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Galp Energia

The sky is the limit

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- We initiate coverage on Galp Energia with a BUY rating
- DCF implies significant value headroom; SOTP supports at least a doubling of Galp's market cap medium term
- Strong earnings uplift to 2012F, and this before considering the transformational impact of Brazil

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Executive summary

Initiate with BUY rating, target price €15.66

We initiate coverage on Galp Energia (Galp.LS/Galp PL) with a **BUY** rating and a target price of €15.66 based on DCF fair value minus 20% (in line with our sector valuation methodology outlined in *Observable Reality*, 22 July 2008).

Despite an already positive performance since listing in October 2006, Galp is still a stock to **BUY** now for short-/medium-term value upside (we see a 23.6% CAGR in adjusted net profit 2007-12F with a 25% CAGR for EBIT) and long-term growth.

We see a doubling of market cap to be easily achievable

Galp describes its strategy as ambitious, albeit its two key aims are quite focused: Galp wants to turn itself into an integrated energy company operating across the whole oil and gas value chain; and it wants to double its value for shareholders over a long-term perspective. We think both of these aims are easily achievable.

Since listing in October 2006, Galp's management team has done an excellent job in adding value to the portfolio and is not resting on its laurels: witness the recently announced innovative investment deal with PDVSA; key downstream initiatives supporting earnings uplift to 2012F; and continued exploration success in Brazil.

Brazil supports upside on its own, and Galp ex-Brazil comes 'free' today

Notably our base-case sum of the parts (SOTP) analysis suggests an equity value for Galp of €28. Indeed our SOTP modelling suggests that the company's Brazilian pre-salt Santos Basin resource exposure is worth more than Galp's overall current market capitalisation today. This implies that if you **BUY** Galp now you will get its non-Brazilian businesses (and all the upside expected in refining/marketing) for 'free'.

Massive transition near term and rapid growth

Admittedly, medium-term multiples do not look compelling for Galp. However, Galp's 150-190% premium rating highlights one of the shortcomings of using earnings and cash flow multiples to value a company with significant growth potential.

Galp is a material growth opportunity, and risk looks balanced to the upside

Galp's upstream volumes are likely to see a CAGR over 2007-15F of 30%, some 10-times that of the sector average of 3%. The stock is deservedly expensive based on the sizeable discovered resource potential available to Galp upstream that will filter into earnings through the next decade. Note that we assume a long-term growth estimate of 6.0% (versus a sector average of 3.2%) in our DCF. While perhaps conservative, this accommodates the fact that our earnings estimates for 2012-15F are not able to fully reflect the growth upside that Galp could enjoy as a result of its multiple discoveries in Brazil. The addition of this world-scale leveraged deepwater upstream business to its improving Iberian downstream/energy base is likely to prove truly transformational for Galp. The transition could well be speedy in industry terms.

Not a yield play

Galp's dividend yield and cash returns are likely to remain well below the sector average. The company is unlikely to have any problems funding its share of eg, Tupi's development costs out of its own resources, while at the same time maintaining its financial flexibility. However, because of this commitment we do not expect any step-change in the dividend payout and we do not expect any substantial share buybacks.

Corporate interest possible

Note that ENI (BUY; share price € 21.4; target price €25.3) could be a major player in any end-game for Galp post 2010F (on the expiration of a shareholder lock-up agreement). ENI is a 33.3% stakeholder in Galp today.

Potential value upside

With or without corporate interest, we believe there is significant value at Galp, and stock price upside could be realised more quickly than the equity market expects.

Investment case

Difficult to value on DCF given differentiated growth outlook

Galp is very different from its pan-European oil company peer group. It is differentiated by the fact that its growth prospects are markedly better than those of its peers, primarily due to significant leverage to exploration/reserve success in the pre-salt Santos Basin play offshore Brazil. This makes it difficult to value using a conventional DCF methodology, which we base on explicit forecast cash flows to 2015F.

DCF fair value €19.58

That said, our DCF modelling implies a fair value of €19.58 (53% upside to €12.79 close 13 August 2008), which is notably attractive.

