

Summary and recommendations

Chapter 1 — Background

General overview of the North West Shelf

The North West Shelf (NWS) is a large scale gas extraction and processing project by world standards in terms of engineering, design expertise and cost.

In expenditure terms, it is the largest project ever undertaken in Australia with the potential to provide significant opportunities for sustainable growth in Australian industry, particularly in terms of project management, design, fabrication, manufacture and installation.

The NWS project is subject to approval processes and legal requirements from all three levels of government. Exploration permits are issued by the Federal Government, port facilities approval by the State Government and company housing and site approvals by the local government.

The NWS project may be divided into three phases.

Phase I infrastructure development included the construction, transport and siting of the North Rankin A platform, laying of a subsea pipeline from North Rankin to the Burrup Peninsula and building of an onshore domestic gas plant. The development cost for phase I, the bulk of which was spent between 1981 and 1983, was \$1.9 billion.

Additional construction for phase II included two liquefaction trains (used to convert natural gas into LNG), gas turbine power generators, four cryogenic LNG storage tanks, a loading jetty and ancillary works. The total cost of construction for phase II was \$2.9 billion.

The construction stage for phase III involved fabrication and placement of the Goodwyn A platform, completion of a subsea pipeline between the two platforms and construction of a third LNG train. The total construction cost for phase III was \$2.5 billion.

Phases II and III of the project involved the production and sale of liquefied natural gas (LNG) to overseas markets. Shipments of gas to eight Japanese electricity and gas utilities commenced in 1989.

The North West Shelf joint venture participants are planning the next expansion phase.

1989 parliamentary committee report

The House of Representatives Standing Committee on Industry, Science and Technology inquired into the NWS project in 1989. At that time the construction stage for phase III was beginning. The Committee reviewed local industry

participation in phases I and II with a view to making recommendations aimed at maximising opportunities for local industry development from phase III, and future major resource development projects. *The North West Shelf: a sea of lost opportunities* was tabled in November 1989.

The *Sea of lost opportunities* report argued that major natural resource projects which exploit a non-renewable national resource should contribute to the economy in more ways than simply through direct revenue, royalties and taxes. The report identified industry, infrastructure and skills development as areas which these projects must develop. Government was seen as having a responsibility to ensure that both the direct and indirect benefits of these projects to the nation are maximised.

The Government's response, tabled in September 1990, agreed with the report's stated aims but disagreed with the emphasis on Government intervention.

Developments since 1989

There is general consensus that resource developments in the north west will expand considerably in the coming decades.

It is anticipated that innovations in technology will continue in order to retain or increase market share. The use of newer technologies does not augur well for local content and employment. However, without the use of innovative technology, some fields would not be developed.

It has been claimed by the Department of Industry, Science and Tourism (DIST) that local industry participation levels for the first three phases of the NWS project were around 70% of total project cost. The level of local industry participation fell to 35% for the FPSO, *Cossack Pioneer*. However, this level is expected to fall even further for the next Woodside FPSO.

Oil and gas prospects

ABARE predicts that gas exports from WA will reach 20 million tonnes per year by 2010, requiring significant expenditure for plant expansion. Such an increase would add \$1.5 billion to \$3 billion a year to Australia's export earnings.

A variety of companies have projects worth in excess of \$10 billion queued for development off Western Australia over the next few years to almost double the existing investment in WA's oil and gas infrastructure.

Woodside and Shell have announced the commencement of a joint feasibility study involving their existing permits in Australian waters. The proposed \$10 billion development relates to facilities for domestic gas and LNG processing and shipping.

Like the first phases of the North West Shelf project, development of these new fields presents significant opportunities for sustained expansion of Australian industry.

General recommendation

In the following chapters there are a number of recommendations the Committee has made. The Committee believes that timeliness is an important issue with respect to the changes it has recommended in this report.

Recommendation 1.1 (paragraph 1.49)

The Committee recommends that the Government's response to this report indicate when the Government intends to implement the Committee's recommendations.

Chapter 2 — Australian industry participation in major projects

Major projects can provide vital opportunities to Australian suppliers of components and materials and of design and finance services. If full advantage is taken of these opportunities and Australian industry becomes internationally competitive, long term economic benefits will flow to Australia through the development of a skills base, technology transfer and sustainable growth.

