

The Palin-Parnell Administration presents

# AGIA

The Alaska Gasline Inducement Act

**Analysis of Producer Returns,  
Investment Attractiveness, and Fiscal Certainty  
Presentation to House Resources**

**4/18/2007**

# How to measure investment attractiveness?



- NPV = “net present value”
  - The current value of future profits
- IRR = “internal rate of return”
  - The discount rate that makes  $NPV = 0$
- P/I = “profitability index”
  - $\frac{\text{[present value of cash inflows]}}{\text{[present value of outflows]}}$
- NPV/Boe = “NPV per barrel oil equivalent”
  - Measure of how much cash flow is generated from reserves

# Producer Upstream Returns

Base case cost = \$20.5B



	<b>NPV<sub>10</sub> (\$B)</b>	<b>IRR</b>	<b>P/I</b>	<b>NPV<sub>10</sub> per BOE</b>
<b>\$4.00</b>	<b>6.1</b>	<b>39.7%</b>	<b>4.3</b>	<b>\$0.74</b>
<b>\$5.50</b>	<b>12.1</b>	<b>62.9%</b>	<b>7.5</b>	<b>\$1.46</b>
<b>\$7.00</b>	<b>17.8</b>	<b>79.2%</b>	<b>10.5</b>	<b>\$2.15</b>

Prices are real, \$2007, escalating at 2%/year

# Producer Upstream Returns 50% cost overrun = \$30.1B



	NPV <sub>10</sub> (\$B)	IRR	P/I	NPV <sub>10</sub> per BOE
\$4.00	3.2	20.9%	2.2	\$0.39
\$5.50	9.2	41.4%	4.6	\$1.12
\$7.00	15.1	57.2%	6.9	\$1.82

Prices are real, \$2007, escalating at 2%/year

# Producers' returns as both shippers + pipeline owners



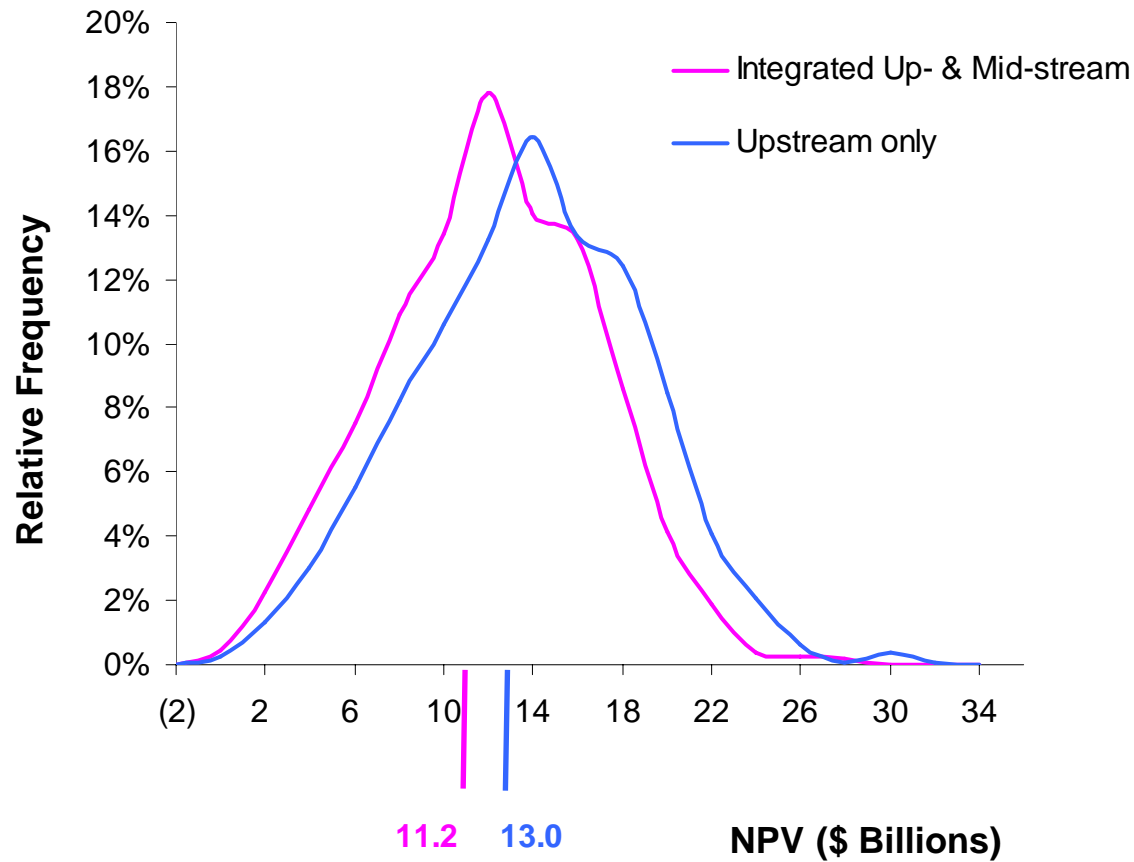
	NPV <sub>10</sub> (\$B)	IRR	P/I	NPV <sub>10</sub> per BOE
\$4.00	5.0	14.0%	1.4	\$0.60
\$5.50	10.6	17.9%	1.9	\$1.28
\$7.00	16.0	21.1%	2.3	\$1.93

**Prices are real, \$2007, escalating at 2%/year**

# Producer NPV: Relative likelihood



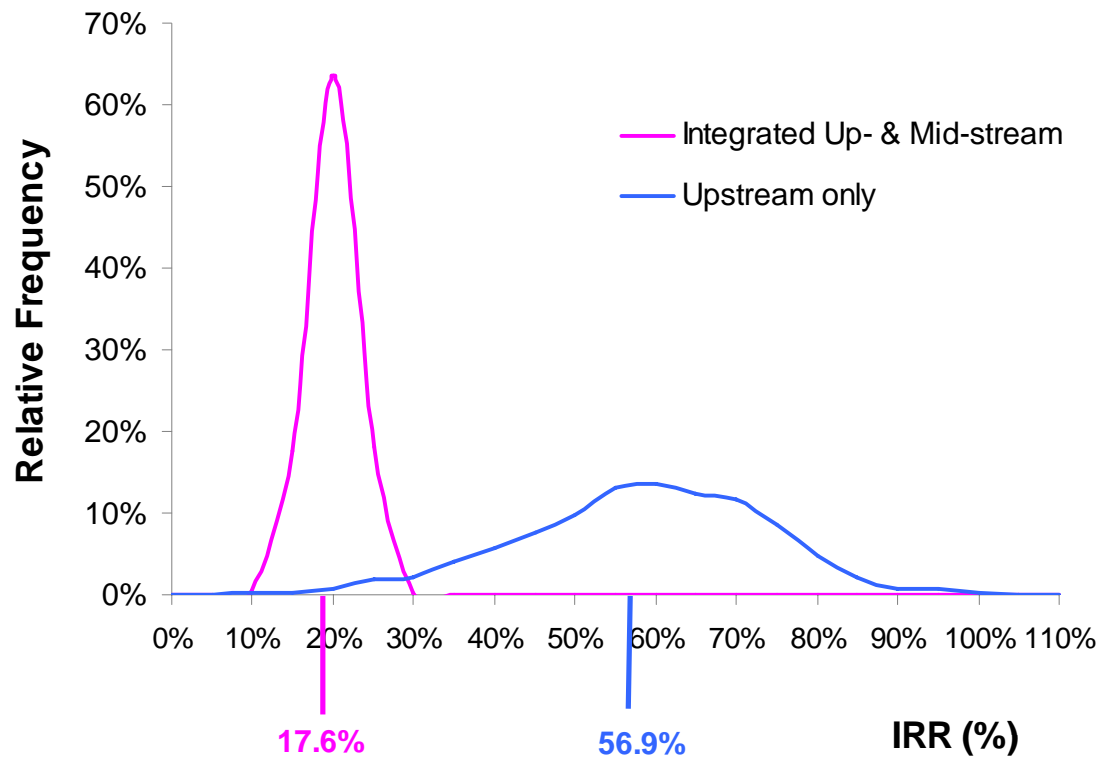
Frequency Distribution of Producer NPV<sub>10</sub>



