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Level 3, Building S, Caulfield Campus
Sir John Monash Drive
Caulfield East VIC 3145

28 July 2017

The Manager
Large Corporates Unit
Corporate and International Tax Division
The Treasury
Langton Crescent
Parkes ACT 2600

Dear Sir

Re: Public Submission. Options to address the design issues identified in the Petroleum Resource Rent Tax Review

This public submission focuses on options to address design issues for Gas Transfer Pricing.

The Callaghan *PRRT Review Final Report* identified the method for determining the gas transfer price for the PRRT as the complex and inequitable.¹ The gas transfer price was seen as a factor contributing to low levels of PRRT revenue both now and into the future.

My recommendation is that the current Residual Price Method used for calculating the gas transfer price, as prescribed in the *PRRT Regulation 2015*, needs to be removed.² Instead, the ‘Net Back’ method should determine the PRRT ‘gas transfer price’. This method would start with the observable, commercial LNG sales price from which revenues are derived, with costs then to be deducted from the LNG tanker to the LNG Custody Transfer Meter. This meter would be the new taxing point. The shift in the taxing point would result in the application of the PRRT on LNG, which is currently not subject to the PRRT. All existing and new integrated LNG projects that extract natural gas from Commonwealth waters should be subject to the proposed change in

¹ Michael Callaghan, *Petroleum Resource Rent Tax Review Final Report to Treasurer*, released 28 April 2017

<https://www.treasury.gov.au/~media/Treasury/Consultations%20and%20Reviews/Reviews%20and%20Inquiries/2016/Review%20of%20Petroleum%20Resource%20Rent%20Tax/Key%20Documents/PDF/PRRT_final_report.ashx>.

² *Petroleum Resource Rent Tax Assessment Regulation 2015* (Cth).

regulation, as it would be a more equitable arrangement between sellers, buyers and the Australian Government.

In addition, I submit that:

- The ‘uplift rates’ on deductible expenditure require more modelling for integrated gas projects.
- The ‘transferability’ of exploration expenditure requires more modelling for integrated gas projects.
- The ‘reverse order’ of deductions requires more modelling for integrated gas projects.
- The focus of the PRRT modelling should be on natural gas projects in Commonwealth waters that are not subject to a royalty regime.

1. Background

I am conducting Monash University-funded research on integrated natural gas-to-liquids projects that extract natural gas from basins in Commonwealth waters. My key research question concerns the modifications necessary to the current fiscal regime for petroleum to facilitate an equitable return to the Australian community. My research findings from fiscal system modelling of one case study, Chevron’s Gorgon project, indicate flaws in the fiscal system, such as zero PRRT collections for Gorgon to 2030. The research is significant for its unique review of Australia’s petroleum taxation from the 1980s to the rise in the 2000s of natural gas projects for LNG export. My findings have been presented at academic tax/energy conferences during 2017 in Wellington, Amsterdam and Singapore and will be published in a quality peer-reviewed journal.³ Five of my six recommendations in my January 2017 submission to the Callaghan PRRT Review were taken up in the Callaghan *PRRT Review Final Report*, and this submission elaborates on the recommendation concerning the calculation of the gas transfer price.

³ Kraal Diane, (forthcoming 2017) ‘Review of the Petroleum Resource Rent Tax: Implications from a case study of the Gorgon gas project’, *Federal Law Review*, Vol. 45, Number 2, see <https://flr.law.anu.edu.au/>.

2. Gas Transfer Pricing Design Problems

2.1 Some anecdotes

The anecdotes below illustrate the lack of understanding of the residual price method used for Gas Transfer Pricing calculations.