What is local content?

It is usually said that there are three types of contract in relation to the NWS project:

- contracts which must be carried out in Australia;
- contracts for which Australia does not have the capability; and
- contracts which may be performed in Australia or overseas.

There are definitional issues to be considered in deciding to which of the three categories a particular contract or type of work belongs.

Measurement of local content

Local content levels are often quoted in aggregate form and without further analysis may be misleading. Aggregated data does not give information about the nature of the contracts won by Australian industry, which would show local participation levels in the more specialised and skills intensive areas, so important to the development of Australia's industrial and technological capability; nor does it allow analysis of possible lost opportunities, that is, areas where local firms had the ability to supply goods and services but did not win contracts.

In estimating levels of Australian participation the developers first exclude from the calculation contracts which they decide Australian contractors would not be capable of providing. The items remaining make up the total, out of which real Australian participation is then measured. This method would throw up quite different levels of ‘actual’ participation depending on what Australian suppliers are deemed to be capable of providing.

Effect of secondary contracts on local content calculation

The Federal Government is reluctant to intervene in the industry and accepts developers’ figures for local content and the industry acknowledges it rarely monitors beyond the primary level of contract. It is therefore impossible to tell if local content figures quoted are inflated. The question is: to what extent do Australian firms who are successful tenderers in turn procure goods required for those contracts overseas? DPIE and DIST were not able to add to debate on this matter.

There should be an agreed national methodology on value added in Australia to measure local content. This measure should be developed through industry consultation. The lack of such an agreed methodology makes the data highly suspect and liable to misinterpretation. The data should be reported by industry for analysis by DIST and ISONET.

Chapter 3 — Roles of government

Federal and State legislation

Under the *Petroleum (Submerged Lands) Act 1967* (PSL Act), a joint authority for fields adjacent to each State has been established with the relevant Federal and State ministers as the mechanism to decide questions of title including grant, renewal and transfer of exploration and production rights. The day-to-day administration and supervision is delegated to the State by the Federal Government; however, the final responsibility for decisions taken under the joint authority provision lies with the Federal Minister for Primary Industries and Energy.

The WA Government plays a major role within the three nautical mile limit in relation to the issue of leases, power generation, collection of royalties, infrastructure provision, labour and safety regulations and environmental considerations.

A primary responsibility of the Federal Government in relation to offshore gas and oil projects is the issue of exploration permits.

The *Sea of lost opportunities* report found that the primary criterion for issue of exploration permits was: to maximise the assessment of petroleum potential in the permit area. Secondary criteria came into effect if no applicant could be identified as superior when assessed against the primary criterion. These secondary criteria

included the intent to source goods and services in Australia, the willingness of foreign companies to transfer skills and technology to Australians and the intention to undertake research and development in Australia.

DPIE stated that, since there had been no cases in the decade to 1996 which required the application of the secondary criteria to determine a successful bid, it had been dropped. It would appear that DPIE have successfully avoided any broader commitment to Australian industry. At the very least, DPIE officers should promote governmental expectations with respect to local content actively and early in discussions.

Recommendation 3.1 (paragraph 3.15)

The Committee recommends that the Minister for Primary Industries and Energy direct his Department to require those seeking exploration permits or licences if their project proceeds to production to commit themselves to:

- **maximising opportunities for local industry involvement and providing details of how this will be achieved;**
- **providing data which will allow analysis of value added in Australia;**
- **maximising the transfer of skills and technology to Australians; and**
- **undertaking research, development and design in Australia to the maximum extent possible.**

Recommendation 3.2 (paragraph 3.16)

The Committee recommends that the Federal Government use information gathered as part of permit processing to ensure Australian industry is aware of forthcoming major oil and gas project requirements.

Major projects facilitation

A major projects facilitation unit was set up in DIST in 1992. It provides a facilitation service for viable new developments requiring Federal Government approval where capital expenditure is expected to be at least \$50 million. The Prime Minister has also appointed a major project facilitator, reporting to him, to ensure that speedy approvals are given to major nation-building investment proposals which conform with Government policy. In mid – 1997, DPIE set up its own unit to promote minerals processing and energy projects.

