Integrated Development of Timor Sea Gas: The National Interest Case

A Submission by

The Northern Territory Government
to
The Commonwealth Government

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Northern Territory Government

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Executive summary

This submission makes the case for the Commonwealth to take action, within its existing policy framework, which will ensure 20,000 petajoules (PJ) of natural gas located in the Timor Sea is developed in a way that:

- optimises the wealth creation and regional development opportunities that are presented by exploitation of these community owned gas resources;
- gives effect to the strategic investment policy objectives of the Commonwealth Government; and
- supports the national energy policy objectives, including security of supply, agreed by the Council of Australian Governments (COAG) on 8 June 2001.

These national interest outcomes would require that the Commonwealth should ensure that Bayu-Undan and Sunrise gas is developed with an integrated offshore pipeline network to Darwin, and that Sunrise is not developed by a floating LNG (FLNG) facility. Commonwealth Government intervention in the North West Shelf project, initially to facilitate development and more recently in relation to the proposed Shell-Woodside merger, has been crucial to maximising the national interest. The case for intervention in the Sunrise development is no less compelling.

The economic and policy arguments contained in this submission have been developed utilising ACIL Consulting's *GasMark* model to assess the implications for Eastern States gas markets of new gas supply from the Timor Sea. Further, the Centre for International Economics (CIE) has applied its integrated model of the Northern Territory and rest of Australia economies to assess macroeconomic impacts of investment and of new gas supply to Eastern States markets.

Wealth creation

The Northern Territory Government is not recommending that Timor Sea gas be reserved for domestic use. However, it is arguing that, if Sunrise gas is not piped to Darwin, the nation could forgo value-adding development and gas market competition opportunities worth at least $1,000 million per annum in additional wealth compared to the FLNG option.

The estimated **additional annual** national economic benefits of the integrated pipeline option over-and-above the FLNG option include:

- over $250 million in household consumption;
- $35 million in real investment, and between $700 million and $900 million per annum during the construction phase;
- $715 million in net exports;
- employment of 4,400 persons; and
- $110 million in government revenues.

In aggregate terms it is estimated that the integrated pipeline option will produce **annual** economic benefits of:

- an increase of 46% to the GSP of the Northern Territory (NT), and, for the whole of Australia, an increase of over $4,000 million in GDP;
- an increase in real investment in the NT economy of $82 million;
- net overseas exports from the NT of over $3,300 million;
- a permanent employment boost of 5,156 in the NT and almost double that figure for Australia;
- increased NT Government revenues of $27 million and Commonwealth revenues of $210 million.

Regional development

Clearly, both options would provide a massive boost to the Northern Territory economy. However, only the option of bringing Sunrise gas to Darwin has the advantage of securing the Northern Territory's future economic independence.

While there is access to natural gas to meet current low level demand, the Northern Territory is one of the few remaining regions without gas supplies sufficient to underpin economic development. Competitive gas supply will bring the direct benefits of investment in minerals and energy processing industries to initiate regional development. This will lead to the flow-on benefits of a knowledgeable and supportive local government, social and economic infrastructure, sophisticated and competitive service providers, a favourable community attitude, a strong local skills base, a healthy climate for small business and local research capacity tailored to the needs of industry.

Just as has taken place on the North-West Shelf, an ongoing cycle of investment will have been created. On the other hand, there can be no doubt that the FLNG facility would be developed, built and largely maintained for its full life outside Australia, and there are no additional gas supplies to sustain industry development in the Northern Territory.

National energy policy

Without Sunrise gas, a valuable option for enhancing upstream competition in Eastern States gas markets will be forgone and, from as early as 2008, gas resources may be insufficient to service those markets to:

- meet moderate growth in demand from household, commercial and industrial consumers;
- sustain significant growth in gas-fired electricity generation;
- hold gas prices at levels that would maintain international competitiveness; and
- sustain a reversal in greenhouse gas emission intensity. In fact, an FLNG only option for Sunrise gas does nothing to reduce Australian greenhouse gas emissions.

On the other hand, bringing Sunrise gas to Darwin can:

- remove impediments to the full realisation of the benefits of energy market reform by increasing gas supply and price competition;
- by delivering 100PJ of gas per annum to the eastern states gas market, guard against the risk that measures taken to promote the penetration of gas are not self-

defeating in that, in the absence of these extra resources, the measures may do no more than push up the price of gas to all users;

- deliver benefits to small and medium size business in regional Australia;
- underpin the Northern Territory's future economic independence; and
- save at least 7.3 million tonnes CO_2-equivalent/annum compared with the option of a FLNG development.

Strategic investment policy

Ensuring that Sunrise gas is delivered to Darwin currently represents the single most important strategic policy decision to be made by the Commonwealth under its Invest Australia initiative.

The strategic strength of ensuring that Sunrise gas is delivered to Darwin is that, in addition to meeting the investment incentive criteria used to assess projects, other national policy objectives are promoted. These objectives have a 'whole-of-government' scope, covering areas such as:

- energy policy;
- resource management policy;
- competition policy;
- regional development policy; and
- environment policy.

The options that will be lost with an FLNG development of Sunrise are of substantial value to the nation as a whole.

Resource management policy

The NT Adjacent Area Joint Authority has the responsibility under the Commonwealth's Petroleum (Submerged Lands) Act to ensure Sunrise and other Timor Sea gas resources within its jurisdiction are developed in a way that optimises the net economic benefits to the nation.

The options created by an offshore pipeline network do not diminish the LNG opportunities, yet at the same time they can deliver substantial additional national and regional benefits.

There must also be a concern that an FLNG development could compromise the full recovery of economic gas reserves. An FLNG facility provides the developer with a flexible capital investment that can be shifted to maximise commercial opportunities. In particular, in the later years of gas production, and given the international nature of the companies involved, undoubtedly opportunities could arise such that development of new gas fields outside Australia providing a greater return (not least through avoiding investing in a new facility) by using the existing FLNG.

In this way, the FLNG presents a risk to Australia's sovereign control of its natural resources — a risk that can be mitigated by ensuring the gas is connected by pipeline to Darwin, and that the LNG facility is located on Australian soil.

The Commonwealth must take decisive action

The Northern Territory appreciates that, in protecting the national interest, there needs to be recognition of proponents' commercial interests and priorities. The Northern Territory is not suggesting actions by government that would bring the investment climate in Australia into question.

Nevertheless, the Commonwealth Government has responsibility for promoting the national interest. For this reason the Northern Territory believes the Commonwealth must act to ensure Sunrise gas is delivered by pipeline to Darwin. The Commonwealth has demonstrated, for example through its decision to reject the proposed Shell acquisition of Woodside, strong leadership in national interest cases involving Australia's energy resources.

The Northern Territory Government understands that the achievement of these objectives requires a range of policy, statutory and administrative actions. These require discussion, and refining as discussion progresses, between the Territory and the Commonwealth at various levels. The Northern Territory Government stands ready to take part in such discussions on the basis of mutual co-operation.