# Producer IRR: Relative likelihood



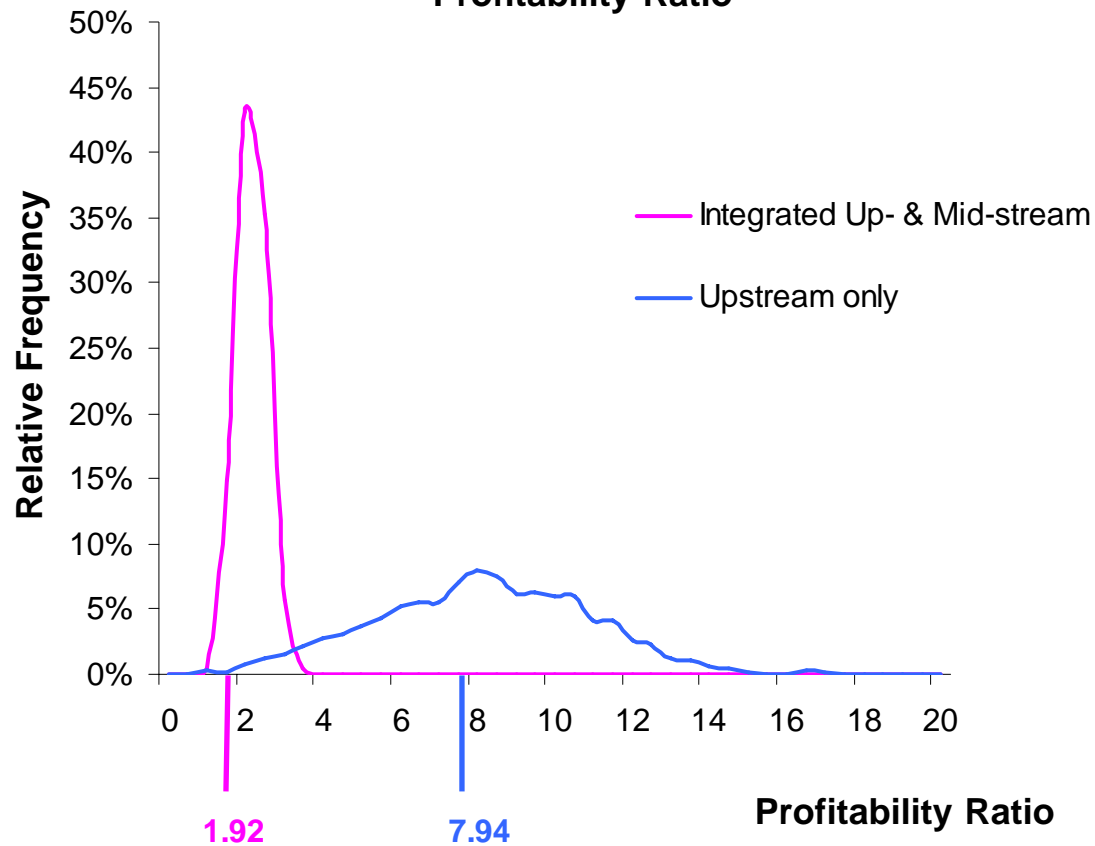
Frequency Distribution of Producer IRR



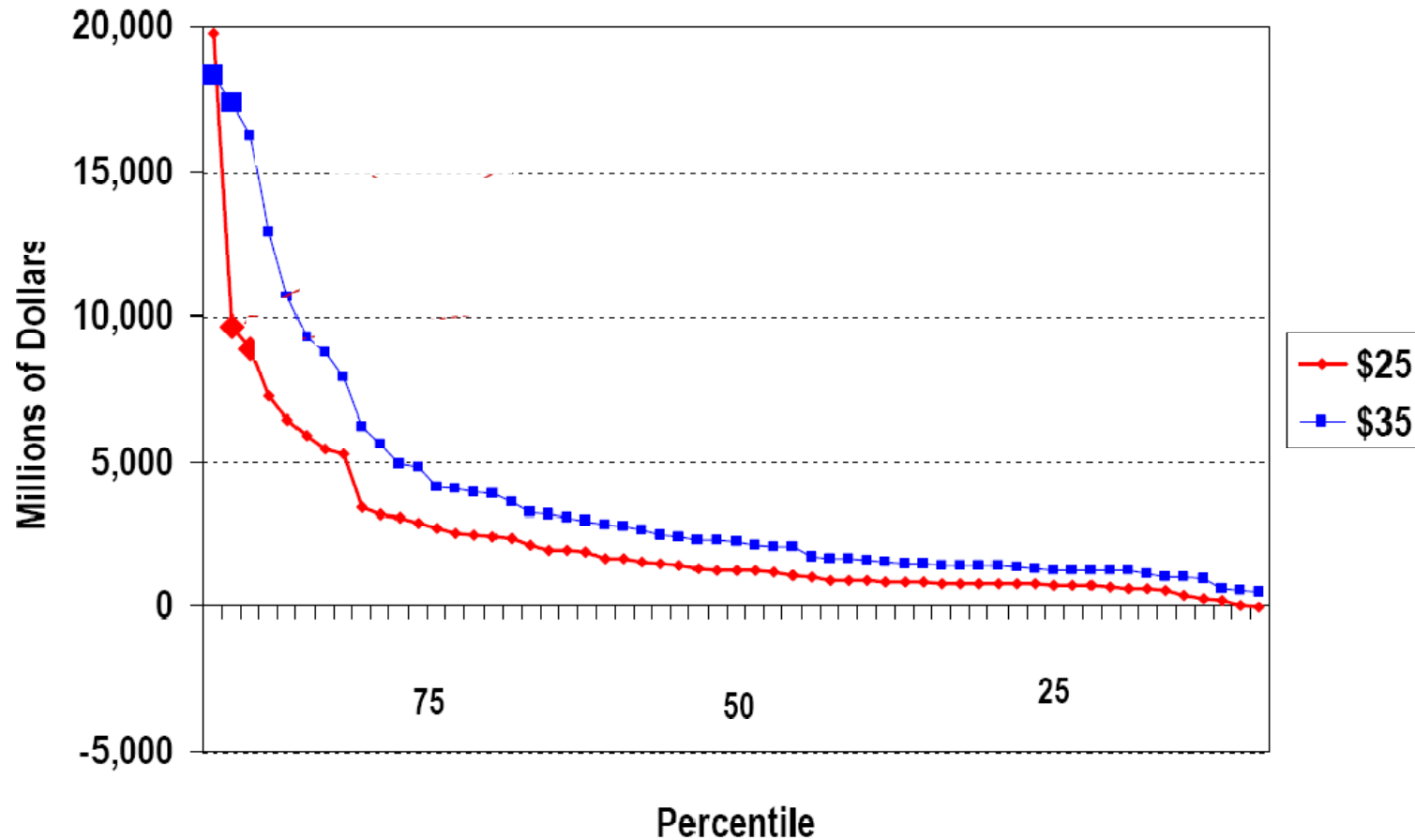
# Producer P/I: Relative likelihood



Frequency Distribution of Producer Profitability Ratio