With regard to my Gorgon Gas Project research, my research assistant (an engineer) with 35 years' experience, stated:

I can input all the PRRT model variables, but you will have to do the Gas Transfer Price part as I do not understand the regulation's requirements.⁴

I used Wood McKenzie data for my Gorgon Gas Project research.⁵ When asked whether their data would include the Gas Transfer Price for the gas feedstock for the Gorgon gas project, Wood MacKenzie replied:

Not for LNG. The data however does include the assumed domestic gas price out to 2026.⁶

An oil and gas industry consultant, with 30 years' experience, stated:

Don't talk to me about the PRRT Regulations technicalities. When I model the PRRT for new oil and gas fields I simply use the spot market price for the gas transfer price, which can be 8, 9 or 10 dollars. In my modelling I just change around the prices.⁷

An energy industry employee, with 35 years' experience, stated:

The PRRT regulations are too complex. My company requested consulting engineers to model our gas fields to determine the PRRT costs. The consultant results were not satisfactory, as they wrote, *'Gas Transfer Prices were estimated. This and other assumptions used in the analysis should be confirmed with the relevant tax authorities for definitive purposes.'*⁸

⁴ D Kraal conversation with Engineer 'A', research assistant, 30/11/16.

⁵ Wood Mackenzie are recognised providers of petroleum industry data, <https://www.woodmac.com/>

⁶ Wood Mackenzie email to D Kraal, 21/11/16.

⁷ D Kraal interview with Engineer 'B', 23/7/17.

⁸ Engineer 'C', email to D Kraal, 23/6/16.

- *Hansard*

Parliament's Hansard recorded the following evidence from the July 2017 Senate Inquiry into corporate tax avoidance, concerning Australia's offshore oil and gas industry.⁹ The following Hansard extracts include expert witnesses' understanding of the residual price method used for Gas Transfer Price calculations.

- a. Evidence was given by Mr Hirschhorn, Deputy Commissioner, Public Groups, Australian Tax Office:

Senator McALLISTER: Dr Kraal, who gave evidence earlier today, criticises the cost-plus calculation on the grounds that it assumes a zero value for gas reserves. Is that your understanding of how that mechanism works?

Mr Hirschhorn [Australian Tax Office]: I would say that is how it operates, that there are costs and then there is a cost-plus, and there is no embedded cost of the gas reserves in the formula.

Senator McALLISTER: What is the theoretical basis for the exclusion of that input cost?

Mr Hirschhorn [Australian Tax Office]: If I can go right back: we have spoken about three sorts of taxes—royalties, which I see as a tax on gross revenue; income tax, which is a tax on profits, which I sometimes describe as an accountant's tax; and the PRRT, which is a tax on rents, or returns over a baseline profit, also called the superprofits tax, and I call that an economist's tax. The challenge is, how do you work out that appropriate baseline return? The PRRT has some complex mechanisms but a lot of mechanisms to work out what that baseline return is.

I think Mr Callaghan struggled to unveil the reasoning of every element of how that profit was generated. I will say that I am simply an accountant, not an economist.

⁹ Hansard, Senate Inquiry, 3 July 2017, <[http://parlinfo.aph.gov.au/parlInfo/download/committees/commsen/b837edf3-1ca4-4dde-86c4-6e7d2ca9ee79/toc_pdf/Economics%20References%20Committee 2017 07 03 5234.pdf;fileType=application%2Fpdf#search=%22committees/commsen/b837edf3-1ca4-4dde-86c4-6e7d2ca9ee79/0000%22](http://parlinfo.aph.gov.au/parlInfo/download/committees/commsen/b837edf3-1ca4-4dde-86c4-6e7d2ca9ee79/toc_pdf/Economics%20References%20Committee%202017%2007%2003%205234.pdf;fileType=application%2Fpdf#search=%22committees/commsen/b837edf3-1ca4-4dde-86c4-6e7d2ca9ee79/0000%22)>.

- b. Evidence was given by Mr Wilson, First Assistant Secretary, Resources Division, Department of Industry, Innovation and Science:

Senator WHISH-WILSON: We have talked about different methods today, like the look-back and netback approaches—how efficient they are and whether one would be more suitable. There is some contention. Certainly, some of the evidence we have had from witnesses today is that other models might be useful. And, as you know, Callaghan himself talked about using a specific method.

Mr Wilson [DIIS]: Residual pricing method.

Senator WHISH-WILSON: That is right, yes.