2. Introduction

In the next few months, the actions of the Commonwealth Government will determine whether or not more than 20,000 petajoules (PJ) of natural gas located in the Timor Sea will be developed in the national interest. **Attachment 1** provides details of the gas resources and development options.

Currently, the proponents of the two largest gas resources in the Timor Sea apparently prefer independent, sub-optimal developments whereby:

- the Bayu-Undan resources (about 3,400PJ) will be transported via a small diameter pipeline (200PJ per annum capacity) to Darwin and processed principally for export in the form of LNG
  - up to 30PJ/annum would be dedicated to existing Darwin uses, including power generation;
- the Sunrise resources (about 9,200PJ) will be converted to LNG on a floating facility (FLNG) at the site of production and exported; and
- the prospects for exploitation of the remaining resources (currently over 7,000PJ), plus any further discoveries, will remain in limbo.

The Northern Territory Government submits that the national interest will be better served by the Commonwealth Government ensuring commercial development that allows for integrated offshore and onshore pipeline options, without compromising the prospects for LNG exports, resulting in:

- the Bayu-Undan resources being transported to Darwin to be processed principally for export in the form of LNG
  - again, around 30PJ/annum would be dedicated to Darwin, including power generation;
- the Sunrise resources being transported to Darwin to meet a range of customer demands
  - LNG for export
  - natural gas for development of a Darwin based regional hub of value adding industries, including aluminium smelting, a range of petrochemicals options (chemical industry feedstock; methanol; alternative transport fuels) and fertiliser manufacture
  - natural gas to replace fuel oil and drive expansion of Gove alumina refinery
  - natural gas to increase competition and replace declining reserves dedicated to Eastern States markets; and
- the establishment of an offshore pipeline network will enhance the prospects for exploitation of the remaining Timor Sea gas resources.

The principal difference between the competing options is the way in which the gas resources of Sunrise and resources under sole Australian jurisdiction are exploited in the national interest. Under both options, the development of Bayu-Undan remains the same. In the case of Sunrise, the impacts on East Timor of different development options have not been determined.

This submission makes the case for the Commonwealth to take action, within its existing stated policy framework, to ensure Timor Sea gas development that:

- optimises the wealth creation and regional development opportunities that are presented by exploitation of these community owned gas resources;
- gives effect to the strategic investment policy objectives of the Commonwealth Government; and
- supports the national energy policy objectives, including security of supply, agreed by the Council of Australian Governments (COAG) on 8 June 2001.

To be convinced of the enormous national benefits to be gained by maximising the future options for exploiting the Timor Sea gas resources, the Commonwealth Government need look no further than the success of the integrated development of the North West Shelf gas resources for domestic and export markets in the national interest. Commonwealth Government intervention in the North West Shelf project, initially and more recently, has been crucial to maximising the national interest.

The options for supply of gas to domestic national and regional markets must be realised through piping Sunrise natural gas to Darwin.

3. Meeting COAG energy policy objectives

Box 1: Key messages for national energy policy

Without Sunrise gas, a valuable option for enhancing upstream competition in Eastern States gas markets will be forgone and, from as early as 2008, gas resources may be insufficient to service those markets to:

- meet moderate growth in demand from household, commercial and industrial consumers;
- sustain significant growth in gas-fired electricity generation;
- hold gas prices at levels that would maintain international competitiveness; and
- sustain a reversal in greenhouse gas emission intensity
  - in fact, an FLNG only option for Sunrise gas does nothing to reduce Australian greenhouse gas emissions.

The Northern Territory Government is not recommending that Timor Sea gas be reserved for domestic use. However, it is arguing that, if Sunrise gas is not piped to Darwin, the nation will forgo value-adding development and gas market competition options worth at least $1,000 million per annum in additional wealth compared with the FLNG option.

It is also arguing that the Northern Territory's future economic independence could be secured by bringing Sunrise gas to Darwin.

At its meeting on 8 June 2001, COAG agreed to the national energy policy objectives of:

> "encouraging efficient provision of reliable, competitively-priced energy services to Australians, underpinning wealth and job creation and improved quality of life, taking into account the needs of regional, rural and remote areas;
>
> encouraging responsible development of Australia's energy resources, technology and expertise, their efficient use by industries and households and their exploitation in export markets; and
>
> mitigating local and global environmental impacts, notably greenhouse impacts, of energy production, transformation, supply and use."[1]

COAG's objectives were underpinned by the following observations:

> "COAG noted key strategic issues for Australia's energy future, including the important emerging role gas will play in any national energy policy because of its domestic abundance and flexibility and it is a clean energy source."
>
> "Australia is well endowed with fossil and renewable energy resources and has strong capabilities across a wide range of energy technologies. However, this resource availability and technological capacity is not sufficient, in itself, to guarantee future secure, reliable and competitively priced provision of energy services to business and the community. Australia can be expected to remain substantially reliant on its fossil fuel supplies for energy needs for the foreseeable future. Efficient energy markets and an effective policy framework are needed to reduce investment uncertainty, facilitate infrastructure development, encourage the development and uptake of alternative, environmentally friendly energy services and facilitate more efficient use of energy throughout the economy. Sound decision-making processes, both in industry and government, contribute to the achievement of effective and efficient energy markets."

To facilitate "sound decision-making processes" in government, among other things, COAG decided to undertake a strategic review. Specifically,

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1 COAG media release, 8 June 2001.

> "The high-level review would identify the strategic issues for Australian energy markets and the policies required from Commonwealth, State and Territory Governments to allow further market development to focus on areas likely to generate the most significant benefits, including the wider penetration and uptake of natural gas."

The remainder of this section of the submission establishes the fundamental significance of Timor Sea gas to four of the six priority strategic issues being addressed by the Review, namely:

- impediments to the full realisation of the benefits of energy market reform;
- regional and small business benefits from energy market development;
- greenhouse gas emission reduction; and
- encouraging wider penetration of natural gas.

3.1 Impediments to the full realisation of the benefits of energy market reform

Over the last ten years, very significant progress has been made on reforming energy markets, particularly petroleum, electricity and gas markets. Nevertheless, a great deal is yet to be done, and undone, before the ultimate goal is reached for consumers — namely, reform that promotes full competition across the widest range of energy services.

