LEGISLATIVE ASSEMBLY OF THE NORTHERN TERRITORY

WRITTEN QUESTION

Mr Maley **to** Minister for the Environment and Heritage

LNG PLANT

1. Given the huge community back lash that is currently occurring in relation to the long-term adverse effects of locating a 10 million tonnes per annum liquefied natural gas plant at this location in the middle of Darwin Harbour, will you guarantee that such a cost benefit analysis is undertaken as a matter of urgency and before any more work is carried out on the Ware (Middle Arm) Peninsula?

2. Will the disposal options for dredged material carried out off Charles Point, and in the Wickham Point turnaround bay, and the plumes of silt created by this process, impact on the unique coral communities adjacent to Channel Island and in the harbour generally

3. Precisely how much damage to sponges, reef, fish breeding grounds and the harbour ocean ecosystem will be caused by the dredging of the route in from Cox Peninsular and of the turnaround bay for ships at the Phillips LNG plant on Wickham Point?

4. Is it true that the 1997 EIS proposed gas pipeline route through a Defence Training Area has been dropped from the Phillips 2001 PER (page 1.8, figure 1.4) without any supporting bathymetric survey data for this newly depicted route that now skirts around that Defence Training Area by up to 25 kilometres?

5. As 12 metre draft tankers must only move during daylight hours when navigating the harbour, how will these ships travel out to the ocean shipping lanes during a midday neap tide in Darwin Harbour? Just where will dredging occur and how often?

6. When the largest mangrove colony in Darwin Harbour is partly bulldozed on the Ware Peninsula road in to Wickham Point, and at the Phillips LNG site, what will be the effect of the large amounts of acid sulphate leached into the waters of Darwin Harbour?

7. What baseline studies have been done to evaluate the environmental effects of implementing a road corridor from Channel Island Road out to Wickham Point? Are any such baseline studies available to the public now?

8. Is it true that the long-term jobs at the Phillips plant will only provide 80 jobs for 17 years for international, interstate and some local employees?

9. When Phillips carries out its initial Hydrotest of the whole system will it use fresh or salt water and how will the Hydrotest water (which will be full of chemical additives) be disposed of?

10. Vast emissions of the global warming gas CO^2 will be released at 18,000 tonnes per day by the Phillips plant on Wickham Point. Is it true that the EIS, the PER and the Assessment Report 39 all give no real indication of how Phillips will offset these emissions?

11. How many square kilometres of new forest will have to be planted by Phillips to soak up 18,000 tonnes per day of CO^2. Is Phillips required to plant this much forest in Australia to offset these emissions?

12. Did the atmospheric emissions modelling carried out in the Phillips PER not take into account humidity and precipitation (rain) as Darwin Harbour has a tropical climate with heavy wet season rains and high humidity?

13. Recently the British warship HMS Nottingham holed itself at sea and nearly sank. Is the Minister aware that human error will almost certainly occur in relation to the production and transportation of LNG in Darwin Harbour at some stage, and that ignition of evaporating LNG from a holed tanker ship or LNG tank could cause a severe and fatal giant fireball? What is the probability of that event occurring?

ANSWER

Question 1 is a question asked by objectors to the LNG plant, including the Environment Centre, when the Exceptional Development Permit was under consideration. Questions 2-13 are questions asked of the Minister by Duncan Dean and replied to by the Minister on 8 October 2002. Attached for Mr Maley's information is a copy of Assessment Report No. 39. The Public Environmental Report (PER) is available on the Department's Web site at http://www.lpe.nt.gov.au/eia/

1. Each of the approval processes applied to the project proposal involve, and amount to in their totality, a comprehensive assessment of the economic, social and environmental issues. Some objectors, such as the Environment Centre believe a 'contingency evaluation' whereby a dollar value is assigned to various social and environmental factors should have been undertaken. While the technique has been used for many years, there is no consensus on the validity or utility of the technique.

   In 1998, the Centre for International Economics examined the economic costs and benefits a methanol project employing the AUST-NT model. Given the similarity in scale and process, the costs and benefits were extrapolated to the LNG proposal:

   Construction:
   - Break up of capital expenditure ($US 1 billion) 40% NT, 35% balance of Australia and 25% international;
   - Average annual construction workforce (4 years) of around 500;
   - Real annual Gross State Product (GSP) increase (average over 4 years) of 3%; and
   - Average economy wide annual employment increase of 1600-1800.

   Production:
   - Real annual GSP increase of 14%;
   - Average economy wide annual employment increase of 750 jobs; and
   - Average NT annual overseas exports increase of 49%.

   In 2002, ACIL Pty Ltd carried out a number of studies concerning the economic impact on the Northern Territory and Australia of the development of the Timor Sea natural gas reserves. Extracting from this data, and given the export focus of the project, the primary benefit to Darwin, the Territory and Australia of the Phillips LNG project will be through the resultant economic activity. This analysis indicates the project has a potential direct and indirect employment effect on Australia and the Northern Territory of 3125 jobs and a $17 billion increase in total GDP (Gross Domestic Product) over 25 years.

2. Dredging at Charles Point is not part of this project and will be subject to separate assessment if and when dredging in this location becomes necessary (see page 27 of the Assessment Report). As mentioned in the Assessment Report (page 25) previous modelling has predicted that turbid plumes are unlikely to affect the Channel Island coral community.

