LatAm Oil

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THEME

Libra: not as bad as you think

Source: Photos.com

Last week the ANP published the documents for the upcoming Libra licensing round in October, which will mark the first use of PSC contracts in Brazil. The market has been paying excessive attention to some important but not crucial points (such as the signature bonus) and little attention to points which we judge equally or more relevant (returns, local content and role of PPSA). After reading the PSC contracts and tender documents, we make the point Libra is not as bad as many fear, and highlight key findings in this note.

- **Does the $7bn signature bonus matter?** Most are concerned that the $7bn is too high, that it will decrease oil company interest, and that it will be too hard on PBR's balance sheet. We make the point that, unlike many licensing rounds where pure exploration is offered, Libra is already a discovery with one well to confirm that. Gaffney's best estimate of 7.8bn bbls means that the bonus payment is equivalent to a 'finding cost' of $0.9/bbl, much lower than industry's $2-3/bbl average. If PBR participates with 30%, spend will be c.$2.0bn, not meaningful vs a 5-year budget of $237bn.
- **Returns, returns, returns.** A PSC unquestionably means lower project returns for the oil companies as government share of economics go from 70% in the current concession model to 75-90% in the new PSC. If oil price remains at c. $100/bbl and our base case of 8.5bn bbls of resource is right, we see returns falling from 25% in the concession model to 19% (at the minimum 41% government take) to as low as 13% (if companies bid a 70% government take). If Libra turns out to disappoint and has 3.0-4.0bn bbls, oil companies can still achieve a 13% IRR if bidding is disciplined and kept at the 60% government take levels. These are lower returns, but in line with industry's recent performance and still decent, especially for a $100bn capex development. 13% is equivalent to a $8bn project NPV, $2.4bn NPV for PBR's minimum 30% stake, or 2.5% of the current market cap.
- **Three other key points.** The role of PPSA, Petrobras 2030 production and local content are also important topics not being talked about that we analyse in this note.

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Libra

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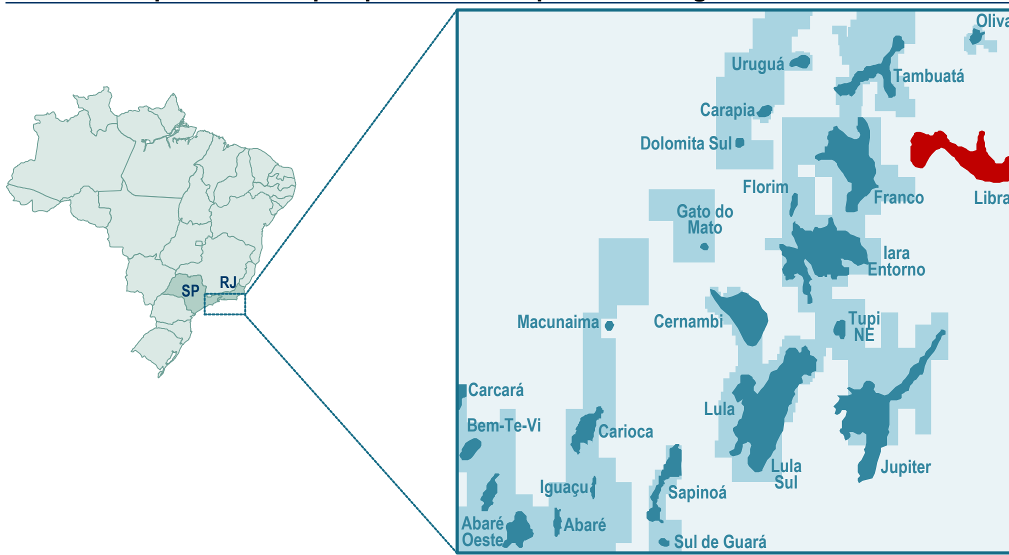
The round and the prospect

Last week the ANP finally announced the full details and documents of the pre-salt licensing round to take place in October 2013. The area to be licensed is the Libra prospect, located in the pre-salt area, 2,000m water depth, nearby existing large discoveries of Lula, Sapinhoa, Franco and Iara (Exhibit 1).

In 2010 Gaffney Cline (GCA) certified a best estimate prospective resource for Libra of 7.8bn bbls (with a 3.3-15bn bbls range based on a 10-25-48% recovery factors for the light 28° API oil). Geological chance of success is seen at 70% over an area of 727km^2 (curiously almost half of the 1,547km^2 that are being licensed), and GCA estimated 9 FPSOs at the time. More recently, with a new well drilled, the ANP has been mentioning a 12-18 FPSO range. The certifier sees relatively minor concerns over trap and seal effectiveness, plus reservoir presence and quality.

