PROGRESSIVITY
PROFITABILITY
PARITY
GAS

Senate Finance Committee

February 24, 2010

Alaska State Department of Revenue

Agenda

- How Does the Production Tax Calculation Change when Gas is Produced?
- Brief historical background on the philosophy behind the current system
- How does "Parity" affect the production tax calculation?
- What is being potentially "locked in" with the AGIA open season?
- Forecasting oil and gas prices 2020 to 2030
- Policy Issues Associated with the Gas Tax

Basic Oil Tax Calculation

	Oil	
ANS Price	$75.00	$/bbl
Daily Production	500,000	Bbl/d
Annual Production	182,500,000	bbl
Total Annual Gross Sales Value	**$13,687,500,000**	
Marine and TAPS Tariff on Oil	($6.50)	$/bbl
Gas Pipeline and Gas Treatment Plant		
Transportation Costs	**($1,186,250,000.00)**	
Value at Point Of Production	**$12,501,250,000**	
Royalty and Federal	($1,562,656,250.00)	
Taxable Point of Production Value	$10,938,593,750	
Lease Expenditures		
Opex	($2,000,000,000)	
Capex	($2,000,000,000)	
Total Lease Expenditures	**($4,000,000,000)**	
Production Tax Value (PTV)	**$6,938,593,750**	
PTV on BOE basis	**$43.45**	
Base Tax (25%*PTV)	$1,734,648,438	
Progressive Tax Rate	5.38%	
Progressive Tax	$373,326,216	
Total Tax Due before credits	$2,107,974,654	
Credits Applied Against Taxes	($400,000,000)	
Total Tax after credits	**$1,707,974,654**	

Now What if We Added 4.5 Bcf of Gas Production?

	Oil		Gas		Combined
ANS Price	$75.00	$/bbl	$8.00	$/mmbtu	
Daily Production	500,000	Bbl/d	4.5	Bdf/d	
Annual Production	182,500,000	bbl	1,643	Bcf/year	
Total Annual Gross Sales Value	**$13,687,500,000**		**$13,140,000,000**		**$26,827,500,000**
Marine and TAPS Tariff on Oil	($6.50)	$/bbl			
Gas Pipeline and Gas Treatment Plant			($4.50)	$/mmbtu	
Transportation Costs	**($1,186,250,000.00)**		**($7,391,250,000)**		**($8,577,500,000)**
Value at Point Of Production	**$12,501,250,000**		**$5,748,750,000**		**$18,250,000,000**
Royalty and Federal	($1,562,656,250.00)		($718,593,750.00)		($2,281,250,000)
Taxable Point of Production Value	$10,938,593,750		$5,030,156,250.00		$15,968,750,000
Lease Expenditures					
Opex	($2,000,000,000)		($200,000,000)		($2,200,000,000)
Capex	($2,000,000,000)		($200,000,000)		($2,200,000,000)
Total Lease Expenditures	**($4,000,000,000)**		**($400,000,000)**		**($4,400,000,000)**
Production Tax Value (PTV)	**$6,938,593,750**		**$4,630,156,250**		**$11,568,750,000**
PTV on BOE basis	**$43.45**		**$19.33**		**$29**
Base Tax (25%*PTV)	$1,734,648,438		$1,157,539,063		$2,892,187,500
Progressive Tax Rate	5.38%		0.00%		0.00%
Progressive Tax	$373,326,216		$0		$0
Total Tax Due before credits	$2,107,974,654		$1,157,539,063		$2,892,187,500
Credits Applied Against Taxes	($400,000,000)		($40,000,000)		($440,000,000)
Total Tax after credits	**$1,707,974,654**		**$1,117,539,063**		**$2,452,187,500**

	Oil	Gas	Combined
ANS Price	$75.00 $/bbl	$8.00 $/mmbtu	
Daily Production	500,000 Bbl/d	4.5 Bdf/d	
Annual Production	182,500,000 bbl	1,643 Bcf/year	
Total Annual Gross Sales Value	**$13,687,500,000**	**$13,140,000,000**	**$26,827,500,000**
Marine and TAPS Tariff on Oil	($6.50) $/bbl		
Gas Pipeline and Gas Treatment Plant		($4.50) $/mmbtu	
Transportation Costs	**($1,186,250,000.00)**	**($7,391,250,000)**	**($8,577,500,000)**
Value at Point Of Production	**$12,501,250,000**	**$5,748,750,000**	**$18,250,000,000**
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Total Tax Due before credits	$2,107,974,654	$1,157,539,063	$2,892,187,500
Credits Applied Against Taxes	($400,000,000)	($40,000,000)	($440,000,000)
Total Tax after credits	**$1,707,974,654**	**+ $1,117,539,063**	**≠ $2,452,187,500**

Was This Expected When ACES was Crafted?

- Same Dynamic for Gas that creates Uplift for Heavy Oil and Marginal Field Development
- Intended to be a positive incentive for Producers to commit to the gasline project

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THE HISTORICAL PERSPECTIVE

SENATE FINANCE COMMITTEE

NOVEMBER 9, 2007

Goals for Fiscal Design

Nov 2007

- **Based on [hearing dialog] we see the State trying to achieve the following in this special session:**
  1. Fields with larger **profitability** should be paying more taxes
  2. Encourage investment in existing units
     - Reinvestment in producing assets
     - Investment in new developments
       - Conventional
       - Unconventional (i.e. heavy oil)
       - Gas
  3. Encourage new investment outside legacy units
     - Level playing field for incumbents and new entrants
  4. Durability
     - Don't want to be back 'fixing' things
  5. Build on prior tax dialogue

The Fiscal Design Challenge

Nov 2007

- **At the same time the State must address "The Take"**
  - (Goal 1) Capture the State's equitable share when margins are very high
  - (Goal 4) Include a form of progressive structure to adapt to the inevitable changes in the three main variables of the business:
    - Price
    - Production
    - Cost
- **…as well as "The Give Back"**
  - (Goal 2) Encouragement to reinvest profits for more development inside legacy units

Goal 3: Encourage New Investment

Nov 2007

- **The [now current] legislation appears to provide the right incentives to encourage investment in new fields**
  - Investment credits
  - Net Operating Loss credits
    - Aid to new entrants with no existing tax base
  - Net based system that by design lowers the applicable production tax rate for fields with higher cost structure
    - More distant from core infrastructure
    - Heavy Oil
    - Gas
- **Beyond the individual project, the State and industry benefit from new developments as they provide additional barrels down TAPS thus extending the productive life of existing reservoirs**

What was expected (in 2007)?