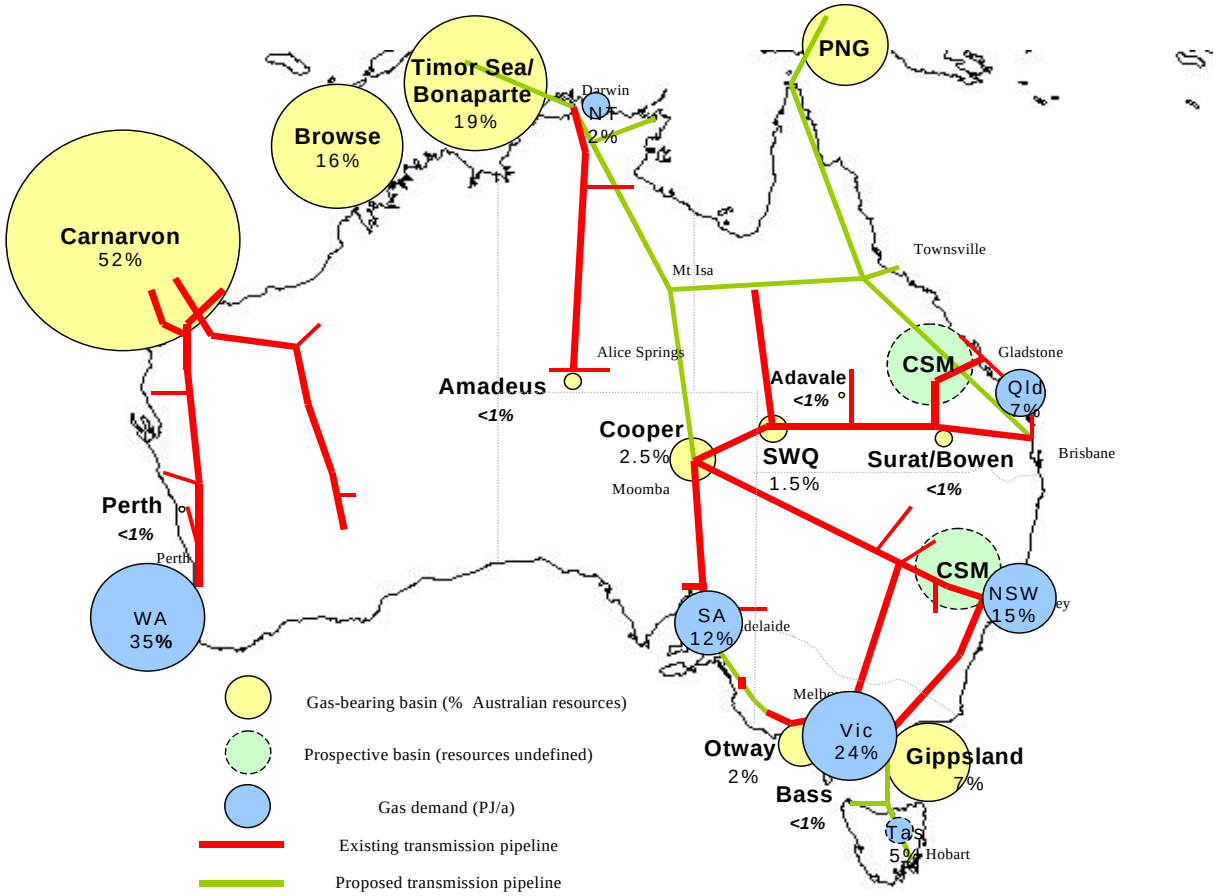
It is not the intention in this submission to identify all the impediments about which the Northern Territory Government has concerns. Rather, in relation to the reform of the natural gas segment of energy markets, the Northern Territory Government brings attention to two fundamental impediments to the full realisation of benefits:

- the absolute amount of natural gas resources available to meet Eastern States demand; and
- competition in natural gas supply.

Figure 1 is a familiar depiction of the distribution of the nation's abundant natural gas resources. It clearly demonstrates the dilemma that around 87% of the resources are located either offshore Western Australia or in the Timor Sea, and these resources are not linked by pipeline to over 60% of Australia's demand which is located in the Eastern States. However, it also obscures two important facts that have the potential to impede the role Timor Sea gas might otherwise play in delivering benefits to Eastern States consumers:

- the prospectivity for discovery of additional gas resources in basins linked to the Eastern States markets is relatively low compared with that of the Timor Sea — meaning that, once offshore infrastructure is in place, scarce exploration investment dollars will be increasingly attracted to the Timor Sea; and
- if the offshore infrastructure does not include a network of pipelines to Darwin with substantial, flexible capacity, the option that Timor Sea gas might play a role in meeting national energy policy objectives will be lost.

Figure 1: Gas resources and pipelines of Australia



Source: ACIL Consulting

To demonstrate the importance of the potential gas supply issues facing Eastern States markets, the Northern Territory Government commissioned ACIL Consulting to use its GasMark model to assess the implications of the availability or otherwise of Timor Sea gas (a copy of the ACIL report is enclosed with this submission). ACIL was asked to model two major scenarios:

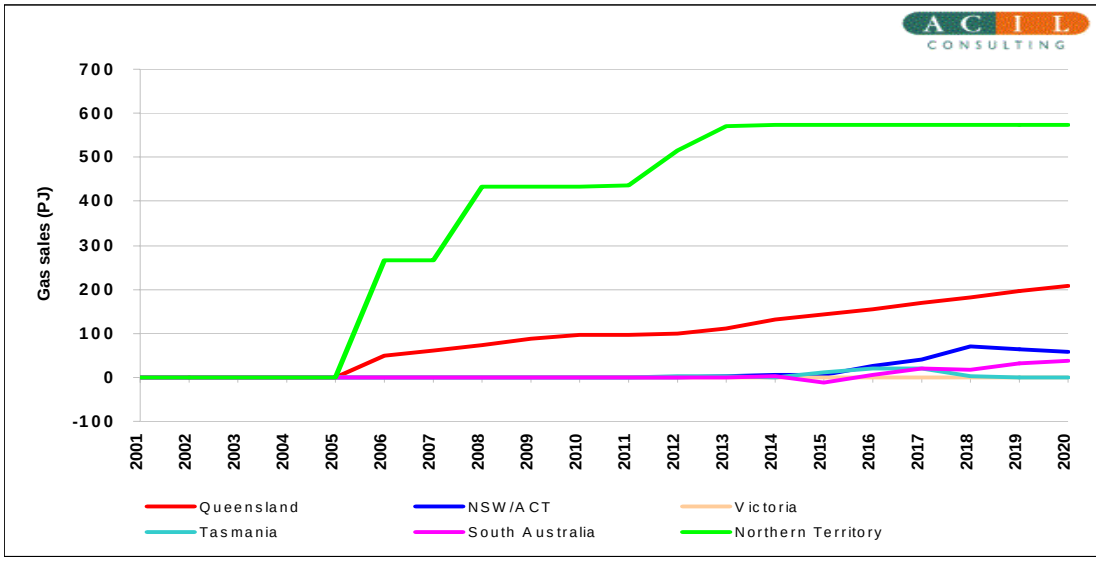
- Scenario A where Bayu-Undan gas is piped to Darwin and Sunrise gas is developed by FLNG (see Attachment A1.2); and
- Scenario B where both Bayu-Undan and Sunrise gas are piped to Darwin (see Attachment A1.3).

In relation to the amount of gas available for Eastern States markets, the ACIL modelling presents a conservative case with respect to potential benefits from Sunrise gas. In particular, it is assumed that PNG gas enters the Queensland market in 2006.

Figure 2 shows three effects on gas markets from the modelling. First, there is a substantial growing of the Northern Territory market (of which 330PJ is processed into LNG) by bringing Timor Sea gas to Darwin. Second, the supply of Sunrise gas (to Mt Isa) and PNG gas to the rest of Queensland has the same effect — the size of the market grows as

competitively priced gas stimulates new industry. Finally, from around 2012, surplus Sunrise gas begins to grow the Southern State markets.