It is not clear why it is necessary for there to be this duplication at the Federal level to deal with major project facilitation.

Recommendation 3.3 (paragraph 3.22)

The Committee recommends that the Federal Government set out clearly the functions of the Federal and State organisations involved in major project facilitation and their relationship with each other.

Industry assistance programs

The Committee welcomes the announcement by the Federal Government of the initiative to establish a new agency, 'Invest Australia', which will be responsible for providing advice on strategic direction and analysis of investment opportunities and proposals, existing major projects facilitation functions, national investment promotion activities and coordination with State and Territory Governments on investment promotion and facilitation. However, these initiatives do not appear to address concerns about the lack of cohesion referred to in the Mortimer report.

Recommendation 3.4 (paragraph 3.33)

The Committee recommends industry assistance programs be delivered by a single administrative unit within the relevant agency (the Department of Industry, Science and Tourism; Department of Primary Industries and Energy; and Austrade), which would also be responsible for consistency of approach within the agency.

Recommendation 3.5 (paragraph 3.34)

The Committee recommends any changes to industry assistance programs be marketed to industry and streamlined to reduce administrative costs and provide a 'one stop shop' to industry.

Local content

National policy

Following the *Sea of lost opportunities* report, an agreement was reached by all State and Federal industry ministers meeting as the Australian Industry and Technology Council (AITC). In 1990 this generated a policy relating to participation by the domestic industry in major projects. Among other things, it stated that local industry should be given full and fair opportunity by developers to participate in major projects. The AITC policy has been criticised by some for being loosely worded, never reviewed, its operation not being monitored and having been deliberately ignored by a number of project developers.

National Liaison Group

The National Liaison Group (NLG) was established specifically for the NWS project at the initiative of the Federal Government after renegotiation of the domestic gas agreement in 1985. It provided an active forum for the joint venture partners, unions, industry and Federal and State governments to raise issues of concern and disseminate information on the project to Australian industry.

The NLG was wound up in 1993 following the effective completion of Phase III of the project. This also marks the end of reporting of local content levels to the Federal Government.

Oil and Gas Consultative Group on Local Content

The next initiative following the *Sea of lost opportunities* report was the formation in 1990 of the Oil and Gas Consultative Group on Local Content (OGCG). Its purpose was to facilitate competitive Australian industry's participation in oil and gas developments and production in Australia.

DIST has stated that the OGCG was not an effective mechanism but could not indicate the use of any formal evaluation procedures in making this judgement. While not disbanding the OGCG, the department has ceased to provide secretariat support. The OGCG has had only one meeting since August 1994.

WA policy

In July 1996 the State Government attempted to overcome some of the perceived shortcomings of the national local content policy by releasing a State policy which contains more monitoring procedures. It is a statement of expectations aimed at encouraging the use of local industry, encouraging best practice and opening lines of communication between sections of the major resource project industries.

Complementary to this policy is the establishment of a WA local content advisory group, which addresses the need for developers to understand State and Federal policies and their obligations to comply, including reporting and active monitoring.

Information collection and use

The effectiveness of current policy and the desirability of alternative policy options cannot be evaluated properly without comprehensive information about contracts which have been let and the amount of value added in Australia in the performance of those contracts. For that information to have credibility, it should be collected in a transparent manner which eliminates any perception of bias or distortion.

It would not be onerous to expect at the Federal level at least the same level of commitment to measuring local content as displayed by the WA State agencies. Information about future contract requirements and the amount of value added in Australia in contracts being undertaken or completed should be provided by industry to DIST. It should then be analysed by appropriate groups (such as

ISONET) to identify market opportunities for the provision of goods and services, facilitation of technology transfer and value-adding.

Recommendation 3.6 (paragraph 3.55)

The Committee recommends that a working group consisting of the Department of Industry, Science and Tourism and relevant State Government agencies develop an agreed national methodology for assessing and validating Australian local content. The Committee anticipates that such a methodology would involve analysis below the primary level of contract and indicate the amount of value adding that takes place in Australia.

