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# **Analysis of HCS CS SB21 (FIN) for House Finance Committee**

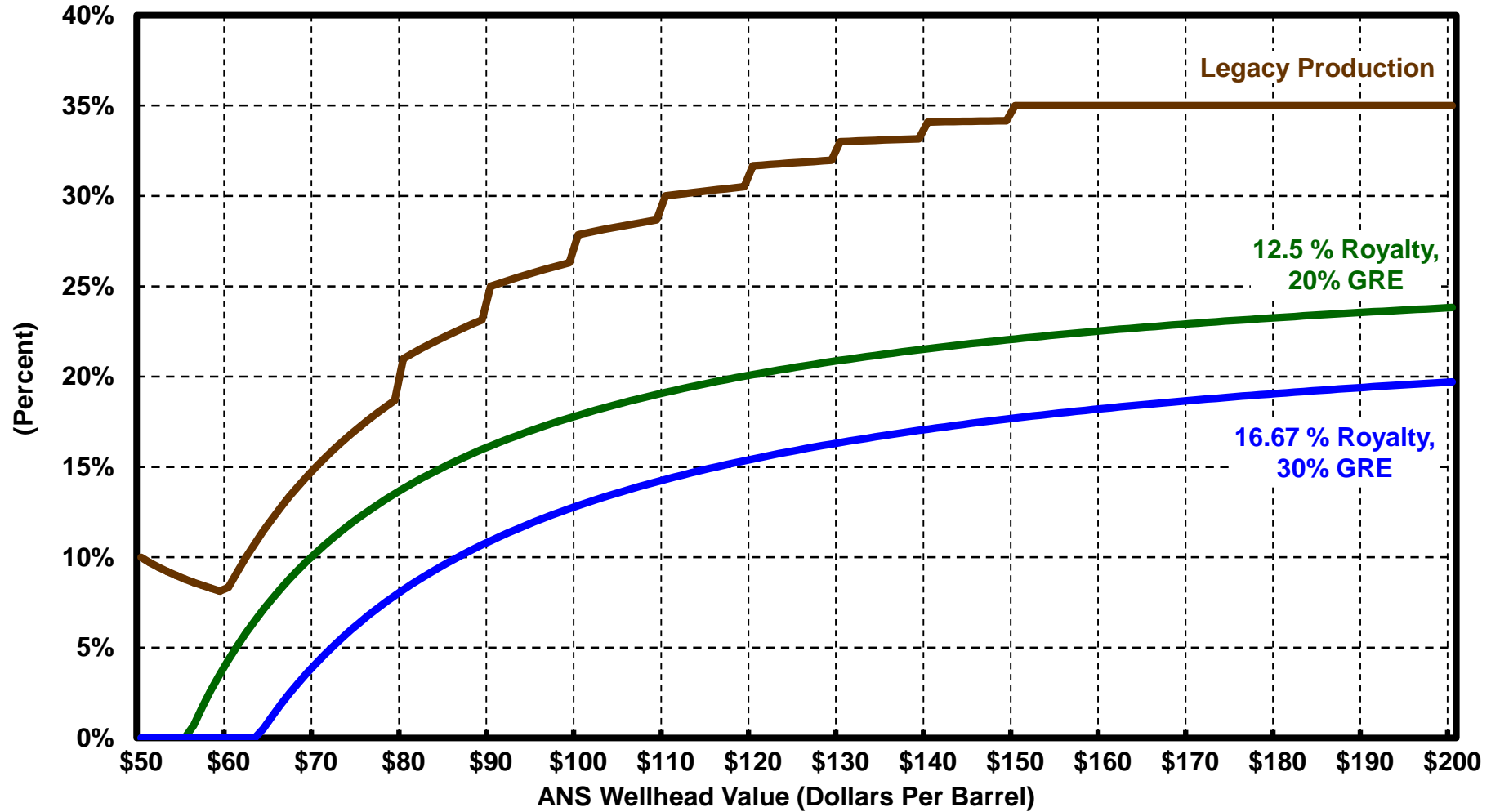
**Barry Pulliam  
Managing Director  
Econ One Research, Inc.**

**April 11, 2013**

# Key Features of ACES, SB21/HB72, HCS CS SB21 (RES) and HCS CS SB21 (FIN)

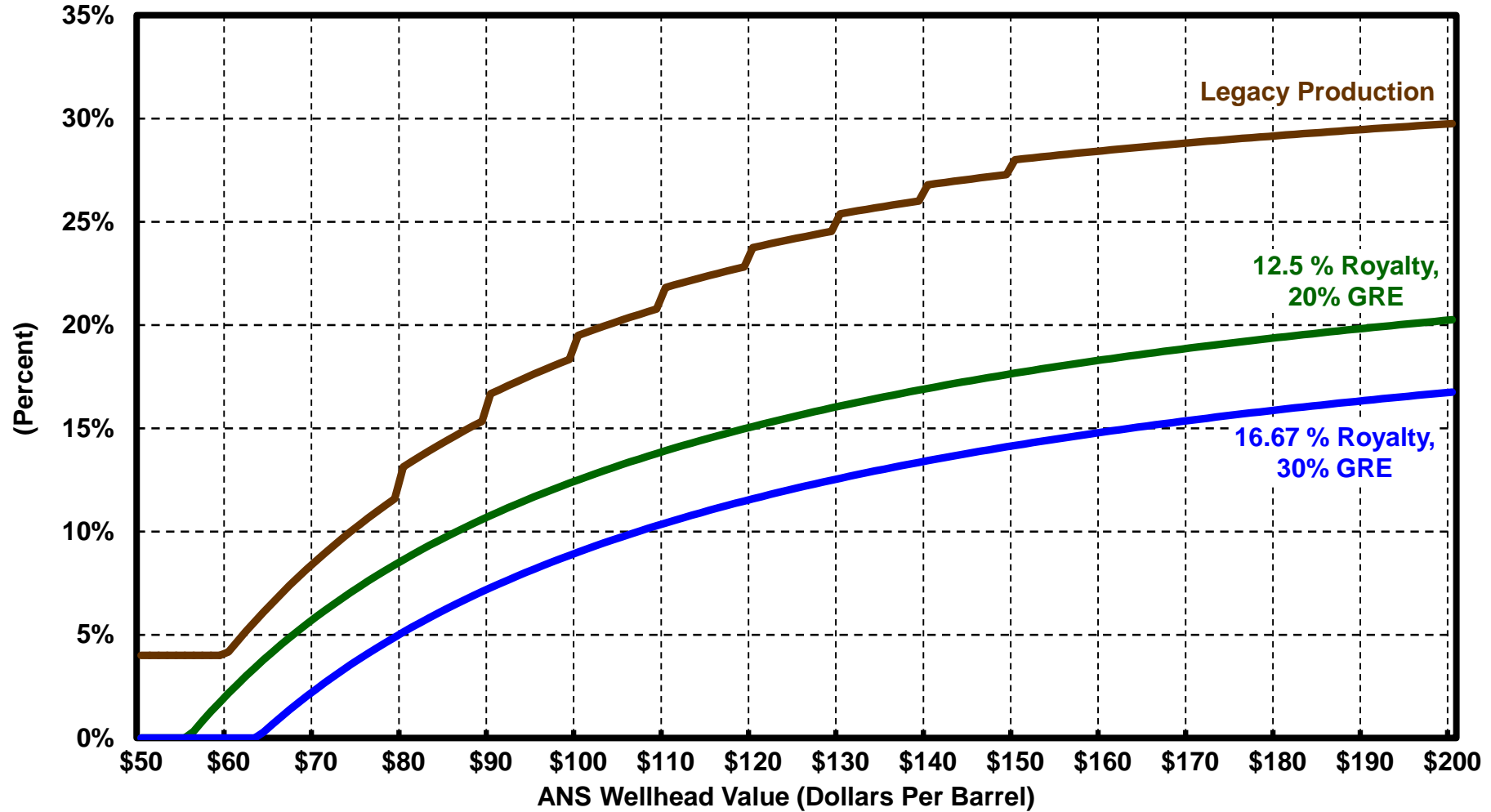
	ACES	SB71/HB72	HCS CS SB21 (RES)	HCS CS SB21 (FIN)
Base Tax Rate	25%	25%	33%	35%
Progressive Tax	0.4% Per \$1 Above \$30 Net; 0.1% Per \$1 Above \$92.50 Net	None	None	None
Maximum Tax Rate	75%	25%	33%	35%
Credits	20% of Qualified Capital Expenditure	None	Up to \$8/Bbl Produced	Up to \$8/Bbl Produced
Gross Revenue Exclusion (GRE)				
Rate	N/A	20%	20%	20%: 12.5% Royalty 30%: >12.5% Royalty
Applicability		New Units/PAs	New Units/PAs PA Expansions	New Units/PAs PA Expansions
Monetization of Net Operating Losses (NOLs)	Yes	No Carried Forward With 15% Increase	Yes	Yes 45% Through 2015, 35% Thereafter
Minimum Tax	4% of Gross @ WC ANS > \$25	4% of Gross @ WC ANS > \$25	4% of Gross @ WC ANS > \$25	4% of Gross @ WC ANS > \$25
Credits Reduce Minimum Tax	Yes	N/A	GRE Barrels Only	GRE Barrels Only
Small Producer Credit	\$12 Million (2016)	\$12 Million (2022)	\$12 Million (2022)	\$12 Million (2016)