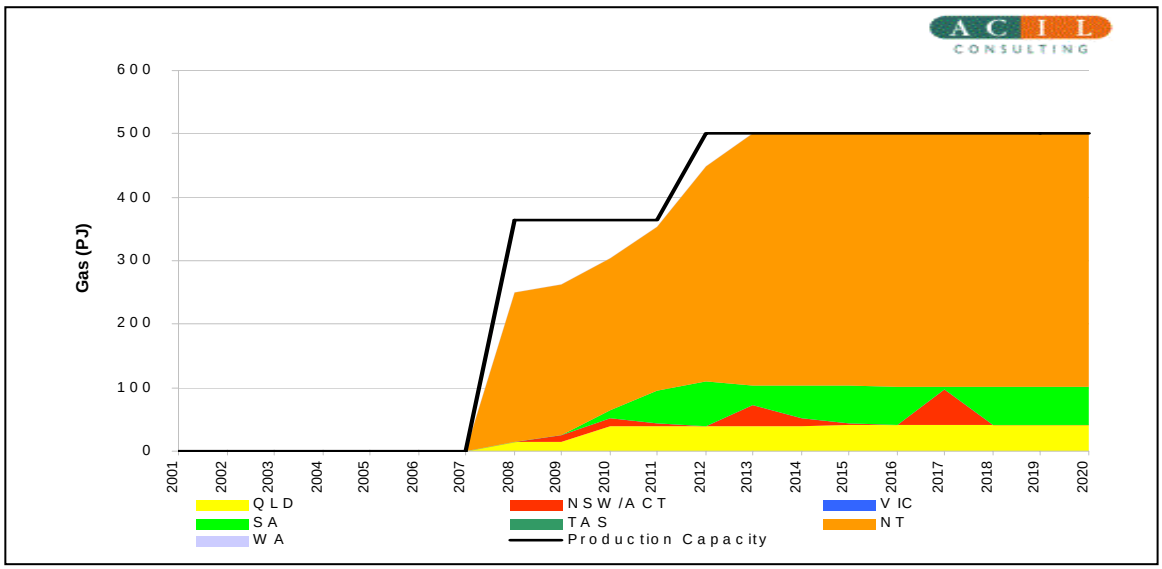
Figure 2: Impact of Timor Sea and PNG gas on Eastern States markets



Of course, Sunrise gas begins to apply competitive pressure to all markets from 2008. As shown in Figure 3, there will be deliveries of around 100 PJ/year into interstate markets:

- deliveries to Queensland (Mount Isa market) commence at approximately 14 PJ/year in 2008 and 2009, rising to around 40 PJ/year from 2010;
- substantial quantities of up to 61 PJ/year are consumed in South Australia from 2010; and
- variable quantities of up to 57 PJ/year are delivered into New South Wales and the Australian Capital Territory from 2009.

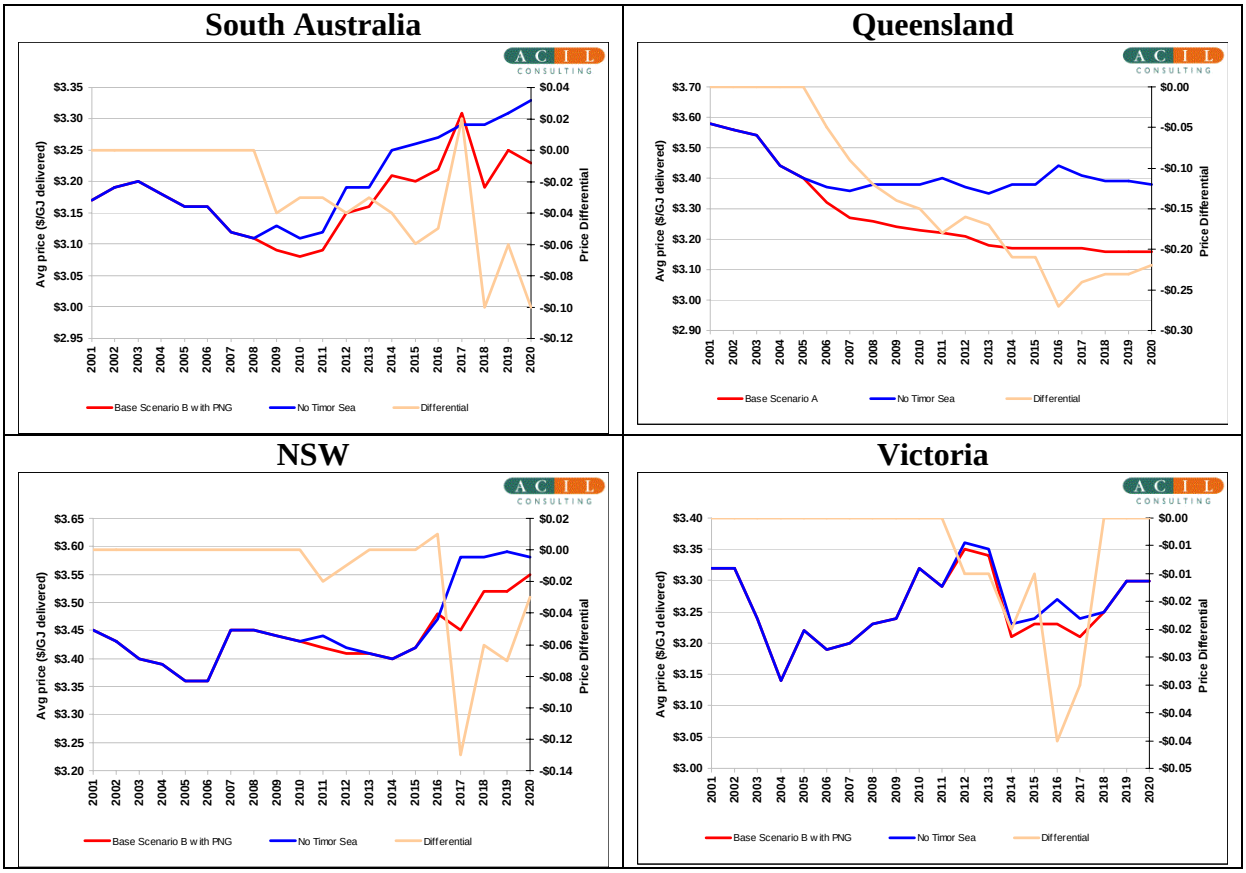
Figure 3: Sunrise Production for Scenario B



The ACIL modelling was also instructive in relation to the second fundamental issue associated with Timor Sea gas and delivery of the full benefits of market reform — that of competition in the supply of the Eastern States gas markets.

Figure 4 shows that Queensland and SA consumers receive lower average gas prices of up to 9c/GJ[2] and 10c/GJ, respectively, because of the availability of Sunrise gas at up to 100PJ/annum. NSW/ACT consumers also benefit significantly, although not until later in the next decade. Victorian consumers also enjoy some benefit, although the benefit is limited because they continue to have the lowest gas prices in Australia throughout the period.

