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GARNAUT CLIMATE CHANGE REVIEW
Level 2, 1 Treasury Place
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SUBMISSION TO THE GARNAUT CLIMATE CHANGE REVIEW INTERIM REPORT

Woodside welcomes the opportunity to respond to the Garnaut Climate Change Review.

Woodside is currently Australia's largest exporter of LNG with plans to significantly expand its LNG business over the next 10-15 years.

Woodside has demonstrated its commitment to reducing the greenhouse gas emissions from the facilities it operates on behalf of the North West Shelf Venture over the past decade, through:

- its membership and investment of some \$249 million in emissions reduction technologies under the Greenhouse Challenge since 1997, which will achieve approximately 42 million tonnes of carbon dioxide equivalent emissions reductions ("tCO₂e") by 2020;
- its support for technologies that avoid emissions of greenhouse gases to the atmosphere, particularly carbon capture and storage; and
- its recent commitment to market mechanisms that will achieve some 260,000 tonnes per annum of carbon dioxide equivalent emissions reductions through carbon sinks.

Woodside has also made contributions to the adaptation effort by enhancing its understanding of climate change science and how this will impact its operations in the North-west Australia region.

Four topics covered in the Interim Report ("Report") are most relevant to Woodside's business:

- 1) Addressing impacts to trade-exposed, emissions-intensive industries;
- 2) Climate Change Science: the North West Australia Climate Change Study;
- 3) The potential of Carbon Capture and Storage; and
- 4) Streamlining of emissions reduction mechanisms

'Addressing impacts to trade-exposed, emissions-intensive industries'

Woodside concurs with the Report's suggestion that addressing impacts to trade-exposed, emissions-intensive industries (TEEIs) must be about avoiding carbon leakage and preserving Australia's international competitiveness.

Further, Woodside believes that the means for addressing the impact of a domestic emissions trading scheme to TEEIs could also contribute towards achieving effective international action outlined in the Report, particularly in the case of LNG.

The lifecycle emissions of LNG are roughly half those of coal and significantly less than those of other fossil fuels. Most of the countries to which Woodside exports LNG use gas to generate electricity that would otherwise have been generated using more emissions intensive fossil fuels, such as coal. Based on current production forecasts, Australian LNG could offset up to 180 million tCO₂e per annum by 2018 in our customer countries, equivalent to some 32% of Australia's current emissions footprint.

Achieving this scale of emissions reduction is heavily contingent upon ensuring a level playing field with respect to carbon emissions constraints, between Australian LNG exports and their international competitors.

Woodside believes there is significant scope to influence the reduction efforts of developing countries through the export of cleaner energy solutions such as LNG.

A case in point is China, which, as the Report points out, has set ambitious targets for emissions reduction. The NDRC have a stated target of 110 million tCO₂e per annum by 2010 in the Thermal Power sector (coal, gas and oil fired power plants):

- Just one 3GW gas-fired power plant is enough to result in a reduction of 10-15 million tCO₂e per year;
- Construction of a 3GW gas-fired power plant every year until 2030 can result in a reduction of 260 mtCO₂e per year by 2030.

Australia's contribution to these significant reductions through our LNG exports needs to be taken into account when establishing an Emissions Trading Scheme to avoid 'carbon leakage' and reinforce a framework for international cooperation. Such a scheme therefore needs to include a mechanism for recognize the disadvantage to the international competitiveness of Australian LNG exports as well as the contribution LNG makes to the reduction in global greenhouse emissions. This may include mechanisms for addressing impacts to TEEIs, for example, taxation reform, international trade arrangements or permit allocation relief.

The relative merits of cash and permit-based mechanisms are explored more fully in Woodside's submission on the Garnaut Review's Emissions Trading Scheme paper.

Climate Change Science: the North-west Australia Climate Change Study (NACCS)

In 2005 Woodside initiated a study to evaluate the effects of climate change on tropical cyclone intensity. The purpose of the study was to understand how climate change might affect Woodside's offshore facilities in the North West region of Australia and to inform their future design.

This study was a joint initiative of Woodside and the University of Oklahoma and one of the largest of its type ever undertaken, producing results not available from any previous study.

Its uniqueness lies in the fine scale of its modelling and the level of accuracy achieved when modeling historical events.

Key achievements of the study include:

- the ability to generate tropical cyclones within a climate model;
- the occurrence rate of tropical cyclones in the present and changed climate over the period 1970 – 2059, isolating the effect of natural variability from that of climate change; and in so doing,
- a database of information over the region extending from the Cocos Islands to Australia and from Indonesia to the south of Perth.

Woodside has been using the results of this study to directly influence its design standards for offshore facilities. The study may also be useful in understanding the impact of climate change on coastal and urban environments, and Woodside would be pleased to share the

results of the study and its implications with the Garnaut Climate Change Review as appropriate.

“The potential of Carbon Capture and Storage”

Woodside supports the Report’s recognition of the potential for carbon capture and storage and believes the upstream oil and gas industry has an important contribution to make to the commercialisation of this technology, given its experience, global precedents and relevance to its core business activities.

Mechanisms that support the commercialisation of this technology, both in a research & development and in a regulatory sense, should be incorporated into climate change policy considerations.

The LNG industry is particularly well placed to further the commercialisation of CCS in the near term. Removal of naturally occurring CO₂ in reservoir gas is an integral part of the LNG manufacturing process.

Geosequestration of this CO₂ stream is significantly less cost than capturing and sequestering CO₂ from a power station's flue gas. Proposed new LNG projects are therefore well placed to play a first mover role in commercially-sized CCS technology, enabling a faster national and international learning curve, paving the way for the power sector to adopt this technology and help Australia to fulfil its emissions targets.

However, such a first mover role would only be possible if the legislative and regulatory framework is conducive to early CCS implementation and that it is commercially attractive.

Mechanisms such as tax incentives and recognition of geosequestration in a permit allocation process will assist LNG proponents such as Woodside to positively consider early adoption of geosequestration.

Streamlining of emissions reduction mechanisms

Woodside is supportive of a price on emissions being the primary instrument for achieving the environmental objectives of reducing greenhouse gas emissions.

However there are a number of mechanisms currently in existence at various jurisdictional levels that directly and indirectly attempt to influence this same objective. In particular, Woodside supports the streamlining of State and Commonwealth regulatory action that drives for greenhouse emissions reductions, and would look to an Emissions Trading Scheme to contemplate transitional arrangements between existing State requirements and those established under a Scheme arrangement.

Woodside encourages the Review’s ongoing considerations of the interaction that these mechanisms will have with the Emissions Trading Scheme and the efficiency with which they would achieve significant reductions of greenhouse gas emissions at lowest cost.

Woodside appreciates the opportunity to participate in this significant debate and would be pleased to provide further detail on our submission, at your convenience.

Yours sincerely,



Vanessa Guthrie
Vice President, Sustainable Development