- Highly likely that any new oil or gas development will cost more per barrel to find, develop and operate than current NS production

- Therefore, the addition of any new hydrocarbons to an existing portfolio will result in production taxes payable on the whole being less than the sum of the production taxes payable on the individual parts
  - Not just a gas/oil issue
  - Also an oil/oil issue, particularly a heavy oil/oil issue

- The more aggressive the progressivity the greater the impact on the effective rate or stand alone rate, and the greater the impact of oil-gas price parity

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How Parity Affects Tax Calculation

	Oil	Gas	Combined
ANS Price	$75.00 $/bbl	$8.00 $/mmbtu	
Daily Production	500,000 Bbl/d	4.5 Bdf/d	
Annual Production	182,500,000 bbl	1,643 Bcf/year	
Total Annual Gross Sales Value	**$13,687,500,000**	**$13,140,000,000**	**$26,827,500,000**
Marine and TAPS Tariff on Oil	($6.50) $/bbl		
Gas Pipeline and Gas Treatment Plant		($4.50) $/mmbtu	
Transportation Costs	**($1,186,250,000.00)**	**($7,391,250,000)**	**($8,577,500,000)**
Value at Point Of Production	**$12,501,250,000**	**$5,748,750,000**	**$18,250,000,000**
Royalty and Federal	($1,562,656,250.00)	($718,593,750.00)	($2,281,250,000)
Taxable Point of Production Value	$10,938,593,750	$5,030,156,250.00	$15,968,750,000
Lease Expenditures			
Opex	($2,000,000,000)	($200,000,000)	($2,200,000,000)
Capex	($2,000,000,000)	($200,000,000)	($2,200,000,000)
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Base Tax (25%*PTV)	$1,734,648,438	$1,157,539,063	$2,892,187,500
Progressive Tax Rate	5.38%	0.00%	0.00%
Progressive Tax	$373,326,216	$0	$0
Total Tax Due before credits	$2,107,974,654	$1,157,539,063	$2,892,187,500
Credits Applied Against Taxes	($400,000,000)	($40,000,000)	($440,000,000)
Total Tax after credits	**$1,707,974,654**	**$1,117,539,063**	**$2,452,187,500**

	Oil	Gas	Combined
ANS Price	$100.00 $/bbl	$8.00 $/mmbtu	
Daily Production	500,000 Bbl/d	4.5 Bdf/d	
Annual Production	182,500,000 bbl	1,643 Bcf/year	
Total Annual Gross Sales Value	**$18,250,000,000**	**$13,140,000,000**	**$31,390,000,000**
Marine and TAPS Tariff on Oil	($6.50) $/bbl		
Gas Pipeline and Gas Treatment Plant		($4.50) $/mmbtu	
Transportation Costs	**($1,186,250,000.00)**	**($7,391,250,000)**	**($8,577,500,000)**
Value at Point Of Production	**$17,063,750,000**	**$5,748,750,000**	**$22,812,500,000**
Royalty and Federal	($2,132,968,750.00)	($718,593,750.00)	($2,851,562,500)
Taxable Point of Production Value	$14,930,781,250	$5,030,156,250.00	$19,960,937,500
Lease Expenditures			
Opex	($2,000,000,000)	($200,000,000)	($2,200,000,000)
Capex	($2,000,000,000)	($200,000,000)	($2,200,000,000)
Total Lease Expenditures	**($4,000,000,000)**	**($400,000,000)**	**($4,400,000,000)**
Production Tax Value (PTV)	**$10,930,781,250**	**$4,630,156,250**	**$15,560,937,500**
PTV on BOE basis	**$68.45**	**$19.33**	**$39**
Base Tax (25%*PTV)	$2,732,695,313	$1,157,539,063	$3,890,234,375
Progressive Tax Rate	15.38%	0.00%	3.59%
Progressive Tax	$1,681,201,216	$0	$558,853,865
Total Tax Due before credits	$4,413,896,529	$1,157,539,063	$4,449,088,240
Credits Applied Against Taxes	($400,000,000)	($40,000,000)	($440,000,000)
Total Tax after credits	**$4,013,896,529**	**$1,117,539,063**	**$4,009,088,240**

	Oil		Gas		Combined
ANS Price	$100.00	$/bbl	$8.00	$/mmbtu	
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Annual Production	182,500,000	bbl	1,643	Bcf/year	
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	Oil		Gas		Combined
ANS Price	$120.00	$/bbl	$8.00	$/mmbtu	
Daily Production	500,000	Bbl/d	4.5	Bdf/d	
Annual Production	182,500,000	bbl	1,643	Bcf/year	
Total Annual Gross Sales Value	**$21,900,000,000**		**$13,140,000,000**		**$35,040,000,000**
Marine and TAPS Tariff on Oil	($6.50)	$/bbl			
Gas Pipeline and Gas Treatment Plant			($4.50)	$/mmbtu	
Transportation Costs	**($1,186,250,000.00)**		**($7,391,250,000)**		**($8,577,500,000)**
Value at Point Of Production	**$20,713,750,000**		**$5,748,750,000**		**$26,462,500,000**
Royalty and Federal	($2,589,218,750.00)		($718,593,750.00)		($3,307,812,500)
Taxable Point of Production Value	$18,124,531,250		$5,030,156,250.00		$23,154,687,500
Lease Expenditures					
Opex	($2,000,000,000)		($200,000,000)		($2,200,000,000)
Capex	($2,000,000,000)		($200,000,000)		($2,200,000,000)
Total Lease Expenditures	**($4,000,000,000)**		**($400,000,000)**		**($4,400,000,000)**
Production Tax Value (PTV)	**$14,124,531,250**		**$4,630,156,250**		**$18,754,687,500**
PTV on BOE basis	**$88.45**		**$19.33**		**$47**
Base Tax (25%*PTV)	$3,531,132,813		$1,157,539,063		$4,688,671,875
Progressive Tax Rate	23.38%		0.00%		6.79%
Progressive Tax	$3,302,376,216		$0		$1,273,703,865
Total Tax Due before credits	$6,833,509,029		$1,157,539,063		$5,962,375,740
Credits Applied Against Taxes	($400,000,000)		($40,000,000)		($440,000,000)
Total Tax after credits	**$6,433,509,029**		**$1,117,539,063**		**$5,522,375,740**

