

GRE ANALYSIS
May 1, 2006
Pedro van Meurs

The Senate introduced the concept of the Gross Revenue Exclusion. This is a good concept because typically jurisdictions which have to transport gas over large distances in order to reach markets will have a government take for gas that is below that for oil.

An analysis was done in order to determine a reasonable level of GRE.

Two cases were compared:

- A 6 Tcf gas field with 300 million barrels of condensates under the stranded gas contract, and
- A 6 Tcf gas field with 300 million barrels of condensates on the North Slope under the general PPT legislation.

It was assumed that the 6 Tcf field and 300 million condensates would require capital expenditures of \$ 2.4 billion in total. Furthermore total operating expenditures of \$ 1.8 billion were assumed.

It was assumed that the royalty rate plus severance tax rate that would equal together exactly 20% (13.75% royalty plus 7.25% severance tax were used). This would be a field that would be representative of the overall 20% participation by the State under the proposed stranded gas contract.

Under the general PPT legislation the payments on such a field would be the 13.75% royalty plus the PPT for gas. The 20-20 concept was used. Sensitivity analysis indicated that a 64% GRE would result in practically the same payments to government as for the field under the stranded gas contract.

It should be noted that the PPT calculation for the condensates would be identical under the stranded gas contract and the general PPT legislation.

The following table illustrates this PPT calculation for condensates.

The table is based on a value of \$ 30 per barrel at the point of production.

The table shows how the PPT on the condensates would be modest at this price. However, the table also shows that all capital costs and operating costs can be absorbed by the condensates.

As was explained previously high cost small oil fields and the condensate from gas fields will not result in much PPT because of the cost deductions and the PPT credits.

CONDENSATE PPT		Condensate Price at Point of Production					\$ 30/bbl				
Years	Production	Gross Rev	Royalty	PPT Gross	Capex	Opex	Net Cash	PPT	Investm	PPT	
	(MMbbls)	(\$ million)	(\$ million)	(\$ million)	(\$ million)	(\$ million)	(\$ million)	Loss/Gain	Credit	(\$ million)	
2006	0.00	0.0	0.0	0.0	5.00	0.0	-5.0	-1.0	1.0	-2.0	
2007	0.00	0.0	0.0	0.0	5.00	0.0	-5.0	-1.0	1.0	-2.0	
2008	0.00	0.0	0.0	0.0	10.00	0.0	-10.0	-2.0	2.0	-4.0	
2009	0.00	0.0	0.0	0.0	20.00	0.0	-20.0	-4.0	4.0	-8.0	
2010	0.00	0.0	0.0	0.0	130.00	0.0	-130.0	-26.0	26.0	-52.0	
2011	0.00	0.0	0.0	0.0	450.00	0.0	-450.0	-90.0	90.0	-180.0	
2012	0.00	0.0	0.0	0.0	500.00	0.0	-500.0	-100.0	100.0	-200.0	
2013	0.00	0.0	0.0	0.0	500.00	0.0	-500.0	-100.0	100.0	-200.0	
2014	0.00	0.0	0.0	0.0	400.00	0.0	-400.0	-80.0	80.0	-160.0	
2015	5.32	159.5	21.9	137.6	130.00	61.1	-53.5	-10.7	26.0	-36.7	
2016	18.25	547.5	75.3	472.2	70.00	88.0	314.2	62.8	14.0	48.8	
2017	18.25	547.5	75.3	472.2	60.00	88.5	323.7	64.7	12.0	52.7	
2018	18.25	547.5	75.3	472.2	20.00	89.0	363.2	72.6	4.0	68.6	
2019	18.25	547.5	75.3	472.2	20.00	89.5	362.7	72.5	4.0	68.5	
2020	18.25	547.5	75.3	472.2	20.00	90.0	362.2	72.4	4.0	68.4	
2021	18.25	547.5	75.3	472.2	20.00	90.5	361.7	72.3	4.0	68.3	
2022	18.25	547.5	75.3	472.2	20.00	91.0	361.2	72.2	4.0	68.2	
2023	18.25	547.5	75.3	472.2	20.00	91.5	360.7	72.1	4.0	68.1	
2024	18.25	547.5	75.3	472.2	0.00	91.5	380.7	76.1	0.0	76.1	
2025	16.43	492.8	67.8	425.0	0.00	82.9	342.1	68.4	0.0	68.4	
2026	14.78	443.5	61.0	382.5	0.00	79.6	302.9	60.6	0.0	60.6	
2027	13.30	399.1	54.9	344.2	0.00	76.6	267.6	53.5	0.0	53.5	
2028	11.97	359.2	49.4	309.8	0.00	73.4	236.4	47.3	0.0	47.3	
2029	10.78	323.3	44.5	278.8	0.00	71.1	207.8	41.6	0.0	41.6	
2030	9.70	291.0	40.0	251.0	0.00	68.4	182.6	36.5	0.0	36.5	
2031	8.73	261.9	36.0	225.9	0.00	61.0	164.9	33.0	0.0	33.0	
2032	7.86	235.7	32.4	203.3	0.00	59.2	144.1	28.8	0.0	28.8	
2033	7.07	212.1	29.2	182.9	0.00	57.1	125.8	25.2	0.0	25.2	
2034	6.36	190.9	26.2	164.7	0.00	55.2	109.4	21.9	0.0	21.9	
2035	5.73	171.8	23.6	148.2	0.00	53.5	94.7	18.9	0.0	18.9	
2036	5.15	154.6	21.3	133.4	0.00	51.8	81.6	16.3	0.0	16.3	
2037	4.64	139.2	19.1	120.0	0.00	50.3	69.8	14.0	0.0	14.0	
2038	4.18	125.3	17.2	108.0	0.00	48.9	59.2	11.8	0.0	11.8	
2039	3.76	112.7	15.5	97.2	0.00	40.5	56.7	11.3	0.0	11.3	
Total	300.00	9000.00	1237.50	7762.50	2400.00	1800.00	3562.50	712.50	480.00	232.50	