# Effective Net Tax Rates Under HCS CS SB21 (FIN)



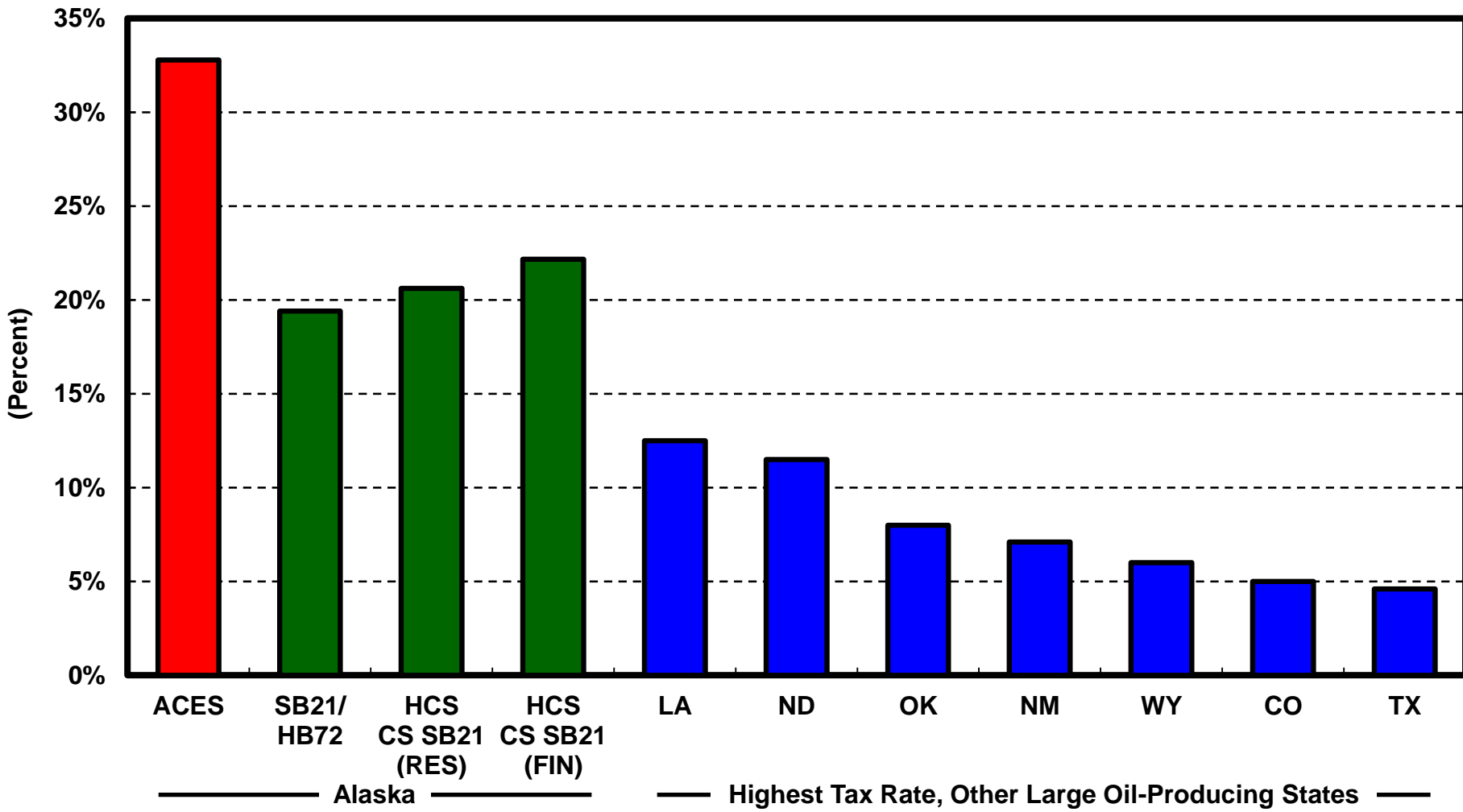
Note: Under HCS CS SB21 (FIN), per barrel credit is equal to \$8/Bbl at wellhead prices below \$80/bbl, diminishing to \$0/Bbl at a wellhead price of \$150/bbl. The minimum tax is 4% of the wellhead value of the oil whenever West Coast ANS is above \$25/Bbl for non-GRE barrels.

# Effective Gross Tax Rates Under HCS CS SB21 (FIN)



Note: Under HCS CS SB21 (FIN), per barrel credit is equal to \$8/Bbl at wellhead prices below \$80/bbl, diminishing to \$0/Bbl at a wellhead price of \$150/bbl. The minimum tax is 4% of the wellhead value of the oil whenever West Coast ANS is above \$25/Bbl for non-GRE barrels.

# Effective Tax Rates on Gross Value for Legacy Production ACES vs. SB21/HB72, HCS CS SB21 (RES), HCS CS SB21 (FIN) and Other Large Oil-Producing States With Production Taxes at \$100 Wellhead Value\*



Note: California and Federal Offshore properties are not subject to a severance tax.  
 \* FY2012 Combined PBU/KPU Costs and Volumes