Recommendation 3.7 (paragraph 3.56)

The Committee recommends that a local content group be established in the Department of Industry, Science and Tourism to bring about attitudinal change towards the use by petroleum developers of competitive Australian goods and services. This group should collect information about:

- future requirements of petroleum developers for goods and services; and**
- the nature and value of contracts let by the developers and the amount of value added in Australia in the execution of those contracts.**

The local content group, in conjunction with ISONET, should identify market opportunities for Australian industry and promote value adding in Australia and the transfer of technology to local industry.

Recommendation 3.8 (paragraph 3.57)

The Committee recommends that the Oil and Gas Consultative Group on Local Content be reactivated, be properly resourced by the Department of Industry, Science and Tourism and continue its role with the Minister as Chair.

Co-ordination

The *Sea of lost opportunities* report recommended that strategies be put in place between the two major departments at the Federal level, DPIE and the Department of Industry, Technology and Commerce (DITAC) as DIST was then, to ensure cohesive action and consultation occurs across the Federal level. The Government response indicated that no action would be taken in this respect.

The Committee believes that the performance of the Federal bureaucracy, and DIST in particular, has deteriorated since the 1989 parliamentary inquiry. The Committee can only conclude that DIST is no longer a key player in maximising

opportunities for local industry participation in major projects and that the important policy action has shifted to Western Australia.

Chapter 4 — Factors affecting participation

A multi-faceted domestic goods and services capability has grown up around the development of Australia's oil and gas industry. This support industry has matured, particularly over the last ten years, as shown by firms increasingly becoming internationally competitive.

Price, timeliness and quality

The *Sea of lost opportunities* report noted that late delivery was an impediment to local industry being awarded work. The present Committee is pleased to note evidence of a reversal: during phase III Australian manufacturers had on a number of occasions outperformed their overseas competitors in terms of price and completion date. The Committee did not receive evidence indicating that quality of locally-produced goods is now an issue.

Price could be a considerable disadvantage for Australian companies because of the high price of basic building materials and labour compared to overseas, but this may be offset by increased productivity.

Communication

Early information allows Australian firms to invest in new technology or make arrangements for technology transfer or manufacture-under-licence. The interval between tenders being let and work commencing is brief. Information flows are therefore critical to maximising industry participation.

It should be reasonable for developers to keep industry informed of major trends in their needs. Equally suppliers should be proactive in seeking out and acting on this kind of information.

Industrial Supplies Office

The Committee received evidence that the WA Industrial Supplies Office was effective at increasing local industry participation *when it was consulted*. This is a very important proviso, given the trend by developers towards outsourcing of the engineering/ procurement/ construction/ management functions (EPCM) to large (overseas) firms and their subsequent sub-contracting to firms with which they have existing alliances or where vertical integration is a factor.

Recommendation 4.1 (paragraph 4.23)

The Committee recommends that the Department of Industry, Science and Tourism conduct a regular marketing exercise to promote the activities of the Industrial Supplies Office and, in particular, its database of national industry capabilities established in January 1998.

Recommendation 4.2 (paragraph 4.24)

The Committee recommends that the Federal Government ensure that the Industrial Supplies Office aims, activities and achievements are regularly reviewed and that it is supplied with the resources it requires to maintain its capability database and its proactive role in promoting Australian industry involvement in major projects.

Industry associations and bodies

Industry associations and bodies can play an important role in gathering and disseminating information about forthcoming projects and promoting the capability of local firms to developers, ISOs and government.

Greater efforts are needed from firms to bring local capability and capacity to the attention of petroleum companies' management.

Recommendation 4.3 (paragraph 4.28)

The Committee recommends that the Minister for Industry, Science and Tourism review in the next 12 months with industry associations and bodies the level of their involvement in:

- gathering and disseminating information about major projects;**
- promoting the capabilities of their member firms to developers and the Industrial Supplies Office; and**
- building linkages,**

with a view to expanding the capability of such bodies in carrying out these activities.

Specifications and standards

If local companies are to be internationally competitive in bidding for local, or indeed for overseas work, they need to become familiar with relevant international specifications and standards. Differences in standards between Australian jurisdictions (and between countries) complicate construction, increase costs

without apparent benefit and have prevented local industry maximising its opportunities.

Persistence in using non-internationally recognised standards by Australian firms who tender for domestic or overseas petroleum contracts may be considered a barrier to local industry growth. It may be appropriate for Australian governments and industry bodies to undertake a review of this matter.