	Oil		Gas		Combined
ANS Price	$120.00	$/bbl	$8.00	$/mmbtu	
Daily Production	500,000	Bbl/d	4.5	Bdf/d	
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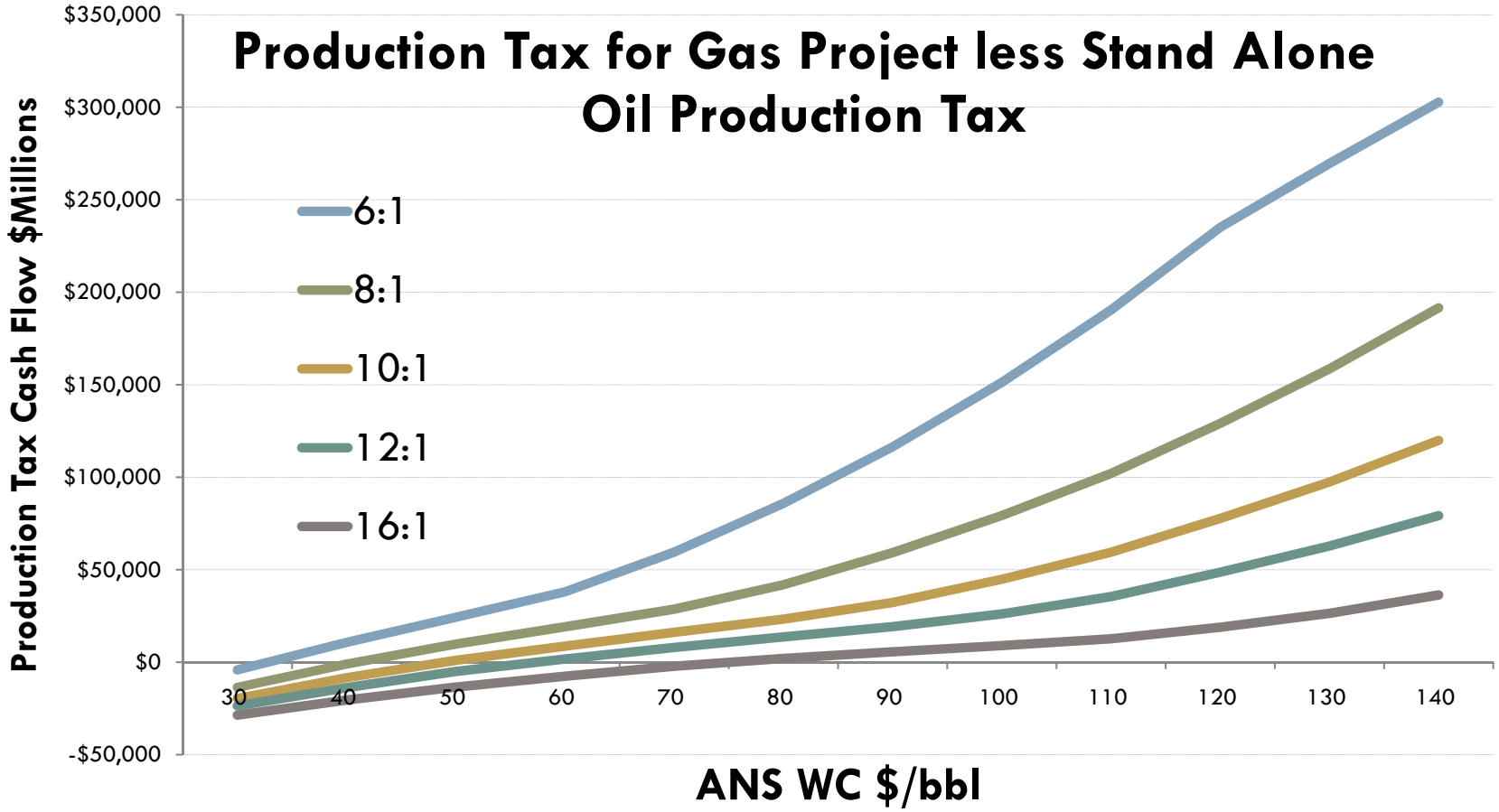
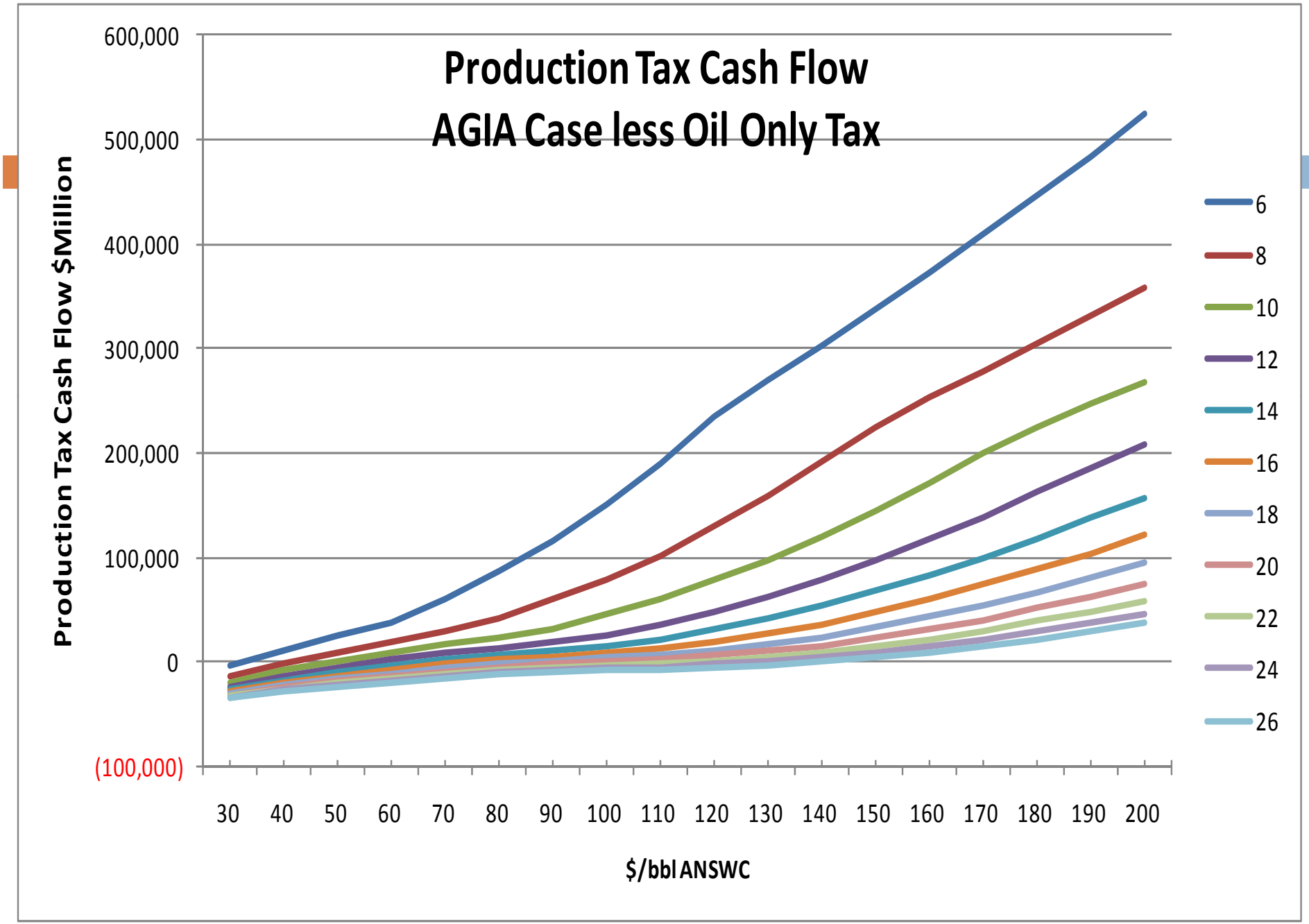
How does Parity affect State Revenues coming from an AGIA gasline?