Realistic target price €15.66

In line with our broader sector valuation methodology outlined in *Observable Reality*, our target price of €15.66 is calculated based on our DCF fair value minus 20%. This target price implies 22.4% upside over the current pricing and supports a **BUY** rating.

SOTP valuation €27.4

Notably, our base-case SOTP analysis suggests an equity value for Galp of €28 (119% upside over close price 13 August 2008): significant headroom indeed.

Significantly, our SOTP modelling suggests that the company's Brazilian pre-salt Santos Basin resource exposure is worth more than the stock's current market capitalisation. This implies that if you **BUY** Galp today you will get its non-Brazilian businesses for 'free'. To put it another way, there is good base value in Galp's downstream and energy businesses that is being discounted at present.

In the following section we provide a high level valuation background. A division-by-division valuation is provided in the Company Overview section (on page 8).

Conventional valuation

Usual methodology for large cap oils is DCF

Our preferred valuation methodology for the European integrated oil majors is a DCF-based one. This reflects the fact that most of the oil majors are relatively mature, almost 'steady state' companies. Our DCF is composed of four key elements:

- In the first phase of the calculation, we model corporate cash flows until 2015F using consistent macro assumptions for key variables such as oil and gas prices, refining and marketing margins, etc
- In the second phase we model cash flow for a further 10 years based on an assessment of 'mid cycle' ROCE and historic growth rates in capital employed
- The third component is a terminal value calculation based on 2025 cash flow less estimated maintenance capital expenditure, and
- Lastly, we deduct the current net debt from the sum of the above components to calculate the net present value (NPV) of corporate cash flows.

ING assumptions ahead of market forecasts

Our long-term oil price assumption has a significant impact on our corporate valuation. Our current oil (Brent) price assumption is detailed in Figure 1. Our oil price assumptions are at the high end of the market range 2009/10/11F at least.

Fig 1 ING – Brent Oil price assumptions and US$/EUR

	2007	2008F	2009F	2010F	2011F	2012F	2013F	2014F	2015F
Brent (US$/bbl) - ING	72.86	120.00	130.00	130.00	120.00	110.00	100.00	95.00	90.00
Brent (US$/bbl) - Consensus	72.86	117.70	120.00	111.27	104.25	110.00	N/A	N/A	N/A
NWE Refining Margin (US$/bbl) - ING	4.85	8.55	8.00	7.50	7.00	7.00	7.00	7.00	7.00
EUR/US$ - ING	1.37	1.52	1.42	1.38	1.34	1.28	1.25	1.21	1.21

Source: ING Estimates; Bloomberg (consensus as at 12/08/08)

Having modelled the NPV of a stock, the cost of capital for each company is then calculated using consistent long-term bond yield assumptions, equity risk premiums that vary by equity market and individual corporate beta factors. The corporate cost of capital assumptions for the European oil majors varies between 8.5% and 10.1%. Our cost of capital assumption for Galp is around 8.9% in the next few years, although it does decline as debt rises in the medium term.

DCF fair value €19.58

Target price €15.66

Our DCF valuation suggests a fair value for Galp of €19.58, which is 53.1% above the closing price for Galp on 13 August (€12.79).

Overall, our DCF valuation methodology has provided us with accurate predictions for share prices over a long period of time. **That said, our target price of €15.66 is calculated based on our DCF fair value minus 20%,** in line with our broader sector valuation methodology outlined in *Observable Reality* *[1].

Why is Galp different?

Despite its importance in our modelling for the large cap integrated oil sector, DCF is perhaps not the best valuation methodology to use for Galp.

Galp is different primarily because it has had six significant and material discoveries in Brazil over the last few months (see 'Exploration and Production' sub-section further on). At least two of these exploration successes in Brazil (Tupi and Jupiter) are truly world-scale. Indeed they are super-massive in the context of the company.