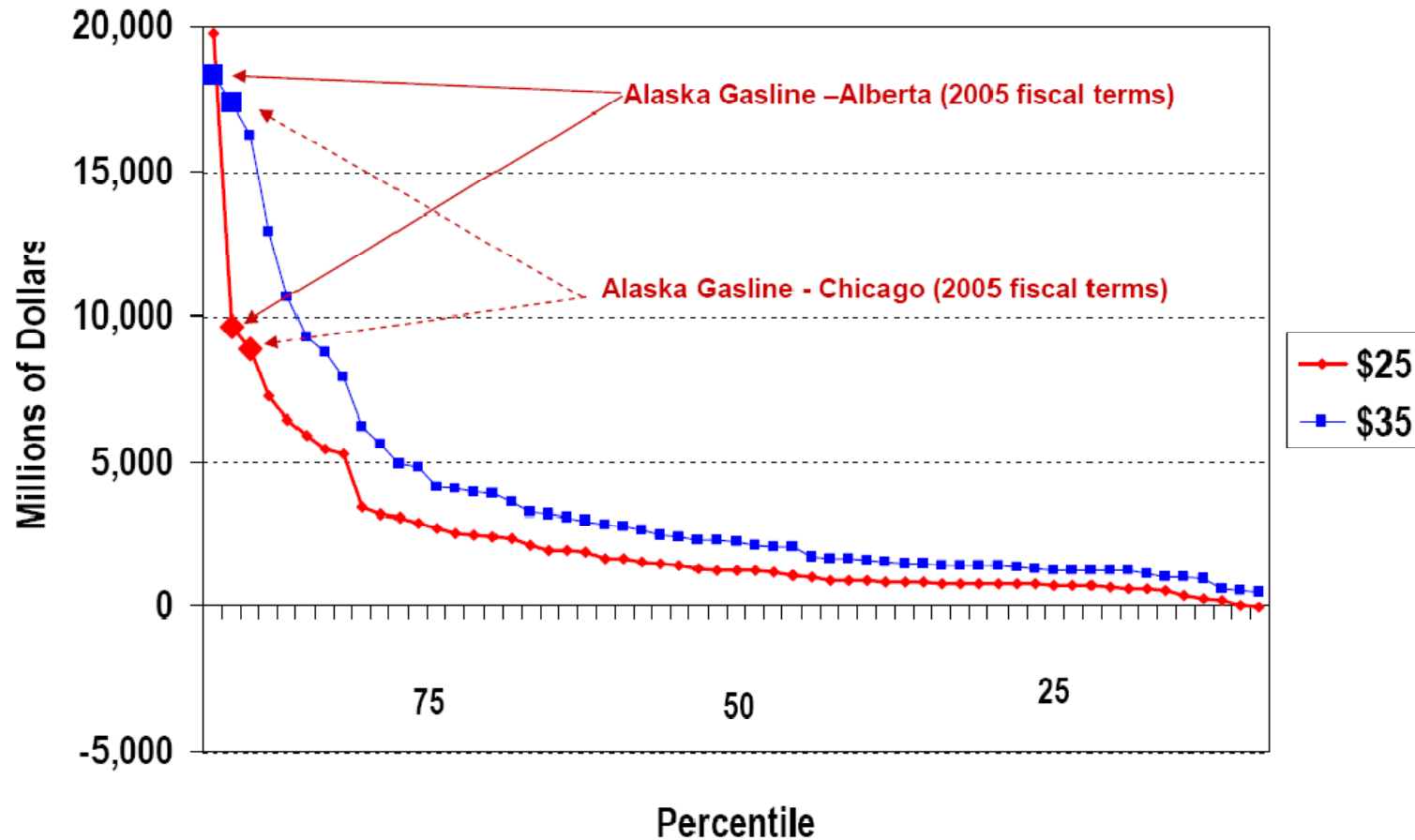


# Comparative Project Opportunities Producer Net Cash Flow (NPV10) (\$35 and \$25 oil and 6/1 oil/gas ratio)



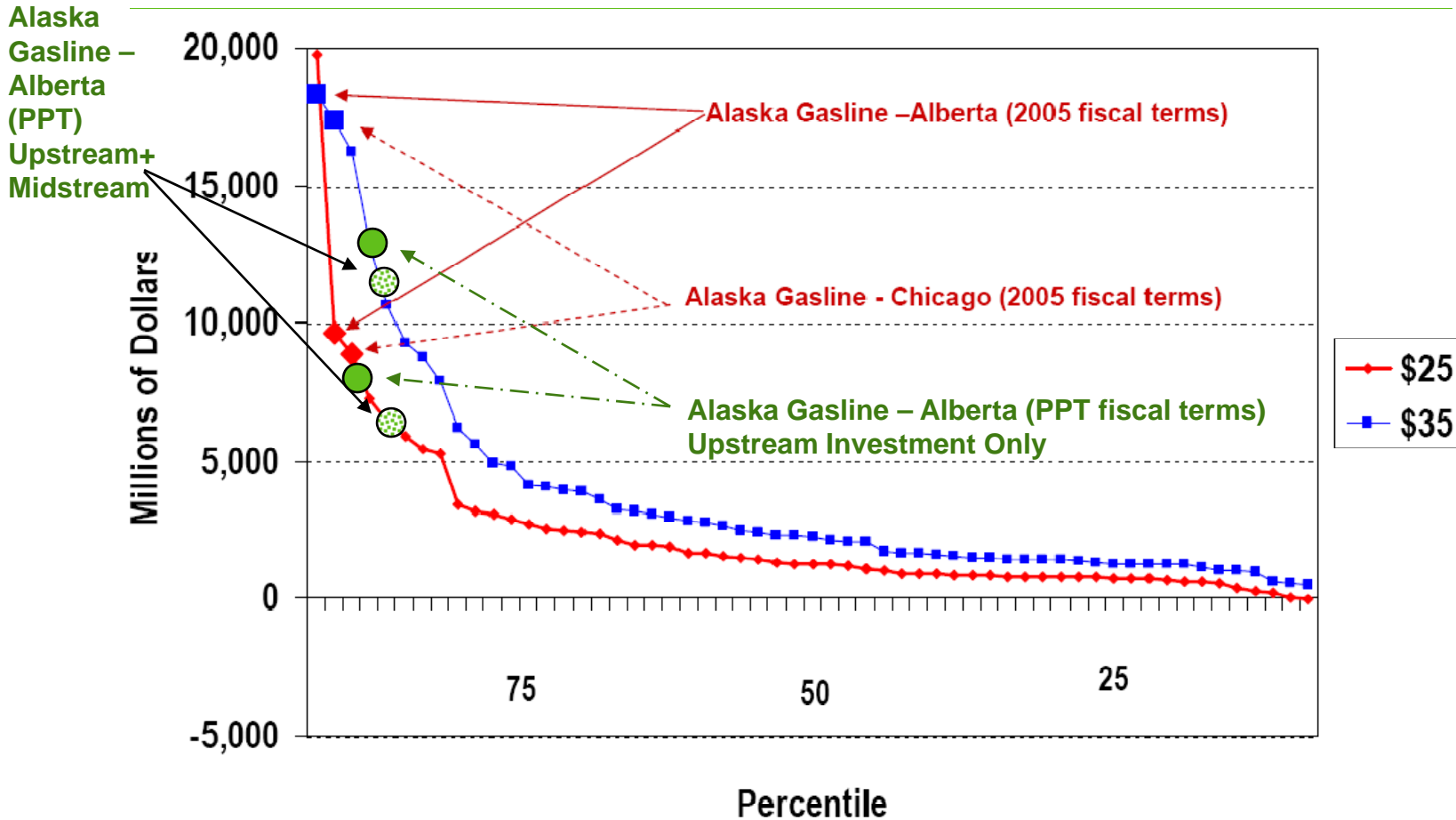
Project comparison data from EconOne presentation to LB&A Committee, 6/14/06.