Mr Wilson [DIIS]: I thought the discussion—when I say 'I thought', I mean the department's view is that the discussion in the Callaghan paper was pretty good on this. The fact that we have had the consistent method that is in the PRRT for a long period of time has been highly beneficial. The companies know it. The ATO know it. It is an established method.

My understanding is it was a compromised method at the time and it was, largely, data and other information gaps that made that method one that everyone could agree on. I do not have any view on whether or not that method should be chosen.

The preceding anecdotes, and expert evidence recorded in Hansard, point to a very complex method for calculating the Gas Transfer Price. It seems to confound both 'experts' and Senators (as representatives of the wider community).

2.2 Integrated LNG projects and gas transfer pricing per the PRRT Regulation 2015.

The questions and answers below highlight the issues with the rise of LNG projects in Australia and the legislative responses.

What is different about LNG projects in Australia?

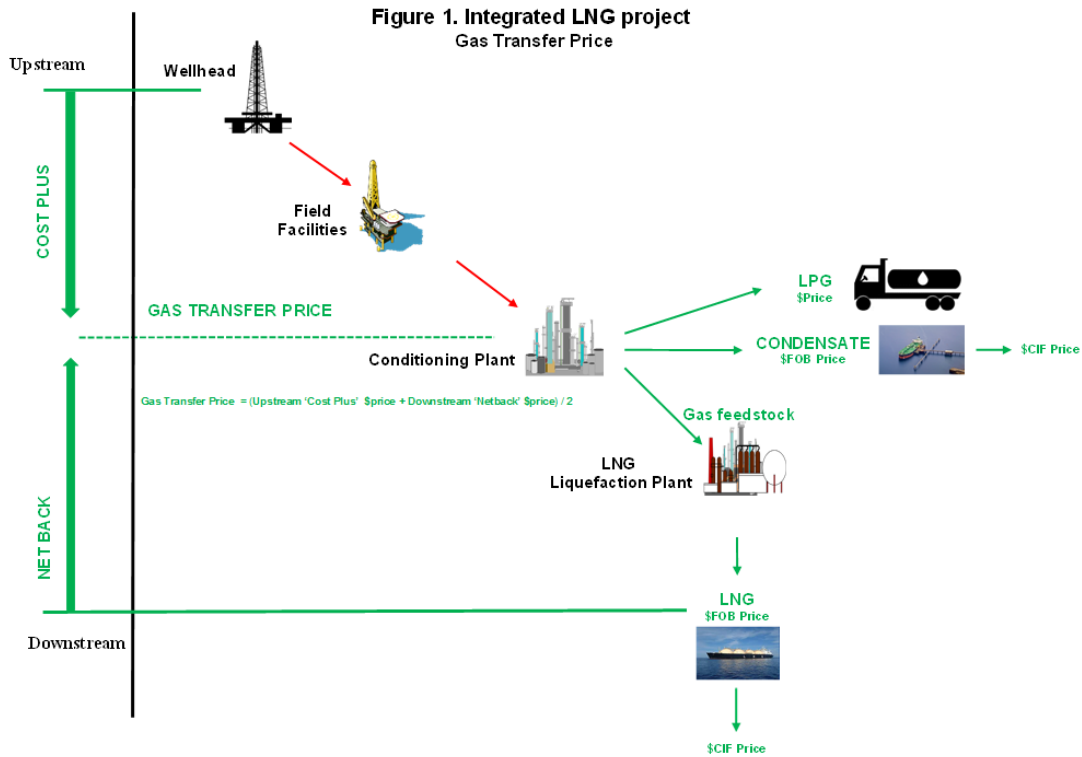
Liquefied natural gas (LNG) projects in Australia are integrated, which means companies form a joint venture to operate activities upstream (extraction of gas at the field's wellhead, and 'cleaning' of the gas at the conditioning plant to produce gas feedstock); as well as activities downstream (piping the gas feedstock to the liquefaction plant, converting it to liquid, and finally loading the LNG onto tanker ships for export).

Why are integrated LNG projects an issue for PRRT revenue?