Figure 4: Impact of Sunrise gas on Eastern States gas prices



These results take account of PNG gas being delivered into Queensland by 2006. One of the key messages the Northern Territory Government wishes to emphasise is that Timor Sea gas can play a competitive and complementary role with PNG gas in Eastern States markets without undermining the role PNG gas can play in eastern Queensland markets.

2 Queensland gas prices are up to $0.25/GJ cheaper, however, around $0.16/GJ is attributed to PNG gas.

3.2 Regional and small business benefits from energy market development

As COAG has recognised, any long-term assessment of the competitiveness of Australian industry and its regional economies reveals that supply of natural gas must be an important element of the energy mix.

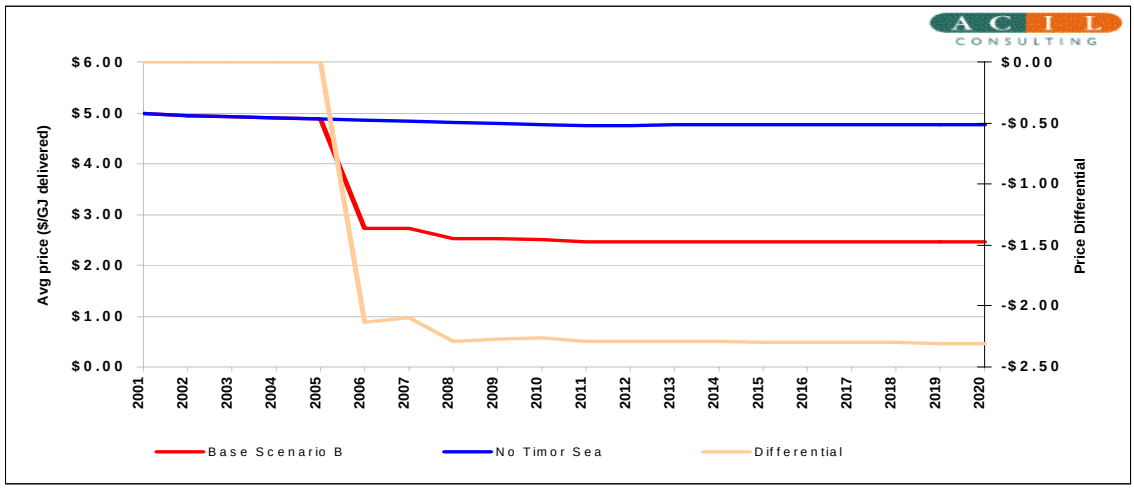
Darwin and the central/northern coast of Queensland are the major remaining regions in Australia without substantial gas supply. While both have access to gas to meet current low-level demand, neither one has gas supplies sufficient to underpin economic development.

The minerals and energy processing industries of the Pilbara and South-west regions of Western Australia and the central coast of Queensland attest to the economic development impetus flowing from a sustainable, low cost energy source. Studies, including those associated with Industry Action Agenda's promoted by the Commonwealth Government, have revealed that business leaders regard competitively priced and reliable energy supply as the most important factor explaining business location decisions — followed by the quality of infrastructure and government policy.

However, while the direct benefits of these industries are important to initiate regional development, it is the raft of follow-up developments that are the key. The initial resource projects underwrite significant infrastructure development, the establishment of synergistic manufacturing industry and the development of a services sector providing a comprehensive range of activities locally. The result is that the attractiveness of the regions to minerals processing location is now based on a wider range of attributes than those that attracted the initial investments. These include knowledgeable and supportive local government, social and economic infrastructure, sophisticated and competitive service providers, a favourable community attitude, a strong local skills base and local research capacity tailored to the needs of industry. These developments have reduced the costs for those establishing and operating businesses of all types in these regions.

To illustrate the impact on Northern Territory gas prices should Sunrise gas be delivered to Darwin, ACIL's GasMark model makes the estimates shown in Figure 5 (as represented by Scenario B). The Northern Territory businesses and citizens are major beneficiaries of lower prices, with average price reductions of around $2.30/GJ.

Figure 5: Average real delivered gas price and price differential for NT



The economic implications for the Northern Territory of bringing Sunrise gas to Darwin versus an FLNG development have been modelled by the Centre for International Economics. For both options, the modelling separately assessed the benefits from substantial capital expenditure during the construction phase to 2007 and the annual benefits of the operations phase from 2008. The additional benefits provided by bringing the gas to Darwin are summarised in Table 1 (additional benefits to the nation as a whole are reported in **sub-section 4.2**).

Clearly, both options would provide a massive boost to the Northern Territory economy. However, the option of bring Sunrise gas to Darwin has two significant long-term advantages for the Territory and its future development:

- the additional annual wealth as reported in Table 1; and
- the ongoing investment possibilities that only the gas to Darwin option can offer.

It is important to recognise that the modelling of the Sunrise gas to Darwin option includes only those LNG, aluminium smelter, southern pipeline and Gove conversion projects that would take place in the period to 2007 — with offshore and onshore investment totalling $14.65 billion. By 2012, there would very likely be at least a further $2 billion invested in petrochemicals and ammonia/urea projects in Darwin and in Gove expansion — and perhaps an additional $1 billion in offshore developments. Just as has taken place on the North-West Shelf, an ongoing cycle of investment will have been created to sustain the Northern Territory's future economic independence.

Table 1: Additional economic benefits to theTerritory from the gas to Darwin option

Economic indicator	Construction phase		Operations phase annual benefits
	2002-04(a)	2005-07(a)	
Gross State Product, including	$113.7m	$126.1m	$810.1m
Real investment	$890.2m	$712.6m	$34.2m
Household consumption	$50.4m	$63.6m	$115.8m
Net exports (imports) to other States	($244.4m)	($324.8m)	$5.8m
Net exports (imports) overseas	($557.9m)	($318.8m)	$651.6m
Employment (full-time equivalents)	2,179	1,488	1,892
NT Government revenue	$5.3m	$5.6m	$9.6m

Source: CIE (a) Three year annual average.

3.3 Greenhouse gas emission reduction

The Northern Territory Government supports investment in Australian LNG projects from an environmental perspective because:

- the issues associated with greenhouse gas emissions are global, and increased use of Australian LNG is part of the global solution; and

- economic development and growth in Australia associated with LNG projects provides high value added income and jobs for Australians at a greenhouse gas emission intensity that is significantly lower than growth based on electricity generation or direct use of oil and coal products.

Nevertheless, production and conversion of natural gas to LNG involves greenhouse gas emissions against which Australia would be liable to acquit its 'assigned amount', or credits and units from sinks and the 'flexibility mechanisms'[3], under the Kyoto Protocol. In this respect, LNG projects represent a 'second best' outcome for Australia and the world.

Far better outcomes, in terms of supporting economic growth at lower emissions intensity, involve bringing Sunrise gas to Darwin so that LNG exports can proceed in conjunction with:

- development of new aluminium smelting capacity based on gas-fired electricity generation in Darwin in preference to the same capacity based on black coal-fired generation in Australia or overseas
  - at 75PJ/annum, the greenhouse gas emission savings are at least 4.1 million tonnes CO_2-e/annum;
- conversion of Gove alumina refinery from fuel oil to gas for a saving of 0.4 million tonnes CO_2-e/annum;
- delivery of 100PJ/annum of gas to Eastern States energy markets, up to half of which could substitute for coal-fired electricity with saving of 2.8 million tonnes CO_2-e/annum; and
- later development of a range of value adding industries based on gas (gas to liquids and fertilisers) with relatively low emissions intensity.