World-scale Brazil success is potentially transformational for Galp

Clearly, Tupi and Jupiter are company-changing discoveries. It has been suggested that Tupi is the largest discovery since Kashagan, which is estimated to contain 14bn boe reserves. With gross resources estimated by company sources to be 18-30bn boe, Tupi could potentially provide Galp with net recoverable reserves of 900 mboe, while Jupiter could add a further 1.3bn barrels of oil equivalent to Galp's reserve base over time. Moreover, other equity stakes in key resources imply a total 3.45bn boe upside net for Galp just from the pre-salt Santos Basin cluster alone.

Although Brazil has one of the toughest fiscal regimes in Latin America, Galp should be in a position to book these reserves in time because Brazil operates a tax and royalty fiscal regime rather than a production-sharing regime. In addition, there is no retroactive state back-in in Brazil.

It is the scale of these discoveries in relation to the size of Galp that makes it difficult to incorporate in a conventional DCF valuation. The discoveries will clearly have a material impact on cash flows beyond our discrete forecasting period to 2015F.

[1] * Essentially in our 22 July report we acknowledged the fact that market values remain very much detached from pure DCF implications in the oil sector. This is likely to remain the case for the foreseeable future given the new era oil **macro-, economic** and geo-political dynamics in play today and also indexation and broader equity market concerns. Consequently we adjusted our DCF target prices to give realistically achievable stock prices on a 12-month basis.

Capital employed to grow substantially

The scale of the discoveries also implies significant growth in capital employed prior to 2015F and beyond. Much of the growth in capital employed will take place ahead of revenue generation, thus diluting Galp's ROCE. This is particularly important for the valuation as this diluted ROCE will feed through into Galp's terminal valuation. Perhaps more importantly though, the 2015F cut-off for explicit cash flow forecasts means that much of the value of Galp's Brazilian business is excluded.

Our first response to the positive appraisal news on Tupi and other key discoveries was to incorporate the field into our model and to raise the long-term growth assumption in our DCF model. However, judging the improvement in Galp's long-term growth profile is a somewhat arbitrary process. Our second response was to complement our DCF analysis with a SOTP valuation.

Sum of the parts valuation

In our SOTP valuation, we have valued various assets on a standalone basis, using a mixture of segment DCFs and industry benchmark type valuation yardsticks. A summary of our SOTP valuation is shown in Figure 2.

Fig 2 Galp Energia – Sum of the parts valuation

	US$m	€m	€/share	Comment
Angola	1,953	1,286	1.55	Industry benchmarks*
Brazil	19,470	12,822	15.46	Industry benchmarks*
Total E&P	**21,423**	**14,108**	**17.01**	
R&M	10,121	6,665	8.04	Segment DCF
G&P	3,937	2,593	3.13	Segment DCF
International Pipelines	911	600	0.72	Earnings Multiple
Net debt	(1,115)	(734)	(0.89)	Balance sheet
Net asset value	**35,278**	**23,232**	**28.02**	

Assumes EUR/US$ exchange rate US$1.52 = €1
* See figures 6, 8 and 9 for more detail on our base-case assumptions for unit net asset value (NAV) for key upstream projects
Source: ING estimates

Using SOTP modelling we value Galp at €28. Significantly, the upstream E&P business accounts for around 61% of this corporate valuation. Moreover, Brazil is estimated to account for 91% of the total E&P valuation.

E&P

We have broken down our E&P valuation between Angola and Brazil. Given the strong long-term growth prospects for both parts of the E&P business, we have used industry benchmarks to value them both.

Galp's upstream NAV is 32% ahead of full corporate stock price

It is worth highlighting that our upstream E&P valuation of €17.01 on its own is 33% ahead of Galp's full company stock price on 13 August (€12.79). Indeed the NAV of Galp's upstream Brazil portfolio at €15.46 is also 20.9% ahead of Galp's current stock price on a standalone basis.

By implication, the market is either:

- Significantly undervaluing the impact of Brazil for Galp (note that we provide sensitivity analysis later in this report) or
- Prepared to fully discount the rest of Galp's business value ex-Brazil.