Exhibit 1: Map of the Libra prospect and other pre-salt acreage

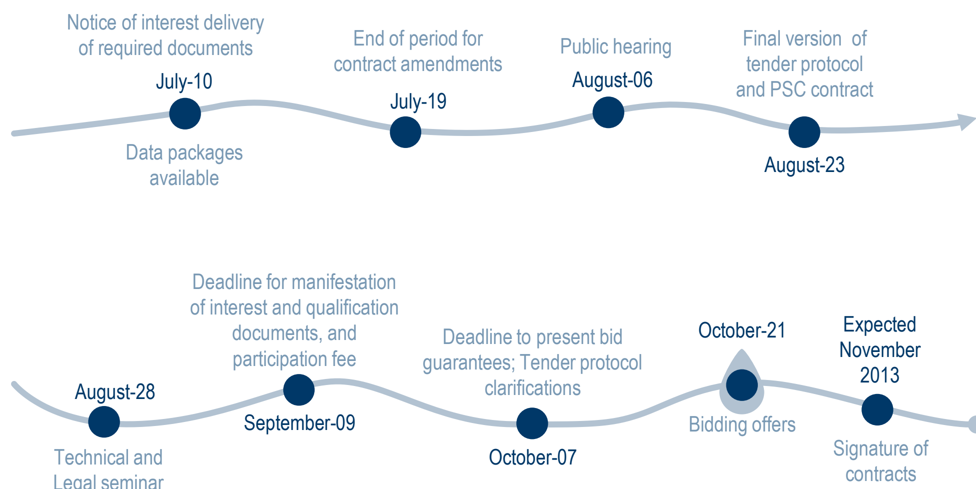


Source: Credit Suisse based on Woodmackenzie, ANP

The bids are scheduled to take place October 21st, with contract signature expected November 2013. The ANP has scheduled a public hearing for August 6th, when it will hear oil companies' suggestions on the draft of the tender protocol and the PSC contract, a fiscal model to be used for the first time in Brazil. Exhibit 2 provides a detailed schedule with the main events to take place between now and October.

The structure of the Libra bid round will also be different from previous ANP rounds. In previous rounds, the signature bonus (40% weight), local content (20%) and minimum exploratory programme (40%) were all criteria to determine the winning consortium. In the upcoming round, those factors will be fixed and not part of the bid, with the bidding factor only being the excess oil offered to the government (Exhibit 3).

Exhibit 2: Libra licensing round indicative timeline



Source: Credit Suisse based on the ANP

We make the following observations:

- Signature bonus is one aspect which has been much talked about, with the following two arguments frequently mentioned: (1) a high R$15bn (c.$7bn) signature bonus could hinder competition, and (2) a high bonus to be paid still this year could put Petrobras' balance sheet in a more delicate situation.

  We counter-argue those making two points: (1) Unlike the majority of the licensing rounds, where exploratory areas are offered, the Libra round offers an oil discovery (one well has already been drilled in Libra and found oil and reservoirs in similar conditions to those in other high-profile pre-salt areas such as Tupi/Lula). This puts the bonus in context. Assuming Gaffney's best estimate of 7.8bn bbls, the $7bn signing fee would be equivalent to a $0.9/bbl 'finding cost' for the oil companies, a much lower figure than the historical $2-3/bbl industry average for the past five years. Even if we take Gaffney's lower end 3.3bn bbls estimate, 'finding' cost would be $2/bbl, still in line with industry average. On item (2), we make the case PBR's 30% stake in Libra would mean a $2bn bonus payment that is far from being meaningful vs a $50bn yearly budget and five-year spend of $237bn.

- Local content. 37% in the exploration phase and 55-59% in the development phase is not dissimilar to the values currently being bid in recent rounds and levels executed by Petrobras.

- Minimum exploratory programme. 1,547km^2 of 3D seismic that covers the full area of the block, two exploration wells and 1 extended well test which look reasonable face a 7.8bn bbls resource estimate.

- Excess oil offered to the government. A minimum of 41.65% of government take under a $100-120/bbl and assuming a 10-12kbd production per well. Exhibit 4 presents the full government take table. Higher oil price levels and higher well productivity imply in an automatically higher government take, which is the basis of the PSC contracts concept – increase the government take in the economics and provide the country more leverage in an upside case of higher prices and production. We discuss the PSC contract in more detail in the following section.

Exhibit 3: **Bidding criteria in the Libra round vs previous rounds**

	Signature bonus	Local content: Exploration phase	Local content: Development phase	Minimum exploratory programme	Bidding factor
Libra round	Fixed at R$15bn	Fixed at 37%	Fixed. 55% until 2021; 59% post 2021	Fixed: 1,547 sq km of 3D seismic, 2 exploration wells, 1 extended well test	Excess oil offered to the government. Minimum of 41.65% for a 10-12kbd well productivity and $100-120/bbl oil price
Previous rounds	Bidding factor at 40% weight	Bidding factor at 5% weight	Bidding factor at 15% weight	Bidding factor at 40% weight	Weighted average of bonus (40%), local content (20%), minimum exploratory programme (40%)

Source: Credit Suisse based on the ANP

Exhibit 4: **Government take ranges dependent on oil price and production per well. Minimum bid of 41.65%**