Since all the costs have now been absorbed by the condensates there are no longer any costs to be deducted from the gas revenues.

The following table shows the value of the tax gas under the stranded gas contract based on a gas price at the point of production of \$ 4 per Mcf.

TAX GAS CALCULATION BASED ON 7.25% TAX GAS RATE

Value at point of production \$ 4/Mcf

Years	Production (Bcf)	Gross Rev (\$ million)	Royalty (\$ million)	Tax Gas (\$ million)	Total Gas (\$ million)
2006	0.00	0.0	0.0	0.0	0.0
2007	0.00	0.0	0.0	0.0	0.0
2008	0.00	0.0	0.0	0.0	0.0
2009	0.00	0.0	0.0	0.0	0.0
2010	0.00	0.0	0.0	0.0	0.0
2011	0.00	0.0	0.0	0.0	0.0
2012	0.00	0.0	0.0	0.0	0.0
2013	0.00	0.0	0.0	0.0	0.0
2014	0.00	0.0	0.0	0.0	0.0
2015	106.35	425.4	58.5	26.6	85.1
2016	365.00	1460.0	200.8	91.3	292.0
2017	365.00	1460.0	200.8	91.3	292.0
2018	365.00	1460.0	200.8	91.3	292.0
2019	365.00	1460.0	200.8	91.3	292.0
2020	365.00	1460.0	200.8	91.3	292.0
2021	365.00	1460.0	200.8	91.3	292.0
2022	365.00	1460.0	200.8	91.3	292.0
2023	365.00	1460.0	200.8	91.3	292.0
2024	365.00	1460.0	200.8	91.3	292.0
2025	328.50	1314.0	180.7	82.1	262.8
2026	295.65	1182.6	162.6	73.9	236.5
2027	266.09	1064.3	146.3	66.5	212.9
2028	239.48	957.9	131.7	59.9	191.6
2029	215.53	862.1	118.5	53.9	172.4
2030	193.98	775.9	106.7	48.5	155.2
2031	174.58	698.3	96.0	43.6	139.7
2032	157.12	628.5	86.4	39.3	125.7
2033	141.41	565.6	77.8	35.4	113.1
2034	127.27	509.1	70.0	31.8	101.8
2035	114.54	458.2	63.0	28.6	91.6
2036	103.09	412.3	56.7	25.8	82.5
2037	92.78	371.1	51.0	23.2	74.2
2038	83.50	334.0	45.9	20.9	66.8
2039	75.15	300.6	41.3	18.8	60.1
Total	6000.00	24000.0	3300.00	1500.00	4800.0