Showing the difference between Combined Oil and Gas Tax Revenue and Oil Tax Revenue with No Gasline Project*



* Based on 25 year undiscounted cash flows to the State, using AGIA oil and gas production profile


Production Tax Cash Flow
AGIA Case less Oil Only Tax
Production Tax Cash Flow $Million
600,000
500,000
400,000
300,000
200,000
100,000
0
(100,000)
30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200
$/bbl ANSWC
6
8
10
12
14
16
18
20
22
24
26

Gas Tax Policy Issues

- What cash flow does the state expect from the gasline?
- What price risk is the state willing to accept?
- Is the state willing to accept the risk of periods where the oil + gas tax revenue is less than oil tax alone?
- What is the cash flow sharing and risk sharing between the Producers and the State?

Issues Surrounding Gas Tax Discussion At this Time

- Entering two open seasons for the gas pipeline
  - Likely to result in Producers continuing to claim changes in the fiscal system are necessary
- Full commitments to ship gas (i.e. project sanction) not expected until 2014
- Stakeholders will continue to discuss:
  - Necessary Producer cash flow from gas development,
  - Relative risks borne by the Producers and the State,
  - Amount of Fiscal Predictability the Producers need

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What is being potentially "locked in" with the AGIA open season?

What kind of shipping commitments qualify shippers for AGIA Tax and Royalty Inducements?

For gas to qualify for the tax and royalty inducements, "producer-shippers" and "shippers buying from producers" must meet this requirement under AS 43.90.300:

"Must commit to acquire firm transportation capacity in the first binding open season"

Definition of Key Terms

- **Precedent Agreement (PA):** Establishes general terms of transportation service the conditions under which shipper will be obligated to acquire transportation capacity on the project (via TSA). Also specifies when the shipper and transporter are relieved of those obligations (i.e. conditions).

- **Transportation Services Agreement (TSA):** Entered when conditions of the PA are met; shipper is then unconditionally obligated to pay for transportation and the transporter to construct the project.

Qualifications for AGIA Inducements

- **"Must commit to acquire firm transportation capacity in the first binding open season" means**:**
  1. Submit a bid for firm transportation capacity during the initial open season;
  2. Execute a Precedent Agreement (PA) w/in 180 days of close of initial open season;
  3. Execute Transportation Services Agreement (TSA) w/in 5 years of open season, or two years following FERC Certification, whichever is later; **and**
  4. File with the DOR-DNR Commissioners:
     - Copies of documents listed above; and
     - Copy of rolled-in rate agreements governing pipeline expansions

**Summary only – does not include all terms

Proposed Regulations 15 AAC 90.200 - 230

The Gas Production Tax Exemption

- Annual exemption from "gas production tax"
- Value Equal to:

Gas production tax under law at time of production **minus** Gas production tax under law at open season

