



NOC Breakeven Costs 2011-2013

CNOOC, Ecopetrol, Petronas, Rosneft, Sinopec, Statoil, PdVSA, Petrobras, PetroChina, Pemex, ONGC

NOC Sample Characteristics

- Companies represented 23-24% of EIA World Oil Production 2011-2013
- Companies' oil production was 73% of total production 2011-2013
- Companies' reserve replacement ratio 2011-2013 was 192% due to large acquisitions by CNOOC, Petronas and Rosneft
- High quality financial and operational reporting (SEC Form 20Fs or comparable)
- Companies exploration and production segment EBIT averaged 105% of total EBIT in 2013
- 10 companies' long term debt/equity averaged 35% in 2013; Pemex had negative equity

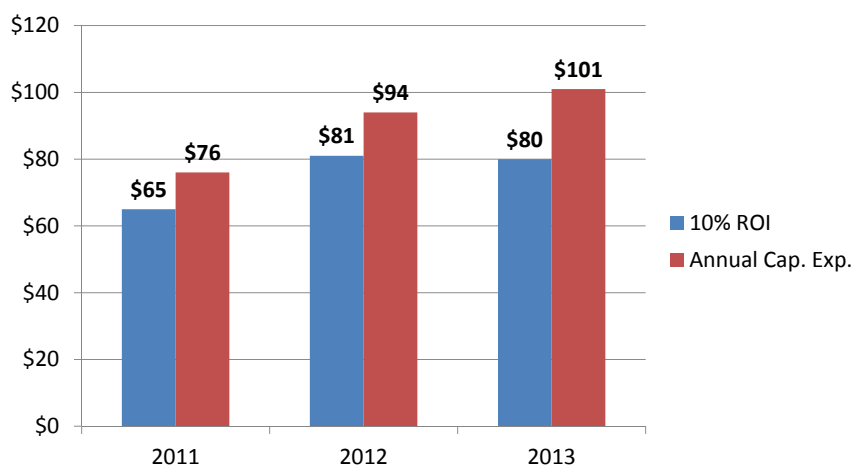
NOC Breakeven Costs (\$/BOE)

Finding & Development Costs (3 Year Rolling Average)	Annual Cash Operating Expenses	Annual Fiscal Contribution to the State	Annual 10% ROI OR Annual Capital Expenditures
(Total \$ Costs Incurred for Exploration, Development & Acquisitions)/(BOE Net Revisions, Extensions & Discoveries, Enhanced Recovery & Acquisitions)	<ul style="list-style-type: none"> • Production Costs • G & A and Marketing • Other Operating Expenses • Net Financial Expense 	<ul style="list-style-type: none"> • Production Taxes • Cash Income Taxes • Estimated Price Subsidies (refining losses) • Dividends to state • Social/economic development expenses 	<ul style="list-style-type: none"> • (Find. & Dev. Costs + Cash Op. Exp. + Fiscal Contribution) * 10% <li style="text-align: center;">OR • Total \$ Costs Incurred for Expl., Dev. & Acq.



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Weighted Average NOC Breakeven Costs* (\$/BOE)



*10% ROI represented 30% of capital expenditures 2011-2013.

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