

## Cairn India

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## Cairn India

<b>Rating</b>	<b>Reduce</b>
Price	Rs258
Target Price	Rs240
Implied Upside	(-) 7.0%
Sensex	16,781

(Prices as on September 24, 2009)

### Trading Data

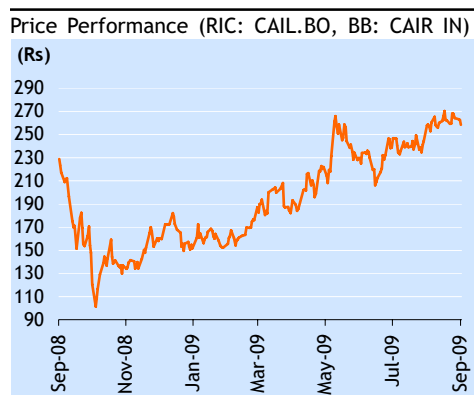
Market Cap. (Rs bn)	490.1
Shares o/s (m)	1,896.7
Free Float	35.3%
3M Avg. Daily Vol ('000)	745.2
3M Avg. Daily Value (Rs m)	181.7

### Major Shareholders

Promoters	64.7%
Foreign	10.8%
Domestic Inst.	6.6%
Public & Others	17.9%

### Stock Performance

	1M	6M	12M
Absolute	(0.1)	36.1	15.7
Relative	(7.0)	(37.4)	(8.1)



Source: Bloomberg, PL Research

- **Rajasthan block - oil production begins:** Cairn India (Cairn) recently commenced oil production from its prolific block in Rajasthan. Production will be ramped up to plateau of over 175,000 bpd by 2H CY11. The plateau will be extended to 8-9 years by application of Enhanced Oil Recovery (EOR) techniques from 2013-14. This block boasts of over 1.0bn bbls of gross 2P reserves, while Cairn's net interest is over 0.7bn bbls.
- **Midstream development on track:** The construction work on 700km, 24" pipeline from Barmer in Rajasthan to Salaya in Gujarat is on track. The heated pipeline will help to keep the temperature of crude above 65°C, due to high viscosity and waxy nature of crude. The pipeline is expected to be operational by the end of 2009. Meanwhile, crude will be transported by trucks with heating system to the western coast.
- **High cash generation in initial years:** Government sharing of profit petroleum being lower in the earlier years of operation, Cairn is likely to generate about US\$8bn cash flows over 2011-16 period. These cash flows will be further utilized for future E&P initiatives.
- **Valuation:** With a ramp-up in crude production from the Rajasthan block, Cairn's earnings are anticipated to jump considerably over FY10-12. However, concern on the cess payment still remains. The stock price is currently discounting US\$84/bbl as long term crude prices. The stock is currently available at 6.5x FY12E EPS of Rs39.6 and 3.6x EV/EBITDA. We have valued Cairn on NPV basis, considering crude oil and natural gas production from its existing and future assets. Considering US\$75/bbl as long term crude prices, we have arrived at NPV of Rs240 for Cairn. We believe that the risk reward is unfavourable at this juncture and hence recommend **REDUCE**.

Key Financials (Y/e March)	FY09	FY10E	FY11E	FY12E
Revenue (Rs m)	14,327	23,746	96,940	129,136
Growth (%)	41.5	65.7	308.2	33.2
EBITDA (Rs m)	9,299	17,407	81,277	108,103
PAT (Rs m)	8,035	10,063	53,954	75,197
EPS (Rs)	4.2	5.3	28.4	39.6
Growth (%)	—	25.2	436.2	39.4
Net DPS (Rs)	—	—	—	—

Source: Company Data; PL Research

\*FY09 - 15 Months

Profitability & Valuation	FY09	FY10E	FY11E	FY12E
EBITDA margin (%)	64.9	73.3	83.8	83.7
RoE (%)	2.6	3.0	14.8	17.5
RoCE (%)	2.4	3.1	14.0	16.7
EV / sales (x)	32.7	19.9	4.6	3.0
EV / EBITDA (x)	50.4	27.1	5.5	3.6
PE (x)	61.0	48.7	9.1	6.5
P / BV (x)	1.5	1.5	1.3	1.0
Net dividend yield (%)	—	—	—	—

Source: Company Data; PL Research

\*FY09 - 15 Months

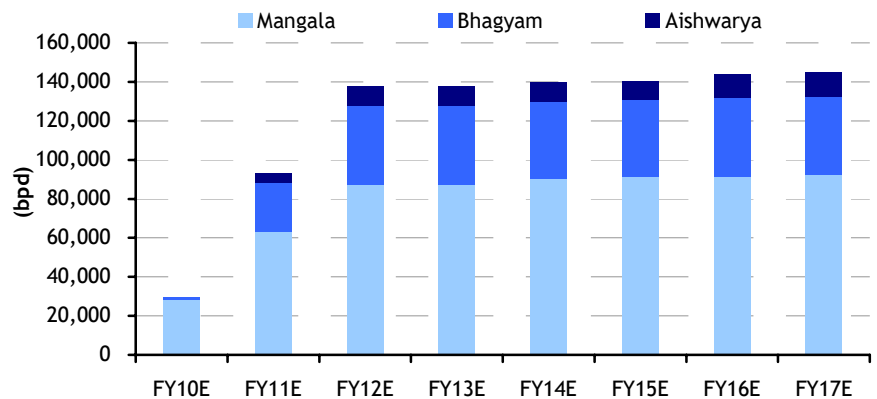
## Investment Arguments

### Rajasthan Block - oil production begins

With fast track development of the Rajasthan block, Cairn recently (August 29, 2009) started oil production from Train 1 of Mangala field, having a capacity of 30,000 bpd. Production from Train 2 (capacity of 50,000 bpd) is anticipated to start by the end of 2009 and from Train 3 (capacity of 50,000 bpd) is targeted for completion by H1CY10. Plateau from the Mangala field is anticipated at about 125,000 bpd. This field is the largest of the Mangala, Bhagyam and Aishwarya (MBA) fields. Since the initial discovery in 2004, the reserve accretion (3P reserves) in Mangala has increased by over 55% to 1.3bn barrels of oil equivalent (boe) from about 0.8bn boe.

Production from the MBA fields is expected to reach a plateau of 175,000 bpd in 2011. Train 4, which is anticipated to come on-stream in 2011 with a capacity of 75,000 bpd, is designed to accommodate production from Bhagyam and Aishwarya. Additionally, this capacity will support production from application of EOR techniques and from potential discoveries in other fields.

#### Production profile - MBA field

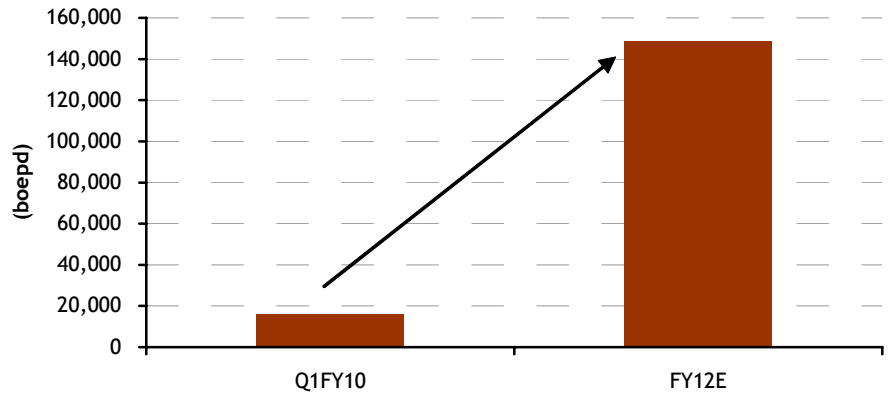


Source: Company Data, PL Research

### Cairn's production to jump eight-fold by FY12

With commencement of production from the MBA fields, Cairn's O+OEG production is slated to jump eight-fold from 15,917 boepd in Q1FY10 to over 148,000 boepd by FY12. Currently, gas production accounts for about 22% of the total O+OEG production which will be marginal, about 2-3% by FY12. The reason being, production from MBA fields is primarily oil with very minimal quantities of associated gas.