The Government's PRRT revenue is calculated at a location called the 'taxing point' that is situated just before the gas feedstock goes into the liquefaction plant (see Figure 1).¹⁰ The calculation for PRRT revenue is: gas price x volume x 40% PRRT rate (eg. price \$10 x volume of gas sold 1,000 mcf x PRRT rate 40% = \$4,000).

However there is no "arm's length" or fair market price for the gas feedstock used in integrated gas projects in Australia. This is because both the upstream and downstream operations in a gas project are typically conducted by a joint venture group of companies.

¹⁰ Gas feedstock is referred to as 'sales gas' in the *PRRTA Act (1987)*.



Source: author

How do we deal with the problem of no arm's length gas price?

Where there is no “arm's length” or fair market price for gas in integrated LNG projects, PRRT regulations provide a method for calculating a ‘gas transfer price’ for the gas feedstock used in the liquefaction process. The method is referred to as the residual price method or RPM. Taxpayers, such as Chevron, are required to use this method if there is no comparable uncontrolled price (CUP), or Advance Pricing Arrangement with the Tax Office.

The RPM is a central design feature of the PRRT used to calculate PRRT revenues (from which exploration, capital costs and operating expenditures are deducted). The higher the ‘gas transfer price’, the more PRRT revenues for the Government, and vice versa.

How does the PRRT Regulation's RPM method work?

The RPM is a combination of both the 'Net Back' and 'Cost Plus' pricing methods. This results in two different prices. The difference is divided by two. The RPM method seeks to establish the mid-point gas price between the upstream and downstream operations of an integrated gas project.

Figure 1 illustrates the RPM calculation requirements of the PRRT Regulations:

- (i) Downstream: uses the Net Back method to determine a gas price.
A price is calculated by taking the LNG sales price and multiplying by gas volumes, less downstream costs that include the liquefaction plant. The net result is divided by gas volumes.

- (ii) Upstream: uses the cost plus method to determine a gas price.
A price is calculated by adding all upstream costs from the wellhead to the boundary of the liquefaction plant, and dividing by gas volumes.

- (iii) The final step is to add together the calculated gas prices from upstream and downstream, and divide by two to derive the 'gas transfer price'.

What are the flaws in the PRRT Regulations' RPM method?

The RPM's combination of 'Net Back' and 'Cost Plus' pricing methods, as prescribed by the PRRT Regulations, is problematic for many reasons. In this single example, the 'Cost Plus' method used to derive the upstream gas price, only calculates costs from the gas field's wellhead to the boundary of the liquefaction plant. It ignores the petroleum reservoir value, that is, it assumes the value of the gas reserves are zero. The resource is free of charge. There is no imputed royalty or PRRT cost. In other words, the upstream price is undervalued.¹¹

¹¹ The Callaghan *PRRT Review Final Report* identifies many other flaws in the RPM method for gas transfer pricing, pp 150-161.

When the upstream ‘Cost Plus’ gas price is compared to the downstream ‘Net Back’ gas price, there will always be a difference. The upstream ‘Cost Plus’ price will nearly always be less than the downstream ‘Net Back’ price. The ‘gas transfer price’ is further reduced by the averaging process. A lower ‘gas transfer price’ results in lower PRRT revenues for the Government.