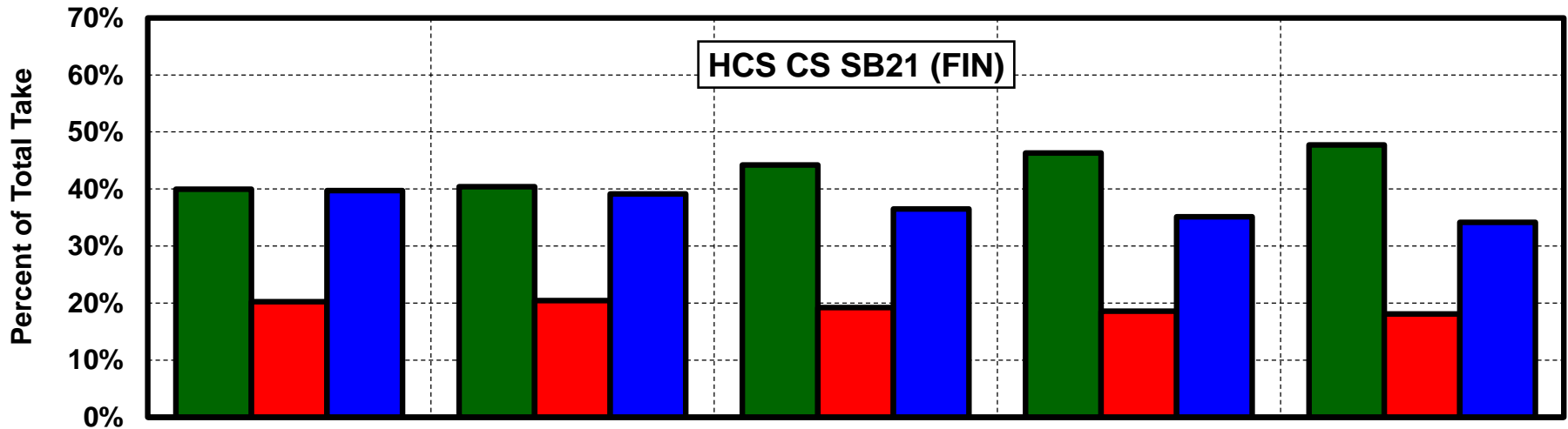
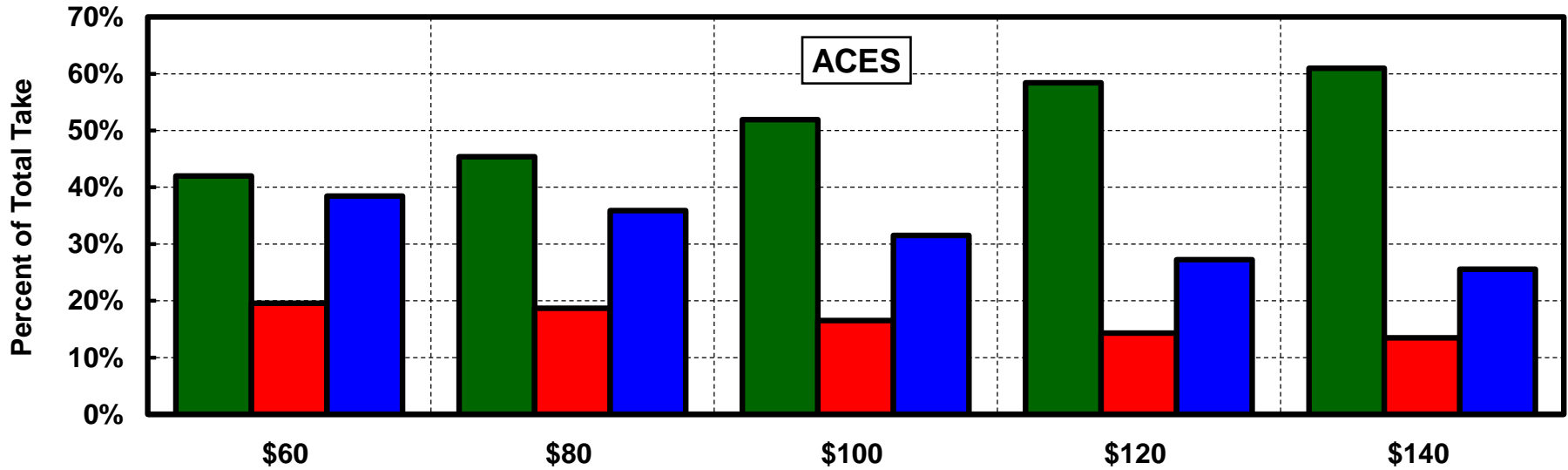
# Average Government Take for All Existing Producers (FY2015-FY2019)

\$2012 West Coast ANS Price (\$2012 \$/Bbl)	Government Take				
	HB72/SB21	CS SB21 (FIN)	HCS CS SB21 (RES)	HCS CS SB21 (FIN)	ACES
	(Percent)				
(1)	(2)	(3)	(4)	(5)	(7)
\$60	67.9%	63.0%	60.3%	60.7%	61.6%
\$70	65.7%	63.7%	59.6%	60.3%	62.2%
\$80	64.5%	64.1%	60.9%	61.8%	64.1%
\$90	63.7%	64.3%	62.3%	63.3%	66.2%
\$100	63.2%	64.5%	63.5%	64.4%	68.5%
\$110	62.8%	64.7%	64.3%	65.3%	70.7%
\$120	62.5%	64.8%	64.9%	65.9%	72.8%
\$130	62.3%	64.9%	65.4%	66.4%	73.8%
\$140	62.1%	65.0%	65.9%	66.9%	74.5%
\$150	62.0%	65.0%	66.0%	67.0%	75.1%
\$160	61.8%	65.1%	65.9%	66.9%	75.7%

Note: Under HCS CS SB21 (RES) and HCS CS SB21 (FIN), per barrel credit is equal to \$8/Bbl at wellhead prices below \$80/bbl, diminishing to \$0/Bbl at a wellhead price of \$150/bbl. The minimum tax is 4% of the wellhead value of the oil whenever West Coast ANS is above \$25/Bbl for non-GRE barrels.

# State, Federal and Producer Take at Various \$2012 WC ANS Prices for All Producers (FY 2015 - FY 2019)

## ACES and HCS CS SB21 (FIN)



# Summary of Investment Measures for New Participant 50 MMBO Alaska Oil Development ACES and HCS CS SB21 (FIN) v. Benchmark Areas



Real \$2012 West Coast ANS Price	ACES 16.67% Royalty	HCS CS SB21 (FIN) 35% Base Rate, \$5/Bbl Credit 12.5% Royalty: 16.67% Royalty:		Unconventional Lower-48		Offshore GOM	Canada Oil Sands SAGD	Norway	United Kingdom	
		20% GRE	30% GRE	Eagle Ford	Bakken				Pre-1993 w/ Brownfield Allowance*	Post-1993 w/ Brownfield Allowance*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>Producer NPV-12 / BOE (Dollars Per BOE)</b>										
\$80	\$2.28	\$3.33	\$3.08	\$3.61	\$0.67	\$2.80	(\$0.93)	\$0.24	\$4.81	\$4.62
\$100	\$4.17	\$6.75	\$6.54	\$6.75	\$4.29	\$6.22	\$0.46	\$2.34	\$7.09	\$8.25
\$120	\$5.79	\$10.13	\$10.06	\$11.17	\$9.16	\$9.64	\$2.01	\$4.44	\$9.09	\$11.88
<b>Profitability Index-12</b>										
\$80	1.18	1.27	1.25	1.25	1.04	1.25	0.88	1.01	1.22	1.21
\$100	1.33	1.54	1.52	1.47	1.28	1.55	1.06	1.14	1.33	1.38
\$120	1.46	1.81	1.80	1.78	1.60	1.85	1.26	1.27	1.42	1.55
<b>IRR (Percent)</b>										
\$80	18.4%	19.7%	19.1%	29.9%	13.6%	18.3%	9.7%	12.4%	34.5%	24.7%
\$100	23.3%	26.2%	25.7%	46.3%	22.7%	24.3%	13.1%	16.0%	45.2%	32.9%
\$120	26.9%	31.8%	31.7%	73.6%	37.0%	29.3%	16.3%	19.3%	53.5%	40.2%
<b>5-Year (2017-2021) Cash Margins (Dollars Per BOE)</b>										
\$80	\$20.82	\$23.28	\$22.28	\$23.39	\$28.39	\$26.31	\$26.07	\$34.51	\$22.94	\$29.35
\$100	\$26.78	\$33.20	\$32.46	\$29.99	\$36.48	\$37.34	\$29.14	\$39.42	\$28.85	\$37.82
\$120	\$30.79	\$42.30	\$42.11	\$36.87	\$44.91	\$48.37	\$33.37	\$44.32	\$31.29	\$46.30
<b>Government Take (Percent)</b>										
\$80	70.4%	59.6%	60.7%	71.7%	77.1%	55.7%	63.4%	67.8%	61.0%	52.0%
\$100	73.9%	60.0%	60.6%	67.9%	72.1%	52.6%	63.5%	71.7%	68.6%	55.8%
\$120	76.0%	60.4%	60.6%	65.1%	68.7%	50.9%	63.0%	73.4%	72.0%	57.5%
<b>State/Municipal NPV-12/BOE (Dollars Per BOE)</b>										
\$80	\$6.06	\$4.44	\$4.83	-	-	-	-	-	-	-
\$100	\$11.80	\$7.84	\$8.15	-	-	-	-	-	-	-
\$120	\$17.96	\$11.28	\$11.39	-	-	-	-	-	-	-

\* Brownfield Allowance applied to 100 MMBOE development.

Alaska Oil Development : New development profile and costs are based on Pioneer's presentation dated February 18, 2013 -- \$18/Bbl. Development Capex.