### Quantum rise in production

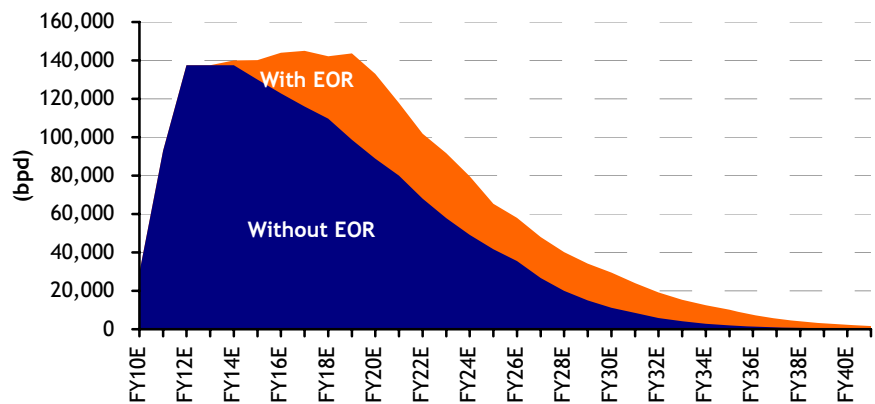


Source: Company Data, PL Research

### EOR techniques to extend plateau

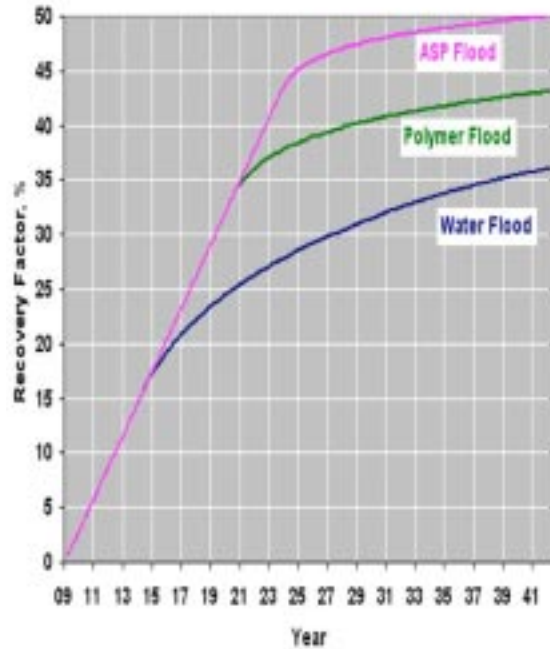
Cairn will employ EOR techniques like ASP (alkali, surfactant and polymer) and polymer flooding to extend the plateau from the Rajasthan field. Incremental recovery expected from application of EOR techniques is about 15% (over 0.3bn bbls) of the 3P reserves. Application of EOR techniques will extend the plateau till 2019-20. The oil recovery rate is, thus, anticipated to move up to over 45%+. Currently, the EOR planning for Mangala field is under review. The approval for application of EOR is expected to come by 2011. Mangala field implementation will start from 2013-14 which will be further extended to Bhagyam and Aishwarya.

### Production profile with EOR



Source: Company Data, PL Research

### Oil recovery rate by EOR application



Source: Company Data, PL Research

### PSC favoring the operator

The production sharing contract (PSC) terms for RJ-ON-90/1 block favours the operator (in this case Cairn) and allows him to recover 100% costs before profit petroleum sharing starts. Also, government share of profit petroleum peaks at 50% which is quite attractive compared to other blocks where the peak government sharing is as high as 85%. The block enjoys a seven-year tax holiday (however, MAT@17.0% is applicable during this period). Royalty on the crude production is to be paid by the licensee (in this case ONGC); hence, Cairn's sharing is nil. However, the cess paid on crude is still a concern as Cairn is contesting that the licensee is expected to pay cess like the royalty. These favourable PSC terms will aid Cairn's cash flows in the initial 4-5 years till the government profit petroleum sharing peaks.

#### Rajasthan PSC details

IM achieved	Cairn profit share
0 < 1.5	80%
1.5 < 2.0	70%
2.0 < 2.5	60%
> 2.5	50%
<b>Crude Oil</b>	
Royalty Rate	0
OIDA Cess*	2,625
Tax holiday	7 years

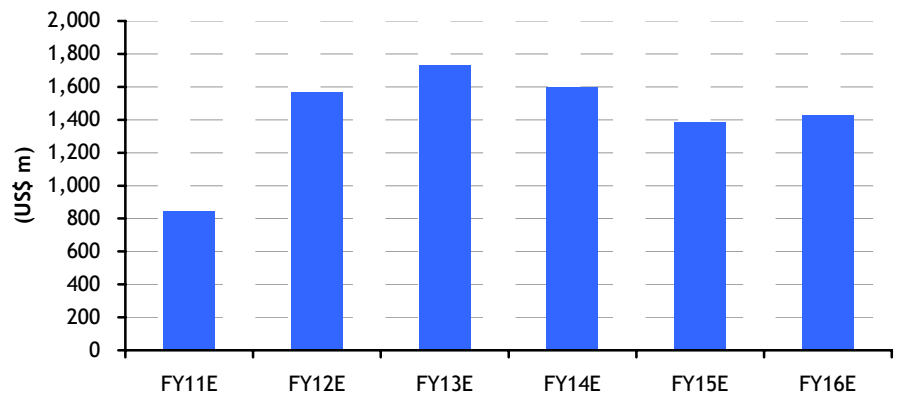
Source: Company Data, PL Research

\* Expected to pay under protest

## High cash generation

Cairn is expected to generate over US\$8bn cash flows over FY11-16 period. Since, during the earlier years of operation the government sharing is lower, the cash flow generation is stronger. Alternately, favourable fiscal terms like no royalty sharing and seven-year tax holiday will also aid high cash flow generation. The cash flows, thus, generated can be further utilized for future E&P initiatives.

### Cash flows to Cairn



Source: Company Data, PL Research

## E&P initiatives to gather momentum

Cairn's landmark discovery from Rajasthan field started its production recently. The company is currently focusing on enhancing the production to reach a plateau of 175,000 bpd in the next one year. The cash flows generated out of Rajasthan development will be deployed for further E&P initiatives. With Rajasthan field yielding oil, the company now boasts of three producing blocks - Ravva, Cambay and Rajasthan. However, the company has another 15 blocks in its kitty. The exploration activity in these blocks is at different stages which will undergo simultaneously along with production and development of the producing blocks.

### Ravva PSC details

Cairn profit share*	40%
<b>Crude Oil</b>	
Royalty Rate	481
OIDA Cess	927
Tax holiday	NA

Source: Company Data, PL Research

\* Government share peaked at 60%

### Ravva (Cairn - operator, 22.5% interest)

Since the start of the field 10 years ago, the block has produced over 200m bbls of crude oil. The average gross production for Q1FY10 was 44,954 boepd (crude oil - 36,558bpd and natural gas - 50.38mmscfd). The field direct opex is at US\$1.5/boe which is one of the lowest in the world. Production from the field is sustained through continuous reservoir and well management. However, after extending the plateau for over eight years, the field is now on a natural decline. The company is conducting further studies to identify additional reserves within the field.

**Cambay PSC details**

Cairn profit share	
< 15%	87.5%
< 20%	77.5%
< 25%	55.0%
< 30%	50.0%
< 35%	45.0%
> 35%	40.0%
<b>Crude Oil</b>	
Royalty Rate	NA
OIDA Cess	NA
Tax holiday	NA

Source: Company Data, PL Research

**Cambay (Cairn - operator, 40.0% interest)**

The CB/OS-2 field has been in operation since October 2002. The block comprises of four fields, namely Lakshmi, Gauri, Ambe and CB-X. Lakshmi and Gauri offshore fields are currently producing oil and gas, while CB-X onshore field produces only gas. After drilling and workover activities in the block during 2007-08, the block has been transformed from a predominantly gas to an oil field. The average gross production for Q1FY10 was 14,506 boepd (crude oil - 9,945 bpd and natural gas - 27.37 mmscfd). The field direct opex for Cambay is at US\$2.7/boe. This field is also on a natural decline.

**Cairn blocks and update**

Block	Area	Participating interest	Update on block
<b>Operated block - Producing</b>			
Ravva	Krishna Godavari	22.50%	Under production
CB-OS/2	Cambay Offshore	40%	Under production
RJ-ON-90/1	Rajasthan Onshore	70%	Under production
<b>Operated block - Exploration</b>			
GV-ONN-2003/1	Ganga Valley Onshore	24%	Processing of 2D seismic data completed, interpretation in progress
VN-ONN-2003/1	Vindhyan Onshore	49%	Processing of 2D seismic data completed in Q3FY09, interpretation in progress
PR-OSN-2004 /1	Palar Basin Offshore	35%	2D seismic data acquisition is completed, 3D seismic studies expected to commence by end 2009
SL 2007-01-001	North West Sri Lanka Offshore	100%	Initial seismic data acquisition expected by the end of 2009 or in 2010.
KG-ONN-2003/1	Krishna Godavari Onshore	49%	2D and 3D Seismic studies undertaken in the block, drilling expected in Q3FY10
GV-ONN-2002/1	Ganga Valley Onshore	50%	An exploration well was drilled in Q4FY09, decision on further work is pending
<b>Non - operated block</b>			
KG-DWN-98/2	Krishna Godavari Deep water	10%	Three wells have been approved by the JV and first is expected to be spud in 2009
RJ-ONN-2003/1	Rajasthan Onshore	30%	First well spud by the end of March 2009
GS-OSN-2003/1	Gujarat Saurashtra Onshore	49%	
KK-DWN-2004	Kerala Konkan Basin Offshore	40%	2D Seismic studies completed in the block
CB-ONN-2002/1 (proposed to be relinquished)	Cambay Onshore	30%	3 Well drilling program completed in Q2FY09, small quantity of oil at a flow rate of 100bpd was recovered but relinquished due to non-commercially
GV-ONN-97/1 (relinquished in 2008)	Ganga Valley Onshore	15%	A well completed in Q3FY09 and the block is relinquished
CB-ONN-2001/1	Cambay Onshore	30%	