Oil price ($/bbl) \ Production per well (kbd)	0-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24+
0-60	(26.7%)	(15.9%)	(9.6%)	(6.3%)	(4.3%)	(2.6%)	(1.5%)	(0.9%)	(0.3%)	0.2%	0.7%	1.1%
60-80	(26.5%)	(12.9%)	(7.5%)	(4.7%)	(2.9%)	(1.5%)	(0.5%)	0.0%	0.5%	0.9%	1.3%	1.7%
80-100	(19.4%)	(8.9%)	(4.7%)	(2.5%)	(1.1%)	0.0%	0.7%	1.1%	1.5%	1.9%	2.2%	2.4%
100-120	(15.0%)	(6.3%)	(2.9%)	(1.1%)	Bid	0.9%	1.5%	1.9%	2.2%	2.5%	2.7%	2.9%
120-140	(11.9%)	(4.6%)	(1.7%)	(0.2%)	0.8%	1.6%	2.1%	2.4%	2.6%	2.9%	3.1%	3.3%
140-160	(9.6%)	(3.3%)	(0.8%)	0.5%	1.4%	2.0%	2.5%	2.7%	3.0%	3.2%	3.3%	3.5%
160+	(5.9%)	(1.2%)	0.7%	1.7%	2.3%	2.8%	3.1%	3.3%	3.5%	3.7%	3.7%	3.9%

Source: ANP. Example: for theoretical winning bid of 60%, if the oil price stays between $100-120/bbl and if well productivity is 20-22kbd, Government take would be 60%+2.5%= 62.5%.

The PSC and the returns

If the R$15bn signature bonus is a topic we think is excessively talked about, the returns profile of the new Libra contract is something which we judge more important and feel is being given less attention by the market.

We compare the IRRs of the Libra PSC to those of a typical, concession-regime, pre-salt field, and also evaluate the Libra IRRs in function of oil price, government take offered, and amount of oil in Libra.

To do so, we take three steps: (1) provide the basic differences between the current concession and the new pre-salt PSC regimes, (2) model a typical pre-salt field development, to then see how Libra would be developed, and (3) put the typical field model under both regulatory regimes and compare the return metrics under different scenarios.

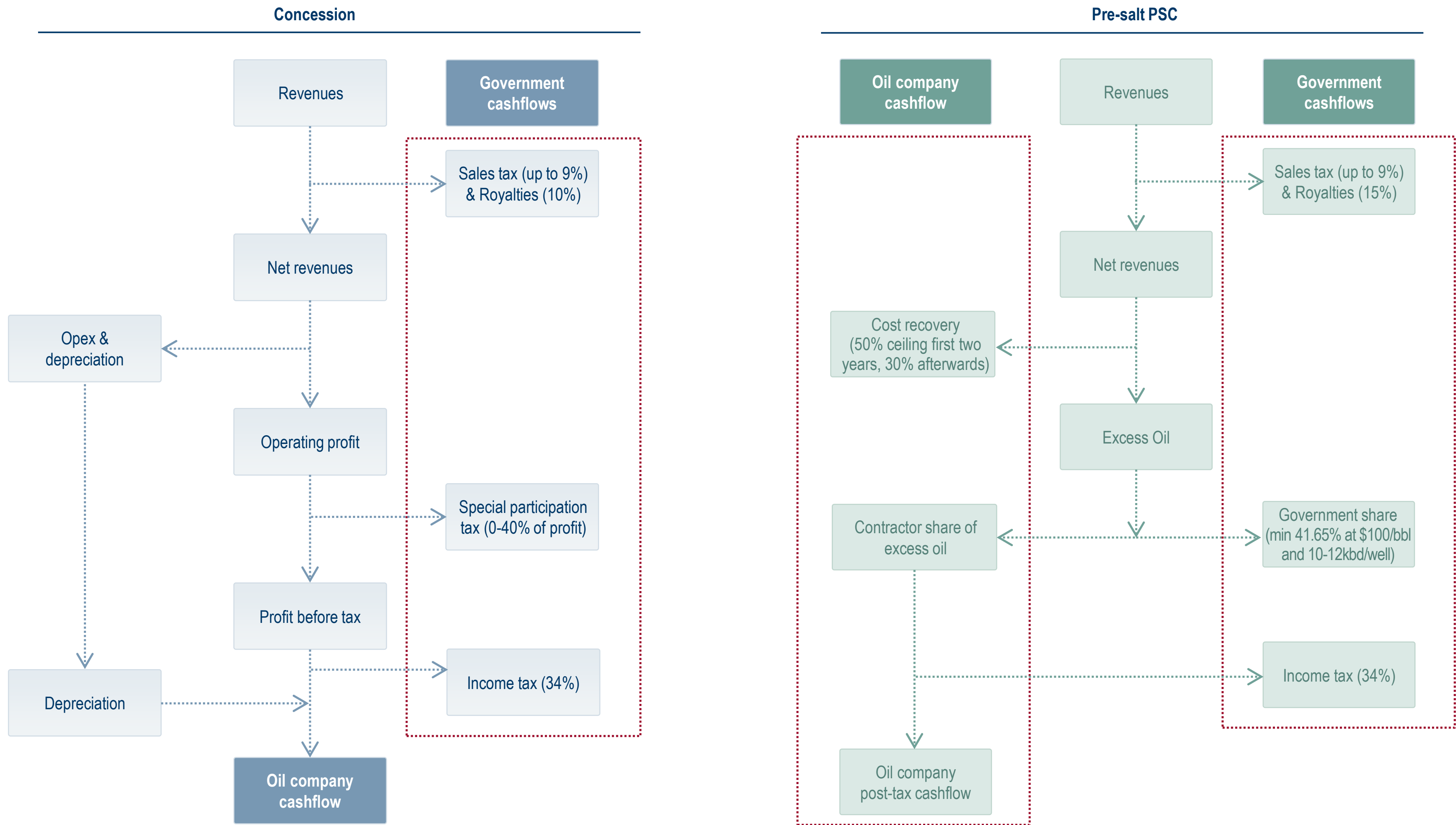
Basic differences between the current (concession) and the new (PSC) fiscal models

Exhibit 5 provides a simple comparison between both fiscal models.