# Pre-PPT Gasline Economics in context Producer Net Cash Flow (NPV10) (\$35 and \$25 oil and 6/1 oil/gas ratio)



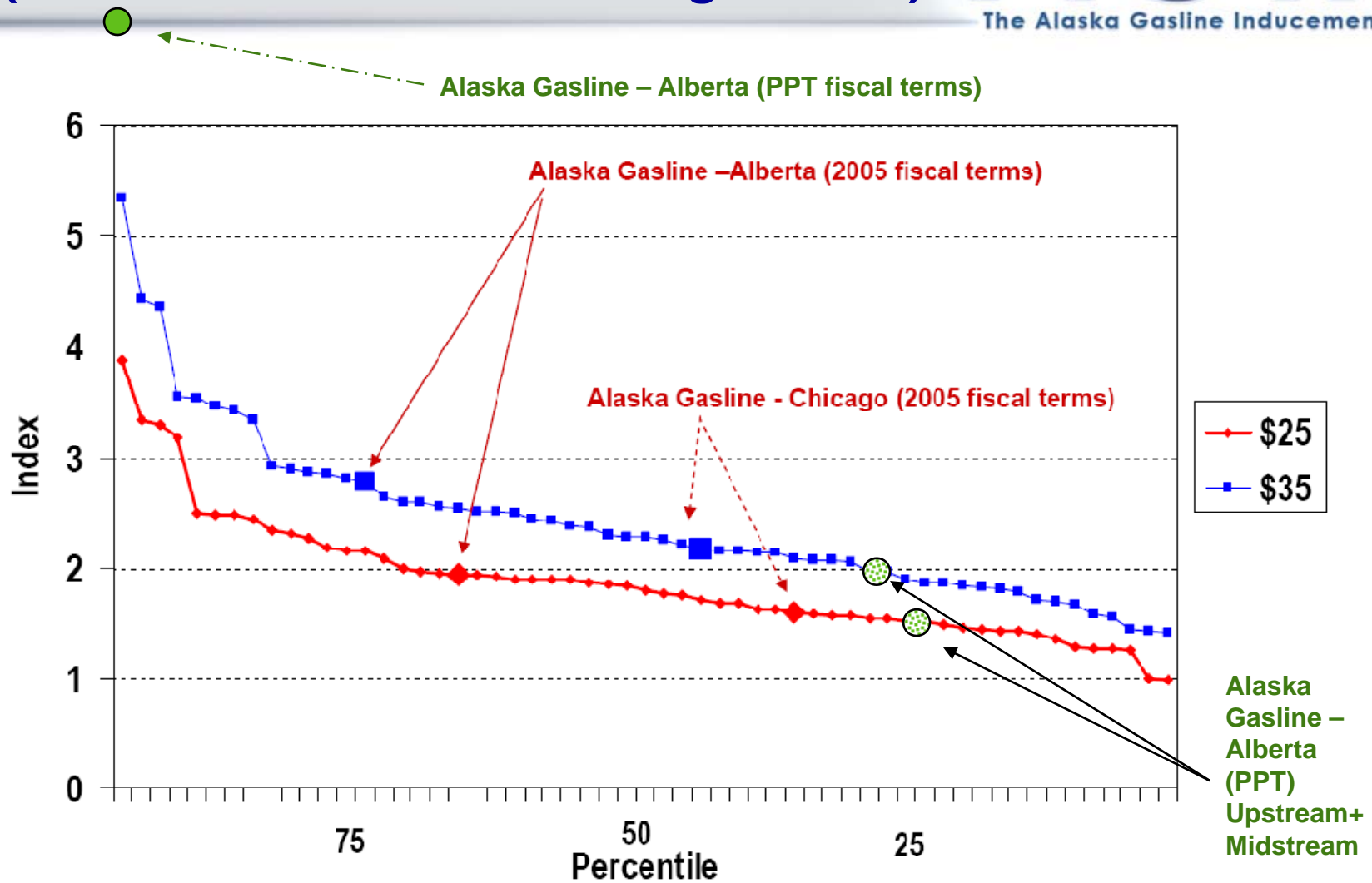
Project comparison data from EconOne presentation to LB&A Committee, 6/14/06. EconOne data assume 100%<sup>10</sup> Producer pipeline ownership, ~\$15B Alberta project.