Source: Company Data, PL Research



## Midstream development on track

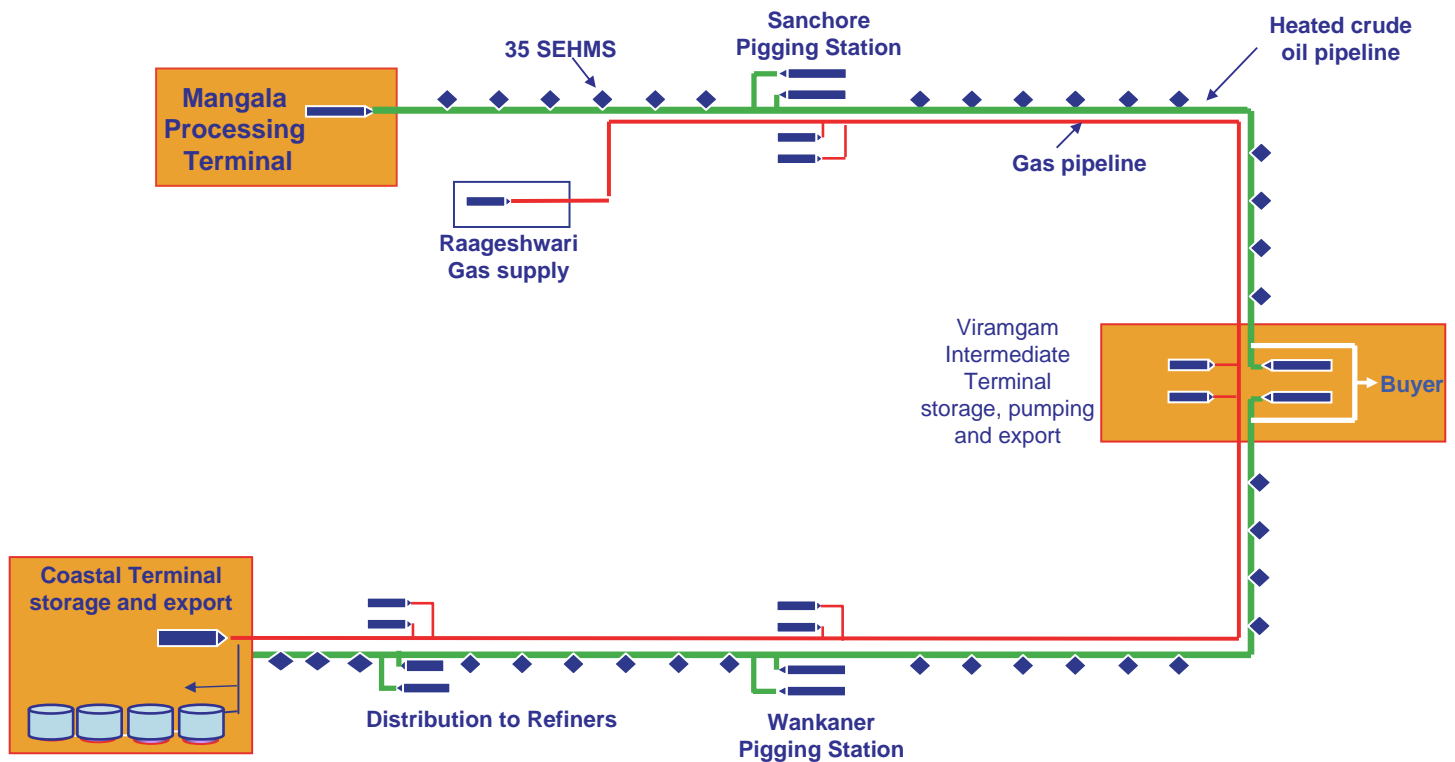
### Pipeline route



Source: Company Data, PL Research

Government approved the shifting of the crude delivery point from Barmer to Gujarat coast at Salaya in April 2008. Post this, construction activities started on the ~700km heated pipeline. An 8" pipeline will be running along with the 24" heated and insulated pipeline carrying Rageshwari gas, which will be utilized for power generation. This pipeline will have 32 heating stations, with power generators of 1MW each. The heating of the pipeline is based on Skin Effect Heat Management System (SEHMS) which will insure the crude temperature above 65°C. Currently, more than 400km pipeline has been laid below the ground and over 70% work has been completed at 32 heating stations. The pipeline is anticipated to be operational by the end of 2009. However, slight delays due to weather conditions (monsoon, heat) cannot be ruled out.

### Pipeline - Schematic



09S0004AE00

Source: Company Data, PL Research

### Crude pricing at 10-15% discount to Brent

Government has nominated Mangalore Refinery and Petrochemicals Ltd (MRPL), Indian Oil Corporation (IOC) and Hindustan Petroleum Corporation Limited (HPCL) for the initial offtake of crude from the Rajasthan block for 2010-11 period. The company recently concluded pricing and commercial negotiations with IOC and MRPL. The implied price realization for Cairn is anticipated at a 10-15% discount to Brent. The crude discount is on account of the waxy nature of crude, high pour point and medium API gravity.

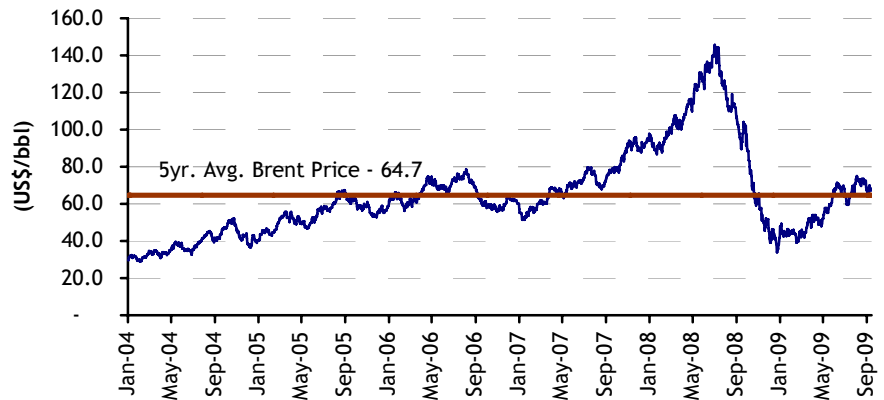
#### Crude characteristics

Properties	Mangala	Brent	Illustrative Bench Mark*
API	27.4	38.0	26.6
Sulphur (% age Wt)	0.14	0.44	0.15
Barrels/Tonne (BPT)	7.11	7.54	7.02
Pour point (Degree C)	42	03	31

Source: Company Data, PL Research

\* International benchmark crude basket

#### Crude price - Brent



Source: Bloomberg, PL Research

## Investment Concerns

### Cess issue still dangling

As per the PSC, Cairn believes that it is not liable to pay cess on the crude production from Rajasthan. However, the government has notified Cairn to pay its share of cess (70%). Cairn is expectedly paying cess under protest at the rate of Rs927/mt which is the rate at the time of signing of the PSC. However, the cess has increased over the years and the current cess amount is Rs2,625/mt. We have accounted Rs927/mt as cess payment in our estimates. However, if the company is asked to pay cess at Rs2,625/mt, then Cairn's NPV for Rajasthan block will get reduced by about 11.4%. Conversely, if Cairn does not have to bear the cess, then there is an upside of 6.2% to the NPV. The company is expected to challenge this issue and is likely to go for litigation / arbitration.

#### Scenario analysis - effect of cess

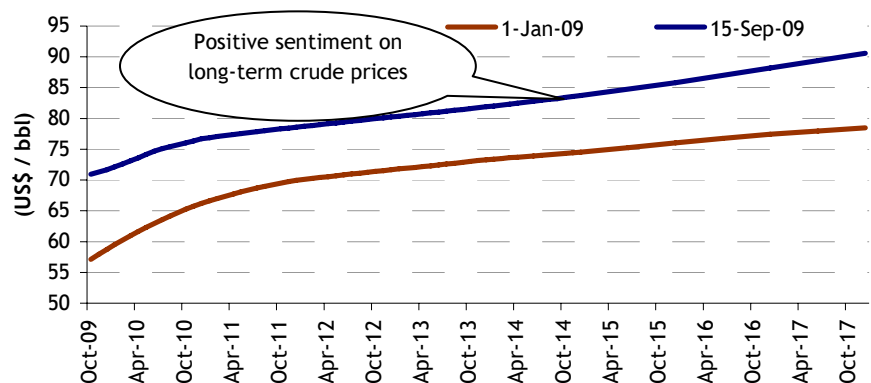
	NPV	%chg from base	FY11 EPS	%chg from base	FY12 EPS	%chg from base
Cess - Nil	178	6.2	30.2	6.3	41.8	5.3
Cess at the time of signing PSC- Rs927/mt	167	0.0	28.4	0.0	39.6	0.0
Current Cess - Rs2,625/mt	148	(11.4)	25.2	(11.5)	35.8	(9.7)

Source: Company Data, PL Research

### Crude prices and rupee appreciation

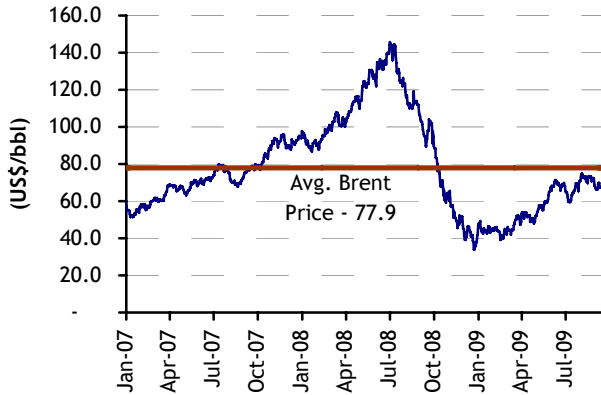
Cairn's earnings are strongly correlated with crude prices. Hence, any material fall in crude prices can impact the earnings substantially. Increase in crude price by a dollar increases the EPS by about 1.9%. Alternately, since the crude prices are dollar denominated, earnings are exposed to exchange rate risk. Rupee-Dollar exchange rate, in the last one year, has been hovering at about Rs47-48/US\$. Hence, rupee appreciation poses a risk to the earnings and further to the NPV. A rupee appreciation in exchange rate can negatively impact the EPS by about 2.4%.