Either way, there is unquestionably significant value headroom at Galp, primarily due to its upstream Brazil exposure. Galp's leverage to this resource base means upside could be realised far more quickly than the equity market currently expects.

R&M

The R&M business has been valued using a segment DCF model based on our existing corporate DCF model. The valuation for this business is around €6.67bn. In total, the R&M business accounts for around 29% of our corporate valuation.

Gas & Power

The G&P business has been valued using a segment DCF model based on our existing corporate DCF model. The valuation for this business is around €3.13bn. In total, the G&P business accounts for around 16% of our corporate valuation.

International gas pipelines

Galp's Associate interests largely comprise its international gas pipeline businesses. These assets are forecast to deliver net income of around €40m in 2008F. We have valued this business with reference to the average multiple of European utility companies of around 15x. This implies a valuation of around €600m for Galp's international gas pipeline business. This valuation is roughly consistent with an annuity type calculation assuming a 10% cost of capital and long-term growth of 3% per annum.

Relative valuation

Rapid growth make Galp logically (deservedly) expensive

The dramatic improvement in Galp's medium-/long-term growth prospects inevitably leaves it looking expensive on the basis of current multiples:

- PER 2009F: 17.2x versus pan-European oils sector 6.9x, a 149% premium
- EV/DACF 2009F: 15.0x versus pan-European oils sector 5,9x, a 154% premium
- EV/EBITDA 2009F: 10.6x versus pan-European oils sector 3.8x, a 179% premium

These premium multiples would normally be regarded as a reason for caution. However, Galp's high rating highlights one of the shortcomings of using earnings and cash flow multiples to value a company with a material and significant growth potential. Even our earnings estimates for 2012F do not fully reflect the growth upside that Galp will enjoy as a result of the Tupi and Jupiter discoveries, for example. Thus, we consider that near-term earnings and cash flow multiples are of little use when valuing Galp today. Moreover, there is little compelling argument to support Galp based on near-term profitability or medium-term dividend or cash yield:

- RoACE (gross debt) 2009F: 14.3% versus peers' 22.2%
- Prospective dividend yield 2009F: 2.9% versus peers' 5.1%
- Cash return 2009F: 2.9% versus sector 8.5%
- FCF yield 2009F: -6.2% versus peers 9.2%

Current earnings do not reflect future growth

Galp's dividend yield and cash returns are likely to remain well below the sector average. The company is unlikely to have any problems funding its share of Tupi's development costs out of its own resources, while at the same time maintaining its financial flexibility. However, we do not expect any step-change in Galp's dividend payout and we do not expect any substantial share buybacks.

Valuation sensitivity

DCF

+US$10/bbl pa implies +€3 for DCF fair value

We raise our DCF fair value from €19.58 to €22.59 for a US$10/bbl per annum increase in our oil price assumption. It falls to €16.58 for a US$10/bbl decrease. This c.±€3 shift is a 15.4% change. This compares to a sector shift of around 16.6% (high 26% StatoilHydro, low TOTAL 8.8%).

If we change our refining margin assumptions by ±US$1/bbl per annum we see a shift of around c.±17% in our DCF fair value (up to €22.90 or down to €16.24). This compares to a sector shift of around 6.4% (high 17% Galp, low TOTAL 1.1%).

A shift in our EUR/USD assumption of 0.1 per annum implies a change in our DCF fair value for Galp of ±9% (down to €17.88 or up to €21.54).

SOTP

Perhaps more importantly, our SOTP valuation remains highly sensitive to the assumed unit NPV/boe valuation for Galp's upstream asset base, particularly in Brazil and also the 'risking' of reserves there (essentially our assumptions regarding Galp's net reserve volumes from its primarily undeveloped resource base).