# Current Gasline Economics Producer Net Cash Flow (NPV10) (\$35 and \$25 oil and 6/1 oil/gas ratio)



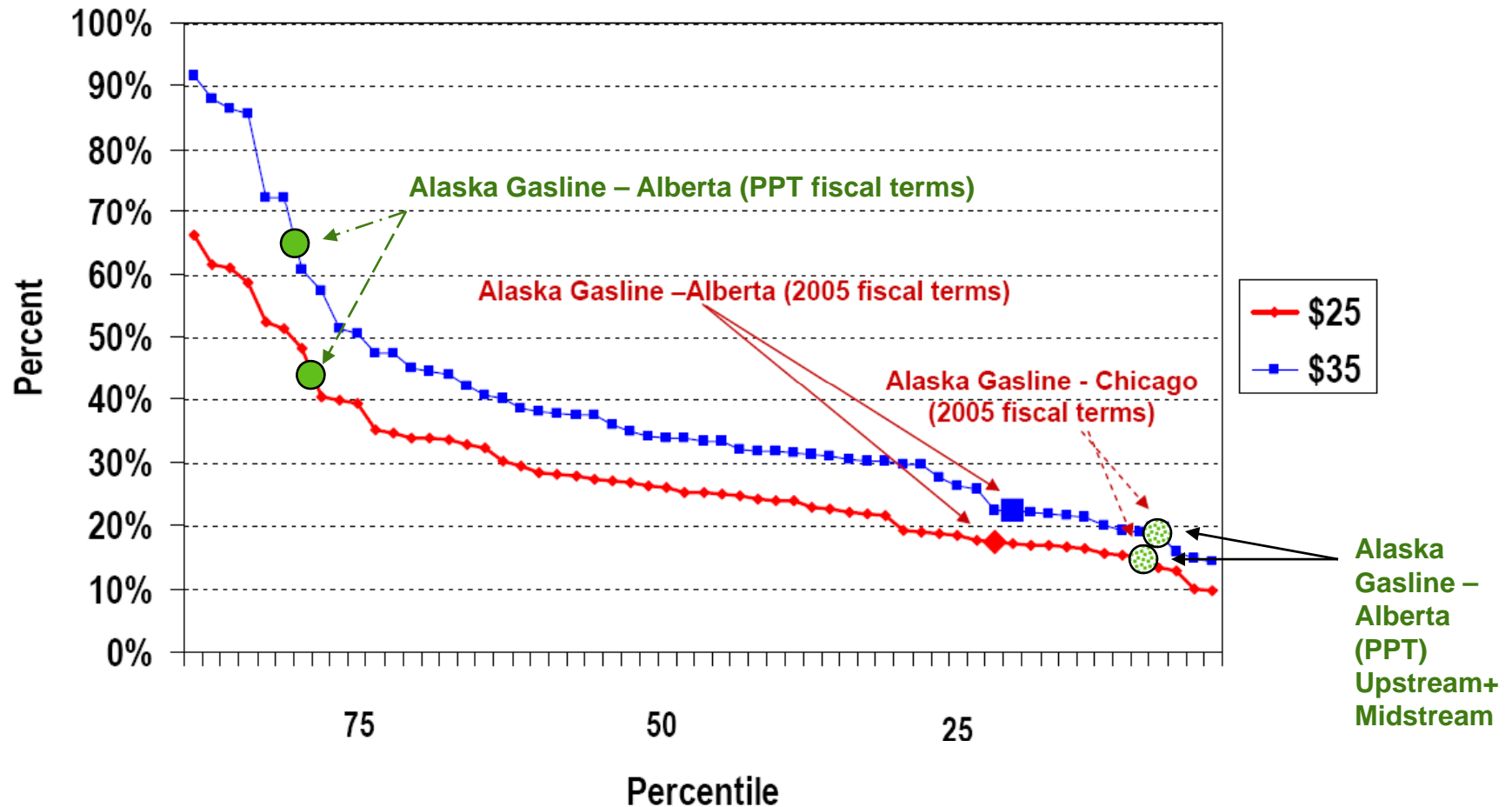
Project comparison data from EconOne presentation to LB&A Committee, 6/14/06. EconOne data assume 100%<sup>11</sup> Producer pipeline ownership, ~\$15B Alberta project; upstream return data assumes 0% pipeline ownership.

# Current Gasline Economics Profitability Index Ratio (PIR10) (\$35 and \$25 oil and 6/1 oil/gas ratio)



Project comparison data from EconOne presentation to LB&A Committee, 6/14/06. EconOne data assume 100% Producer pipeline ownership, ~\$15B Alberta project; upstream return data assumes 0% pipeline ownership.

# Current Gasline Economics Internal Rate of Return (IRR) (\$35 and \$25 oil and 6/1 oil/gas ratio)



Project comparison data from EconOne presentation to LB&A Committee, 6/14/06. EconOne data assume 100% Producer pipeline ownership, ~\$15B Alberta project; upstream return data assumes 0% pipeline ownership.

## Why Pipeline Ownership?

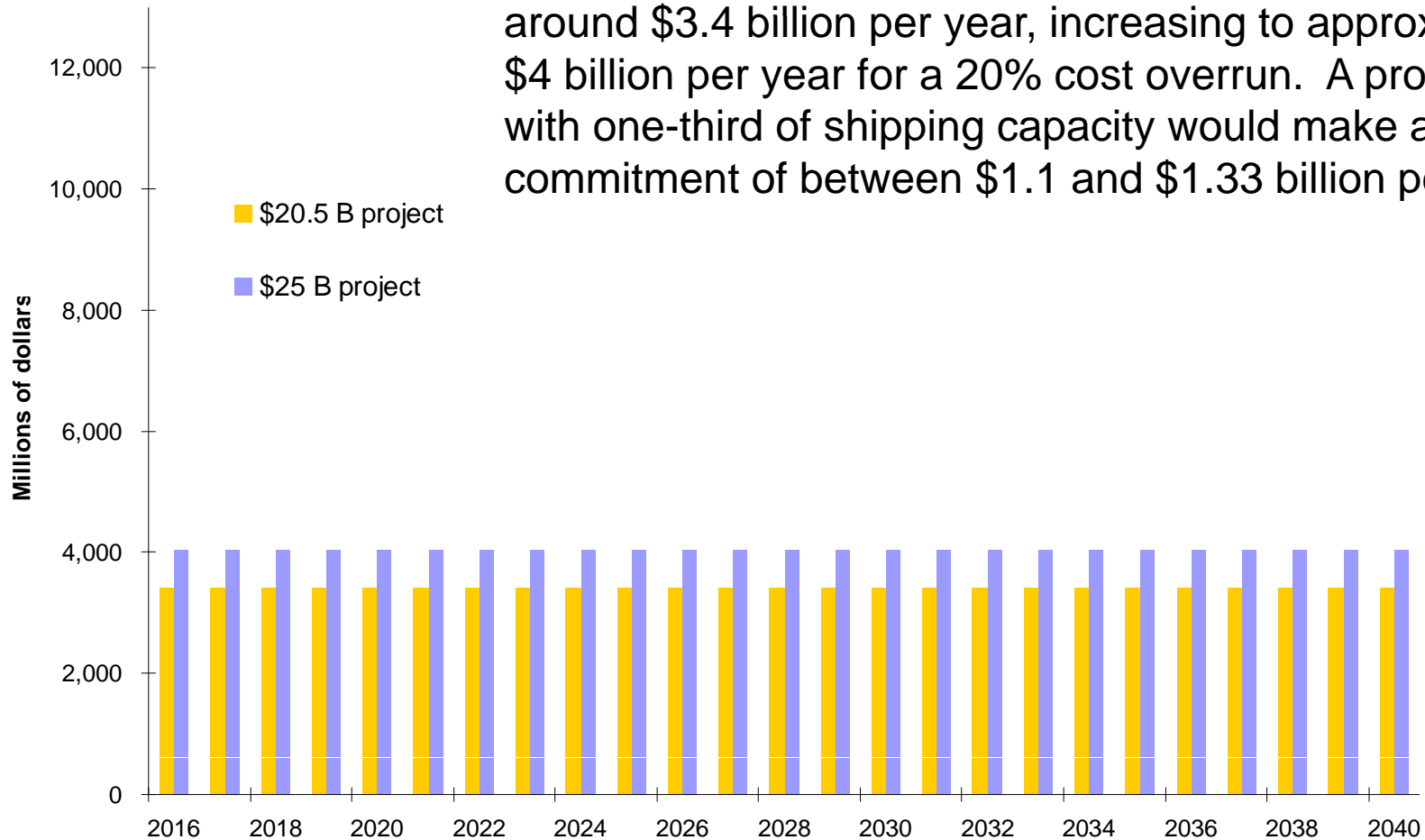


- Producers the only entities that can do it?
- Need to control costs?
- FT = Debt?
- Control over pipeline terms?
- Bargaining leverage with state?