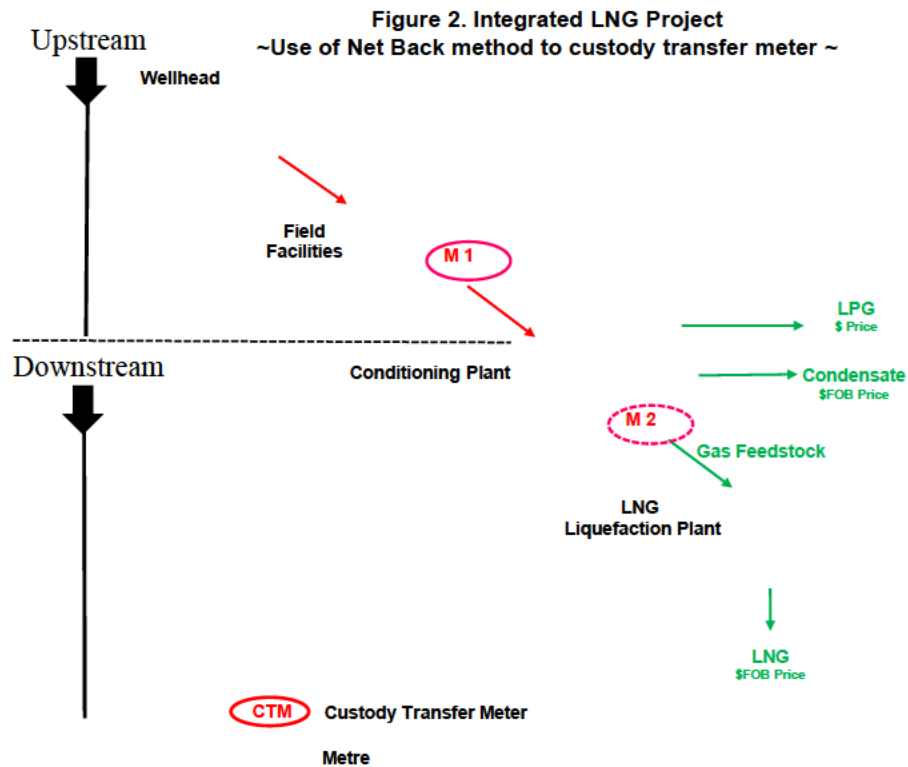
The RPM method clearly disadvantages the Government and the wider Australian community as the owners of gas resources. The flaws in the RPM method result in the Australian government losing millions of dollars in tax.

No other country in the world uses this ‘bespoke’ and flawed RPM method to determine a gas transfer price.

The RPM method is not used in the calculation of North West Shelf gas royalties, or for calculating the Queensland’s state royalty on onshore coal seam gas.

3. An option to fix the Gas Transfer Price problem

The ‘Net Back’ method is the alternative option to determine the PRRT ‘gas transfer price’. Consider Figure 2 below, which shows the elements for a netting of costs from the LNG sales price back to a *custody transfer meter (CTM)*. Currently a CTM provides an observable price for products such as LPG and condensate, but there is no CTM for gas feedstock.



Source: author

3.1 Net Back to the LNG Custody Transfer Meter

The Net Back method involves taking the LNG sales price and multiplying by gas volumes, less downstream costs to the LNG custody transfer meter at the liquefaction plant's storage tank. The net result is then divided by gas volumes to determine the gas transfer price.

3.1.1 What is custody transfer?

Custody transfer in the oil and gas industry refers to the transactions that involve transporting physical substance from one operator to another. This includes the transfer of petroleum products from a production platform to a pipeline, holding tank, truck or marine tanker to re-gasification plants and other transactions.

Custody transfer in fluid measurement is defined as a metering point (location) where the fluid is being measured for sale from one party to another. During custody transfer, accuracy is of great importance to both the company delivering the material and the eventual recipient and when transferring product.¹²

The term "fiscal metering" is often interchanged with custody transfer, and refers to metering that is a point of a commercial transaction, such as when a change in ownership takes place. Custody transfer takes place any time fluids are passed from the possession of one party to another. Custody transfer generally involves industry standards; national metrology standards; contractual agreements between custody transfer parties; and government regulation and taxation.¹³

Due to the high level of accuracy required during custody transfer applications, the flowmeters which are used to perform this process might typically be subject to approval by organisations such as SGS Australia, the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), the Australian National Audit Office (ANAO) and the various States' mines and petroleum authorities.¹⁴

3.1.2 What are Custody Transfer Meters?

LNG ships are fitted with high-accuracy liquid-level, temperature and vapour-pressure measuring equipment or a custody transfer measuring system (CTMS). The cargo tanks are calibrated by an independent measurer so that the volume of cargo can be determined accurately. The CTMS is accepted by the buyer and the seller of the cargo as the basis for the quantity purchased or sold. Samples of the LNG cargo are taken ashore and analysed to determine the cargo's chemical composition from which the heating value can be calculated. The heating value is then multiplied by the volume loaded or discharged from the ship to obtain the British thermal unit (Btu) content

¹² Rudroff, D. J. (2006). Custody Transfer: The Value of Good Measurement and the Search for the Truth. *Pipeline and Gas Journal*, 236(7), 1.