Recommendation 4.4 (paragraph 4.34)

The Committee recommends that the Federal Government vigorously pursue with State Governments the establishment of construction industry standards across Australia to conform with internationally accepted standards, to the maximum extent possible.

Recommendation 4.5 (paragraph 4.35)

The Committee recommends that the Federal Government continue to pursue in international forums the harmonisation of petroleum industry standards and contract specifications.

Design

Developers should develop procedures to alert any overseas design contractors, or indeed domestic designers, to their own and governmental expectations that Australian firms be given full and fair opportunities to perform construction and fabrication work.

DIST must play an active role in developing, implementing and then monitoring a mechanism to ensure overseas designers are aware of Australian industry capability. The Committee does not agree with the view that this amounts to intervention in commercial matters: it is merely a proper role of bureaucracy to inform participants of the government's expectations.

Recommendation 4.6 (paragraph 4.46)

The Committee recommends that Austrade provide expertise and information services to facilitate participation in petroleum development opportunities in Southeast Asia and the Middle East by Australian design firms.

Post – phase III opportunities

Attention needs to be given to planning for the work which will result from aging equipment, the need for refits and so on. In terms of the domestic market, it is the high value long term maintenance and support contracts which sustain parts of the industry between construction phases. This reinforces the need for local industry involvement at the earliest stage of a project to ensure it has the ability to perform later work.

Employment

Skill shortages

The ability of firms to deliver goods and services to the oil and gas industry and to survive in the longer term is dependent on their ability to recruit and retain people with appropriate skills. The intermittent nature of large scale construction has historically been a problem.

Although current requirements for skilled labour are being met, there was broad agreement that labour shortages are expected during 1998. It will not be possible to meet the demand for certain skill categories in the timeframe by training. Some skilled workers may come from interstate migration and the remainder from persons entering Australia on skilled specialist temporary residence visas.

A range of strategies should be implemented including increased training provision in high demand skill areas, accelerated trade training and skills upgrading programs and the promotion of apprenticeships and traineeships. In the longer term, closer links need to be developed between industry and the education system, to ensure that not only are gaps forecast, but that steps are taken to fill them before they become impediments to major projects.

Recommendation 4.7 (paragraph 4.63)

The Committee recommends that the Minister for Schools, Vocational Education and Training pursue through the Ministerial Council the provision of sufficient skills training in Australia to meet the projected needs of the oil and gas industry.

Overseas recruitment

Where overseas staff perform design work, it has the potential to decrease local content levels throughout the project life. The use of overseas personnel assists technology and skills transfer and should not be considered as a barrier to local industry participation in major projects. The Committee believes there may be merit in seeking the assistance of industry as assessors to ensure a match between the needs of the project and the applicant.

Project management skills

The complex and intermittent nature of major projects in Australia has provided limited opportunities for acquiring project management skills. There is evidence that the tertiary education sector, and in particular, engineering, has been slow to adapt to industry requirements.

Recommendation 4.8 (paragraph 4.76)

The Committee recommends that the Federal Government encourage closer links between industry associations and bodies and the tertiary education sector to facilitate more rapid forecasting of, and response to, changing industry needs.

Recommendation 4.9 (paragraph 4.77)

The Committee recommends that the Federal Government sponsor a system of overseas secondments to petroleum companies to assist young Australian graduates to acquire the experience required by Australian industry.

Although Government programs exist to address the skills gap, the Mortimer review suggested that the programs did not match what firms require. The appropriateness of alternate service delivery methods should be investigated in the wider context of reforms suggested by Mortimer.

Recommendation 4.10 (paragraph 4.79)

The Committee recommends that the Federal Government review within 12 months the delivery of skills training aimed at improving the performance of firms and investigate the appropriateness of alternative delivery methods.

Industrial relations

Fluctuations in construction activity and the temporary nature of construction sites have traditionally encouraged an adversarial approach to industrial relations.

Significant benefits may result from changes to work practices, union amalgamation, more flexible workplace arrangements and the Workplace Relations Act. The benefit to all parties of an improved industrial environment would be a sustainable and modern support industry for the resource sector and Australian industry as a whole.

