersed supplies across a region seeking contracts with the same or similar clients. It also offers 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 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 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, directly or 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 Zimele 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.

### 3.2 Collaboration in a Skills and Enterprise Support Programme

Another type of initiative is for the lead contractor to start 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, i.e. 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 the 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 to 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.

### 3.3 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.

### 3.4 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.

## 4 Conclusions

### 4.1 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 a 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.

## 4.2 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.