In the current concession regime, the oil company simply pays three types of 'taxes' to the government: a 10% royalty on sales, a tax on operating profit called Special Participation Tax, which varies from 0-40% dependent on type of field (onshore, shallow water, deepwater – high productivity fields pay more tax than less productive fields), year of production, and amount of oil produced, and a 34% tax on income.

In the PSC regime, the oil company stills pays royalty (a higher, 15% of revenues) to the government. Then it recovers the amount invested to bring the field onstream (capex+opex) through cost oil or cost recovery. What is left after cost oil is called excess oil or profit oil, which is then split between the oil company and the Government.

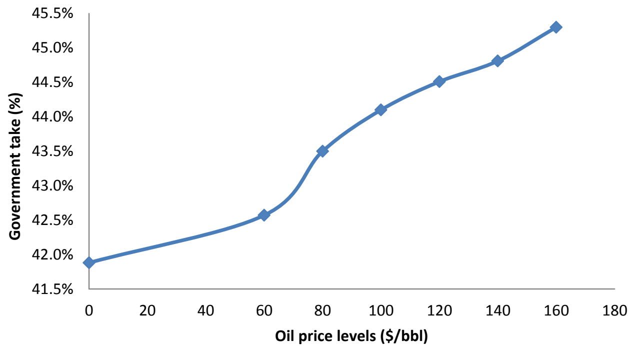
Exhibit 5: Comparison of cashflow schemes of current Brazilian oil concessions vs the new pre-salt PSCs



Source: Credit Suisse

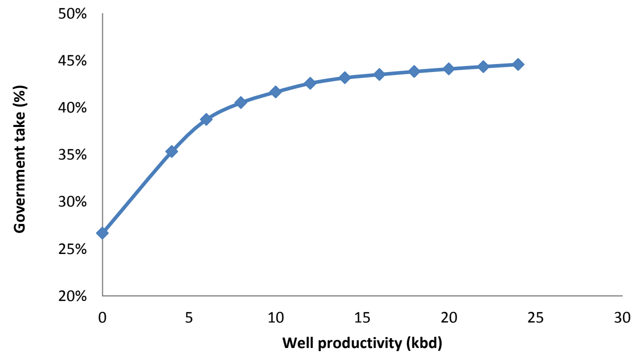
The oil company pays a further 34% income tax on its share of the profit oil. The share of profit oil to the government (government take) is the sole bidding factor in the Libra round, with minimum bid of 41.65%. Importantly, the government take will vary with the oil price and well productivity, with the aim to provide more leverage to the government. Higher oil prices and higher well productivity increase the government take. Exhibit 4, Exhibit 6, and Exhibit 7 provide detail and illustrate this point

Exhibit 6: Minimum Government take (%) for a 20kbd well in different oil price scenarios



Source: Credit Suisse based on the ANP

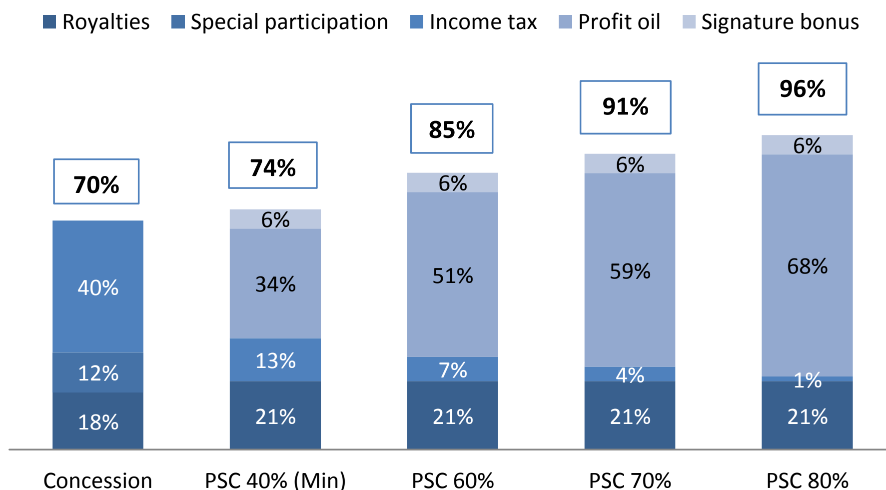
Exhibit 7: Minimum Government take (%) for different well productivity levels at $100/bbl oil price



Source: Credit Suisse based on the ANP

The second major implication of the PSC model vs the concession regime is that the Government share of the economics of the oil is significantly higher in the PSC model, leaving less for the oil company, worsening the returns profile.