Characteristics of local firms

Small to medium size firms can be successful in filling niche markets; however, depending for survival on local niche markets which are intermittent is a dangerous strategy. The experience gained must be used to build export sales. The building of cooperative arrangements would help small firms achieve critical mass.

Risk and cooperative arrangements

The Committee believes more assistance could be provided by existing industry associations without the need for a one-on-one government assistance package. Industry associations could encourage firms to develop solutions to common problems beyond their individual capabilities.

It would appear an information campaign is warranted to increase firms' awareness of assistance provided by Government, and that DIST should review the outcomes of programs related to increasing the effectiveness of firms.

Recommendation 4.11 (paragraph 4.100)

The Committee recommends that the Department of Industry, Science and Tourism and Austrade, where appropriate:

- **review the effectiveness of its programs aimed at increasing inter-firm cooperation;**
- **review the effectiveness of the provision of information about the existence and operations of such programs; and**
- **encourage industry associations and the Industrial Supplies Offices to increase their efforts at promoting cooperative arrangements between Australian firms to tender for large scale development projects.**

Government activities

Projects of this size require a regulatory framework which is conducive to foreign investment and assurances that governments will not make regulatory or other changes which have the potential to damage the project's cash flows or ability to deliver a competitive product.

Enforced local content

There is a role for ISOs, peak bodies and local firms to play in minimising contracts which are being let overseas simply as a result of lack of knowledge of local industry capability. The WA Government, in concert with that State's ISO, seeks to discuss a new project with the developer early in the design stage. The aim is to maximise the chances of local industry involvement at all stages of the project, rather than to achieve a target percentage of local content.

The Committee believes that the approach advocated by the WA Government is preferable to setting targets for local content.

Taxation

Australian petroleum production companies are subject to general taxes levied at State and Federal levels, including payroll tax, stamp duty, corporate income tax as well as those applying to the petroleum extraction industry. Remote projects pay higher wages and provide more fringe benefits to attract staff and also use more fuel. They therefore pay more tax than projects in less remote locations.

Against this, the Committee notes the significant concession made to the NWS developers to get the project started: petroleum resource rent tax (PRRT), currently set at 40% of net project incomes, does not apply to NWS production licences and associated exploration permit areas.

Recommendation 4.12 (paragraph 4.117)

The Committee recommends that the Government or an appropriate parliamentary committee review the impact on the oil and gas industry of State and Federal taxes and the various concessions which might operate in the context of overall tax reform.

Tariffs

Tariff barriers on equipment for the oil and gas industry have been low, by world standards, in Australia for some time.

A 1996 change to the Customs Act has tightened the requirement for tariff concession applicants to prove equivalent goods are not produced in Australia prior to seeking a concession. Previously all equipment was exempt. The Australian Customs Service assesses applications by referring them to prescribed organisations capable of undertaking research into local manufacturers' capacity. Where there is no local manufacturer, the import duty rate of 5% is waived. Evidence indicated considerable confusion about the operation of the policy by-laws and the stringency with which they are applied.

Recommendation 4.13 (paragraph 4.123)

The Committee recommends that the Australian Customs Service conduct an information campaign to clarify the changes in 1996 to policy by-laws affecting the oil and gas industry.

Overseas policies and practices

The Committee was told that lower standards of safety applied to work carried out overseas for use in the Australian petroleum industry than that expected on sites within Australia. Evidence was also received relating to the effect of overseas governments' policies on the ability of Australian firms to compete internationally.

Recommendation 4.14 (paragraph 4.125)

The Committee recommends that the Federal Government continue to pursue, through bilateral contacts and multilateral forums, the harmonisation of safety standards in the construction industry, particularly as they relate to work on oil and gas projects.

Recommendation 4.15 (paragraph 4.129)

The Committee recommends that the Federal Government continue to pursue, through bilateral contacts and multilateral forums, the elimination of import barriers and export subsidies affecting the oil and gas industry.

Chapter 5 — Trends

Alliances and tendering

Since the *Sea of lost opportunities* report, a trend has developed towards alliance arrangements. Through these arrangements, partners in a project have a special interest in supplying key components or services to the project.

Alliances between the developer and an overseas firm

This process has resulted in local firms considering they have not received fair access to tendering, or in key contracts not going to tender.