#### Long term crude price curve

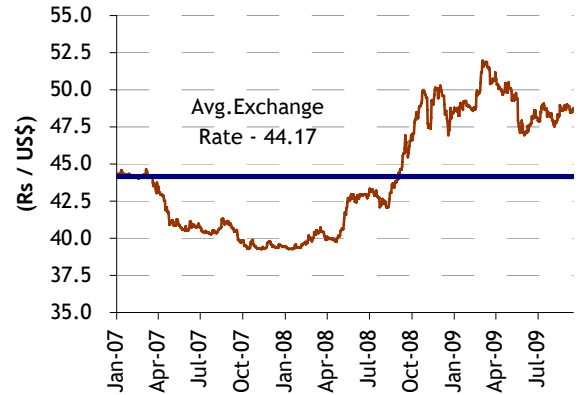


Source: Bloomberg, PL Research

Crude Price - Brent



Rupee - dollar exchange rate



Source: Bloomberg, PL Research

### Project delays

Cairn's earnings and cash flows are heavily dependent on the timely execution of the Rajasthan project. Earlier the company has demonstrated its capability during development of the Ravva and Cambay fields. However, the size of the Rajasthan project is much bigger than the earlier projects. Hence, execution remains critical for the success of the project. The company recently started oil production from the Mangala field. However, timely ramp-up of the same is necessary. Alongside, commissioning of the crude pipeline is necessary to evacuate the larger quantity of crude oil.

## Valuation - Risk reward unfavourable

Recently, Cairn started oil production from its Rajasthan block and is expected to achieve plateau in 2011. Hence, the earnings are anticipated to rise substantially over the next 2-3 years. However, concern on the cess payment still remains. The stock price is currently discounting US\$84/bbl as long term crude prices. We have valued Cairn on NPV basis, considering crude oil and natural gas production from its existing and future assets. Considering US\$75/bbl as long term crude prices, we have arrived at NPV of Rs240 for Cairn. However, we have depicted different scenarios which can impact the NPV of Cairn positively or negatively. We believe that the risk reward is unfavourable at this juncture and hence recommend **REDUCE**.

### Valuation - NPV

	FCFF	No. of shares	Value/ share	US\$@48	Oil recovery (m bbls)	EV/bbl
RJ ON 1	317,632	1,897	167	6,617	738	9.0
Ravva+Cambay	20,484	1,897	11	427	31	13.6
KG-DWN98/2	8,640	1,897	5	180	20	9.0
Expl. Upside	90,720	1,897	48	1,890	210	9.0
<b>Total</b>	<b>437,476</b>	<b>1,897</b>	<b>231</b>	<b>9,114</b>	<b>999</b>	<b>9.1</b>
<hr/>						
Debt	49,600	1,897	26	1,033		
Cash	67,808	1,897	36	1,413		
<hr/>						
<b>Equity value</b>	<b>455,684</b>	<b>1,897</b>	<b>240</b>	<b>9,493</b>	<b>1,897</b>	

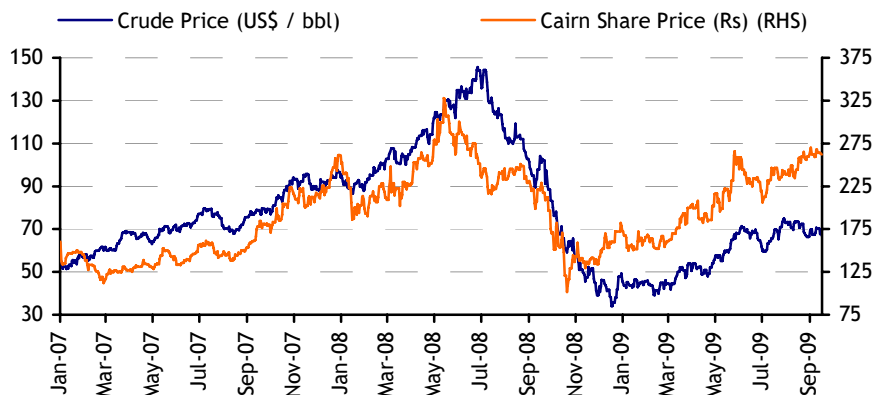
Source: Company Data, PL Resesarch

### Scenario under different oil recovery rates for future prospects

	Optimistic case	Base case	Pessimistic case
Oil recovery (mn bbls)	420	210	140
EV @Rs48/US\$ (US\$ mn)	3,360	1,890	1,120
EV (Rs/ share)	85	48	28
Cairn NPV (Rs/ share)	277	240	221
Upside/ (Downside) (%)	15.5	0.0	(8.1)

Source: PL Research

### Co-relation of Cairn stock price with crude prices



Source: Bloomberg, PL Research

**Rajasthan Block NPV (Rs m)**

Y/e/March	FY10E	FY11E	FY12E	FY13E	FY14E	FY15E	FY16E	FY17E	FY18E	FY19E	FY20E	FY21E	FY22E	FY23E	FY24E	FY25E	FY26E	FY27E	FY28E	FY29E	FY30E
<b>Key Assumptions</b>																					
Production (mn bbls)	52	31.2	46.1	46.0	45.9	43.4	41.1	38.8	36.6	33.0	29.7	26.7	22.7	19.3	16.4	13.9	11.5	8.7	6.5	4.9	3.6
Brent price (US\$/bbl)	65.0	70.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
Cairn's price (US\$/bbl)	57.2	61.6	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
Exchange rate (Rs/US\$)	48.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0
<b>Revenues</b>	14,357	88,326	140,008	139,626	142,205	143,070	148,952	150,851	148,709	151,414	140,861	124,490	107,678	97,344	84,914	69,381	60,735	50,695	43,025	36,823	32,027
Statutory levies	682	4,064	6,013	5,996	6,107	6,144	6,397	6,478	6,386	6,502	6,049	5,346	4,624	4,180	3,647	2,980	2,608	2,177	1,848	1,581	1,375
Rev. post-stat. levies	13,675	84,262	133,996	133,629	136,098	136,926	142,556	144,373	142,322	144,911	134,812	119,143	103,054	93,164	81,267	66,401	58,127	48,518	41,178	35,242	30,652
Govt. share - profit pet.	0	0	18,670	34,666	48,223	60,753	62,257	62,329	61,033	61,062	56,519	49,960	43,003	38,489	33,374	27,249	23,585	19,306	16,052	13,444	11,441
Operating expenditure	1,882	7,965	11,667	11,635	12,320	13,810	16,431	18,104	18,647	21,176	20,165	17,614	15,437	14,576	12,910	10,294	9,348	8,297	7,465	6,744	6,160
<b>Operating profit</b>	11,793	76,297	103,659	87,328	75,554	62,363	63,867	63,939	62,643	62,672	58,129	51,570	44,613	40,099	34,984	28,859	25,195	20,916	17,662	15,054	13,051
Dep., Depletion etc.	4,078	10,708	12,535	13,053	12,231	11,249	10,285	9,418	8,637	7,934	7,302	6,733	6,220	5,799	5,344	4,971	4,635	4,332	4,060	3,815	3,595
Interest	2,525	4,940	3,952	2,984	1,976	988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PBT</b>	5,190	60,649	87,171	71,311	61,348	50,126	53,582	54,522	54,006	54,738	50,827	44,837	38,393	34,339	29,639	23,888	20,560	16,583	13,601	11,239	9,456
Tax	882	10,307	14,815	12,119	10,406	8,519	9,105	18,537	18,362	18,611	17,281	15,245	13,054	11,675	10,077	8,122	6,990	5,688	4,625	3,821	3,215
Tax rate	17.0	17.0	17.0	17.0	17.0	17.0	17.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
<b>PAT</b>	4,308	50,341	72,356	59,192	50,922	41,607	44,476	35,984	35,644	36,127	33,546	29,593	25,339	22,664	19,562	15,766	13,570	10,945	8,977	7,418	6,241
<b>Cash flows</b>																					
EBIT (1-Tax)	6,404	54,442	75,637	61,652	52,582	42,427	44,476	35,984	35,644	36,127	33,546	29,593	25,339	22,664	19,562	15,766	13,570	10,945	8,977	7,418	6,241
DD&A	4,078	10,708	12,535	13,053	12,231	11,249	10,285	9,418	8,637	7,934	7,302	6,733	6,220	5,799	5,344	4,971	4,635	4,332	4,060	3,815	3,595
Operating Cashflow	10,481	65,150	88,172	74,705	64,793	53,676	54,761	45,402	44,281	44,061	40,848	36,325	31,560	28,423	24,906	20,737	18,204	15,277	13,037	11,233	9,886
Investment/ Capex	30,240	28,980	28,980	6,440	3,220	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610	1,610
<b>Free cashflow</b>	(19,759)	36,170	59,192	68,265	61,573	52,066	53,151	43,792	42,671	42,451	39,238	34,715	29,950	26,813	23,296	19,127	16,594	13,667	11,427	9,623	8,226
Discounted cash flow	(19,759)	32,406	47,514	49,094	39,673	30,057	27,490	20,293	17,715	15,790	13,076	10,365	8,012	6,426	5,002	3,680	2,860	2,111	1,581	1,193	944
Cum. Cash flow		317,632																			
No. of shares		1,897																			
Value/ shareholder		167																			
<b>WACC calculations</b>																					
Other assumptions																					
Cost of equity	12.5%																				
Cost of debt	10.0%																				
Debt: Equity	0.2																				
WACC	11.6%																				
Cess																					2.7 (Rs927/ton)