# Appendix

# Tax Calculation Using Stepped Scale Production Credit (Volumes Not Subject to Gross Revenue Exclusion)

(a) West Coast Price (\$/Bbl)			\$80.00	\$100.00	\$120.00	\$140.00	\$160.00
(b) Transportation (\$/Bbl)	-		10.00	10.00	10.00	10.00	10.00
(c) Gross Value (\$/Bbl)	(a) - (b)	=	\$70.00	\$90.00	\$110.00	\$130.00	\$150.00
(d) Lease Expenditures (\$/Bbl)	-		30.00	30.00	30.00	30.00	30.00
(e) Net Value (\$/Bbl)	(c) - (d)	=	\$40.00	\$60.00	\$80.00	\$100.00	\$120.00
(f) Tax Rate (Percent)	x		35%	35%	35%	35%	35%
(g) Production Tax Before Credit (\$/Bbl)	(e) x (f)		\$14.00	\$21.00	\$28.00	\$35.00	\$42.00
(h) Production Credit (\$/Bbl)	-		8.00	6.00	4.00	2.00	0.00
(i) Production Tax After Credit (\$/Bbl)	(g) - (h)		\$6.00	\$15.00	\$24.00	\$33.00	\$42.00
(j) Taxable Barrels (Bbls)	x		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
(k) Total Production Tax After Credit (\$000)	(i) x (j)	=	\$6,000	\$15,000	\$24,000	\$33,000	\$42,000
(l) Effective Tax Rate on Net Value (%)	(i) ÷ (e)		15.0%	25.0%	30.0%	33.0%	35.0%
(m) Effective Tax Rate on Gross Value (%)	(i) ÷ (c)		8.6%	16.7%	21.8%	25.4%	28.0%

Note: Per barrel credit is equal to \$8/Bbl at wellhead prices below \$80/bbl, diminishing to \$0/Bbl at a wellhead price of \$150/bbl. The minimum tax is 4% of the wellhead value of the oil whenever West Coast ANS is above \$25/Bbl.

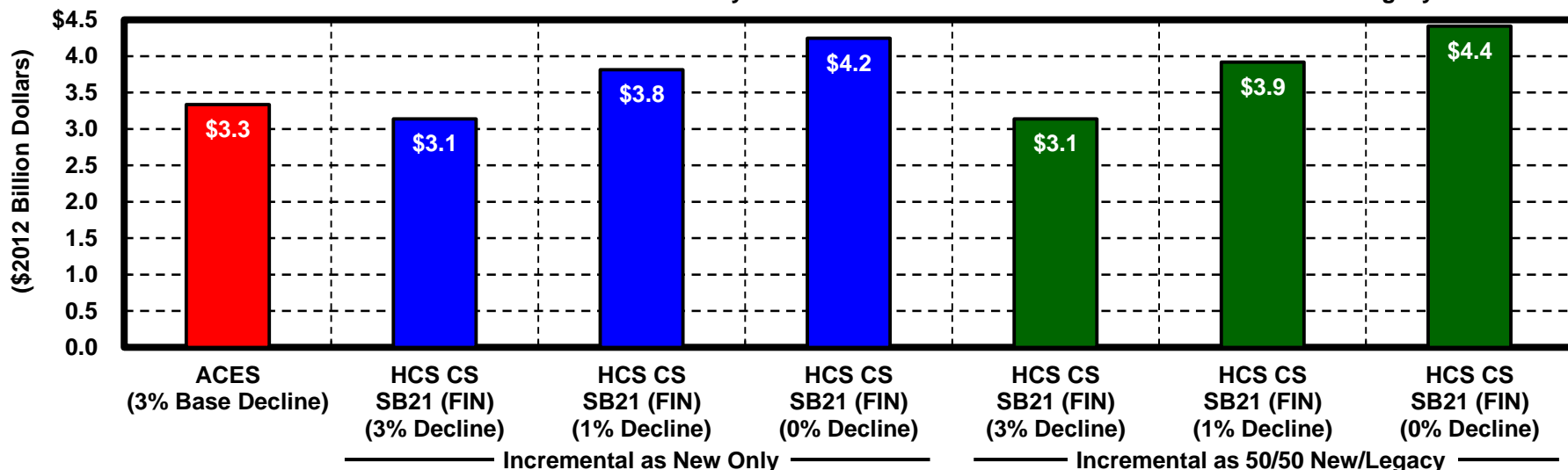
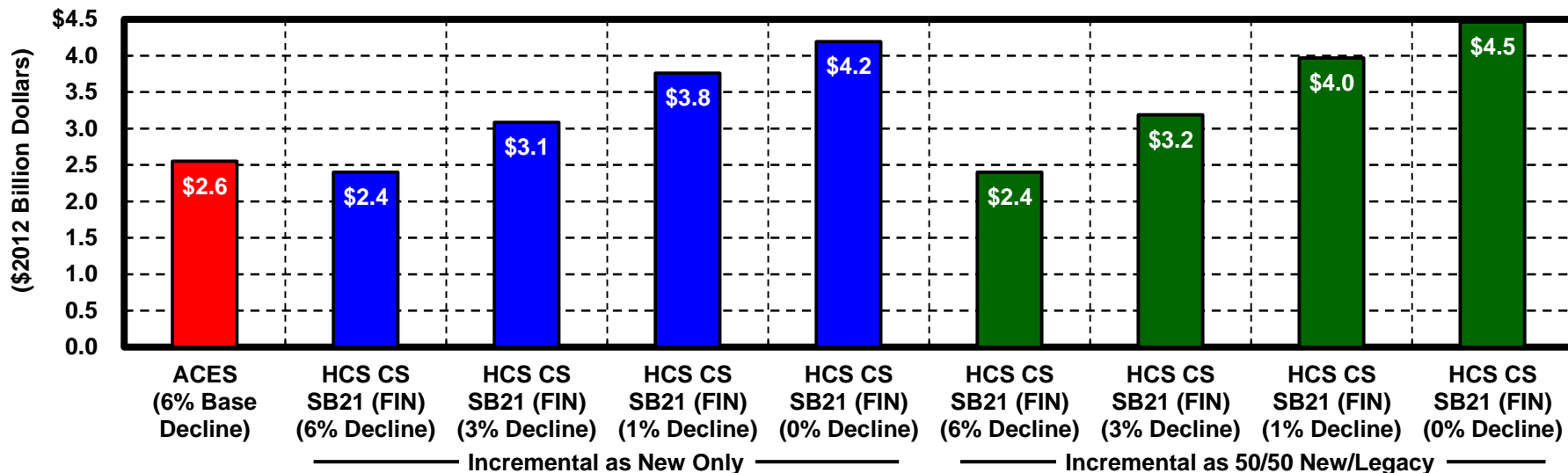
# Tax Calculation Using Fixed \$5 Production Credit (Volumes Subject to Gross Revenue Exclusion, 12.5% Royalty)

(a) West Coast Price (\$/Bbl)			\$80.00	\$100.00	\$120.00	\$140.00	\$160.00
(b) Transportation (\$/Bbl)	-		10.00	10.00	10.00	10.00	10.00
(c) Gross Value (\$/Bbl)	(a) - (b)	=	\$70.00	\$90.00	\$110.00	\$130.00	\$150.00
(d) Lease Expenditures (\$/Bbl)	-		30.00	30.00	30.00	30.00	30.00
(e) Net Value (\$/Bbl)	(c) - (d)	=	\$40.00	\$60.00	\$80.00	\$100.00	\$120.00
(f) Gross Revenue Exclusion (%)			20%	20%	20%	20%	20%
(g) Gross Value After GRE (\$/Bbl)	(c) x [100%-(h)]		\$56.00	\$72.00	\$88.00	\$104.00	\$120.00
(h) Net Value After GRE (\$/Bbl)	(g) - (d)		\$26.00	\$42.00	\$58.00	\$74.00	\$90.00
(i) Tax Rate (Percent)	x		35%	35%	35%	35%	35%
(j) Production Tax Before Credit (\$/Bbl)	(h) x (i)	=	\$9.10	\$14.70	\$20.30	\$25.90	\$31.50
(k) Production Credit (\$/Bbl)	-		5.00	5.00	5.00	5.00	5.00
(l) Production Tax After Credit (\$/Bbl)	(j) - (k)	=	\$4.10	\$9.70	\$15.30	\$20.90	\$26.50
(m) Taxable Barrels (Bbls)	x		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
(n) Total Production Tax After Credit (\$000)	(l) x (m)	=	\$4,100	\$9,700	\$15,300	\$20,900	\$26,500
(o) Effective Tax Rate on Net Value (%)	(l) ÷ (e)		10.3%	16.2%	19.1%	20.9%	22.1%
(p) Effective Tax Rate on Gross Value (%)	(l) ÷ (c)		5.9%	10.8%	13.9%	16.1%	17.7%