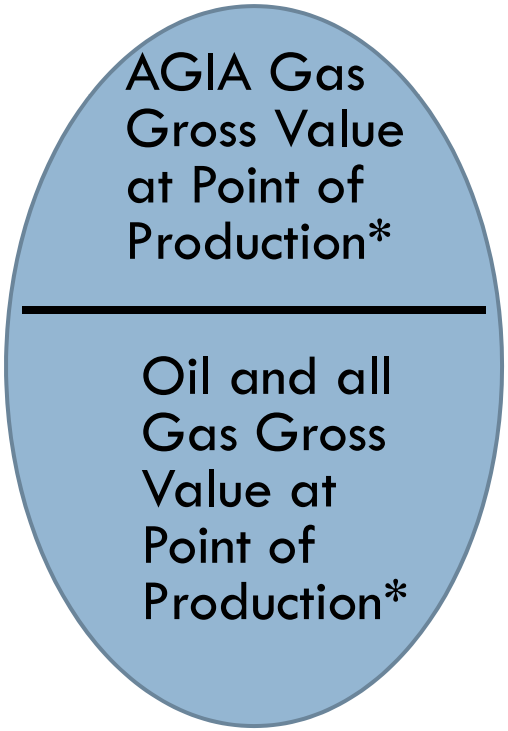
- Good for 10 years following start of gas sales
- Applies only to volume of gas identified in the Commissioners' determination of qualification or voucher.

Identifying "gas production tax"

- Current Production Tax is calculated on combined oil and gas production, with combined oil and gas lease expenditures, so we need to attribute a "gas production tax" value.
- Under proposed 15 AAC 90.220, to attribute "gas production tax", we use the ratio of the gross value of AGIA gas at the point of production divided by the combined gross value of the oil and all gas at the point of production. This ratio is multiplied by the combined oil and all gas production tax liability.

Gas Tax Exemption Mathematics

$$\frac{A}{V} \times T = G$$



AGIA Gas Value Ratio

$\frac{A}{V}$ **times** **T** (Oil and Gas Production Tax Liability under system in effect May 1, 2010) **equals** **G** ("Production Tax on Gas" as of May 1, 2010)

*Gross value at point of production is the value at point of production without deduction of costs upstream of that point. (See AS 43.55.900(12) and AS 43.55.150)

Proposed Regulations 15 AAC 90.200 - 230

	Oil		Gas		Combined
ANS Price	$120.00	$/bbl	$8.00	$/mmbtu	
Daily Production	500,000	Bbl/d	4.5	Bdf/d	
Annual Production	182,500,000	bbl	1,643	Bcf/year	
Total Annual Gross Sales Value	**$21,900,000,000**		**$13,140,000,000**		**$35,040,000,000**
Marine and TAPS Tariff on Oil	($6.50)	$/bbl			
Gas Pipeline and Gas Treatment Plant			($4.50)	$/mmbtu	
Transportation Costs	**($1,186,250,000)**		**($7,391,250,000)**		**($8,577,500,000)**
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Total Lease Expenditures	**($4,000,000,000)**		**($400,000,000)**		**($4,400,000,000)**
Production Tax Value (PTV)	**$14,124,531,250**		**$4,630,156,250**		**$18,754,687,500**
PTV on BOE basis	**$88.45**		**$19.33**		**$47**
Base Tax (25%*PTV)	$3,531,132,813		$1,157,539,063		$4,688,671,875
Progressive Tax Rate	23.38%		0.00%		6.79%
Progressive Tax	$3,302,376,216		$0		$1,273,703,865
Total Tax Due before credits	$6,833,509,029		$1,157,539,063		$5,962,375,740
Credits Applied Against Taxes	($400,000,000)		($40,000,000)		($440,000,000)
Total Tax after credits	**$6,433,509,029**		**$1,117,539,063**		**$5,522,375,740**

	Oil		Gas		Combined
ANS Price	$120.00	$/bbl	$8.00	$/mmbtu	
Daily Production	500,000	Bbl/d	4.5	Bdf/d	
Annual Production	182,500,000	bbl	1,643	Bcf/year	
Total Annual Gross Sales Value	**$21,900,000,000**		**$13,140,000,000**		**$35,040,000,000**
Marine and TAPS Tariff on Oil	($6.50)	$/bbl			
Gas Pipeline and Gas Treatment Plant			($4.50)	$/mmbtu	
Transportation Costs	**($1,186,250,000)**		**($7,391,250,000)**		**($8,577,500,000)**
Value at Point Of Production	**$20,713,750,000**		**$5,748,750,000**		**$26,462,500,000**
Royalty and Federal	($2,589,218,750)		($718,593,750)		($3,307,812,500)
Taxable Point of Production Value	$18,124,531,250		$5,030,156,250.00		$23,154,687,500
Lease Expenditures					
Opex	($2,000,000,000)		($200,000,000)		($2,200,000,000)
Capex	($2,000,000,000)		($200,000,000)		($2,200,000,000)
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Assuming all the gas is shipped via capacity that qualifies for the AGIA inducement…

$$\frac{\$5,748,750,000}{\$26,462,500,000} = 21.7\%$$

$5,522,375,740 X 21.7% =

$1,199,688,523

Production Tax Attributed to Gas under proposed 15 AAC 90.220

	Oil	Gas	Combined
ANS Price	$120.00 $/bbl	$8.00 $/mmbtu	
Daily Production	500,000 Bbl/d	4.5 Bdf/d	
Annual Production	182,500,000 bbl	1,643 Bcf/year	
Total Annual Gross Sales Value	**$21,900,000,000**	**$13,140,000,000**	**$35,040,000,000**
Marine and TAPS Tariff on Oil	($6.50) $/bbl		
Gas Pipeline and Gas Treatment Plant		($4.50) $/mmbtu	
Transportation Costs	**($1,186,250,000)**	**($7,391,250,000)**	**($8,577,500,000)**
Value at Point Of Production	**$20,713,750,000**	**$5,748,750,000**	**$26,462,500,000**
Royalty and Federal	($2,589,218,750)	($718,593,750.00)	($3,307,812,500)
Taxable Point of Production Value	$18,124,531,250	$5,030,156,250.00	$23,154,687,500
Lease Expenditures			
Opex	($2,000,000,000)	($200,000,000)	($2,200,000,000)
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Assuming all the gas is shipped via capacity that qualifies for the AGIA inducement…

$$\frac{\$5{,}748{,}750{,}000}{\$26{,}462{,}500{,}000} = 21.7\%$$

$5,522,375,740 X 21.7% =

Close Approx.