# FT contracts: nominal dollar size of obligation



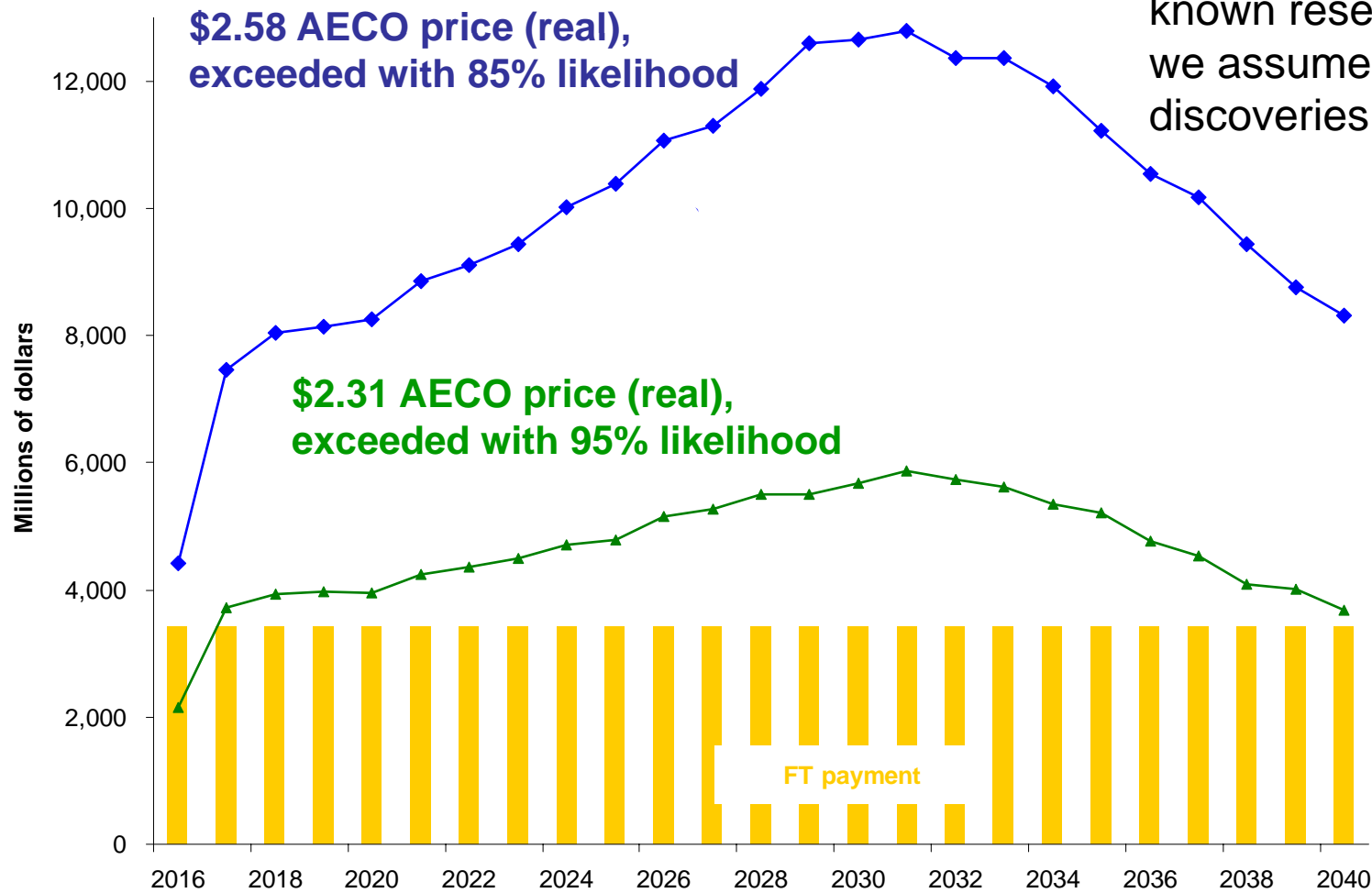
The total financial commitment for the producers would be around \$3.4 billion per year, increasing to approximately \$4 billion per year for a 20% cost overrun. A producer with one-third of shipping capacity would make a financial commitment of between \$1.1 and \$1.33 billion per year.



# FT contracts (cont.): tariff in context of revenues



Revenues declines as known reserves decline; we assume no new discoveries.



# Tax increase effects on NPV

→ No fiscal certainty



**Producer NPV<sub>10</sub> in billions of dollars with increase in production tax rate at start of project**

	NPV <sub>10</sub>				% change		
	<b>0%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>
\$3.50	3.8	3.6	3.3	3.0	-6.4%	-12.8%	-21.3%
\$4.00	5.7	5.4	5.0	4.6	-5.8%	-11.6%	-19.3%
\$4.50	7.6	7.2	6.7	6.2	-5.5%	-11.0%	-18.4%
\$5.00	9.4	8.9	8.4	7.8	-5.4%	-10.7%	-17.8%
\$5.50	11.3	10.7	10.1	9.3	-5.2%	-10.5%	-17.5%
\$6.00	13.1	12.5	11.8	10.9	-5.2%	-10.3%	-17.2%
\$6.50	14.9	14.2	13.4	12.4	-5.1%	-10.2%	-17.1%
\$7.00	16.7	15.8	15.0	13.8	-5.1%	-10.2%	-17.0%
\$7.50	18.3	17.4	16.5	15.2	-5.1%	-10.2%	-17.1%
\$8.00	19.9	18.9	17.8	16.5	-5.1%	-10.3%	-17.2%
\$8.50	21.4	20.3	19.2	17.7	-5.2%	-10.4%	-17.3%

# Tax increase effects on NPV

## → Fiscal certainty 10 years



**Producer NPV<sub>10</sub> in billions of dollars with increase in production tax rate at 11th year of project**

	NPV <sub>10</sub>				% change		
	<b>0%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>
\$3.50	3.8	3.7	3.6	3.5	-2.9%	-5.8%	-9.7%
\$4.00	5.7	5.6	5.4	5.2	-2.5%	-5.0%	-8.4%
\$4.50	7.6	7.4	7.2	7.0	-2.3%	-4.7%	-7.8%
\$5.00	9.4	9.2	9.0	8.7	-2.2%	-4.4%	-7.4%
\$5.50	11.3	11.1	10.8	10.5	-2.1%	-4.3%	-7.1%
\$6.00	13.1	12.9	12.6	12.2	-2.1%	-4.2%	-6.9%
\$6.50	14.9	14.6	14.3	13.9	-2.0%	-4.1%	-6.8%
\$7.00	16.7	16.3	16.0	15.5	-2.0%	-4.1%	-6.8%
\$7.50	18.3	18.0	17.6	17.1	-2.0%	-4.0%	-6.7%
\$8.00	19.9	19.5	19.1	18.6	-2.0%	-4.0%	-6.7%
\$8.50	21.4	21.0	20.5	19.9	-2.0%	-4.1%	-6.8%