Exhibit 8: Total Government take on different fiscal regimes



Source: Credit Suisse

The Libra development

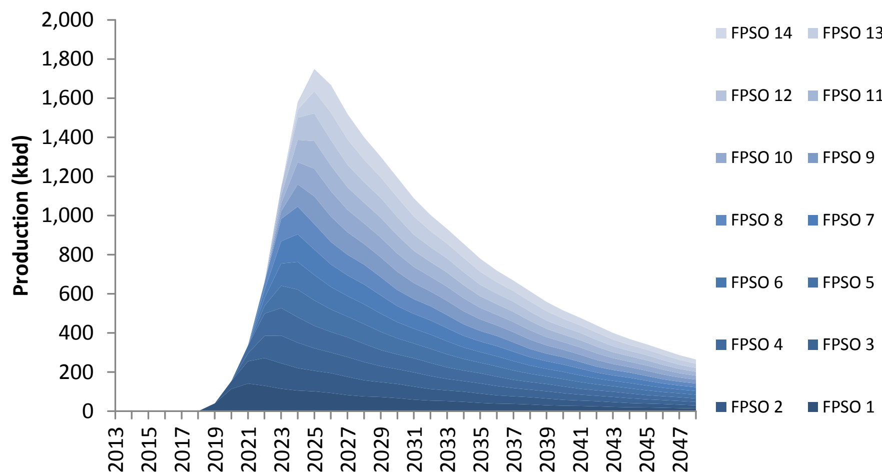
When modeling the Libra development, we use the following set of operational assumptions:

- FPSO development, with a $1.6bn capex for each of the 150kbd vessels, equivalent to a $600k/d if the vessel is leased. As a base case, we use 8 producers and seven injector wells per FPSO, with well productivity at 20kbd and a 8% decline rate. This implies that each FPSO is capable to drain 600-700mmbbls of oil through the 35 years of duration of the contract. Peak production of each FPSO conservatively reached in three years after first oil.

- Capex for one development estimated at c. $7bn, equivalent to c.$12/bbl, roughly split as follows: Drilling (exploration + development) at 40%, FPSO capex at 20%, Subsea + SURF 20%, Other items (maintenance, abandonment) at 20%.
- Opex estimated at $7/bbl, mostly a result of a c.$100k/d operations and maintenance of the FPSO.

After being comfortable with these assumptions for one FPSO development, the key question would be how many FPSOs Libra will require. As a base case, we assume 14 FPSOs, implying in a total resource of 8.5bn bbls, not dissimilar to Gaffney's 2010 best estimate of 7.8bn bbls. In the next section, we flex some of those assumptions and their implication to returns.

Exhibit 9: Base case Libra production – 14 FPSOs to drain 8.5bn bbls of oil

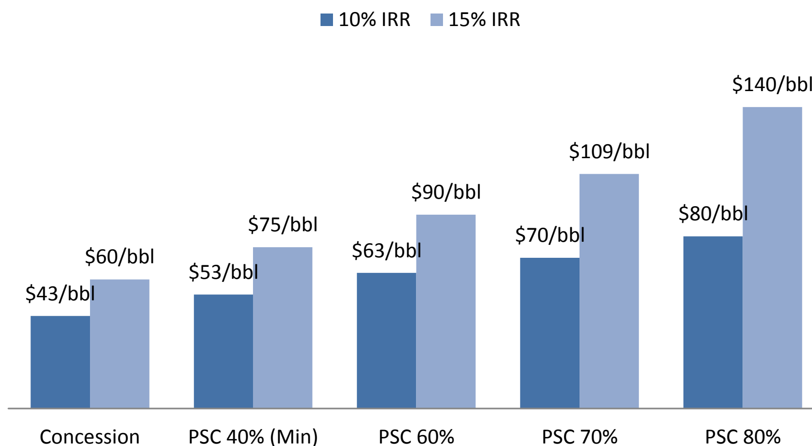


Source: Credit Suisse estimates

The returns

We illustrate our basic conclusion in different ways: IRRs under the Libra PSC regime will unquestionably be much lower than in the current concession model. Exhibit 10, for instance, tells us that the break-even oil price for 10-15% returns rise from $43-60/bbl in the concession model to at least $53-75/bbl in the PSC model. If competition is high and excess oil offered to the government is, say, 70%, oil prices would have to remain at $109/bbl levels for Libra to offer a 15% project return.

Exhibit 10: Break-even oil prices for a 10% and 15% IRRs under various fiscal regimes.



Source: Credit Suisse estimates. Note: assumes a base case Libra development of 8.5bn bbls

At the same time, we think Exhibit 11 and Exhibit 12 show a more positive message. Yes, returns are lower in the PSC terms. But, *if* Libra does have our base case of 8.5bn bbls of oil, *if* oil prices remain between $90-100/bbl, and *if* competition is high but reasonable to keep government take anywhere between 50% and 70%, IRRs can range anywhere from 13% to 19%. Not stellar numbers, but very decent considering this a very capital intensive project: 8.5bn bbls in Libra will demand a total capital investment of c.$100bn.