$1,199,688,523

Production Tax Attributed to Gas under proposed 15 AAC 90.220

Given that Example – What is the AGIA Tax Exemption?

1. Calculate Gas Production Tax under system in place in the Year of Production:
   - Assume the Gas Production Tax then is = $1.5B
2. Calculate Gas Production Tax under system in effect on May 1, 2010:
   - Previous slide shows gas tax attribution of: $1.2B
3. The taxpayer can claim an exemption for the difference:
   - AGIA Gas Tax Exemption = $300M

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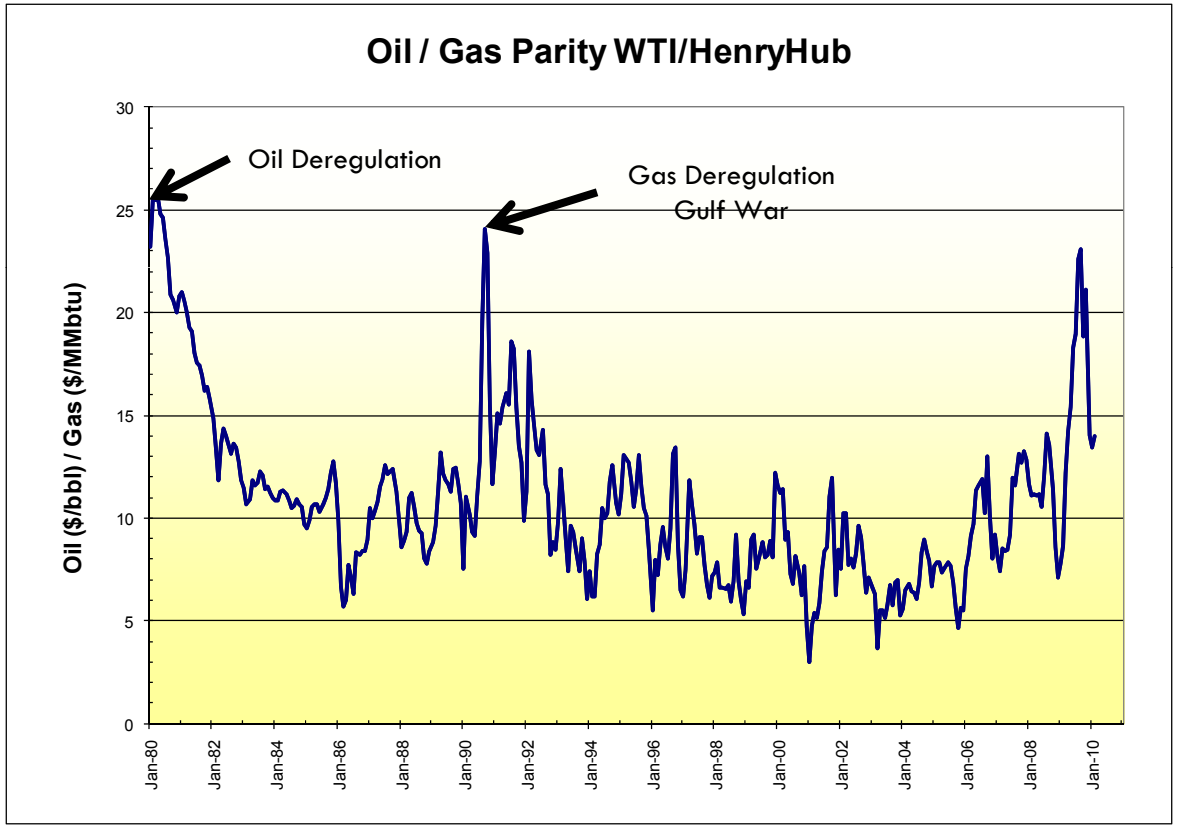
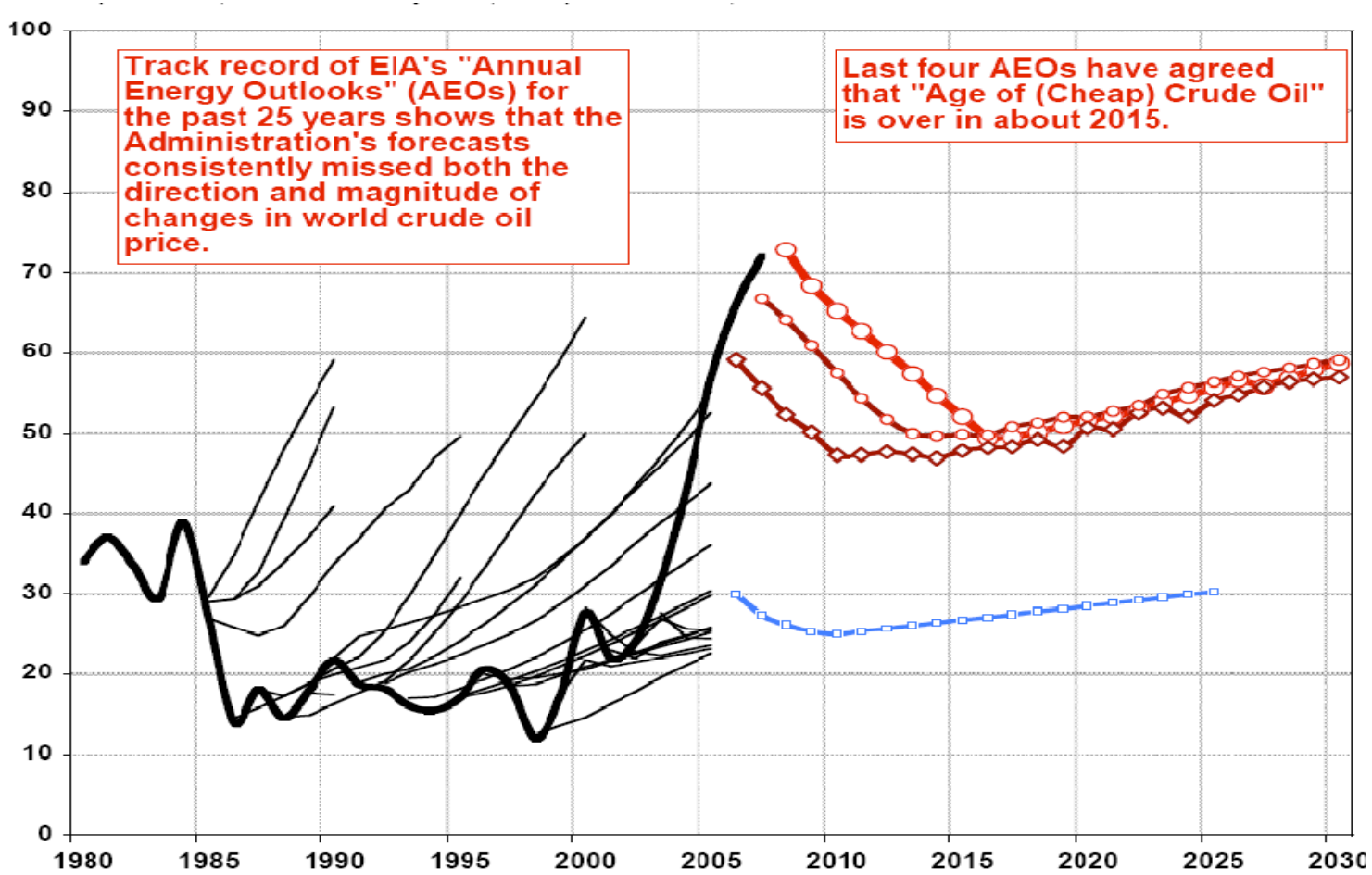
Oil and Gas Price Expectations and Forecasting Challenges