In total, bringing Sunrise gas to Darwin should save at least 7.3 million tonnes CO_2-e/annum compared with the option of a FLNG development.

3.4 Encouraging the wider penetration of natural gas

COAG identified as a priority issue "means of encouraging the wider penetration of natural gas" because it recognised the importance of:

- promoting upstream gas competition; and
- the link between natural gas and the continued growth in Australia of competitive value adding minerals processing in a greenhouse gas emissions constrained world.

This submission has already demonstrated the role Timor Sea gas can play to ensure this priority issue becomes more than mere rhetoric. Indeed, measures taken to promote penetration of gas on the demand side without securing adequate long-term supply of gas will do no more than push up the price of gas to all users, thereby defeating the policy intent of wider penetration.

As demonstrated above in **sub-section 3.1**, 100PJ/annum of Timor Sea gas competing in Eastern States markets could lower average gas prices by up to $0.10/GJ — and by $2.30/GJ in Darwin. The associated national and regional economic benefits to all consumers —

3 Flexibility mechanisms include international emissions trading, Joint Implementation and the Clean Development Mechanism.

households, small business and industry — are considerable, extending to the attraction of investment in new enterprises.

The importance of Timor Sea gas to generate wealth in the Darwin region through growth in value adding industry has been demonstrated in **sub-section 3.2**. There is further discussion of this priority issue in terms of national outcomes in **section 4** below.

4. Giving effect to strategic investment objectives

Box 2: Key messages for strategic investment policy

Ensuring that Sunrise gas is delivered to Darwin would represent the single most important strategic policy decision made to date by the Commonwealth under its Invest Australia initiative. Whereas FLNG closes options, a network of offshore pipelines to Darwin creates options that enhance:

- value adding investment in Australia that may be lost overseas, including in as yet unidentified opportunities;
- net national economic benefit, not simply in the form of the investment itself but, perhaps more importantly, in the form of greater competition in Eastern States gas markets;
- development aspirations in the Darwin region;
- greenhouse gas abatement policy objectives; and
- Australia's competitive advantage

without:

- compromising LNG exports;
- the need for ongoing subsidy; and
- the need for ongoing assessment of, and assistance to, individual downstream projects.

The ongoing economic development of regional Australia is a high priority for the Commonwealth Government. Demonstration of this commitment was a key reason behind the establishment of Invest Australia as the Government's national investment promotion and facilitation agency.

Invest Australia manages a range of initiatives some of which are described in Box 3. These initiatives are enlightened by the Commonwealth's recognition that there is global competition for investment, and by the demonstrated regional and national benefits that accrue from building upon Australia's comparative advantage in, for example, energy intensive, minerals processing industry.

While the measures described in Box 3 may, to the casual observer, suggest a narrow project-by-project approach to investment policy, the Northern Territory Government is aware that the Commonwealth has a far more sophisticated strategic focus.

There will be few opportunities of the scale presented by the Timor Sea gas developments that give full scope to this strategic focus.

The strategic strength of ensuring that Sunrise gas is delivered to Darwin is that, in addition to the investment incentive criteria used to assesses projects (which are addressed below), other national policy objectives are promoted. These objectives have a 'whole-of-government' scope, covering areas such as:

- energy policy;
- resource management policy;
- competition policy;
- regional development policy; and
- environment policy.

The options that will be lost with an FLNG development of Sunrise are of substantial value to the nation as a whole.

In addition, by facilitating a significant element of multi-user infrastructure in the form of a major offshore pipeline network, through Invest Australia the Federal Government could in a single, one-off decision:

- provide assistance to gas producers and domestic consumers, without limiting LNG exports;
- provide assistance without the need for ongoing subsidy; and
- avoid the need to assess all opportunities, whether gas supply or major new gas user, on a project-by-project basis.

Box 3: Invest Australia selected programs

"Major Project Facilitation

Invest Australia facilitates new investment by providing you with a single contact point within the Commonwealth Government.

Tailoring the Major Project Facilitation program to address the nature and complexity of your project, Invest Australia can provide you with information, advice and support to achieve prompt decisions on necessary government approvals.

Facilitating relationships with key Commonwealth agencies and the State Government involved in approvals processes for your project, Invest Australia will also identify areas where government assistance may be available. This includes: immigration; local procurement; customs concessions; and R&D assistance. Information on other relevant issues, for example on matters such as taxation and competition policy, can also be provided by Invest Australia."

"Strategic Investment Coordination

The Australian Government will consider the provision of investment incentives to strategic investment projects in limited and special circumstances where the project would generate significant net economic and employment benefits for Australia.

The importance of regional development to Australia and the impact of the Government's broader taxation reforms will also be taken into consideration when assessing projects for incentives.

Incentives include grants, tax relief or the provision of infrastructure services. Incentives are considered on a case-by-case basis, taking into account a published set of eligibility criteria."

"Regional Investment

Invest Australia recognises the importance of securing private sector investment to ensure sustainable economic development in regional Australia and has established a team dedicated to the facilitation and attraction of investment into regional areas.

The Regional Australia Investment team, in partnership with State and Territory agencies, works with communities to encourage institutional investors, venture capitalists and/or project financiers to invest in regional Australia.

Invest Australia has prepared an innovative business tool, Inside Intelligence: Building an Investors' Guide, to assist rural and regional towns develop their own investment attraction strategies. The Guide also assists communities to identify and compile an information database of their existing strengths and resources – it empowers communities to seek out and achieve their full potential."

When considering recommending that the Commonwealth Government provide incentives to new projects, the Strategic Investment Coordinator has regard to a number of criteria. In addition to the strong strategic case already made above in terms of national policy objectives, the case for ensuring Sunrise gas is delivered to Darwin also meets these new project incentive criteria.

4.1 Investment might otherwise be lost overseas

There are three key arguments for providing incentives to support Darwin as Australia's fourth hub for gas-based resource processing industry:

- commercial North-West Shelf gas reserves are fast becoming fully contracted to new onshore and LNG customers, and unless new gas resources can be delivered onshore to guarantee the 20 year contracts that are necessary to support new processing projects, Australia is likely to miss out on significant new investment. The gas resources of the Timor Sea can provide the reliable and secure supplies that are necessary;
- the FLNG option represents a significant loss of investment to Australia. There can be no doubt that the FLNG facility would be developed, built and largely maintained for its full life outside Australia, and that it may well be used in its 'second life' to support development of gas resources in competition to Australian resources. Bringing the gas onshore will not only lead to the sourcing of more goods and services in Australia for the LNG plant (past experience would suggest at least 25% of capital expenditure), as already argued it also opens up options for considerable investment in new downstream minerals processing projects in Darwin;
- an integrated offshore pipeline network will enhance the viability of other, currently less commercial, gas resources in the Timor Sea and will promote additional exploration investment that would otherwise not take place; and
- bringing gas onshore in Darwin will provide a new source of supply to the Eastern States, promoting lower gas prices to all consumers and generally supporting competitiveness for all business leading to greater investment opportunities.