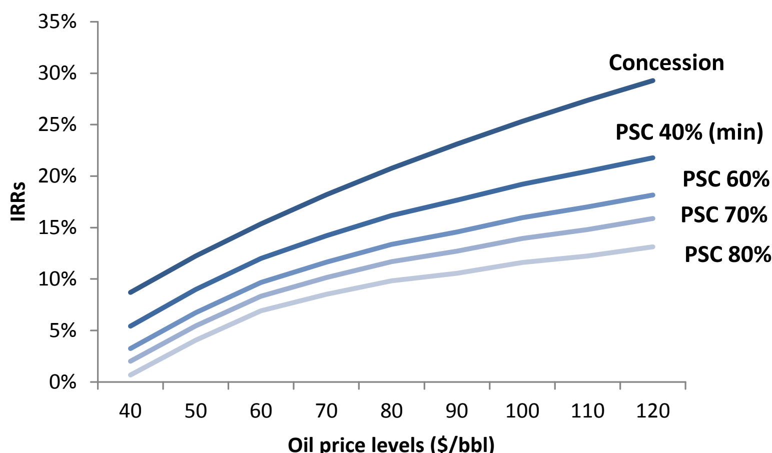
We also note that industry Upstream ROGICs have averaged 12% since 2009, therefore the expectations of a 13%+ return if bidding is adequate should not refrain companies from participating (Exhibit 13 and Exhibit 14).

Exhibit 11: IRRs of various fiscal regimes in different oil price scenarios

	Oil prices ($/bbl)									
	30	40	50	60	70	80	90	100	110	120
Concession	4.5%	8.7%	12.2%	15.4%	18.2%	20.8%	23.1%	25.3%	27.4%	29.3%
PSC 40% (min)	0.9%	5.3%	8.9%	11.9%	14.1%	16.0%	17.5%	19.1%	20.3%	21.6%
PSC 50%	0.0%	4.4%	7.9%	10.9%	13.0%	14.9%	16.3%	17.7%	18.9%	20.2%
PSC 60%	(1.1%)	3.2%	6.7%	9.7%	11.6%	13.4%	14.6%	16.0%	17.0%	18.2%
PSC 70%	(2.2%)	2.0%	5.4%	8.3%	10.1%	11.7%	12.7%	13.9%	14.8%	15.9%
PSC 80%	(3.5%)	0.7%	4.1%	6.9%	8.5%	9.8%	10.6%	11.6%	12.2%	13.1%

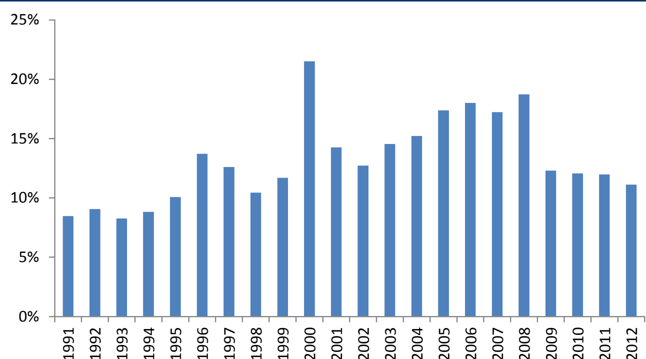
Source: Credit Suisse estimates. Note: assumes a base case Libra development of 8.5bn bbls

Exhibit 12: IRRs of various fiscal regimes in different oil price scenarios



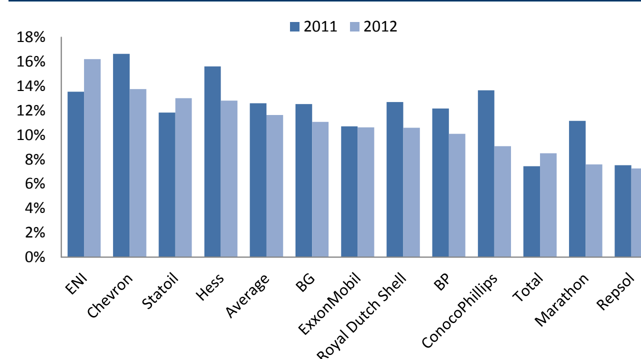
Source: Credit Suisse estimates. Note: assumes a base case Libra development of 8.5bn bbls

Exhibit 13: Major Oils upstream ROGIC over time (%)



Source: Credit Suisse Order of Merit

Exhibit 14: Upstream ROGIC rankings by oil company



Source: Credit Suisse Order of Merit

Exhibit 15 shows different IRR simulations for various sizes of Libra, from as little as 2.5bn bbls to as high as 12bn bbls, all at $100/bbl oil. We note that in Gaffney's low case of

resources of c. 3.3bn bbls, companies would have to be far less aggressive to guarantee fair returns, ideally in the 50% government take levels to maintain IRRs in the 13-14% range.