Source: Company Data, PL Research

**Sensitivity of EPS with crude prices and exchange rate**

		Crude Price						
FY11 EPS		55.0	60.0	65.0	70.0	75.0	80.0	85.0
Exchange Rate	43.0	17.9	20.6	23.3	26.1	28.8	31.5	34.3
	44.0	18.5	21.3	24.1	26.9	29.7	32.5	35.3
	45.0	19.1	21.9	24.8	27.7	30.5	33.4	36.2
	46.0	19.7	22.6	25.5	28.4	31.4	34.3	37.2
	47.0	20.3	23.3	26.2	29.2	32.2	35.2	38.2
	48.0	20.9	23.9	27.0	30.0	33.1	36.1	39.2
	49.0	21.5	24.6	27.7	30.8	33.9	37.0	40.2

		60.0	65.0	70.0	75.0	80.0	85.0	90.0
Exchange Rate	43.0	26.9	30.1	33.3	36.5	39.7	42.9	46.0
	44.0	27.8	31.0	34.3	37.5	40.8	44.1	47.3
	45.0	28.6	31.9	35.3	38.6	41.9	45.3	48.6
	46.0	29.4	32.8	36.2	39.6	43.1	46.5	49.9
	47.0	30.3	33.7	37.2	40.7	44.2	47.7	51.1
	48.0	31.1	34.6	38.2	41.8	45.3	48.9	52.4
	49.0	31.9	35.6	39.2	42.8	46.4	50.1	53.7

Source: Company Data, PL Research

**Sensitivity of NPV of Rajasthan, Ravva and Cambay blocks with crude prices, exchanges rates and WACC**

		Crude Price						
NPV		60.0	65.0	70.0	75.0	80.0	85.0	90.0
Exchange Rate	43.0	142.8	153.1	163.3	173.6	183.9	194.1	204.4
	44.0	145.2	155.7	166.2	176.7	187.2	197.7	208.2
	45.0	147.5	158.3	169.0	179.8	190.5	201.2	212.0
	46.0	149.9	160.9	171.8	182.8	193.8	204.8	215.8
	47.0	152.2	163.4	174.7	185.9	197.1	208.3	219.6
	48.0	154.6	166.0	177.5	189.0	200.4	211.9	223.4
	49.0	156.9	168.6	180.3	192.0	203.7	215.4	227.1

		60.0	65.0	70.0	75.0	80.0	85.0	90.0
WACC	10.1%	161.2	173.3	185.3	197.4	209.5	221.5	233.6
	10.6%	157.3	169.0	180.6	192.3	204.0	215.7	227.4
	11.1%	153.5	164.8	176.1	187.5	198.8	210.1	221.5
	11.6%	149.9	160.9	171.8	182.8	193.8	204.8	215.8
	12.1%	146.4	157.1	167.7	178.4	189.0	199.7	210.4
	12.6%	143.1	153.4	163.8	174.1	184.5	194.8	205.2
	13.1%	139.9	149.9	160.0	170.0	180.1	190.1	200.2

Source: Company Data, PL Research

## Financials

### Income Statement

(Rs m)

Y/e March	CY06	CY07	FY09	FY10E	FY11E	FY12E
<b>Net Revenue</b>	<b>387</b>	<b>10,123</b>	<b>14,327</b>	<b>23,746</b>	<b>96,940</b>	<b>129,136</b>
Operating Expenses	423	3,774	5,441	4,889	14,013	19,332
<i>% of Net Sales</i>	<i>109.1</i>	<i>37.3</i>	<i>38.0</i>	<i>20.6</i>	<i>14.5</i>	<i>15.0</i>
Other Costs	93	4,458	(413)	1,450	1,650	1,700
<i>% of Net Sales</i>	<i>24.0</i>	<i>44.0</i>	<i>(2.9)</i>	<i>6.1</i>	<i>1.7</i>	<i>1.3</i>
Cost of Goods Sold	516	8,231	5,028	6,339	15,663	21,032
<i>% of Net Sales</i>	<i>133.1</i>	<i>81.3</i>	<i>35.1</i>	<i>26.7</i>	<i>16.2</i>	<i>16.3</i>
<b>EBITDA</b>	<b>(128)</b>	<b>1,891</b>	<b>9,299</b>	<b>17,407</b>	<b>81,277</b>	<b>108,103</b>
<i>Margin (%)</i>	<i>(33.1)</i>	<i>18.7</i>	<i>64.9</i>	<i>73.3</i>	<i>83.8</i>	<i>83.7</i>
Depreciation, Depletion, Amort.	61	1,940	2,698	5,773	12,262	13,939
Other Income	62	1,324	3,625	3,500	1,750	1,250
<b>EBIT</b>	<b>(127)</b>	<b>1,275</b>	<b>10,226</b>	<b>15,134</b>	<b>70,766</b>	<b>95,414</b>
Interest	3	16	64	2,525	4,940	3,952
Extraordinary items	0	0	(283)	0	0	0
<b>PBT</b>	<b>(130)</b>	<b>1,259</b>	<b>9,879</b>	<b>12,609</b>	<b>65,826</b>	<b>91,462</b>
Total tax	56	1,152	1,734	2,546	11,872	16,265
<i>Tax rate (%)</i>	<i>(42.8)</i>	<i>91.5</i>	<i>17.6</i>	<i>20.2</i>	<i>18.0</i>	<i>17.8</i>
<b>PAT</b>	<b>(187)</b>	<b>(245)</b>	<b>8,035</b>	<b>10,063</b>	<b>53,954</b>	<b>75,197</b>
Min. interest	25	—	—	—	—	—
<b>Adjusted PAT</b>	<b>(212)</b>	<b>(245)</b>	<b>8,035</b>	<b>10,063</b>	<b>53,954</b>	<b>75,197</b>

Source: Company Data, PL Research \*FY09 - 15 Months



**Balance Sheet**

(Rs m)

Y/e March	CY06	CY07	FY09	FY10E	FY11E	FY12E
<b>Sources of Fund</b>						
Share Capital	17,653	17,784	18,967	18,967	18,967	18,967
Reserves & Surplus	275,363	277,031	309,057	319,120	373,073	448,270
Misc. exp.	507	370	—	—	—	—
Total Shareholders Equity	292,509	294,445	328,023	338,086	392,040	467,237
Total Debt	5,179	3,124	43,564	49,600	39,720	29,840
Deferred Tax Liability	4,152	4,916	5,624	5,624	5,624	5,624
<b>Total</b>	<b>301,841</b>	<b>302,486</b>	<b>377,211</b>	<b>393,310</b>	<b>437,384</b>	<b>502,701</b>
<b>Application of Fund</b>						
Gross Block	1,327	1,093	1,435	1,935	2,435	2,935
Depreciation	831	606	802	877	952	1,027
Net Block	495	487	633	1,058	1,483	1,908
Cost of producing facilities (Net)	2,976	4,390	3,014	58,316	67,129	74,265
Exp. & development wells in progress	17,122	24,670	62,027	20,277	28,527	36,777
Net Producing properties	20,098	29,060	65,041	78,593	95,656	111,042
Goodwill	253,193	253,193	253,193	253,193	253,193	253,193
Investments	105	7,129	1,713	1,713	1,713	1,713
Deferred Tax Asset	—	—	84	84	84	84
<b>Current Assets</b>						
Inventories	1,251	1,216	1,683	1,616	5,654	8,449
Sundry Debtors	1,917	1,349	1,516	2,020	7,067	10,562
Cash & bank balances	61,348	13,318	65,271	67,808	85,809	129,525
Other current assets	13	135	704	704	704	704
Loans and advances	2,762	4,516	3,505	3,505	3,505	3,505
Total Current Assets	67,291	20,533	72,679	75,653	102,739	152,745
<b>Current Liabilities</b>						
Accounts Payable	3,211	3,921	8,648	9,000	9,000	9,000
Provisions	2,811	3,680	4,337	4,337	4,337	4,337
Other	33,532	770	3,146	3,646	4,146	4,646
Total Current Liabilities	39,554	8,372	16,132	16,984	17,484	17,984
<b>Net Current Assets</b>	<b>27,737</b>	<b>12,161</b>	<b>56,548</b>	<b>58,670</b>	<b>85,255</b>	<b>134,761</b>
P & L Debit balance	212	457	—	—	—	—
<b>Total</b>	<b>301,841</b>	<b>302,486</b>	<b>377,211</b>	<b>393,310</b>	<b>437,384</b>	<b>502,701</b>