4.2 Generate net national economic benefits

The Centre for International Economics has modelled the national economic implications of bringing Sunrise gas to Darwin versus an FLNG development. For both options, the modelling separately assessed the benefits from substantial capital expenditure during the construction phase to 2007 and the annual benefits of the operations phase from 2008. The additional net national benefits expected by bring the gas to Darwin, over and above those from the FLNG option, are summarise in Table 2.

The option of bringing Sunrise gas to Darwin is estimated to deliver additional annual:

- national wealth, as measured by GDP, of over $1,000 million;
- employment of 4,400 full-time equivalents; and
- government revenue of $110 million, of which $100 is collected by the Commonwealth.

These are conservative estimates since they do not include expansion of Gove or the inevitable follow-up developments in petrochemicals and fertiliser projects that will emerge once Darwin is established as a regional hub for gas-based minerals processing.

Table 2: Additional national economic benefits from the gas to Darwin option

Economic indicator	Construction phase		Operations phase annual benefits
	2002-04(a)	2005-07(a)	
Gross Domestic Product, including	$283.8m	$330.1m	$1021.3m
Real investment	$890.2m	$712.6m	$35.1m
Household consumption	$112.3m	$168.6m	$256.9m
Net exports (imports) overseas	($698.4m)	($545.2m)	$715.2m
Employment (full-time equivalents)	5,613	3,025	4,408
Government revenue	$89.7m	$108.7m	$110.4m

Source: CIE (a) Three year annual average.

4.3 Generate regional benefits

The very significant regional benefits have been described in detail in **sub-section 3.2** above. Again the CIE modelling is conservative because it does not include likely later development investment.

Not unexpectedly, the CIE modelling shows net national benefits — in terms of household consumption, real investment and employment — significantly greater than the regional benefits. This is because the Northern Territory economy is relatively undeveloped in terms of providing goods and services to minerals processing construction projects and operations. While this is likely to be the case in the first round of investments, over time the operations could be fully serviced out of the Northern Territory and new investment will leverage off the 'capacity building' that will occur in Darwin.

4.4 Investment that is commercially viable without ongoing subsidy

The central commercial issue for the proponents of the Sunrise development can only be that the FLNG option has net cost advantages over building and operating a pipeline to Darwin. This is a common infrastructure issue, not unlike that recently addressed for new petrochemicals projects in the North-West Shelf region, and which lends itself to resolution without the need for ongoing subsidy.

The proponents have not yet shared the relative costs and benefits of alternative development options with the Northern Territory Government. Consequently, the specific nature of the infrastructure incentives that may need to be considered by the Commonwealth cannot be assessed at this time.

4.5 Other criteria

The arguments already made in this submission support the remaining criteria that incentives to ensure Sunrise gas is delivered to Darwin would:

- complement Australia's areas of competitive advantage, particularly in value adding mineral processing;
- be open to foreign and domestic investors;

- take into consideration the availability of other assistance from the Commonwealth or State and Territory governments; and
- be consistent with our international obligations, including under WTO.

4.6 Incentives provided by Australia's competitors

Attachment 2 of this submission highlights the incentives being offered by Australia's immediate competitors in the Asian region markets for processed minerals. The Northern Territory believes Australia must meet the challenge being held out by these competitors.

5. Resource Management Policy

Box 4: Key messages for the NT Adjacent Area Joint Authority

The NT Adjacent Area Joint Authority has the responsibility under the Commonwealth's Petroleum (Submerged Lands) Act to ensure Sunrise and other Timor Sea gas resources within its jurisdiction are developed in a way that optimises the net economic benefits to the nation. The evidence in this submission demonstrates that this responsibility may only be met by the Joint Authority exercising its powers under the Act to ensure that these gas resources are delivered to Darwin via an offshore pipeline network.

5.1 Petroleum legislation issues

Development of the Sunrise gas resources requires, among other things, the award of a production licence (and pipeline licence) by the Northern Territory Adjacent Area Joint Authority (the Joint Authority) under the Commonwealth's Petroleum (Submerged Lands) Act (PSLA). The Joint Authority consists of the Commonwealth Minister for Industry, Tourism and Resources and the Northern Territory Minister for Business, Industry and Resource Development, or their delegates[4]. Because only 20% of the Sunrise gas resource is in Area A of the Zone of Cooperation (and will therefore also require development approval by the Australia-East Timor Joint Authority), the principal decisions rest under the PSLA.

While the PSLA does not have an explicit statement as to its objectives, a recent review against competition policy principles for the Australian and NZ Minerals and Energy Council[5] is instructive as to how the Joint Authority should carry out its responsibilities in approving development proposals. This review was conducted by a committee that included the Commonwealth and Northern Territory delegates of the NT Adjacent Area Joint Authority.

In terms of the underlying rationale for the legislation, the review asserted that

> "the nation's sovereign rights over offshore petroleum resources are an asset of the whole community and governments have a 'stewardship' role in managing the discovery and extraction of those resources…" and
>
> "The Review Committee also notes that the Crown is the entity with rights under international law to exploit the resources."

Consistent with this rationale, the review agreed a broad statement of objective

> " The objective of the PSLA is to provide a licensing and regulatory regime to enable exploration, development and production of petroleum resources within Australia's marine jurisdiction so that the net economic benefits of the resources to the nation are optimised."

In defining how "net economic benefits" might be optimised, the review rejected an approach whereby only proponents would dictate development options. The review noted at least three reasons why the Joint Authority might require a development option that, while providing an

4 Note: where there is not consensus within the Joint Authority, the Commonwealth's view prevails.

5 *Review of the Petroleum (Submerged Lands) Act Against Competition Policy Principles*, Final Report to ANZMEC by the Review Committee, August 2000.

outcome that is fair in terms of balancing private and public interests, differs from that initially proposed by the proponent:

- market failures can occur, including that proponents might choose development options that result in anti-competitive behaviour in domestic gas markets;
- differences between public and private assessments about the future value of the resources (generally captured by different discount rates); and
- there may be broader national benefits, such as downstream industry opportunities and regional development, that governments have the responsibility for taking into account.

5.2 Optimising the benefits of resource development: the way forward

The evidence already presented in this submission is sufficient to demonstrate to the Joint Authority that optimising the net economic benefits from exploitation of the community's gas resources in the Timor Sea will not be achieved by FLNG development of Sunrise. The options created by an offshore pipeline network do not diminish the LNG opportunities, yet at the same time they can deliver substantial additional national and regional benefits.

In addition to these arguments, there must also be a concern that an FLNG development could compromise the full recovery of economic gas reserves. An FLNG facility provides the developer with a flexible capital investment that can be shifted to maximise commercial opportunities. In particular, in the later years of gas production, and given the international nature of the companies involved, undoubtedly opportunities could arise such that development of new gas fields outside Australia providing a greater return (not least through avoiding investing in a new facility) by using the existing FLNG.