3. Experience from dredging for the development of East Arm Port indicates that little damage is likely to be caused to sponges, reef etc in the Harbour.

4. It is correct that the pipeline alignment described in the Environmental Impact Statement for the 3 MTPA plant was further south than the current alignment. Since then there have been revisions of the alignment as well as the northern boundary of the military training area. The most recent change moved the northern boundary of the training area further south to accommodate the favoured route for the pipeline. This change in the boundary has also allowed the pipeline to avoid the Boxer Shoals. Bathymetric data is a major requirement for the design and construction of the pipeline and also important in operating the pipeline. The seabed profile shown in Figure 1.4 of the Public Environmental Report is based on this bathymetric data.

5. The LNG vessels will probably have a draft of 11.5 m (see page 2-4 of the PER and page 5 of the Assessment Report). The only constraint to navigation of 12 m draft vessels occur at Charles Point Patches where there is a minimum depth of 12 m. Vessels of such a draft will have to wait until the tide is such that sufficient depth is available (see also 2 above). Dredging elsewhere in the Harbour will not be necessary. Pilotage is compulsory in Darwin Harbour so all LNG vessels will require a pilot to enter and leave the Harbour. The Harbour Master has advised that there are no restrictions on night time navigation in the Harbour except that berthing at the Iron Ore Wharf is done during daylight hours.

   Note: **Neap** tides occur when the tide generating forces of the sun and moon oppose each other and result in the smallest rise and fall in tidal levels. **Spring** tides, which it seems the question is about, occur when the tide generating forces of the sun and moon act in the same direction causing the greatest rise and fall in tidal levels.

6. The clearing of mangroves for the road to the LNG plant site will cause some disturbance to mangrove mud with the potential to form acid sulfate soils and acid leachate. The construction method chosen for the road, floating embankment will cause the least disturbance to the mud with minimum formation of acid leachate. There will be no excavation and disposal of mud which would lead to greater acid leachate formation and associated problems.

7. No specific baseline studies have been undertaken for the road corridor. Its alignment was chosen to require the least clearing of mangroves and disturbance to mangrove mud. Specific studies of the mangroves of Darwin Harbour are available on the Department of Infrastructure, Planning and Environment Web site.

8. Phillips estimates that the workforce to operate the plant will be up to 120 personnel (see page 2-16 of the PER).

9. The Construction Environmental Management Plan provides for hydrotesting of the on shore storage tanks using fresh water with no chemical additives. Discharge will be over a 10-12 days period towards the end of the construction period. The discharge will be subject to conditions of any waste discharge licence issued under the *Water Act*.

10. Phillips is considering various offsets to greenhouse gas emissions and is working with the NT Government's Greenhouse Unit on this matter. The Environmental Impact Statement, Public Environmental Report and Assessment Report 39 all consider options for offsetting greenhouse gas emissions. The Public Environmental Report includes a greenhouse offsets study (appendix D). The study evaluates a range of greenhouse gas offset options in relation to the Wickham Point 10 MTPA LNG facility. Assessment Report 39 addresses greenhouse gas offsets. The report recommends that the proponent's Environmental Management Program includes a section specifically addressing commitments and strategies aimed at reducing greenhouse gas emissions, including opportunities for offsetting greenhouse gas emissions.

11. Appendix D to the Public Environmental Report outlines the area of plantation required to be planted each year (for 45 years) to offset carbon dioxide emissions. The area required varies between plantation type and three examples are provided in the Public Environmental Report as follows:

Plantation type	**CO_2 emissions**	**Area required to be planted each year**
Radiata pine	4 Mt per year	8,000 ha
Blue Gum Eucalypt	4 Mt per year	8,800 ha
Reforestation *	4 Mt per year	24,000 ha

* Reforestation of catchments and waterways in agricultural areas of Australia.

There is no requirement for Phillips to establish plantations to offset greenhouse gas emissions. However, Phillips has committed to further investigating options for offsetting greenhouse gas emissions (including plantations) during detailed design and construction. The Assessment Report recommends that opportunities for offsetting greenhouse gas emissions should be included in the project Environmental Management Program.

12. See page 13 of the Assessment Report for the reasons why humidity and precipitation was not included in the air emission modelling. Phillips considers the modelling as carried out gives a more conservative (greater) estimate of ground level concentrations of pollutants.

13. It is unfortunate but human error occurs in all walks of life. However the operation of LNG shipping is carried out with the highest level of care possible.

    Following the event of 11 September 2001 in the United States of America, Lloyds Register carried out a generic risk and consequence assessment with respect to the transport of liquefied natural gas (LNG) including the consequences of a deliberate attack against LNG tankers, associated with an East Coast LNG Terminal. The Lloyds Register study reported that there have been no recorded incidents of collision, grounding, fire, explosion or hull failure that have resulted in cargo spillage. No fatalities have occurred, nor has there ever been any damage to land-based property or the environment as a result of a LNG release from a vessel. This conclusion is based on more than 30 000 laden voyages over 37 years travelling more than 100 million kilometres.

    LNG carrier operations were considered in the Hazard and Risk Assessment for the Darwin LNG plant (see PER Appendix G, pp 41-50 and is Appendix 7).

    In the unlikely event of a hull rupture and the creation of a flammable vapour cloud, which would rapidly dissipate, an ignition source would result in a fire burning back to the fuel source, not an explosion or “fireball”.