Source: Company Data, PL Research \*FY09 - 15 Months

**Cash Flow**

(Rs m)

Y/e March	CY06	CY07	FY09	FY10E	FY11E	FY12E
Cash from operating activities	33,495	(29,822)	17,802	20,368	84,565	118,578
Cash from investing activities	(21,468)	(14,427)	(27,282)	(10,552)	(15,813)	(14,636)
Cash from financing activities	49,321	(3,781)	61,432	(7,279)	(50,750)	(60,226)
(Dec) / Inc. in Cash	61,348	(48,030)	51,953	2,537	18,001	43,716
Opening Cash	—	61,348	13,318	65,271	67,808	85,809
Closing Cash	61,348	13,318	65,271	67,808	85,809	129,525

Source: Company Data, PL Research \*FY09 - 15 Months

**Key Ratios**

Y/e March	CY06	CY07	FY09	FY10E	FY11E	FY12E
<b>Growth Ratios (%)</b>						
Sales	–	–	41.5	65.7	308.2	33.2
EBITDA	–	–	391.6	87.2	366.9	33.0
PAT	–	15.9	–	25.2	436.2	39.4
EPS	–	15.1	–	25.2	436.2	39.4
<b>Asset Based Ratios (%)</b>						
RoCE/ RoI	–	–	2.4	3.1	14.0	16.7
RoE/RoNW	–	–	2.6	3.0	14.8	17.5
<b>Gearing</b>						
Debt/Equity	0.0	0.0	0.1	0.1	0.1	0.1
<b>Per Share (Rs.)</b>						
EPS	–	–	4.2	5.3	28.4	39.6
BV	165.8	165.2	172.7	178.0	206.5	246.1
DPS	–	–	–	–	–	–
CEPS	–	1.0	5.7	8.3	34.9	47.0
FCPS	6.8	(22.2)	(9.7)	1.2	21.1	35.6
<b>Margins (%)</b>						
EBITDA	–	18.7	64.9	73.3	83.8	83.7
PAT	–	–	44.8	36.9	54.7	57.7
Tax Rate	–	–	17.6	20.2	18.0	17.8
Dividend Pay out	–	–	–	–	–	–
<b>Velocity</b>						
Debtors	–	48.0	38.1	25.0	25.0	25.0
Inventories	–	–	–	20.0	20.0	20.0
<b>Valuations (x)</b>						
P/E	–	–	61.0	48.7	9.1	6.5
P/CEPS	–	–	45.7	30.9	7.4	5.5
P/BV	1.6	1.6	1.5	1.5	1.3	1.0
M. Cap/ Sales	–	45.4	34.2	20.6	5.1	3.8
EV/EBITDA	–	–	50.4	27.1	5.5	3.6
EV/Sales	–	44.4	32.7	19.9	4.6	3.0

Source: Company Data, PL Research \*FY09 - 15 Months

## Company profile

Cairn India, which is 65% owned by Cairn Plc., has been operating in India since past 15 years. With recently started production from the Rajasthan block, the company now has three producing assets namely Ravva in Eastern offshore, Cambay in western offshore and Barmer in Rajasthan.

Rajasthan block (RJ-ON-90/1) is the most valuable asset for Cairn. The onshore oil discovery in this block is the largest discovery in India over the last 25 years. Cairn made its maiden oil discovery in early 2004 in the block, which was acquired during the late 1990s. With the fast track development of the block, Cairn started oil production from the block recently (August 29, 2009), within five years from its first discovery. Apart from the discovered MBA fields in the Barmer basin (gross 3P reserves - 2.0bn boe), the rich hydrocarbon base in the basin offers further upside potential (gross 3P reserves - 1.7bn boe).

### Cairn India - 3P and 2P reserves

(mmboe)

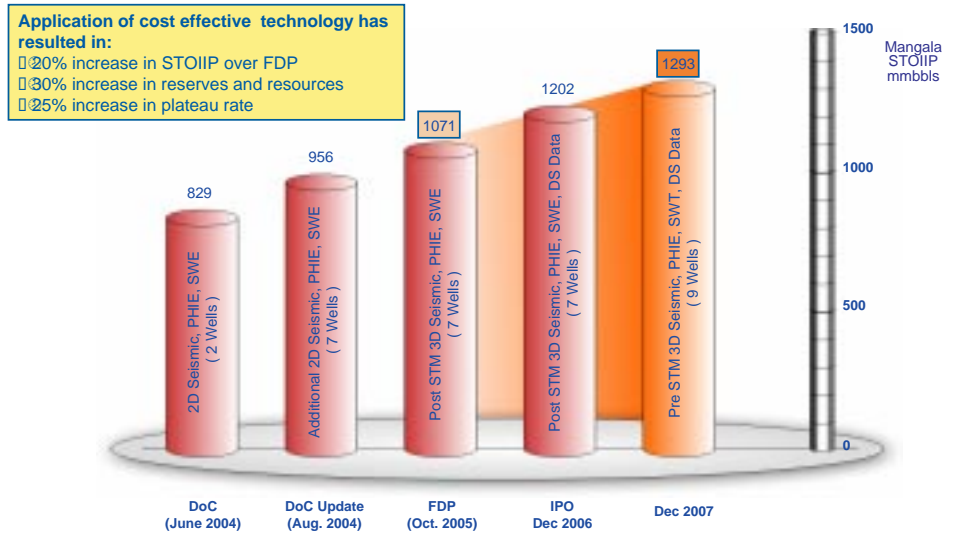
	Gross Proved & probable hydrocarbons initially in place (3P)		Gross Proved & probable reserves & resources (2P)		Net Proved & probable reserves & resources to Cairn	
	CY07	FY09	CY07	FY09	CY07	FY09
Rajasthan MBA Fields	2,054	2,054	685	685	479	479
Rajasthan MBA EOR	0	0	308	308	216	216
Rajasthan Block Other Fields	1,697	1,708	84	86	60	61
Ravva Fields	584	625	82	72	18	16
CBOS/2 Fields	116	156	25	20	10	8
KG-DWN-98/2	650	650	353	353	35	35
<b>Total</b>	<b>5,101</b>	<b>5,193</b>	<b>1,537</b>	<b>1,524</b>	<b>818</b>	<b>815</b>

Source: Company Data, PL Research

### Mangala - reserve accretion

Cairn recently started oil production from Train 1 of Mangala field, having a capacity of 30,000bpd. Production from Train 2 (capacity of 50,000bpd) is anticipated by the end of 2009 and from Train3 (capacity of 50,000bpd) is targeted for completion by H1CY10. This field is the largest of the MBA fields. Plateau production from the Mangala field is anticipated at over 125,000 bpd. Since the initial discovery in 2004, the reserve accretion (3P reserves) in Mangala has increased by over 55% to 1.3bn boe from about 0.8bn boe.

### Gradual increase in Mangala reserves since 1st discovery in 2004

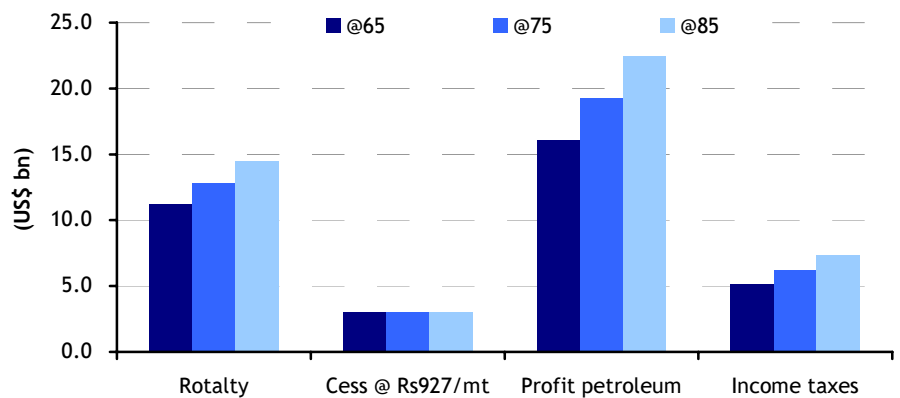


Source: Company Data, PL Research

### Government to earn about US\$41bn over the life of Rajasthan block

Government is expected to earn over US\$19bn as profit petroleum over the life of the Rajasthan asset considering US\$75/bbl as the long-term crude oil price. The cess and royalty payments together will account for over US\$16bn over the life of the asset. The income tax will account for over US\$6bn. All these payments put together will earn the government over US\$41bn over the life of the asset.