# Tax increases effects on NPV

## → Fiscal certainty 5 years



**Producer NPV<sub>10</sub> in billions of dollars with increase in production tax rate at 6th year of project**

	NPV <sub>10</sub>				% change		
	<b>0%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>
\$3.50	3.8	3.7	3.5	3.2	-4.7%	-9.3%	-15.4%
\$4.00	5.7	5.5	5.2	4.9	-4.1%	-8.2%	-13.6%
\$4.50	7.6	7.3	7.0	6.6	-3.8%	-7.6%	-12.7%
\$5.00	9.4	9.1	8.7	8.3	-3.7%	-7.3%	-12.2%
\$5.50	11.3	10.9	10.5	10.0	-3.5%	-7.1%	-11.8%
\$6.00	13.1	12.7	12.2	11.6	-3.5%	-6.9%	-11.6%
\$6.50	14.9	14.4	13.9	13.2	-3.4%	-6.8%	-11.4%
\$7.00	16.7	16.1	15.5	14.8	-3.4%	-6.8%	-11.3%
\$7.50	18.3	17.7	17.1	16.3	-3.4%	-6.8%	-11.3%
\$8.00	19.9	19.2	18.5	17.6	-3.4%	-6.8%	-11.4%
\$8.50	21.4	20.7	19.9	18.9	-3.4%	-6.9%	-11.4%

# Tax increases effects on NPV → Fiscal certainty 15 years



**Producer NPV<sub>10</sub> in billions of dollars with increase in production tax rate at 16th year of project**

	NPV <sub>10</sub>				% change		
	<b>0%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>
\$3.50	3.8	3.8	3.7	3.7	-1.4%	-2.8%	-4.6%
\$4.00	5.7	5.6	5.6	5.5	-1.2%	-2.4%	-4.1%
\$4.50	7.6	7.5	7.4	7.3	-1.1%	-2.3%	-3.8%
\$5.00	9.4	9.3	9.2	9.1	-1.1%	-2.2%	-3.7%
\$5.50	11.3	11.2	11.1	10.9	-1.1%	-2.1%	-3.5%
\$6.00	13.1	13.0	12.9	12.7	-1.0%	-2.1%	-3.5%
\$6.50	14.9	14.8	14.6	14.4	-1.0%	-2.0%	-3.4%
\$7.00	16.7	16.5	16.3	16.1	-1.0%	-2.0%	-3.4%
\$7.50	18.3	18.1	18.0	17.7	-1.0%	-2.0%	-3.4%
\$8.00	19.9	19.7	19.5	19.2	-1.0%	-2.0%	-3.4%
\$8.50	21.4	21.2	21.0	20.7	-1.0%	-2.0%	-3.4%

# Tax increases effects on IRR

→ No fiscal certainty



Producer IRR with increase in production tax rate at start of project							
		IRR			difference		
	<u>0%</u>	<u>15%</u>	<u>30%</u>	<u>50%</u>	<u>15%</u>	<u>30%</u>	<u>50%</u>
\$3.50	29.1%	28.1%	26.9%	25.4%	-1.1%	-2.2%	-3.7%
\$4.00	37.6%	36.3%	34.9%	33.0%	-1.3%	-2.7%	-4.6%
\$4.50	45.2%	43.6%	42.1%	39.8%	-1.5%	-3.1%	-5.3%
\$5.00	51.9%	50.2%	48.5%	46.1%	-1.7%	-3.4%	-5.8%
\$5.50	57.9%	56.1%	54.3%	51.7%	-1.8%	-3.7%	-6.3%
\$6.00	63.4%	61.5%	59.5%	56.8%	-1.9%	-3.9%	-6.6%
\$6.50	68.4%	66.4%	64.4%	61.5%	-2.0%	-4.0%	-6.9%
\$7.00	73.0%	70.9%	68.8%	65.8%	-2.0%	-4.2%	-7.1%
\$7.50	77.3%	75.2%	73.0%	69.9%	-2.1%	-4.3%	-7.4%
\$8.00	81.1%	79.0%	76.7%	73.6%	-2.2%	-4.4%	-7.6%
\$8.50	84.5%	82.3%	80.0%	76.7%	-2.2%	-4.5%	-7.8%

# Tax increases effects on IRR

## → Fiscal certainty 10 years



**Producer IRR with increase in production tax rate at 11th year of project**

		IRR			difference		
	<u>0%</u>	<u>15%</u>	<u>30%</u>	<u>50%</u>	<u>15%</u>	<u>30%</u>	<u>50%</u>
\$3.50	29.1%	29.0%	28.8%	28.6%	-0.2%	-0.3%	-0.5%
\$4.00	37.6%	37.5%	37.4%	37.3%	-0.1%	-0.2%	-0.3%
\$4.50	45.2%	45.1%	45.0%	45.0%	-0.1%	-0.1%	-0.2%
\$5.00	51.9%	51.9%	51.8%	51.7%	0.0%	-0.1%	-0.2%
\$5.50	57.9%	57.9%	57.9%	57.8%	0.0%	-0.1%	-0.1%
\$6.00	63.4%	63.4%	63.3%	63.3%	0.0%	0.0%	-0.1%
\$6.50	68.4%	68.4%	68.3%	68.3%	0.0%	0.0%	-0.1%
\$7.00	73.0%	72.9%	72.9%	72.9%	0.0%	0.0%	0.0%
\$7.50	77.3%	77.3%	77.2%	77.2%	0.0%	0.0%	0.0%
\$8.00	81.1%	81.1%	81.1%	81.1%	0.0%	0.0%	0.0%
\$8.50	84.5%	84.5%	84.5%	84.5%	0.0%	0.0%	0.0%

# Tax increases effects on IRR

## → Fiscal certainty 5 years



Producer IRR with increase in production tax rate at 6th year of project							
		IRR			difference		
	<u>0%</u>	<u>15%</u>	<u>30%</u>	<u>50%</u>	<u>15%</u>	<u>30%</u>	<u>50%</u>
\$3.50	29.1%	28.7%	28.2%	27.5%	-0.5%	-0.9%	-1.6%
\$4.00	37.6%	37.2%	36.8%	36.2%	-0.4%	-0.8%	-1.4%
\$4.50	45.2%	44.8%	44.5%	44.0%	-0.4%	-0.7%	-1.2%
\$5.00	51.9%	51.6%	51.3%	50.9%	-0.3%	-0.6%	-1.0%
\$5.50	57.9%	57.7%	57.4%	57.0%	-0.3%	-0.5%	-0.9%
\$6.00	63.4%	63.2%	62.9%	62.6%	-0.2%	-0.5%	-0.8%
\$6.50	68.4%	68.2%	68.0%	67.7%	-0.2%	-0.4%	-0.7%
\$7.00	73.0%	72.8%	72.6%	72.3%	-0.2%	-0.4%	-0.6%
\$7.50	77.3%	77.1%	76.9%	76.7%	-0.2%	-0.3%	-0.6%
\$8.00	81.1%	81.0%	80.8%	80.6%	-0.2%	-0.3%	-0.5%
\$8.50	84.5%	84.4%	84.2%	84.0%	-0.1%	-0.3%	-0.5%