The Oil/Gas Price Parity….



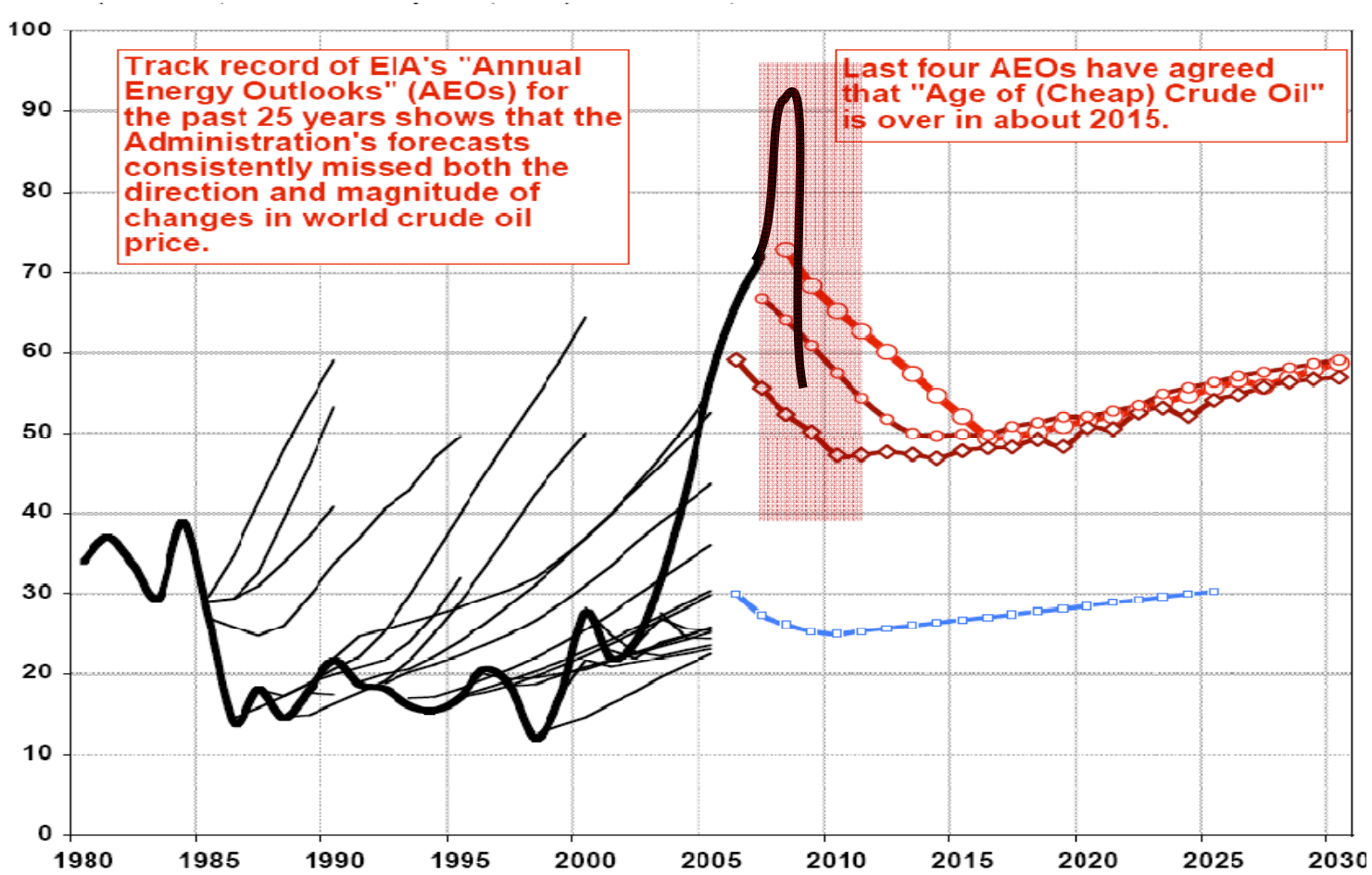
….Has Been Higher than Expected….