±50% shift in net reserves implies ±30% shift in SOTP value

Without changing our assumptions for the rest of Galp's businesses, a ±50% shift in either our net reserve or base unit valuation assumptions for Galp's upstream assets in Angola and Brazil implies a ±30% shift in SOTP valuation:

Fig 3 Galp Energia - Sum of the parts valuation

	(US$m)	(€m)	Base (€/share)	Sensitivity -50% (€/share)	Sensitivity +50% (€/share)
Angola	1,953	1,286	1.55	0.78	2.33
Brazil	19,470	12,822	15.46	7.73	23.19
Total E&P	**21,423**	**14,108**	**17.01**	**8.51**	**25.52**
R&M	10,121	6,665	8.04		
G&P	3,937	2,593	3.13		
International Pipelines	911	600	0.72		
Net debt	(1,115)	(734)	(0.89)		
Net asset value	**35,278**	**23,232**	**28.02**	**19.51**	**36.52**
(%)				**-30.3**	**+30.3**

Assumes EUR/US$ exchange rate US$1.52 = €1

Source: ING estimates

Even with 50% less resource, our SOTP implies 52% headroom for valuation

Assuming 50% less resource for Galp in our valuation (across the board in Angola and Brazil) implies a divisional valuation of €8.51, equivalent to 44% of Galp's overall net asset value and around 66% of today's market value for the whole of Galp (11 August 2008). Our overall SOTP valuation would be 52% ahead of Galp's stock price.

Assuming 50% more resource for Galp in our valuation implies a divisional valuation of €25.52, equivalent to 70% of Galp's overall net asset value. This divisional valuation is also around 2x today's market value for the whole of Galp. Our total SOTP valuation would be 2.8x today's stock price for Galp: significant headroom indeed.

For completeness, a shift in refining margin assumptions of ±US$1/bbl per annum implies a shift of around +€1.56 in our SOTP valuation, or a ±5.6% change (down to €26.46 or up to €29.58).

We provide more detail on our divisional valuation assumptions (including asset-by-asset reserve assumptions for Galp's upstream business) in the 'Company Overview' section later in this report.

Company overview

Downstream business dominates near-term strategy

Galp is the incumbent player in the Portuguese gas market and a key power player across Iberia. That said, based on current earnings, it is primarily a downstream refining and marketing company. This is likely to remain the case through 2012F, with near-term capex focused on improving efficiency downstream, and on conserving value in gas and power as these markets liberalise in Portugal and across Iberia.

While there is potential value accretion from Galp's downstream strategy, we do not consider this to be a reason to invest in Galp on a standalone basis.

Brazil could be truly transformational

After 2010F we expect the majority of the uplift in Galp's earnings growth to be generated by its international upstream business, which is focused primarily in Angola (4 out of 36 upstream projects) and Brazil (20 out of 36 upstream projects).

The group's exposure to world-scale deepwater exploration success and resource upside in Brazil has the potential to be truly transformational for Galp.

Note that Galp's exposure to Brazil is not unique in the pan-European oils peer group. Indeed BG Group (HOLD; 1071p; TP 1237p) and Repsol-YPF (HOLD; €20.5; TP €21.9) are also likely to see support from their notable exposure there (relative to their size) and the NAV upside that the resource base potentially offers. In the pan-European oils peer group, RD Shell (BUY; €22.7/1765p; TP €25.8/2052p) also has a key interest in the prospective pre-salt play in the Santos Basin offshore Brazil too.

Brazil upside potential: supports a BUY rating on its own

However, Galp's net exposure offshore Brazil is considered to be of a higher value than its current corporate market capitalisation. Consequently, the stock is by far the most leveraged to the region and the resource upside located there. Brazil resource and growth upside potential for Galp is the key parameter underpinning our **BUY** rating.

Company structure

Despite the potential of Brazil, we still need to understand Galp as it is today to better know the outlook for base earnings and cash flow to 2012F at least.

Galp Energia is organised into four key business units: Exploration & Production (E&P), Refining & Marketing (R&M), Gas & Power (G&P) and Other. The split of operating income in 2007 is shown in Figure 4.