#### Government earnings

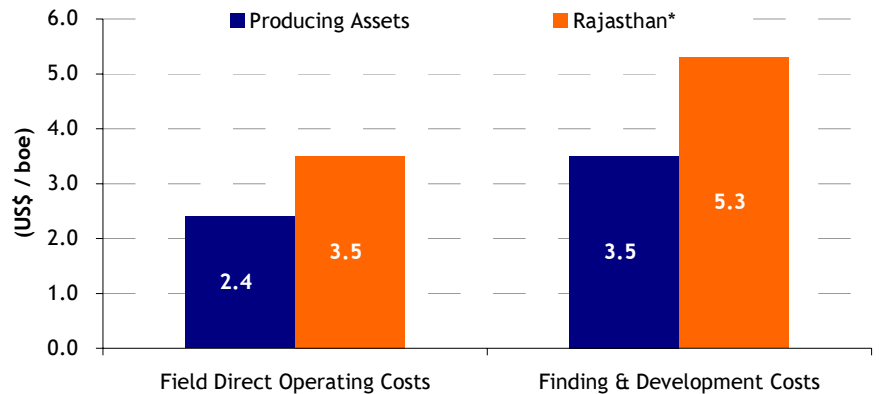


Source: Company Data, PL Research

## Lower field operating, finding and development costs

Cairn's Ravva and Cambay blocks boast of one of the lowest operating costs among global players. The finding and development costs have also been lower for Ravva and Cambay. The operating costs are expected to be higher for Rajasthan block along with higher finding and development costs.

### Operating finding and development costs



Source: Company Data, PL Research

## Well funded for future exploration and development activities

Cairn's capex for the development of Rajasthan block and crude transportation pipeline, till 2011 is expected at about US\$2.5-2.7bn. The company is well funded with about US\$2.1bn amount of cash+debt facility to carry out the capex. With the start of production from Rajasthan field, the company is expected to generate further cash flows which will be utilized to bridge the funding gap.

### Capex Plans and Funding

Capex	US\$ bn	Funding	US\$ bn
<b>2008 and 2009</b>			
Gross	2.0	Cash at the end of 2008	0.6
Upstream	1.2	Pref. allotment	0.6
Pipeline	0.8	Existing debt facility	0.9
Net to Cairn (70%)	1.4		
<b>2010 and 2011</b>			
Gross	1.5-1.8		
Net to Cairn (70%)	1.1-1.3		
Total net to Cairn (70%)	2.5-2.7	Total	2.1

Source: Company Data, PL Research

### Rajasthan block - to contribute over 16% of domestic oil production

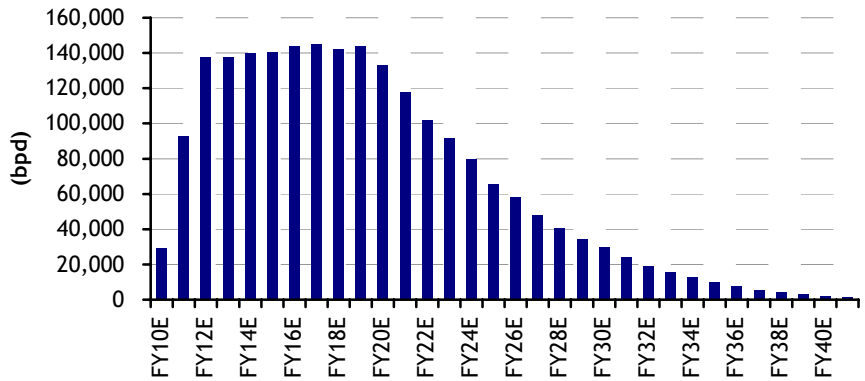
During FY09 the domestic crude production stood at about 34mmt. We anticipate Cairn's crude oil production in FY12 at about 6.5mmt which will be about 16% of the total production. This will reduce India's import bill by over US\$3bn.

#### Crude oil imports and domestic production



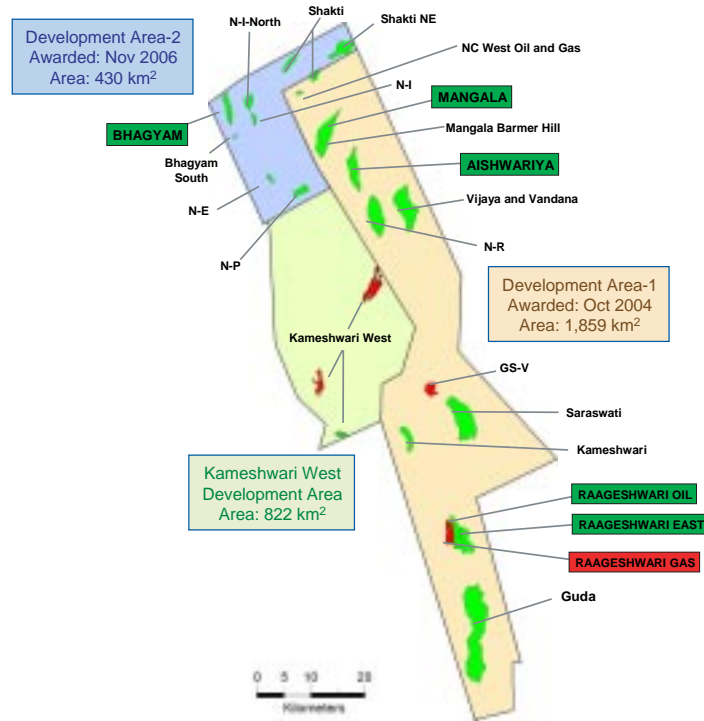
Source: Company Data, Industry, PL Research