# Tax Calculation Using Fixed \$5 Production Credit (Volumes Subject to Gross Revenue Exclusion, >12.5% Royalty)

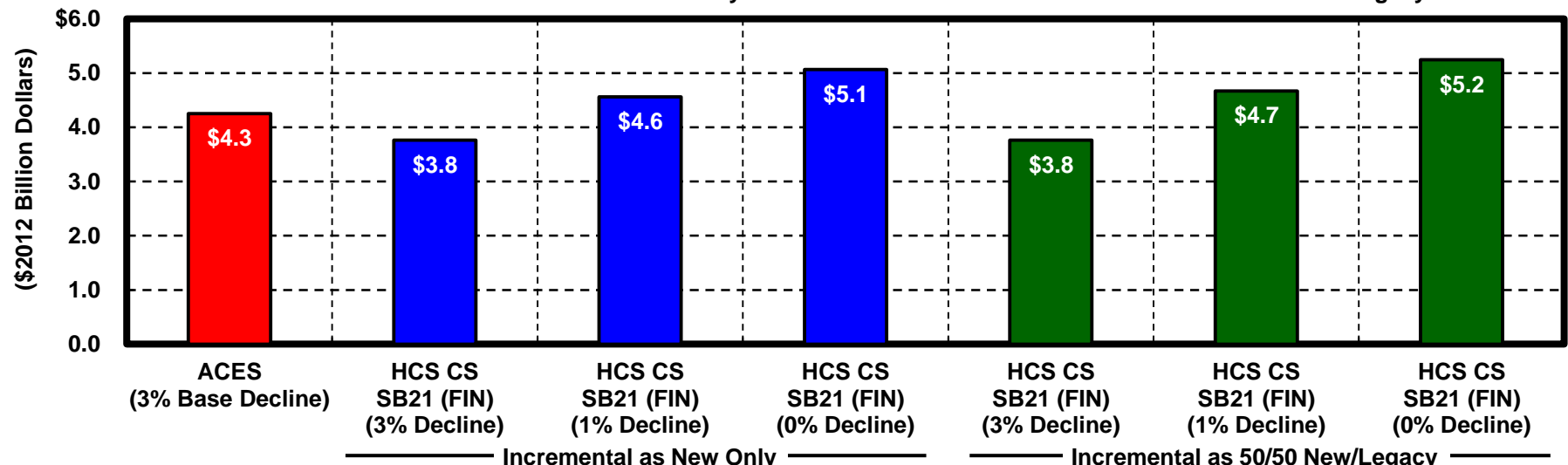
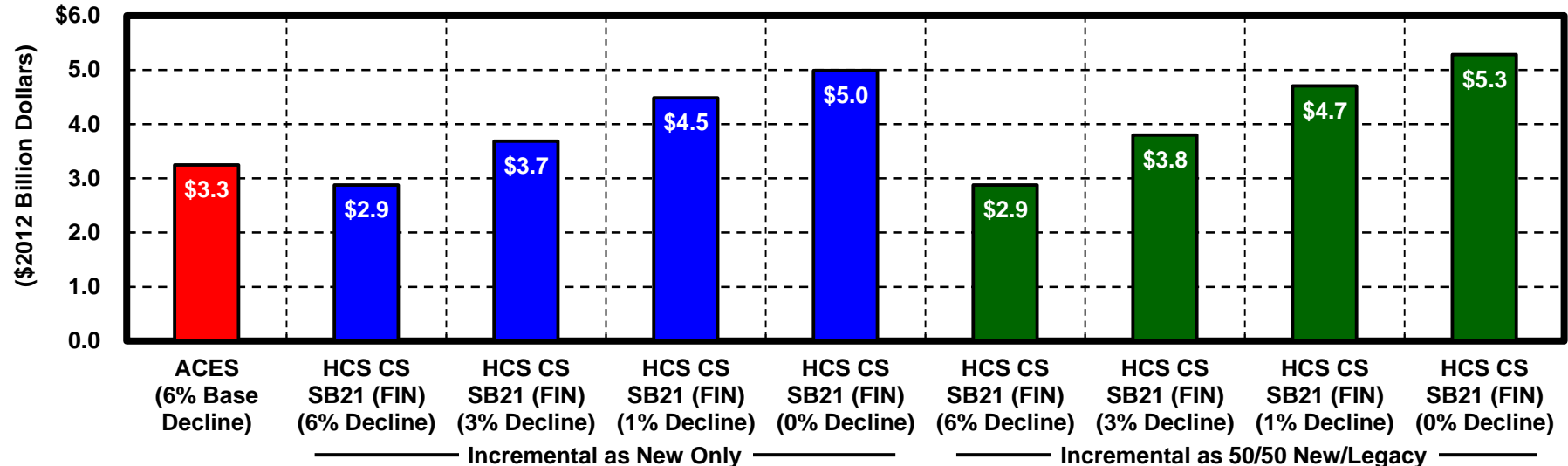
(a) West Coast Price (\$/Bbl)			\$80.00	\$100.00	\$120.00	\$140.00	\$160.00
(b) Transportation (\$/Bbl)	-		10.00	10.00	10.00	10.00	10.00
(c) Gross Value (\$/Bbl)	(a) - (b)	=	\$70.00	\$90.00	\$110.00	\$130.00	\$150.00
(d) Lease Expenditures (\$/Bbl)	-		30.00	30.00	30.00	30.00	30.00
(e) Net Value (\$/Bbl)	(c) - (d)	=	\$40.00	\$60.00	\$80.00	\$100.00	\$120.00
(f) Gross Revenue Exclusion (%)			30%	30%	30%	30%	30%
(g) Gross Value After GRE (\$/Bbl)	(c) x [100%-(h)]		\$49.00	\$63.00	\$77.00	\$91.00	\$105.00
(h) Net Value After GRE (\$/Bbl)	(g) - (d)		\$19.00	\$33.00	\$47.00	\$61.00	\$75.00
(i) Tax Rate (Percent)	x		35%	35%	35%	35%	35%
(j) Production Tax Before Credit (\$/Bbl)	(h) x (i)	=	\$6.65	\$11.55	\$16.45	\$21.35	\$26.25
(k) Production Credit (\$/Bbl)	-		5.00	5.00	5.00	5.00	5.00
(l) Production Tax After Credit (\$/Bbl)	(j) - (k)	=	\$1.65	\$6.55	\$11.45	\$16.35	\$21.25
(m) Taxable Barrels (Bbls)	x		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
(n) Total Production Tax After Credit (\$000)	(l) x (m)	=	\$1,650	\$6,550	\$11,450	\$16,350	\$21,250
(o) Effective Tax Rate on Net Value (%)	(l) ÷ (e)		4.1%	10.9%	14.3%	16.4%	17.7%
(p) Effective Tax Rate on Gross Value (%)	(l) ÷ (c)		2.4%	7.3%	10.4%	12.6%	14.2%

# Estimated Average 2013 - 2042 State Oil Revenues (\$2012 Billion Dollars) Under Potential Production and Tax Scenarios ACES v. HCS CS SB21 (FIN) (35% Base Rate, 30% GRE) \$90 West Coast ANS (\$2012)