Galp: primarily a downstream company today

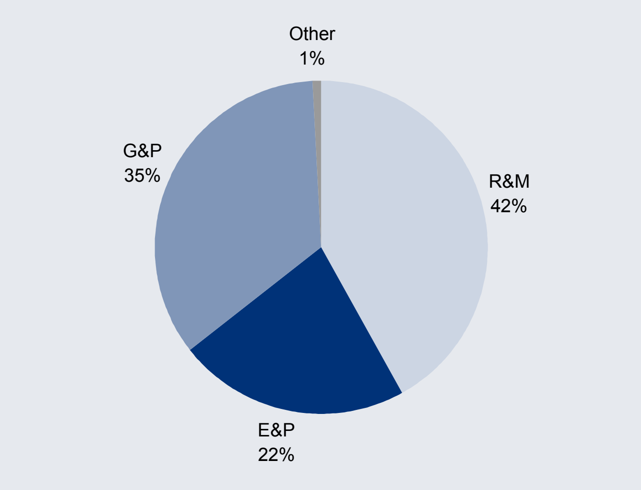
Galp is primarily a downstream company at present. The dominance of the R&M division is even more apparent if we look at the distribution of assets within the business (Figure 5).

Looking ahead we expect Galp to become a more balanced 'three-legged stool', as all three of the key businesses generate attractive growth.

That said, the R&M business is likely to remain Galp's most important in the period to 2012F, as a large part of the group's current capex is devoted to improving the efficiency of its refining business.

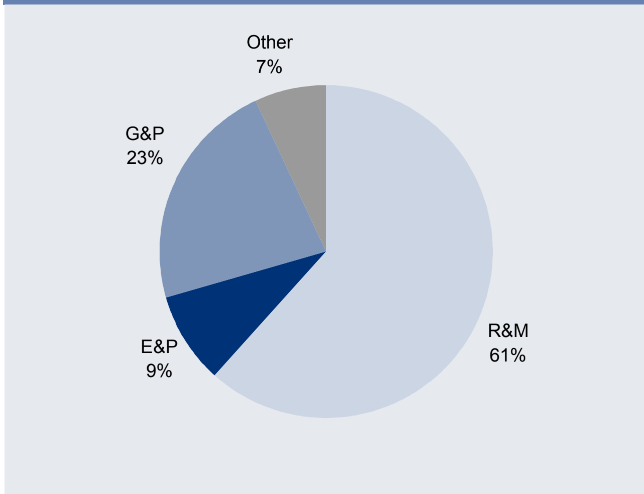
After 2012F, we expect most earnings growth to be generated by the E&P business, following the group's major exploration successes in Brazil.

Fig 4 Galp operating profit 2007 (€608m)



Source: Company data, ING estimates

Fig 5 Galp business assets 2007 (€6.566bn)



Source: Company data, ING estimates

Exploration and production

Galp's strategy for its Exploration and Production (E&P) business has been focused on the acquisition of minority stakes in blocks with high potential, especially in Portuguese-speaking countries around the world, in particular, Angola and Brazil.

The company has been involved in upstream projects in Angola since 1982 and in Brazil since 1999. Its upstream portfolio consists of interests in four projects in Angola and 20 projects in Brazil, 17 offshore and 3 onshore.

Reserves and production

Proved reserves 23mboe

At the end of 2007, Galp's net entitlement share of proved reserves was 23m barrels (mbbl) of oil, which were located entirely within the Block 14 licence in Angola.

Its proved reserves were down from 36m barrels of oil equivalent (mboe) at the end of 2006 due to the impact of production and higher oil prices, which reduced the company's entitlement to cost and profit oil.

Probable reserves 8mboe

In addition, Galp has probable reserves of 8m boe. This is completely oil and is also associated with Block 14 in Angola.

Contingent resources associated with Blocks 14, 14K and 32 in Angola are estimated at around 242m boe at end 2007.

Tupi adds 900mboe net…

Contingent resources associated with the Tupi discovery (including Tupi Sul) add a further 900m boe to the total (ING estimates).

Thus, Galp has a total potential resource base today of 1,173m boe.