In this way, the FLNG presents a risk to Australia's sovereign control of its natural resources — a risk that is avoided by ensuring the gas is connected by pipeline to Darwin.

The Northern Territory Government understands that the achievement of these objectives requires a range of policy, statutory and administrative actions. These require discussion, and refining as discussion progresses, between the Territory and the Commonwealth at various levels. The Northern Territory Government stands ready to take part in such discussions on the basis of mutual co-operation.

Attachment A1. Resources and development options for Timor Sea Gas

A1.1 Timor Sea gas resources

Table 3 provides information on the gas projects, resources and ownership of the Timor Sea.

Table 3: Ownership and gas resources of the Timor Sea

Gas Project	Gas resource (,000 PJ)	Ownership	
Bayu-Undan	3.4	Phillips Petroleum (operator)	58.6%
		Santos	11.8%
		Inpex	11.7%
		Kerr-McGee Corp	11.2%
		Agip	6.7%
Sunrise	9.2	Woodside Energy Limited (operator)	33.44%
		Phillips STL Pty Ltd	30%
		Shell Development (Australia) Pty Ltd	26.56%
		Osaka Gas Australia Pty Ltd	10%
Evans Shoals	6.6	Shell Development (Australia) Pty Ltd (operator)	50%
		Natural Gas Australia Ltd	40%
		Osaka Gas Pty Ltd	10%
Petrel	1.2	Santos Ltd and related companies (operator)	95%
		Origin Energy Bonaparte Pty Ltd	5%
Tern		Santos Ltd and related companies (operator)	100%

A1.2 FLNG development option

Table 4 sets out the products and capital investment arising from a FLNG development of Sunrise gas. In the case of Bayu-Undan, this is identical to the option recommended by the Northern Territory Government. In the case of Sunrise, the FLNG development is being presented by Shell as the preferred option.

The following corresponds to Scenario A in the gas market and macroeconomic modelling.

Table 4: FLNG development option

Project Development	Gas PJ/annum	Total Liquids in Field mmbbls	Investment A$Million	Product
PRODUCTION				
Bayu-Undan - gas field	195	0	2,700	Natural gas to shore
Bayu-Undan - condensate	0	400		Condensate/LPG for export
Sunrise - gas field	275		1,500	Natural gas offshore
Sunrise - condensate		320		Condensate/LPG for export
Pipeline to shore (B-U only)			1,200	26"
CONSUMPTION				
Floating LNG (Sunrise gas)	-275		5,500	Export of gas (5mtpa)
Onshore LNG (Bayu-Undan gas)	-165		2,000	Export of gas (3mtpa)
NT grid (Bayu-Undan gas)	-30		0	Electricity (substitution)
Balance	*0*	*720*	*12,900*	

A1.3 Integrated development option

Table 5 sets out the products and capital investment arising from the integrated development of Timor Sea gas. This is the development option that the Northern Territory Government recommends to the Commonwealth as most likely to deliver outcomes that will optimise the national interest.

The following corresponds to Scenario B in the gas market and macroeconomic modelling.

Table 5: Integrated development option

Project Development	Gas PJ/annum	Total Liquids in Field Mmbbls	Investment A$Million	Product
PRODUCTION (2006)				
Sunrise - gas field	365		2,000	Natural gas to shore
Sunrise - condensate		320		Condensate/LPG for export
Bayu-Undan - gas field	195		2,700	Natural gas to shore
Bayu-Undan - condensate	0	400		Condensate/LPG for export
Pipeline to shore (Networked)			2,000	B-U 26",Sunrise 36",Shared 36"
CONSUMPTION				
Onshore LNG - Plant 1	-165		2,000	Export of gas (3mtpa)
Onshore LNG - Plant 2	-165		1,000	Export of gas (3mtpa)
Aluminium smelter and power	-75		3,450	Aluminium (0.468mtpa)
NT grid	-30		0	Electricity (substitution)
Gas to Gove	-25		200	Electricity (substitution)
Interstate Pipeline			1,300	
Interstate gas sales	-100			Sales gas to Mt Isa and Moomba
Balance	*0*	*720*	*14,650*	
ADDITIONAL PRODUCTION (from 2012)[6]				
New gas field or Sunrise extension	136		800	Natural gas to shore
Pipeline Link (if necessary)			300	26"
CONSUMPTION				
Gas to liquids plant - Plant 1	-55		750	For export/domestic (1.5mtpa)
Gas to liquids plant - Plant 2	-55		750	For export/domestic (1.5mtpa)

6 This additional production is included in the *GasMark* modelling, but not the CIE economic modelling.

Ammonia/Urea Plant	-26		577	Exports/domestic (0.31mtpa)
Balance	*0*	*0*	*3,177*	

Attachment A2. Incentives offered by other countries

The following tables identify some of the tax incentives and infrastructure assistance offered by other countries.

Table 6: Taxation and financial assistance

	SINGAPORE	**MALAYSIA**	**INDONESIA**
Company Tax **Standard rate** **Special rates**	26 percent Pioneer status: 5-10 year tax holiday, or 50 percent investment allowance Development & Expansion incentive: 15 percent rate for 10 years	34 percent Pioneer firms: 30 percent for 5 years; 15 percent in petrochemical regions Strategic projects: tax holiday of up to 10 years, or 60-80 percent investment allowance	30 percent Newly established companies: tax incentives negotiated case by case (e.g. tax holidays and extended period for loss carry-forward)
Loss carryover	Forward indefinitely	Forward indefinitely	Forward five years
Depreciation **(Plant & Machinery)** **Standard** **Accelerated**	Initial Allowance 20%, annual allowance straight line based on working life Accelerated Allowances 33 1/3% over 3 years (based on election) Specific allowances 100%(hi-tech P&E generally)	Initial allowance-20%. Annual allowance- prescribed rates depending on nature of asset Not known	Assets grouped according to nature. Depreciation rates 5% to 50% p.a. Available by negotiation
Financial Assistance	Cluster Development Fund: up to 30 percent equity participation; exit after 6-8 years Capital Assistance Scheme: loan of up to 30 percent of project cost; preferential terms	Official equity participation in some projects	None

Table 7: Infrastructure assistance

	INDONESIA	MALAYSIA	SINGAPORE
LAND	Land must be purchased for large petro-chemical projects. Smaller projects can receive land at favoured rates	Each state offers pre-developed industrial estates at attractive rents. Not all estates are zoned for chemicals	Offers reclaimed land at commercial rents
ROADS	Connections to sites from trunk roads at sponsor's expense	Roads to site provided as part of estate development	Roads to site provided
UTILITIES **Electricity**	State electricity company will participate in supply provision. Details are negotiated	Supply provided to substation at site boundary at cost plus return for connection.	Supply provided to substation at site boundary
Water	Own supply must be obtained	Supply provided to boundary	Supply provided to boundary
Port facilities	Not provided	Available at Johor Bahru, Kerteh and Kelantan, the sites of most chemical development, usage at commercial rates	Jurong Island has deep water facilities with usage at commercial rates