Commentary on Proposed Fiscal Changes

26 April 2017

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Introduction

In November 2016, Scott Morrison the Treasurer for Australia, announced a review of the operation of the Petroleum Resource Rent Tax (PRRT), crude oil excise and associated Commonwealth royalties. Led by Michael Callaghan AM, the review team will report back to the Government by April 2017 with recommendations for the reform of PRRT.

The purpose of the review is to "*help better protect Australia's revenue base and ensure that companies are paying the right amount of tax on their activities in Australia*." In addition, "*The review will advise the Government to what extent Commonwealth oil and gas taxes and royalties are operating as intended, having regard to the need to provide an equitable return to the Australian community from the extraction and sale of these resources without discouraging investment in exploration and development.*"

One potential change that has been widely suggested, is the introduction of a 10% royalty to apply to fields liable only to PRRT and Corporate Tax.

APPEA has requested that Wood Mackenzie reviews the likely impact of introducing such a royalty, specifically considering five offshore LNG developments that would be affected by such a measure.

It is unclear whether the introduction of the royalty would extend to all offshore production, or would be targeted to apply to those new LNG developments that have recently commenced production or will commence production in the near future. For the purpose of this review we have limited our analysis to the effect of retrospective changes on the following five new offshore LNG projects:

- Greater Gorgon;
- Ichthys;
- Pluto;
- Prelude; and
- Wheatstone

We have determined that the current economics of the fields on a life of project basis are marginal and the introduction of a 10% royalty will adversely affect the likelihood of the development of similar projects in the future. A 10% royalty can also be expected to reduce the level of incremental and new investment in current developments due to the negative effect on project economics.

Wood Mackenzie

Wood Mackenzie has a long history of providing data, analysis, valuations and consultancy services to the international oil and gas industry. We publish reports and analysis of upstream oil and gas fields, energy markets, downstream refining and marketing assets and energy companies in many areas of the world.

Wood Mackenzie has been instrumental in driving the development of new fiscal terms in a number of countries through our work with governments. We have also provided advice on fiscal terms to individual companies and industry associations. Our fiscal advisory work, developed over many years, gives us a deep understanding of the drivers both from the industry and government perspectives.

Wood Mackenzie has also produced a number of industry leading fiscal multi-client studies that compare fiscal terms globally, as well as looking at the drivers for changes to terms.

We have been covering the Australian upstream oil and gas sector in our research offerings for over thirty years.

This experience, complemented by the expertise of our analysts, gives us confidence in our ability to comment on the current discussion about the potential fiscal changes being suggested for the Australian upstream sector.

Observations

Effect of a 10% Royalty

During the period in which the review of potential changes to the Australian upstream fiscal regime has been progressing, a number of commentators have raised the issue of the introduction of a 10% royalty as a way of increasing government revenues.

To determine the effect on project economics of including a 10% royalty, we have used Wood Mackenzie's Global Economic Model (GEM) to analyse how the returns to companies will change if such a royalty is introduced. It is unclear at this stage whether the proposed royalty would replace PRRT or be in addition to PRRT, but for the purposes of this review we have assumed that any royalty would be in addition to PRRT.

We have used Wood Mackenzie's published models for Greater Gorgon, Ichthys, Pluto, Prelude and Wheatstone and run the economics at a long term flat real (2017) oil price assumption of US$60/bbl to determine the effect of the royalty. This price assumption falls within the range of those being currently used by companies making investment decisions. We have included our understanding of the LNG prices that will apply under this oil price assumption.

In the following table we show the effect on the Internal Rate of Return and the Net Present Value of the full project life at a 10% discount rate, a standard rate used in valuations. Companies will however tend to use a higher discount rate than 10% to evaluate future investment decisions, indeed Wood Mackenzie currently models the economics of new LNG projects at a 12% discount rate. This rate more accurately reflects the risks and the returns that are necessary to form the basis of investment in such projects.

Effect of 10% Royalty on Project Economics – Oil Price US$60/bbl 2017 real

Metric*	Gorgon	Ichthys	Pluto	Prelude	Wheatstone
IRR - current terms	7.7%	9.2%	8.0%	4.8%	7.8%
IRR + royalty	7.4%	8.7%	7.6%	4.3%	7.4%
Reduction in IRR	**-0.3%**	**-0.4%**	**-0.4%**	**-0.5%**	**-0.4%**
	US$ billion	**US$ billion**	**US$ billion**	**US$ billion**	**US$ billion**
**NPV10 - current terms	-24.8	-3.5	-4.2	-6.9	-9.5
**NPV10 + royalty	-27.5	-5.3	-4.9	-7.4	-11.3
Reduction in NPV10	**-2.7**	**-1.8**	**-0.7**	**-0.5**	**-1.8**

* IRR and NPV10 are shown on a life of project basis and include past and future cash flows
** NPVs are discounted to 1 January 2017

The above table shows that on a life of field basis the economics of the project are highly marginal. Internal rates of return of less than 10% challenge the ability of companies to justify taking projects forward. With most of the projects giving an IRR of 8% or less, it does mean that it is highly unlikely that most of the developments would have been sanctioned had such low IRRs been expected at FID.