… and other Brazil pre-salt takes Galp's total resource base to over 3.7bn boe

That said, this estimate excludes the Jupiter discovery offshore Brazil, which could add a further 1.30m boe net resource. Moreover, the recently announced Iara discovery might hold some 2bn boe gross (200mboe net) resource.

Adding in Galp's potential share of the prospectively massive Carioca-Sugar Loaf area (see map and further detail later) to the south west of Tupi (potentially 18.7bn boe gross, 1.05bn boe net resource), Galp might have a more realistic total resource base of 3.7bn boe: truly sizeable relative to its current reserve base and size.

Reserve life of only five years…

Galp's entitlement oil and gas production was 12.5k boe/d mboe in 2007 (4.56m boe). In relation to proved reserves, this implies a reserve life of only around five years.

This reserve life figure is low in relation to the peer group. Normally a reserve life of less than 10 years is regarded as potentially problematic, implying as it could that the company is likely to see weak volume growth in the medium term.

…resource life of over 800 years

However, given the company's sizeable contingent reserves, which in time will feed through into proven reserves, it is our view that Galp's medium- and long-term growth prospects are among the best of the integrated oil majors. Galp's resource life of over 800 years compares to the best European large cap majors, with 40-50 years.

Angola

Galp has a 9% interest in Block 14 in Angola.

Block 14: Galp's only production currently

This is Galp's only producing asset at present. Five development areas on Block 14 have been declared to date: Kuito; Benguela, Belize, Lobito and Tomboco (BBLT); Tombua Landana (TL); Negage; and Gabela. The only fields currently in production are Kuito and BBLT. The TL fields are under development. In 2007, Galp's net entitlement share of production from Block 14 was 4.56 mboe (12.5kboe/d).

In addition, Galp has a 4.5% interest in Block 14K, which contains the Lianzi discovery, and a 5% interest in Block 32.

Angola has recently opted to join OPEC. Since the start of 2008, Angola has operated under a production quota of 1.9m b/d. It is possible that Galp's Angolan production could be restricted if the government decides to adhere to its quota.

Block 14 - Kuito

The Chevron-operated Kuito field is located on Block 14, where Galp has a 9% interest. First production from the central part of the field was achieved in late 1999. Peak production of 66k b/d was attained in 2002. The East Kuito reservoir was brought on stream in May 2003.

The Kuito Deep accumulation is scheduled to come on stream in mid-2008. A development drilling programme in the central part of the field is planned for 2008 and 2009. The field's remaining recoverable reserves are around 60m boe.

Block 14 - Benguela, Belize, Lobito and Tomboco (BBLT)

BBLT – key asset

The BBLT fields are also located on Block 14. The development of the four fields has been split into two phases. The first phase involved construction of the Benguela-Belize drilling and production platform, and development of the Belize field. First production from the Belize field was achieved in January 2006.

Phase two includes the development of the Lobito, Tomboco and Benguela fields, through the Benguela-Belize platform. Production from all these fields has now commenced. Development drilling on the Lobito, Tomboco and Benguela fields is expected to continue through 2008 and 2009. Peak production of around 200,000 b/d is expected in 2009. However, production is expected to decline sharply thereafter. Total reserves of the development are estimated at 500m boe.

Block 14 - Tombua Landana (TL)

The Landana field was discovered in 1997, while the Tombua field was discovered in 2001 and is located approximately 6km south west of Landana. The Landana North field was discovered in 2005.

The Landana North field was brought on stream in June 2006. It is being produced via a single well tied-back to the BBLT development. The Tombua and Landana fields are being developed. As in the case of the BBLT fields, a Compliant Piled Tower (CPT) with a capacity of 100,000 b/d will be used. The development was sanctioned in June 2006 and we assume that the project will commence production in 2010. Recoverable reserves are estimated at around 300m boe.

Block 14 - Lucapa

The Lucapa discovery is being appraised. It is likely to be developed via subsea tie backs to a new FPSO. We are assuming that the field will be brought on stream in 2014 and that it will peak at 100,000 b/d in 2016.

The Gabela field (see below), which lies 25km to the east, could be tied back to the Lucapa development. Reserves are estimated at 250m boe.