The Committee believes there are grounds for an investigation to be held into the preference of petroleum developers to use overseas firms with whom they have pre-existing alliances and whether this is circumventing the Federal Government's policy of 'full, fair and reasonable opportunities' for Australian suppliers to compete.

Recommendation 5.1 (paragraph 5.11)

The Committee recommends that the Australian Competition and Consumer Commission investigate whether alliances between petroleum developers and overseas firms have resulted in anti-competitive behaviour in relation to goods and services to be used in the domestic petroleum industry.

Australian – overseas alliances

An alliance arrangement between an Australian firm and an overseas partner may result in an increase in the Australian companies' skills and technology bases and dissemination to other local companies over time. Subject to performance, it may also result in medium term contracts with developers.

Under an alliance arrangement, risks are shared. The Committee received evidence that some Australian companies have been reluctant to change their practices and take risks.

Forming alliances should not be viewed as the easy way out or costless for Australian industry. Overseas companies have devoted resources to developing their skills bases and technology. Local companies must be prepared to develop their own technology or buy existing technology, perhaps under a licensing agreement

Australian companies as prime contractors

It is vital that Australian companies position themselves to become prime contractors and thus maximise Australian industry participation.

In order to reduce costs, supply and maintenance, for example, may not be viewed in isolation, but may now be put out for tender in the one package. As such it has major ramifications for smaller firms and their ability to compete.

Early involvement of local industry in project construction can ensure considerable savings on through-life operational support costs, create a broad-based and sustainable design/ engineering capability, which will have application to diverse industry sectors, and may provide a catalyst for major corporate, management and work practices restructuring within Australian industry.

Changes in technology

A feature of the North West Shelf project has been the incorporation of new technology at all stages. If Australia is to benefit from such technology and its industry remain competitive, its firms must take the risks associated with integrating new technology.

Floating production and offloading systems

One of the major new changes in the oil extraction industry is the trend towards the use of floating production, storage and offloading facilities (FPSO). The introduction of this technology, while necessary to ensure certain fields are developed, has the potential to decimate local content in areas where Australian manufacture has traditionally been strong.

It seems unlikely that Australia would be competitive with respect to building new hulls. It should, however, be possible for Australia to compete for the high value on-going maintenance and refit work, provided it has appropriate facilities and capacity.

Concrete gravity structures

As well as technology transfer for the North West Shelf gas project, this new industry may offer export potential, but it will not occur if large parts are closed to Australian tenderers.

Modularisation

Materials, which traditionally have been sourced locally and then assembled using local labour at the project site, are now just as likely to be imported as prefabricated modules.

The ability of local industry to capitalise on the trend to modularisation is directly related to the provision of a permanent and integrated heavy engineering facility, such as that envisaged in Western Australia.

Marine heavy engineering facility

There is broad agreement that if Australian industry is to compete more readily with Southeast Asia, and to capitalise on the significant opportunities created by deregulation of the WA energy market and considerable growth in Australia's immediate region, a world class waterfront engineering facility must be created.

WA planners have identified the Jervoise Bay/ Henderson Industrial Estate on the eastern shores of Cockburn Sound near Perth as the most suitable base to support both offshore and onshore aspects of the resource industry.

In January 1998 it was announced the \$200 million redevelopment would be funded by the Federal and WA Governments and the private sector.

Technology transfer

Skills transfer

Each phase of the NWS has required the use of technology which Australia did not have. Such technology transfer has been facilitated by movement of personnel and through alliances.

Export opportunities

The oil and gas industry is a typical example of globalisation of the domestic market. Goods and services used in the domestic industry are composed of designs, technologies and components from around the world.

The Committee received evidence on the desirability of companies putting in place quality assurance systems and ensuring goods' compliance with relevant oil and gas industry certification. Such systems are not a requirement domestically yet, but for exporters a fully certified business is essential.

Better and greater marketing of companies' capabilities and capacities requires urgent action.

Recommendation 5.2 (paragraph 5.65)

The Committee recommends that the Department of Industry, Science and Tourism survey the efforts of industry associations to promote compliance with industry quality control and assurance standards and international best practice and report to the Minister within 12 months on the adequacy of such promotional efforts.