# Tax increases effects on IRR

## → Fiscal certainty 15 years



**Producer IRR with increase in production tax rate at 16th year of project**

	IRR				% change		
	<u>0%</u>	<u>15%</u>	<u>30%</u>	<u>50%</u>	<u>15%</u>	<u>30%</u>	<u>50%</u>
\$3.50	29.1%	29.1%	29.1%	29.0%	0.0%	-0.1%	-0.1%
\$4.00	37.6%	37.6%	37.6%	37.6%	0.0%	0.0%	-0.1%
\$4.50	45.2%	45.2%	45.2%	45.1%	0.0%	0.0%	0.0%
\$5.00	51.9%	51.9%	51.9%	51.9%	0.0%	0.0%	0.0%
\$5.50	57.9%	57.9%	57.9%	57.9%	0.0%	0.0%	0.0%
\$6.00	63.4%	63.4%	63.4%	63.4%	0.0%	0.0%	0.0%
\$6.50	68.4%	68.4%	68.4%	68.4%	0.0%	0.0%	0.0%
\$7.00	73.0%	73.0%	73.0%	73.0%	0.0%	0.0%	0.0%
\$7.50	77.3%	77.3%	77.3%	77.3%	0.0%	0.0%	0.0%
\$8.00	81.1%	81.1%	81.1%	81.1%	0.0%	0.0%	0.0%
\$8.50	84.5%	84.5%	84.5%	84.5%	0.0%	0.0%	0.0%

# Tax increases effects on P/I → No fiscal certainty



**Producer PI with increase in production tax rate at start of project**

	PI				difference		
	<b>0%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>
\$3.50	3.7	3.6	3.4	3.2	-0.2	-0.4	-0.6
\$4.00	5.1	4.8	4.6	4.3	-0.2	-0.5	-0.8
\$4.50	6.4	6.1	5.8	5.4	-0.3	-0.6	-1.0
\$5.00	7.7	7.4	7.0	6.5	-0.4	-0.7	-1.2
\$5.50	9.1	8.6	8.2	7.7	-0.4	-0.8	-1.4
\$6.00	10.4	9.9	9.4	8.8	-0.5	-1.0	-1.6
\$6.50	11.7	11.1	10.6	9.8	-0.5	-1.1	-1.8
\$7.00	12.9	12.3	11.7	10.9	-0.6	-1.2	-2.0
\$7.50	14.1	13.4	12.7	11.8	-0.7	-1.3	-2.2
\$8.00	15.2	14.5	13.7	12.8	-0.7	-1.5	-2.4
\$8.50	16.3	15.5	14.7	13.6	-0.8	-1.6	-2.6

# Tax increases effects on P/I → Fiscal certainty 10 years



**Producer PI with increase in production tax rate at 11th year of project**

		PI			difference		
	<b>0%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>
\$3.50	3.7	3.7	3.6	3.5	-0.1	-0.2	-0.3
\$4.00	5.1	5.0	4.9	4.7	-0.1	-0.2	-0.3
\$4.50	6.4	6.3	6.1	6.0	-0.1	-0.3	-0.4
\$5.00	7.7	7.6	7.4	7.2	-0.1	-0.3	-0.5
\$5.50	9.1	8.9	8.7	8.5	-0.2	-0.3	-0.6
\$6.00	10.4	10.2	10.0	9.7	-0.2	-0.4	-0.7
\$6.50	11.7	11.4	11.2	10.9	-0.2	-0.4	-0.7
\$7.00	12.9	12.6	12.4	12.1	-0.2	-0.5	-0.8
\$7.50	14.1	13.8	13.6	13.2	-0.3	-0.5	-0.9
\$8.00	15.2	14.9	14.6	14.2	-0.3	-0.6	-1.0
\$8.50	16.3	15.9	15.6	15.2	-0.3	-0.6	-1.0

# Tax increases effects on P/I → Fiscal certainty 5 years



**Producer PI with increase in production tax rate at 6th year of project**

	PI				difference		
	<b>0%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>
\$3.50	3.7	3.6	3.5	3.3	-0.1	-0.3	-0.4
\$4.00	5.1	4.9	4.7	4.5	-0.2	-0.3	-0.6
\$4.50	6.4	6.2	6.0	5.7	-0.2	-0.4	-0.7
\$5.00	7.7	7.5	7.2	6.9	-0.2	-0.5	-0.8
\$5.50	9.1	8.8	8.5	8.1	-0.3	-0.6	-1.0
\$6.00	10.4	10.0	9.7	9.3	-0.3	-0.7	-1.1
\$6.50	11.7	11.3	10.9	10.4	-0.4	-0.7	-1.2
\$7.00	12.9	12.5	12.1	11.5	-0.4	-0.8	-1.3
\$7.50	14.1	13.6	13.2	12.6	-0.4	-0.9	-1.5
\$8.00	15.2	14.7	14.2	13.6	-0.5	-1.0	-1.6
\$8.50	16.3	15.7	15.2	14.5	-0.5	-1.0	-1.7

# Tax increases effects on P/I → Fiscal certainty 15 years



**Producer PI with increase in production tax rate at 16th year of project**

	PI				difference		
	<b>0%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>	<b>15%</b>	<b>30%</b>	<b>50%</b>
\$3.50	3.7	3.7	3.7	0.3	0.0	-0.1	-3.4
\$4.00	5.1	5.0	5.0	0.4	0.0	-0.1	-4.7
\$4.50	6.4	6.3	6.3	0.5	-0.1	-0.1	-6.0
\$5.00	7.7	7.7	7.6	0.5	-0.1	-0.1	-7.2
\$5.50	9.1	9.0	8.9	0.6	-0.1	-0.2	-8.5
\$6.00	10.4	10.3	10.2	0.6	-0.1	-0.2	-9.7
\$6.50	11.7	11.5	11.4	0.7	-0.1	-0.2	-11.0
\$7.00	12.9	12.8	12.6	0.7	-0.1	-0.2	-12.2
\$7.50	14.1	13.9	13.8	0.8	-0.1	-0.3	-13.3
\$8.00	15.2	15.1	14.9	0.8	-0.1	-0.3	-14.4
\$8.50	16.3	16.1	15.9	0.8	-0.2	-0.3	-15.4

# Appendix Project Assumptions



- Here we assume:
  - 4.3 Bcf/day to Alberta, no expansions
  - \$20.5 billion base case cost (\$2007)
  - 70/30 debt to equity, 14% ROE
  - Current PPT tax structure
  - Producers own GTP, no investment credit
  - Oil impacts of gas production included
  - 30 year project life
  - Gas flow 2016-2046
  - Oil price of \$36.50 fixed real for project life
  - \$ values increase at 2%/yr