Exhibit 15: IRRs at $100/bbl oil price for different Libra sizes and different fiscal terms

# FPSOs	4	6	8	10	12	14	16	18	20
bn barrels	2.5	3.7	4.9	6.1	7.3	8.5	9.7	10.9	12.1
PSC 40 (Min)	14.0%	15.8%	17.1%	17.9%	18.6%	19.1%	19.5%	19.8%	20.1%
PSC 50	12.8%	14.6%	15.8%	16.6%	17.3%	17.7%	18.1%	18.5%	18.8%
PSC 60	11.2%	13.0%	14.1%	14.9%	15.5%	16.0%	16.3%	16.6%	16.9%
PSC 70	9.5%	11.1%	12.2%	12.9%	13.5%	13.9%	14.3%	14.6%	14.9%
PSC 80	7.4%	9.0%	10.0%	10.7%	11.2%	11.6%	11.9%	12.2%	12.5%

Source: Credit Suisse estimates

Finally, Exhibit 16 and Exhibit 17 provide the NPV per PBR ADR under various scenarios and assuming PBR's minimum 30% stake

Exhibit 16: PBR's Libra NPV/ADR under various fiscal regimes and oil price scenarios and 10% discount rate

	Oil prices ($/bbl)									
	30	40	50	60	70	80	90	100	110	120
PSC 40 (Min)	(0.95)	(0.54)	(0.14)	0.26	0.58	0.89	1.13	1.40	1.63	1.89
PSC 50	(1.01)	(0.64)	(0.26)	0.12	0.42	0.69	0.90	1.14	1.33	1.56
PSC 60	(1.10)	(0.75)	(0.40)	(0.05)	0.22	0.46	0.62	0.83	0.98	1.17
PSC 70	(1.18)	(0.86)	(0.53)	(0.21)	0.02	0.22	0.35	0.51	0.62	0.77
PSC 80	(1.26)	(0.97)	(0.67)	(0.37)	(0.18)	(0.01)	0.07	0.20	0.27	0.37

Source: Credit Suisse estimates

Exhibit 17: PBR's Libra NPV/ADR under various fiscal regimes and different Libra sizes, at $100/bbl oil

# FPSOs	4	6	8	10	12	14	16	18	20
bn barrels	2.5	3.7	4.9	6.1	7.3	8.5	9.7	10.9	12.1
PSC 40 (Min)	0.27	0.52	0.76	0.98	1.20	1.40	1.61	1.80	1.99
PSC 50	0.19	0.39	0.59	0.78	0.97	1.14	1.32	1.48	1.64
PSC 60	0.08	0.24	0.40	0.54	0.69	0.83	0.96	1.09	1.22
PSC 70	(0.03)	0.09	0.20	0.31	0.41	0.51	0.61	0.71	0.80
PSC 80	(0.13)	(0.06)	0.00	0.07	0.13	0.20	0.26	0.32	0.38

Source: Credit Suisse estimates

Three other important things

The role of PPSA (Pre-Sal Petroleo S.A., the government-created company which will act as 'the manager' of the contract), Petrobras' *long term* production, and local content are three other points we find important to keep in mind:

The role of PPSA

While PPSA will not have any equity in the PSC contracts, it will have a 50% voting weight and veto power in the operating committee – the aim being to audit costs and development plans to prevent any asymmetry of information between the companies and the government.

While the veto power from PPSA does present a source of concern from investors and companies' point of view, we note most decisions in the operating committee cannot be approved with the vote of PBR and PPSA only (Exhibit 18).

Exhibit 18: Voting structure in the operating committee

Item	Description	PPSA vote	PBR vote	Minimum vote required for approval
1	Declaration of commerciality	50%	15%	PBR alone, or PPSA + other "operator A"
2	Development plan and revisions	50%	15%	91%
3	Unitization agreement	50%	15%	
4	Resignation of the contract	50%	15%	
5	Agreement of production availability	50%	15%	
6	Yearly budgets and work plan	50%	15%	82.5%
7	Yearly production programmes	50%	15%	
8	De-activation of infrastructure	50%	15%	
9	Accountability of incurred spend	50%	15%	
10	Authorization to incur spend	50%	15%	
11	Contract goods and services / suppliers	50%	15%	
12	Creation of subcommittees	50%	15%	
13	Regiment of Operating Committee	50%	15%	
14	Other matters	50%	15%	
15	Early termination of exploration period	Variable	15%	If decision taken before discovery evaluation plan, PPSA has no voting power and minimum is 32.5%. If decision happens after discovery, PPSA has 50% and minimum is 82.5%
16	Discovery evaluation plan	Variable	15%	
17	Exploration plan	Variable	15%	
18	Geophysical and geological data acquisition	Variable	15%	
19	Relinquishment of areas	Variable	15%	
20	Extension of exploration phase	Variable	15%	
21	Other matters related to the exploration phase	0%	15%	32.5%

Source: Credit Suisse based on the ANP

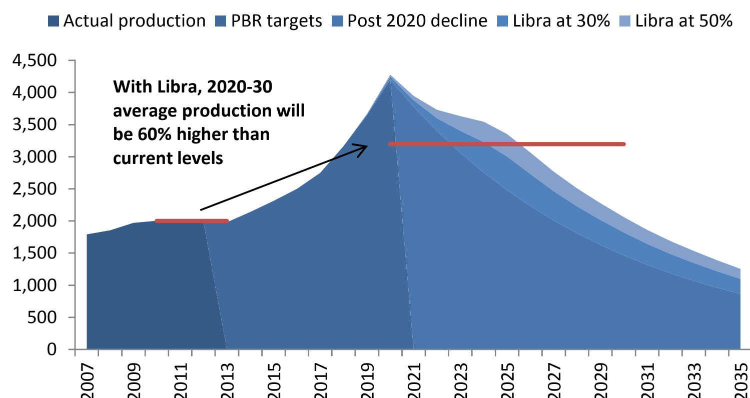
What will Petrobras' 2030 production be?