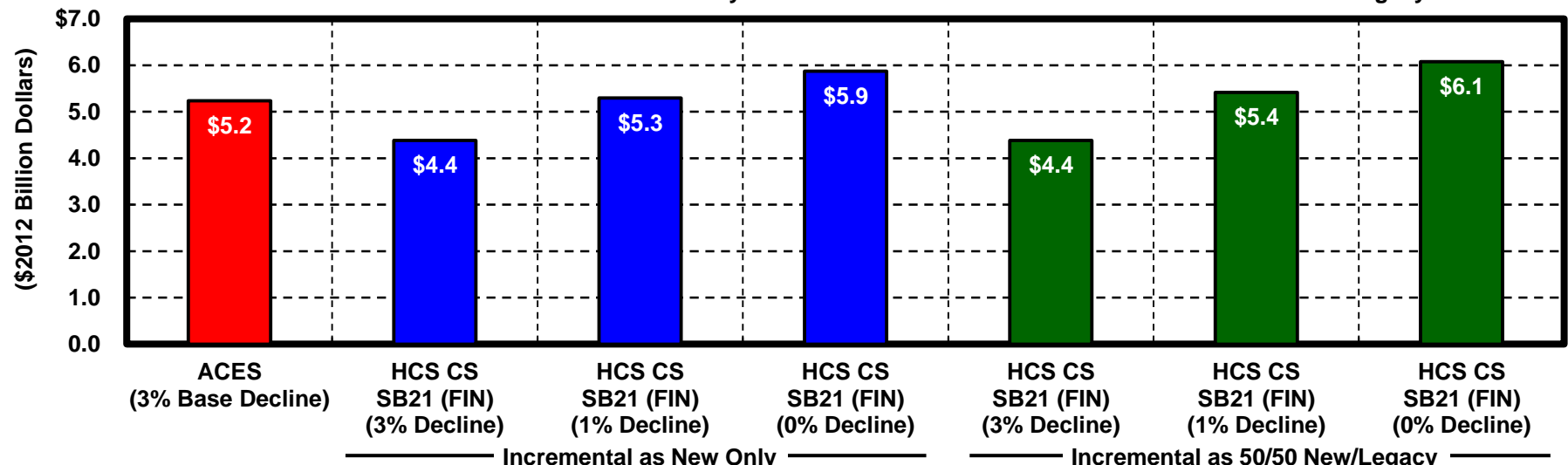
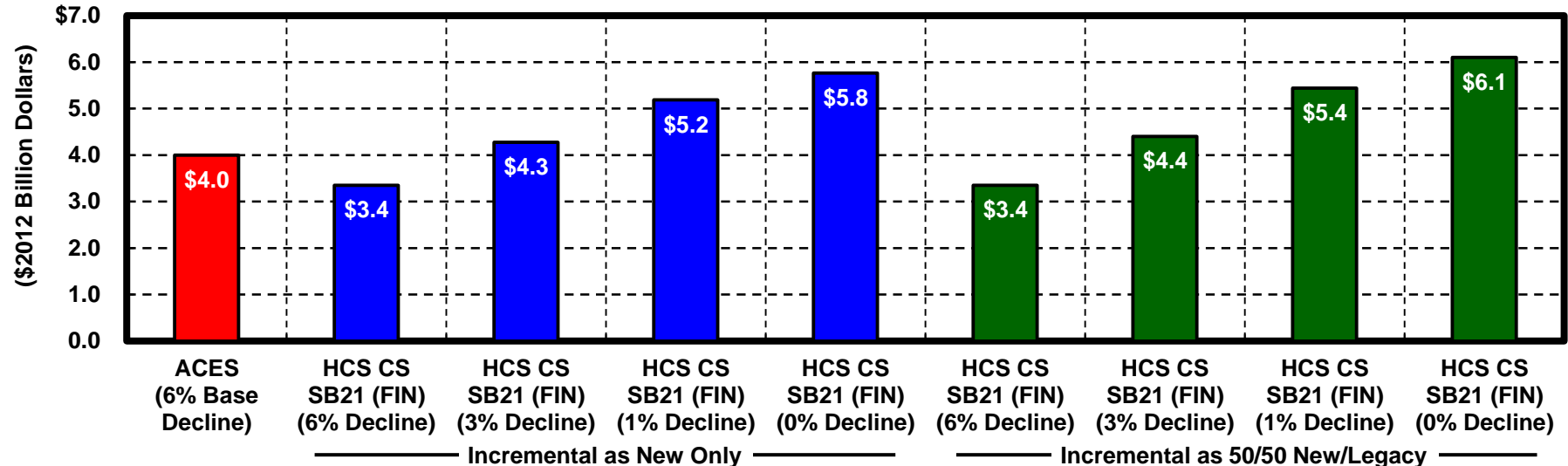
Note: Volumes over base classified as "new" assumed to qualify for GRE and carry 1/6th royalty; volumes over base classified as "legacy" assumed in PBU/KPU fields.

# Estimated Average 2013 - 2042 State Oil Revenues (\$2012 Billion Dollars) Under Potential Production and Tax Scenarios ACES v. HCS CS SB21 (FIN) (35% Base Rate, 30% GRE) \$100 West Coast ANS (\$2012)



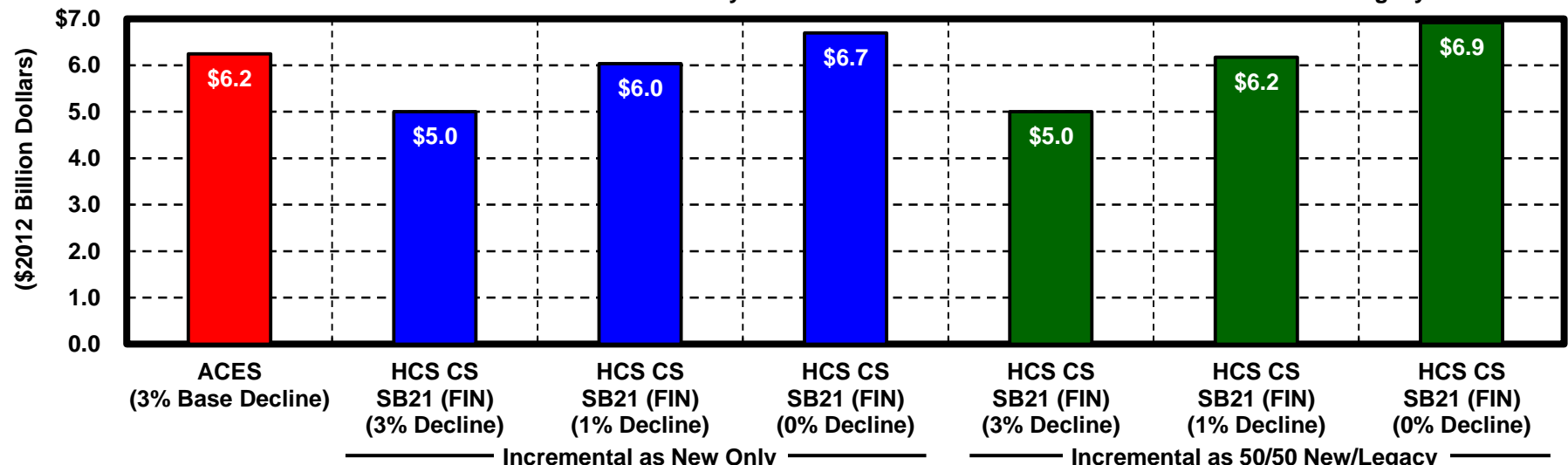
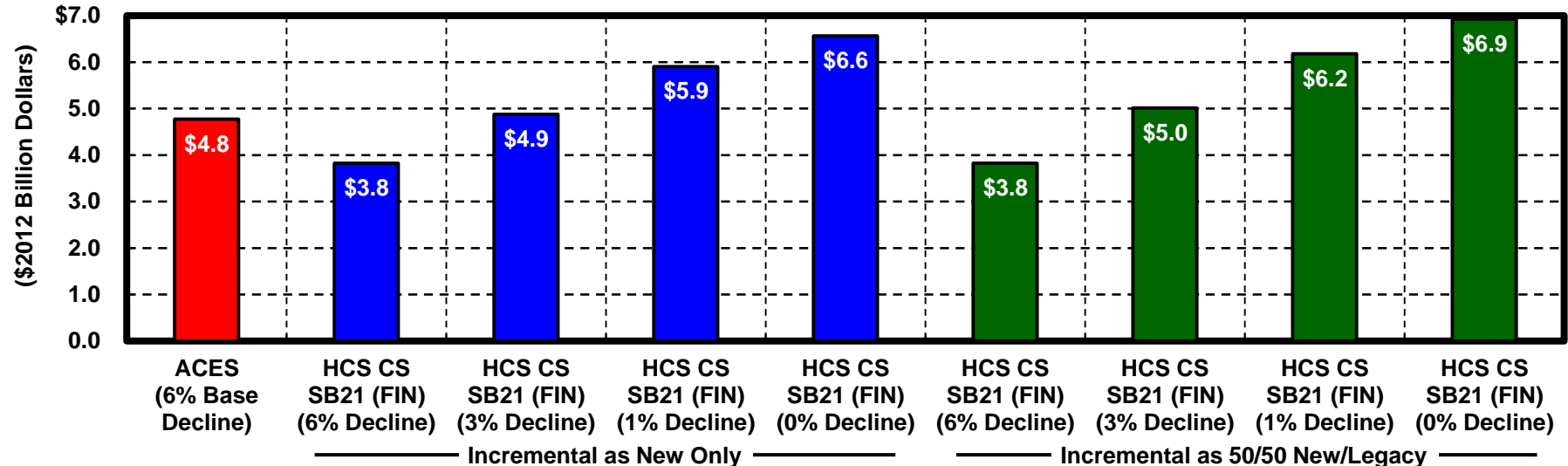
Note: Volumes over base classified as "new" assumed to qualify for GRE and carry 1/6th royalty; volumes over base classified as "legacy" assumed in PBU/KPU fields.