#### Rajasthan block - production profile



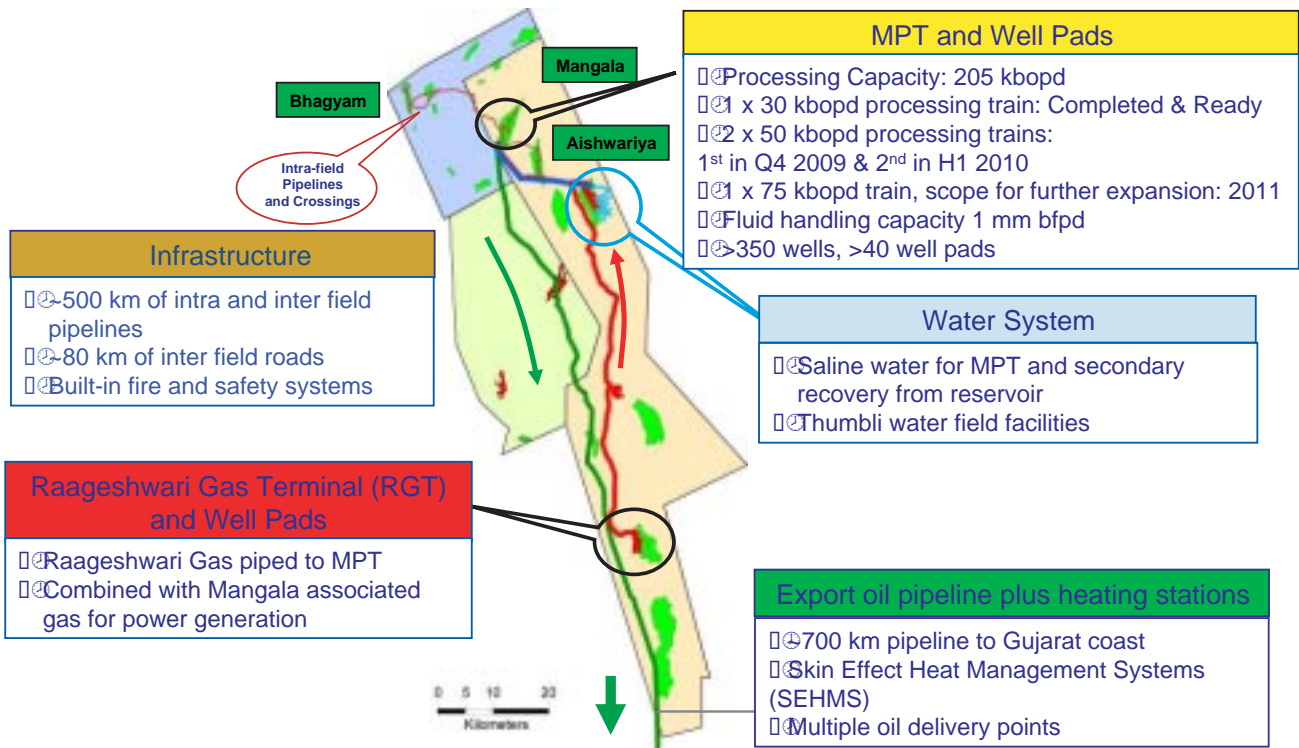
Source: Company Data, PL Research

**Barmer field**



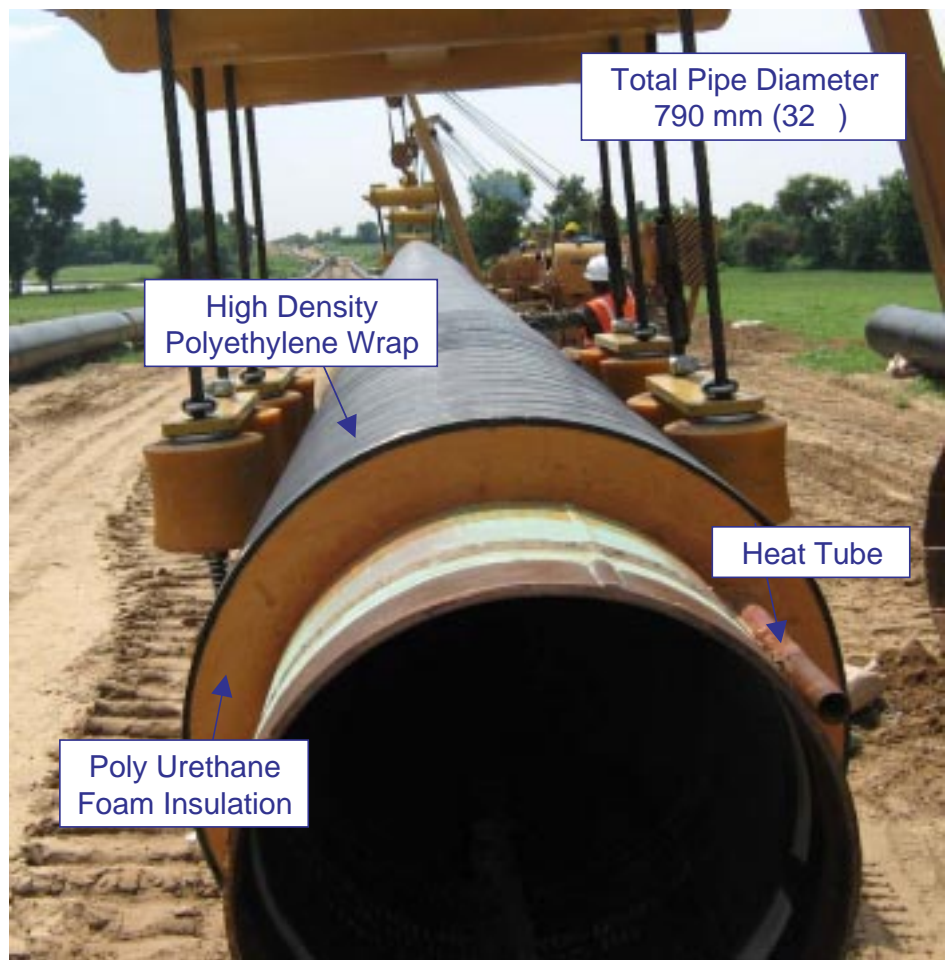
Source: Company Data, PL Research

**Oil & Gas evacuation facilities**



Source: Company Data, PL Research

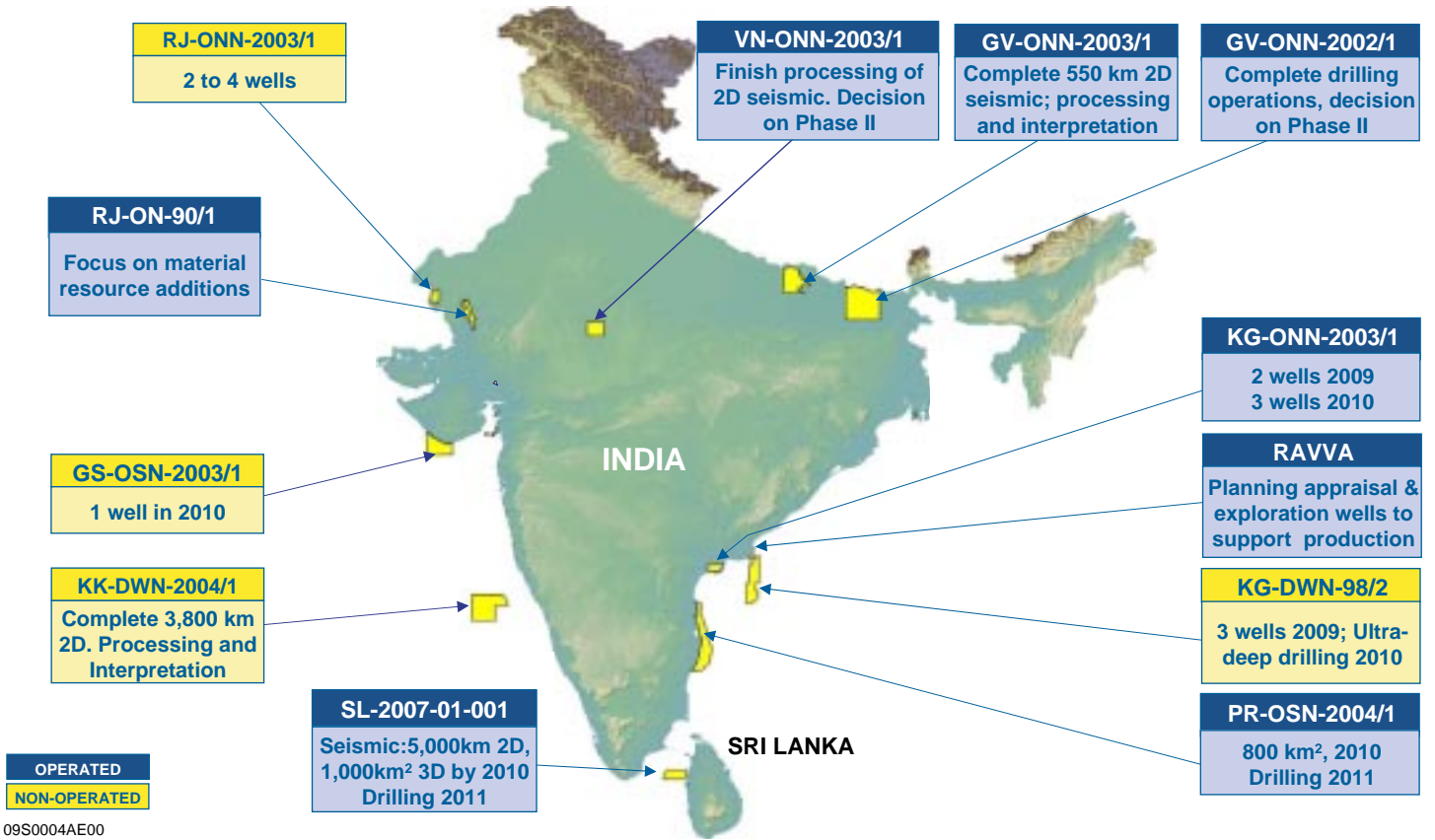
Skin effect heated crude pipeline



Source: Company Data, PL Research



Cairn O&G blocks



09S0004AE00

Source: Company Data, PL Research

**Domestic exploration area granted to companies**

Company/ Operator	Sq. km.	%age
ONGC	512,754	48.4
Reliance Industries Limited	341,359	32.2
Oil India Limited	39,326	3.7
<b>Cairn India</b>	<b>38,339</b>	<b>3.6</b>
Hindustan Oil Exploration Company Limited	25,124	2.4
FOCUS	21,000	2.0
SANTOS	16,496	1.6
ENI SpA	14,445	1.4
Prize Petroleum	13,277	1.3
Gujarat State Petroleum Corporation Ltd	11,057	1.0
OAO Gazprom	7,779	0.7
Geo Global Resources Inc	5,804	0.5
NAFTOGAZ	3,789	0.4
Jubilant Oil and Gas Pvt. Ltd	2,534	0.2
Essar Oil Limited	1,729	0.2
Canoro Resources Limited	1,445	0.1
Tullow Oil Plc	1,277	0.1
Niko Resources Limited	957	0.1
Hardy Exploration & Production (India) Inc	859	0.1
PetroGas	741	0.1
Geopetrol	295	0.0
<b>Total</b>	<b>1,060,385</b>	<b>100.0</b>

Source: Oil India RHP, PL Research



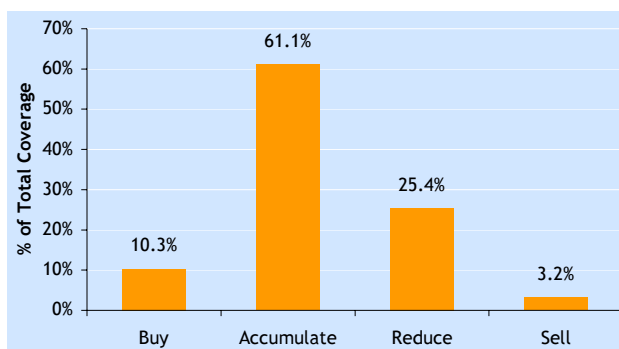
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#### Rating Distribution of Research Coverage



#### PL's Recommendation Scale

<b>BUY</b>	: Over 15% Outperformance to Sensex over 12-months	<b>Accumulate</b>	: Outperformance to Sensex over 12-months
<b>Reduce</b>	: Underperformance to Sensex over 12-months	<b>Sell</b>	: Over 15% underperformance to Sensex over 12-months
<b>Trading Buy</b>	: Over 10% absolute upside in 1-month	<b>Trading Sell</b>	: Over 10% absolute decline in 1-month
<b>Not Rated (NR)</b>	: No specific call on the stock	<b>Under Review (UR)</b>	: Rating likely to change shortly

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