EIA Forecasting Is Widely Quoted But Usually Not Even Close



Source: US DOE Energy Information Administration Mar 2008

EIA Forecasting Not Even Close



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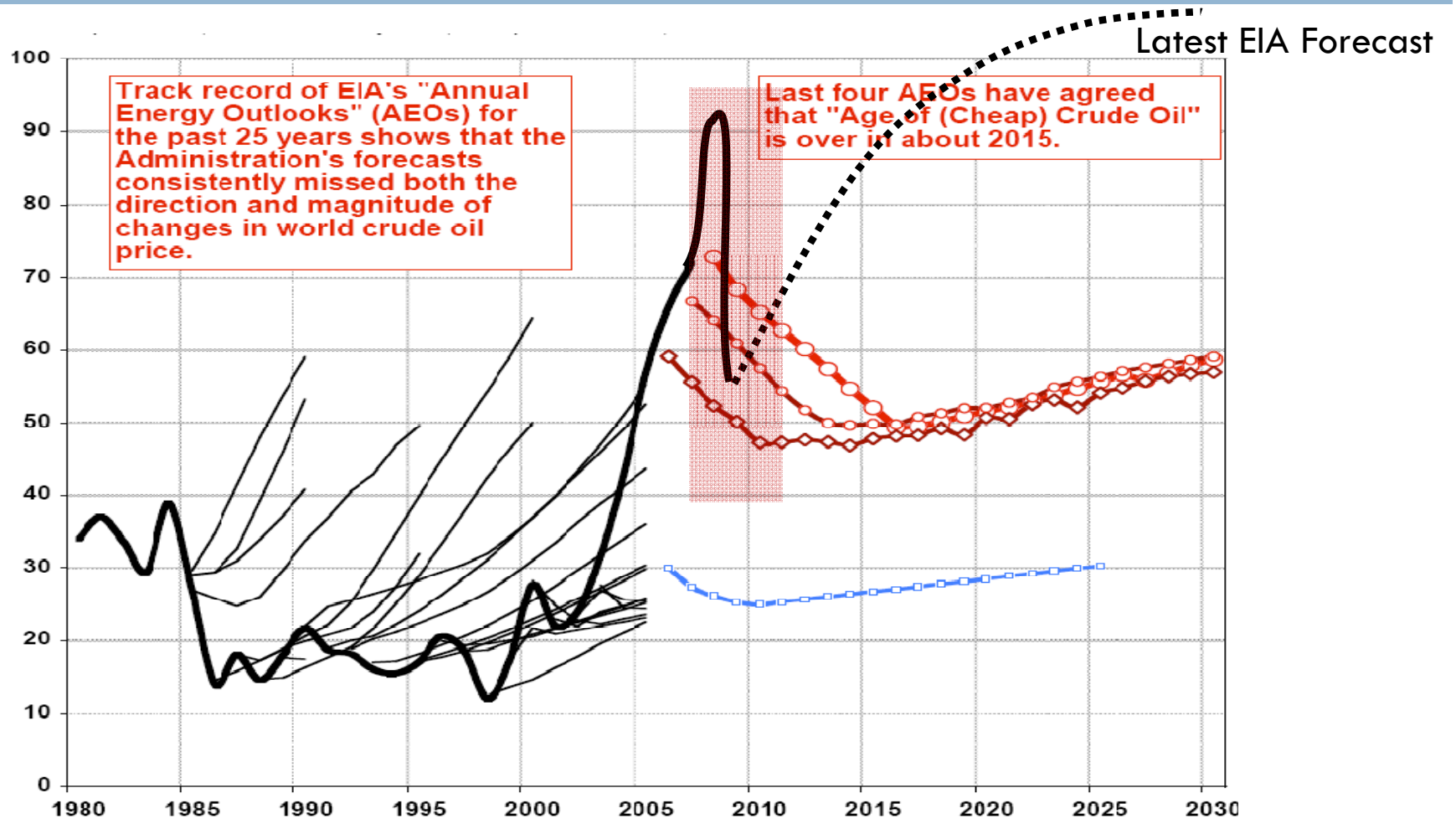
EIA Forecasting Not Even Close



Source: US DOE Energy Information Administration Mar 2008

In the past 5 years, We've gone from an expected major gas shortfall…

- 2005
  - US to suffer significant gas shortage predicted by 2010 to 2012
  - About 5-8 bcfd of new imports projected to be needed
- 2006
  - Over a dozen new LNG projects sanctioned
  - 48 proposed NA regasification facilities
- 2007
  - Gas prices strengthening, gas rig count up
- 2008
  - Spot LNG cargos selling for > $24/MMBtu
  - US Henry Hub > $14/MMBtu

…to awash in gas!

- 2009
  - Unconventional gas exceeding all predictions
  - Storage overflowing due to warm winter
  - Global economic slowdown, demand way off
  - Gas trading at lowest parity to oil since deregulation of the US gas industry

- 2020 to 2030 ???
  - If past is an indicator, very hard to predict what will happen with any accuracy
  - Need an approach that adapts to any number of possible future states.

Policy Issues Associate with the Gas Tax

Gas Tax Policy Options By 2014

- Leave the Current System
  - Accept the gas price risk as an incentive for Producer participation in the gasline
- Eliminate the Risk of Oil+Gas Tax < Oil Tax
  - Set a minimum tax equal to the tax that would have been paid for the oil alone
- Reduce the Oil Tax Reducing Effect of Price Parity
  - Establish a "collar" around the parity ratio, if the collar ratio is exceeded the equivalence of oil to gas is adjusted
- Separate or Ringfence gas production for State production tax purposes
  - Need to develop a way to allocate costs between oil and gas that does not require an army of auditors
  - Changes the current cash flow balance between the State and Producers

The End