# Estimated Average 2013 - 2042 State Oil Revenues (\$2012 Billion Dollars) Under Potential Production and Tax Scenarios ACES v. HCS CS SB21 (FIN) (35% Base Rate, 30% GRE) \$110 West Coast ANS (\$2012)



Note: Volumes over base classified as "new" assumed to qualify for GRE and carry 1/6th royalty; volumes over base classified as "legacy" assumed in PBU/KPU fields.

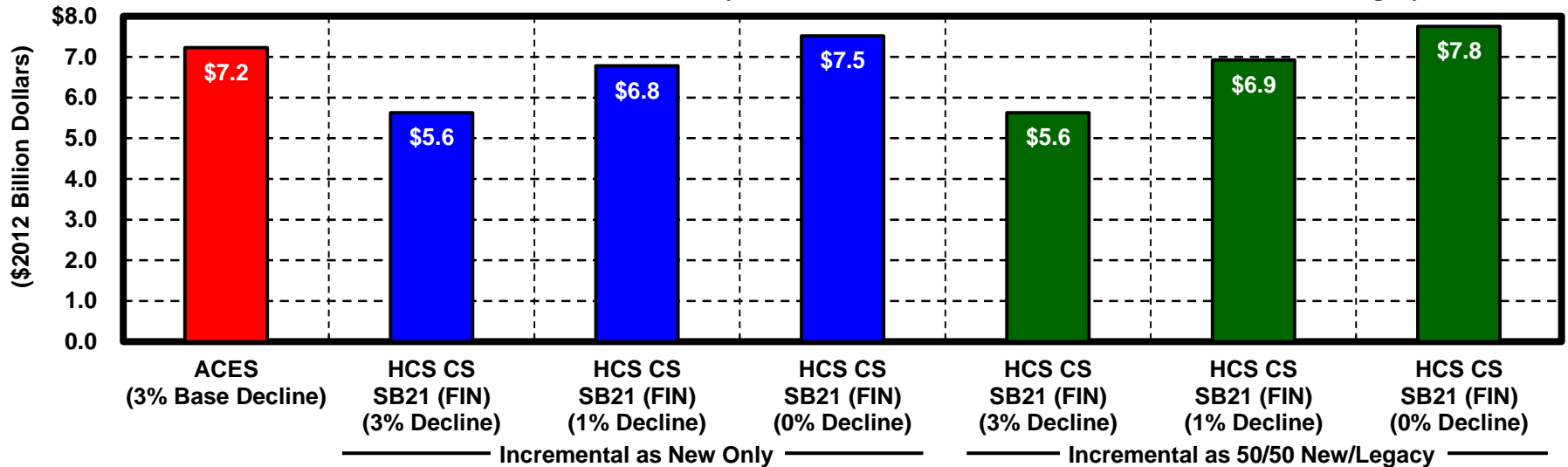
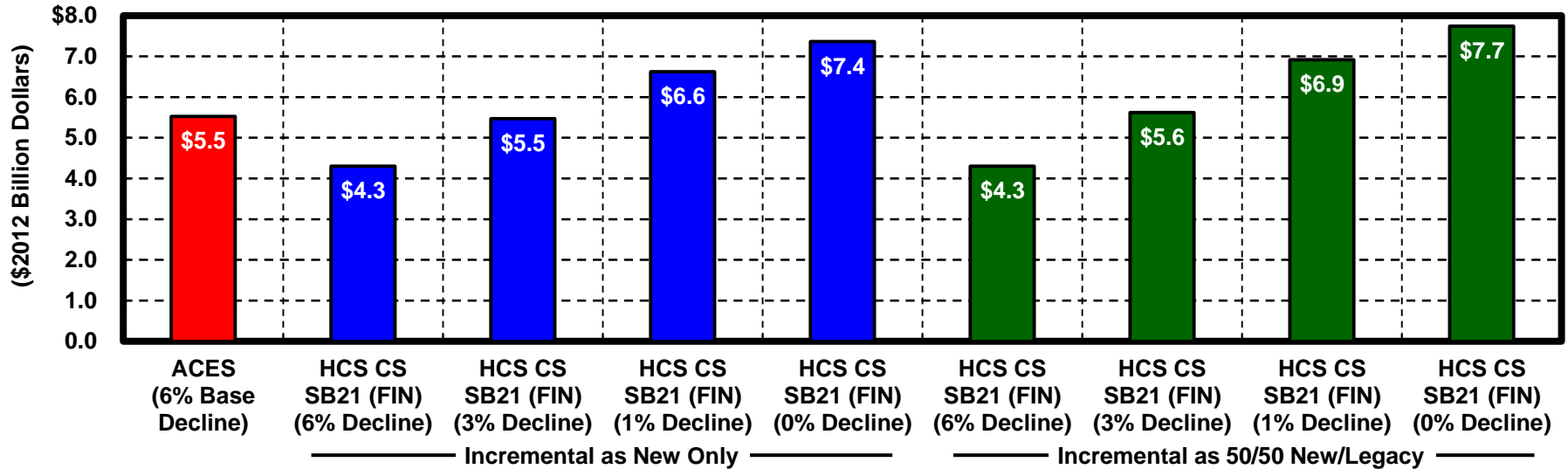
# Estimated Average 2013 - 2042 State Oil Revenues (\$2012 Billion Dollars) Under Potential Production and Tax Scenarios ACES v. HCS CS SB21 (FIN) (35% Base Rate, 30% GRE) \$120 West Coast ANS (\$2012)



Note: Volumes over base classified as "new" assumed to qualify for GRE and carry 1/6th royalty; volumes over base classified as "legacy" assumed in PBU/KPU fields.

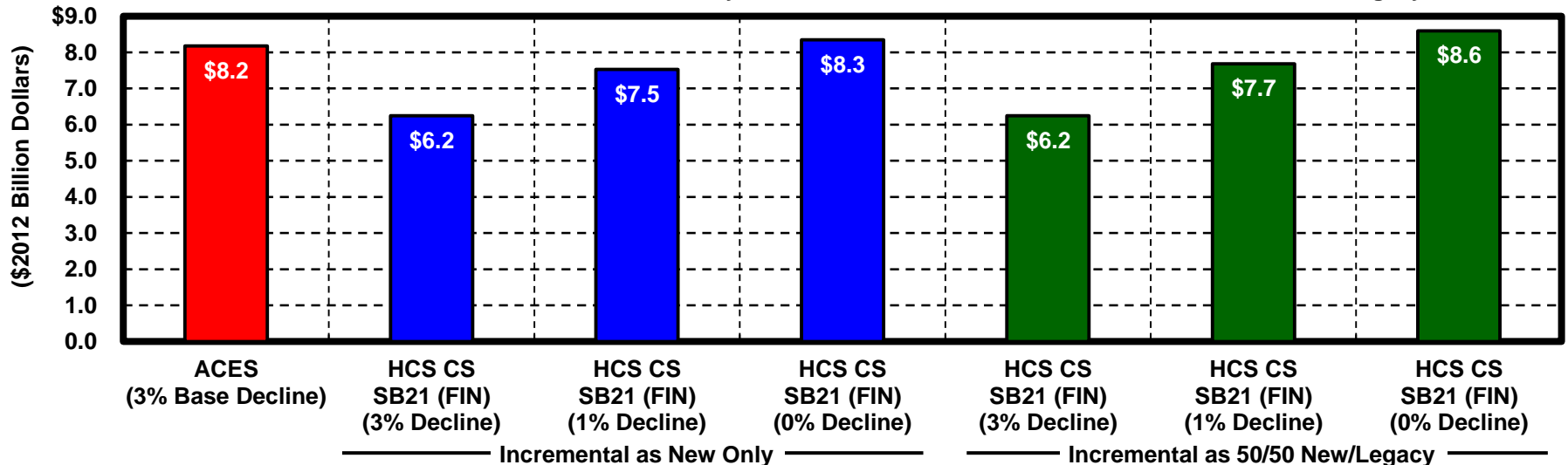
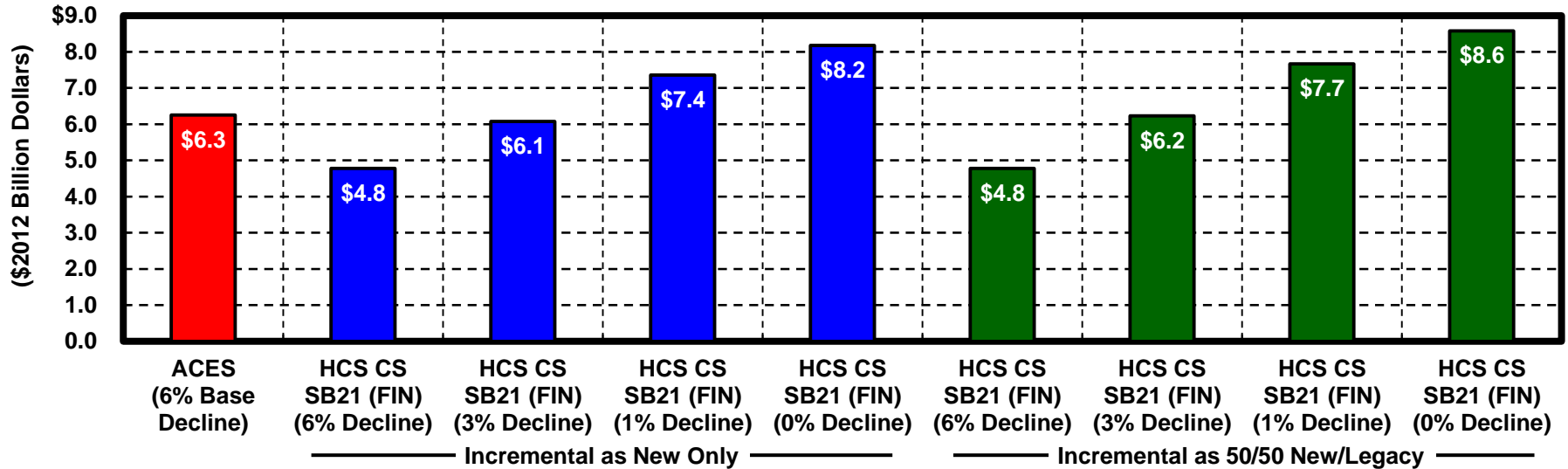