The inclusion of a royalty reduces project IRRs by between 0.3 to 0.5 percentage points. Whilst this might not seem a significant amount, when dealing with already low IRRs the effect will be to reduce further the economic viability of such projects. These changes should not be discarded as being immaterial for companies and having no effect on their likelihood of investing. Such a reduction for already marginal future developments will further reduce the attraction of investment in Australian LNG projects.

The net present values for the overall project economics look very poor, with all projects showing significant negative values at a 10% discount rate. As mentioned above, companies are more likely to target higher IRRs for such projects, with 12% being currently a minimum threshold for the development of new LNG projects.

Expectations at the time of making a Final Investment Decision (FID)

IRRs in the above table show the economics under current data assumptions and do not reflect the IRRs that companies were expecting to achieve at the time of FID. We do not have access to the specific assumptions companies were using, but reviewing the reports that Wood Mackenzie published at the time of FID and also accessing Wood Mackenzie's historical databases, we have determined the IRRs using Wood Mackenzie assumptions at FID.

The following table shows the IRRs that Wood Mackenzie was forecasting at the time of each project's FID.

Difference in IRR between that at FID and currently

	Gorgon	Ichthys	Pluto	Prelude	Wheatstone
FID date	September 2009	January 2012	July 2007	May 2011	September 2011
IRR - at the time of FID	12.6%	12.9%	8.3%	14.5%	12.0%
IRR - current	7.7%	9.2%	8.0%	4.8%	7.8%
Reduction in IRR	**-4.9%**	**-3.7%**	**-0.3%**	**-9.7%**	**-4.2%**

The reductions in the above table are in most cases significant. showing changes from IRRs at the time of FID of at least 12% to the single digit IRRs currently being expected. The reductions in IRRs will be due to different factors, including both the fall in the price of crude (and thus the LNG price) as well as an increase in costs. What can be taken from the table is that IRRs need to be at least 12% before companies will take FID. Pluto's IRR at the time of FID was lower, however, FID was taken based upon expectations that further reserves would be discovered and economics would improve.

Qatar has been held up as an example of a jurisdiction where the government share is higher than those in Australia, but the IRRs in Qatar are also much higher with projects generating IRRs of above 30% for investors.

There might be a sense that all will be fine for existing projects if there is an increase in government share now. The driver for this opinion is that the majority of spending has been incurred and if projects are not yet producing, they will be producing LNG relatively soon. The point forward economics show positive net present values, thus the argument continues that it doesn't matter if companies are hit with a royalty at this stage, they won't be walking away from these projects.

However, were the Government retrospectively to introduce a royalty at this time, it will have presented industry with one set of terms prior to development, but after the companies have invested on this set of terms, the terms are changed to give the government a higher share when production is commencing.

Any change to the terms will make future offshore LNG developments much less attractive at a time when even under existing terms their economics are likely to look marginal. For example, based on analysis conducted by Wood Mackenzie, the introduction of a 10% royalty would decrease the IRR for the Scarborough field by 1.3% moving it from 12.0% to 10.7%.

However, it would wrong to think that there will be no effect on existing developments. There will be additional investment required for these projects to maintain future production. However any incremental investment that will be required in the future will be put at risk by the introduction of a 10% royalty.

Not only would the economics of these incremental projects be adversely affected by changes to the fiscal terms, but Australia would be seen as being much more fiscally unstable, with a willingness to let companies invest and then to change the terms after companies have made these massive investments.

Thus any potential future investor will have to consider carefully whether after making a multi-billion dollar investment they would be faced with an increase in the terms compared with those on which they had planned to make their investment. Such a situation will only act to diminish future appetite for investment and companies will be far less likely to invest in future LNG projects.

Whilst a number of factors will drive investment decisions, the companies involved in Australian LNG projects are generally global players. Therefore, Australian players are competing with other international projects for investment dollars: what is not invested in Australia will be invested elsewhere.

How common is royalty?

Royalty is a fairly widely used feature of oil and gas fiscal regimes internationally. The main purpose of a royalty is to provide the government with a stream of income in each year in which there is production from an oil or gas field, regardless of whether the field is generating profits. It is one of set of measures that governments use to generate income from oil and gas production, but royalty should not be viewed in isolation, rather as part of a package.

Royalty rates vary between jurisdictions, with for example the PNG LNG project in Papua New Guinea having a royalty of only 2%, although a development levy increases this rate to 4%.

Royalty rates for gas developments tend to be lower than those for oil projects. A recent fiscal study by Wood Mackenzie shows that for gas projects on new licences, the median starting rate for a gas royalty is 5%.

Although royalty is commonly applied, some countries that can be viewed as being comparable with Australia, in that they have a concession regime and production from multiple fields, do not have a royalty. Such countries include the

United Kingdom and Norway, neither of which have royalty and where government share from the upstream arises purely from profit based taxes.

The United Kingdom started abolishing royalties in 1982 when it was removed for new field developments. The UK and Norway have a broad spread of producing fields and therefore the requirement to ensure that the government receives income from each field diminishes as a result of the wide income base that generates revenues for the government. A royalty is therefore not an essential component of a fiscal regime and some countries that had royalty in the past have removed it.

In regimes that have high levels of royalty or other levels of take that are not related to profits, there is the risk that otherwise profitable projects could be made uneconomic. Any well designed fiscal system needs to ensure that it does not turn a project that is economic before the application of government share to being uneconomic after the application of government share.