The total value of the gas is 20% of the gross value of the gas.

Under the PPT calculation, all costs have already been deducted from the condensate values and the credits have already been taken against the PPT on the condensates. Therefore the PPT calculation for gas does not have further cost deductions or credits associated with it. The following table shows this calculation:

GAS PPT WITH 64% GROSS REVENUE EXCLUSION

Value at point of production \$ 4/Mcf

Years	Production (Bcf)	Gross Rev (\$ million)	Royalty (\$ million)	PPT gross (\$ million)	GRE (\$ million)	PPT Base (\$ million)	PPT (\$ million)	Total Gas (\$ million)
2006	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015	106.35	425.4	58.5	366.9	234.8	132.1	26.4	84.9
2016	365.00	1460.0	200.8	1259.3	805.9	453.3	90.7	291.4
2017	365.00	1460.0	200.8	1259.3	805.9	453.3	90.7	291.4
2018	365.00	1460.0	200.8	1259.3	805.9	453.3	90.7	291.4
2019	365.00	1460.0	200.8	1259.3	805.9	453.3	90.7	291.4
2020	365.00	1460.0	200.8	1259.3	805.9	453.3	90.7	291.4
2021	365.00	1460.0	200.8	1259.3	805.9	453.3	90.7	291.4
2022	365.00	1460.0	200.8	1259.3	805.9	453.3	90.7	291.4
2023	365.00	1460.0	200.8	1259.3	805.9	453.3	90.7	291.4
2024	365.00	1460.0	200.8	1259.3	805.9	453.3	90.7	291.4
2025	328.50	1314.0	180.7	1133.3	725.3	408.0	81.6	262.3
2026	295.65	1182.6	162.6	1020.0	652.8	367.2	73.4	236.0
2027	266.09	1064.3	146.3	918.0	587.5	330.5	66.1	212.4
2028	239.48	957.9	131.7	826.2	528.8	297.4	59.5	191.2
2029	215.53	862.1	118.5	743.6	475.9	267.7	53.5	172.1
2030	193.98	775.9	106.7	669.2	428.3	240.9	48.2	154.9
2031	174.58	698.3	96.0	602.3	385.5	216.8	43.4	139.4
2032	157.12	628.5	86.4	542.1	346.9	195.1	39.0	125.4
2033	141.41	565.6	77.8	487.9	312.2	175.6	35.1	112.9
2034	127.27	509.1	70.0	439.1	281.0	158.1	31.6	101.6
2035	114.54	458.2	63.0	395.2	252.9	142.3	28.5	91.4
2036	103.09	412.3	56.7	355.6	227.6	128.0	25.6	82.3
2037	92.78	371.1	51.0	320.1	204.9	115.2	23.0	74.1
2038	83.50	334.0	45.9	288.1	184.4	103.7	20.7	66.7
2039	75.15	300.6	41.3	259.3	165.9	93.3	18.7	60.0
Total	6000.00	24000.0	3300.00	20700.0	13248.0	7452.0	1490.4	4790.4

As can be seen from this example the royalty on gas would be exactly the same since the royalty would simply be maintained. The value of the PPT on gas would be almost identical to the Tax Gas with a 64% Gross Revenue Exclusion in this case.

This percentage will vary slightly with royalty rates. However, in general the figures will be very close.

It is therefore that a 64% GRE can be recommended.