¹³ Dupuis, E., & Hwang, G. (2010). Custody Transfer: Flowmeter as Cash Register. *Control Engineering*. Retrieved from <http://www.controleng.com/index.php?id=483&cHash=081010&tx_ttnews%5btt_news%5d=39535>.

¹⁴ SGS Australia, <http://www.sgs.com.au/>; and NOPSEMA < <https://www.nopsema.gov.au/>>.

of the delivered cargo, which is used as the basis for cargo invoices, import duties and fiscal accounting.¹⁵

3.1.3 Why use a custody transfer meter as the taxing point?

The custody transfer meter is where an observable commercial transaction takes place, the ideal taxing point for sales gas (that has been converted into LNG). It is fair to buyer, seller and government.

3.1.4 What needs to change?

The taxing point for sales gas in the PRRT legislation needs to be changed. The taxing point would shift from just before liquefaction to the LNG custody transfer meter at the liquefaction plant's storage tank. Figure 2 shows that the location of the LNG custody transfer meter, besides many other flow meters in an integrated facility.

The shift in the taxing point would mean applying the PRRT on LNG, which is currently not subject to the PRRT. Sales gas (ie. feedstock gas) is subject to the PRRT.¹⁶ Critics argue that if LNG were to be subject to the PRRT, then the PRRT would be going beyond taxing the extraction of the resources and would include taxing the value added from subsequent processing of the gas.

The counter argument for LNG to be subject to PRRT is that LNG has to be re-gasified before use by the final customer, in other words, it is converted back to natural gas. Other products from petroleum liquids and gas extraction, such as condensate is stabilised, and LPG is processed to meet customer specifications before sale. Thus it is evident that neither of these resources are sold in an unprocessed state.

¹⁵ Price Waterhouse Coopers. (2006). *LNG Glossary of Terms* London: Petroleum Economist, p.20.

¹⁶ LNG is not a marketable petroleum commodity as it is processed from sales gas, *PRRTA Act (1987)*, Section 2E. Thus it is not subject to the PRRT.

The PRRT Regulations need to be changed. The current PRRT Regulations prescribe an arbitrary location as the taxing point for sales gas. The current taxing point makes no commercial sense, does not reflect practice, invites tax minimisation and has no theoretical basis.¹⁷

The RPM needs to be removed and substituted by the Net Back method. The proposed Net Back method should be the same as that for the North West Shelf project's royalty calculation. It is understood that improvements are underway concerning the measurement and administration North West Shelf project's royalty regime after an unsatisfactory audit report in 2016.¹⁸ The PRRT is a form of royalty. The methods used to calculate the taxing of offshore gas should be harmonised.

I would be pleased to meet with Treasury to further discuss this submission.

Yours Sincerely

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¹⁷ Kraal D., (2016) *The Petroleum Resource Rent Tax: Overview of primary documents and literature leading to the 1987 legislation*, Tax and Transfer Policy Institute, Australian National University, Working Paper, pp 6-7, <<https://taxpolicy.crawford.anu.edu.au/publication/tpi-working-papers/8697/petroleum-resource-rent-tax-overview-primary-documents-and>>; Kraal D., (2016) 'Australia's Petroleum Resource Rent Tax: Paul Keating, Peter Walsh and other game changers', *Griffith Law Review*, Vol. 25, Number 4, pp. 492-524, <<http://www.tandfonline.com/eprint/JWYImUCDq77pkYYnkpsi/full>>.

¹⁸ Australian National Audit Office. (2016). *Collection of North West Shelf Royalty Revenue* Canberra: Australian Government, released 28 November, p.3.