Even though this is a very long term question, it is far from irrelevant. Due to its intensive capex programme, Petrobras will remain free-cash-flow negative until 2016 at best. This puts a lot of pressure on any DCF-based valuation, increasing the relevance of PBR's 'terminal' or 'perpetuity' valuation.

If PBR is successful in achieving its 2020 production targets of 4,200kbd, it will have an even further challenge post 2020, which will be to battle against a 10% decline rate on that high level of production.

Libra can be the solution to that problem. In our base case of 8.5bn bbls for Libra and PBR's stake between 30%-50%, PBR's 2020-30 production would be c.3,200kbd, 60% higher than today's levels. Production in 2030 would be equal to today's 2,000kbd levels. If Libra did not exist, 2020-30 production would be 'only' 20% higher than current levels, and PBR in 2030 would produce 1,400kbd, 30% *below* current levels.

Exhibit 19: Simulation of PBR's 2030 production profile – 60% higher than current levels



Source: Credit Suisse estimates. Note: Production in kbd

Local content

Local content requirements of 37% in the exploration phase and 55-59% in the development phase are not dissimilar to the values currently being bid in recent rounds and levels executed by Petrobras. In Exhibit 20 we illustrate local content requirements in selected key equipment and services.

Exhibit 20: Local content requirements for selected equipment

Item	Name	Min. Local Content Required
1	Rig charter	65%
2	Drilling + Completion	37%
3	Casing	80%
4	Production column	80%
5	Auxiliary systems	58%
6	Drilling and completion field instrumentation	60%
7	Xmas tree	70%
8	Manifold	70%
9	Flexibles flowlines and riser	56%
10	Rigid flowlines and riser	50%
11	Subsea control systems	20%
12	Production gathering system construction and installation	80%
13	Production gathering detailed engineering	90%
14	Production unit detailed engineering	90%
15	Hull	76%
16	Anchor handling and hook-up	85%
17	Production plant and materials	80%
18	Heat exchange systems	50%
19	Telecomunication systems	40%
20	Production unit field instrumentation	40%
21	Pressure handling equipment	70%
22	Tanks	83%
23	Processing towers	75%
24	Diesel engine (up to 600HP)	70%

Source: Credit Suisse based on the ANP

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Companies Mentioned *(Price as of 22-Jul-2013)*

Petrobras (PBR.N, $14.32, OUTPERFORM[V], TP $25.0)

Disclosure Appendix

Important Global Disclosures

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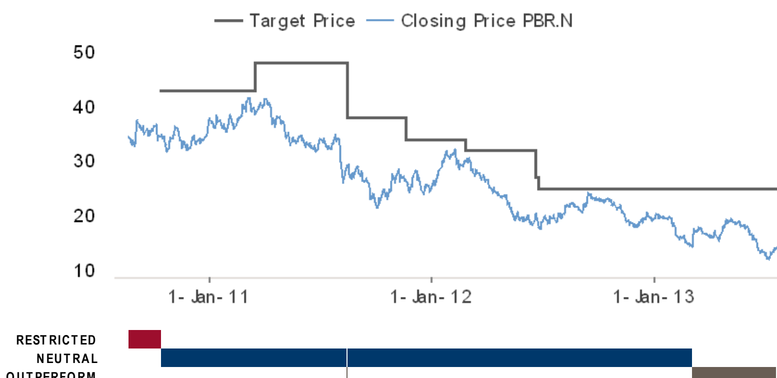
3-Year Price and Rating History for Petrobras (PBR.N)

PBR.N Date	Closing Price (US$)	Target Price (US$)	Rating
20-Aug-10	34.42		R
13-Oct-10	34.74	43.00	N
17-Mar-11	39.10	48.00	
15-Aug-11	29.23	38.00	O
17-Aug-11	29.37	38.00	N
20-Nov-11	26.65	34.00	
26-Feb-12	30.08	32.00	
20-Jun-12	20.47	27.00	
24-Jun-12	19.60	25.00	
07-Mar-13	17.56	25.00	O
16-Jul-13	13.42	25.00	*

** Asterisk signifies initiation or assumption of coverage.*



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Restricted	2%	

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Price Target: (12 months) for Petrobras (PBR.N)

Method: Our US$25/ADR target price for Petrobras is based on a DCF (discounted cash flow) model using oil prices of US$100/bbl, a WACC (weighted average cost of capital) of 9.9% and perpetuity growth of 2.5%.

Risk: Risks to our US$25/ADR target price for Petrobras include, but are not restricted to, (1) changes in oil prices, (2) foreign exchange rate variations, (3) changes in the regulatory environment in Brazil, (4) political interference (Petrobras is controlled by the Brazilian government), (5) delays in the execution of its main E&P projects, and (6) potential controls on domestic prices of refined products.

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See the Companies Mentioned section for full company names

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