# Estimated Average 2013 - 2042 State Oil Revenues (\$2012 Billion Dollars) Under Potential Production and Tax Scenarios ACES v. HCS CS SB21 (FIN) (35% Base Rate, 30% GRE) \$130 West Coast ANS (\$2012)



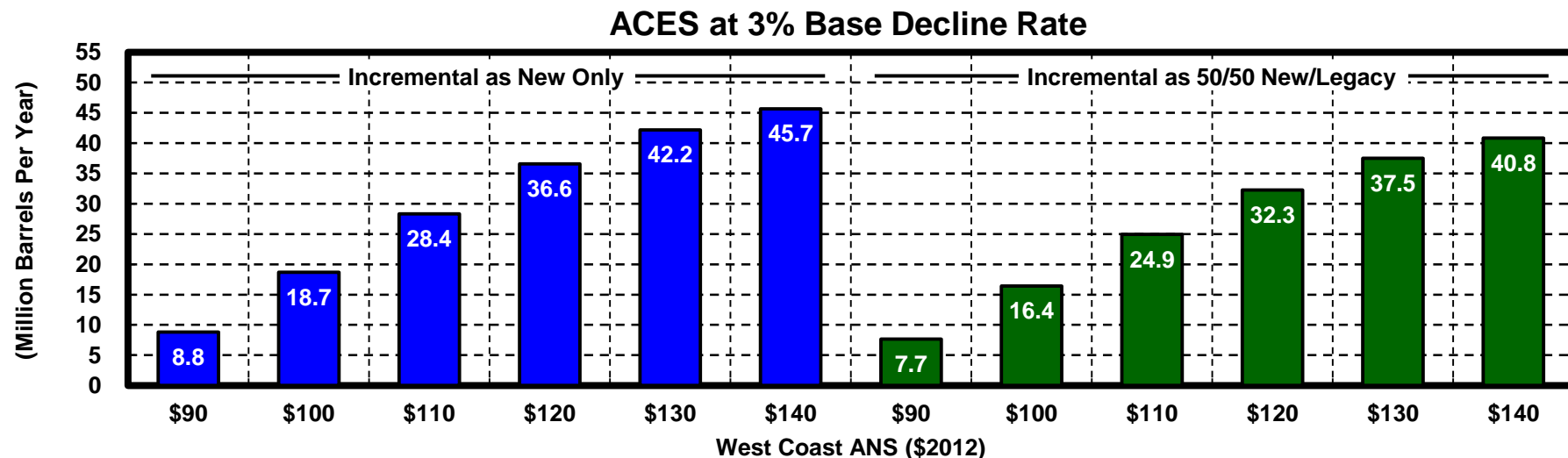
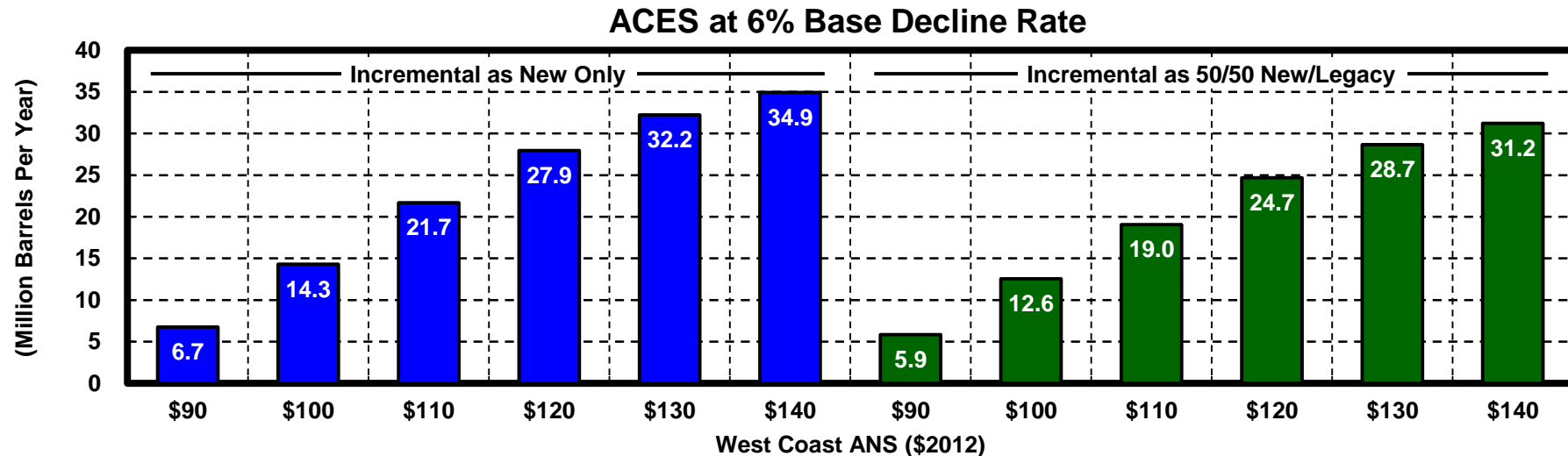
Note: Volumes over base classified as "new" assumed to qualify for GRE and carry 1/6th royalty; volumes over base classified as "legacy" assumed in PBU/KPU fields.

# Estimated Average 2013 - 2042 State Oil Revenues (\$2012 Billion Dollars) Under Potential Production and Tax Scenarios ACES v. HCS CS SB21 (FIN) (35% Base Rate, 30% GRE) \$140 West Coast ANS (\$2012)



Note: Volumes over base classified as "new" assumed to qualify for GRE and carry 1/6th royalty; volumes over base classified as "legacy" assumed in PBU/KPU fields.

# Estimated Additional Annual Volumes Needed (2013 - 2042) Under HCS CS SB21 (FIN) (35% Base Rate, 30% GRE) to Match State Oil Revenues (\$2012 Billion Dollars) Under ACES at 6% and 3% Decline Rates



Note: Volumes over base classified as "new" assumed to qualify for GRE and carry 1/6th royalty; volumes over base classified as "legacy" assumed in PBU/KPU fields.