Block 14 - Malange

The Malange field was discovered in February 2007. Chevron, the operator, plans to appraise the field in 2009. It seems likely that the field will be developed as a subsea tie back to the BBLT development. We have assumed that the field will commence production in 2014. Peak production is expected to be around 25,000 b/d. Reserves are estimated at 50m boe.

Block 14 - Negage

The Negage field is situated in the south west corner of the block, close to ExxonMobil's Xikomba field in Block 15. It is likely to be developed using a leased FPSO. We expect the field to commence production in 2012, with peak production of around 60,000 b/d in the following year. Reserves are estimated at 150m boe.

Block 14K - Lianzi

The Lianzi discovery is located in Block 14K, which is a joint development area established by the governments of Angola and Congo in order to settle a border dispute. Chevron is operator of the block and is fast-tracking the development of the Lianzi discovery. Production is expected to commence in 2012. It seems likely that the discovery will be tied back to the BBLT facilities. Reserves are estimated at around 60m boe. Peak production of around 40,000 b/d is expected to be achieved in 2013.

Block 32

Galp has a 5% interest in ultra-deep water Block 32. To date, there have been around thirteen discoveries on the block, including Alho, Canela, Caril, Cola, Colorau, Cominhos, Gengibre, Gindungo, Louro, Manjericao, Mostarda and Salsa.

Block 32: significant resources to be developed

Total reserves on the block are estimated at around 1.0bn boe (source: ExxonMobil). Production from the block is unlikely to commence before 2015. Plateau production from the block could be in the order of 300,000 b/d after 2016.

TOTAL, the operator, envisages two separate developments on the block; Block 32 Central and Block 32 South East.

The Block 32 Central development will include five fields: Caril, Cominhos, Cola, Colorau and Manjericao, tied back to an FPSO. The Alho field could be developed at a later stage. TOTAL has obtained a development licence for the Cola field, and is expected to submit applications for further development licences in 2008.

The Block 32 Southeast development will include five fields; Canela, Gengibre, Gindungo, Louro and Mostarda, tied back to an FPSO.

The Salsa field could also be developed at a later stage. TOTAL has obtained development licences for the Canela, Gengibre and Gindungo fields, and will submit applications for further development licences in 2008.

Angola – Summary valuation

Galp itself estimates its total contingent resource base in Angola at around 273m oe. We have used this figure as the basis for our valuation. This figure implies that Galp has exposure to gross resources of around 3.7bn barrels in Angola.

Angola worth US$2.0bn for Galp

Using industry benchmarks, we value Galp's Angolan interest at nearly US$2.0bn. This implies an average valuation of around US$7.15/barrel. This partly reflects the fact that a significant proportion of these resources are located on Block 32 and, as yet, is undeveloped. The developed reserves in Block 14 clearly carry a higher valuation.

Fig 6 Galp's Angolan asset base – NAV calculation and sensitivity

Angola	Working int (%)	Gross reserves (mboe)	Net reserves (mboe)	Net value (US$m)	Base value (US$/boe)	Sensitivity -50% (US$m)	Sensitivity +50% (US$m)
Kuito	9.0	60	5	54	10.0	27.0	81.0
BBLT	9.0	500	45	450	10.0	225.0	675.0
TL	9.0	300	27	270	10.0	135.0	405.0
Lucapa	9.0	250	23	135	6.0	67.5	202.5
Malange	9.0	50	5	27	6.0	13.5	40.5
Negage	9.0	150	14	81	6.0	40.5	121.5
Block 14 (total)	**9.0**	**1,310**	**118**	**1,017**	**8.63**	**508.5**	**1,525.5**
Block 14K (Lianzi)	4.5	60	3	22	8.0	10.8	32.4
Block 32	5.0	1,000	50	300	6.0	150.0	450.0
Contingent Reserves		1,365	102	614	6.0	307.2	921.6
Total Angola	**7.3**	**3,735**	**273**	**1,953**	**7.15**	**976.5**	**2,929.5**

Source: ING estimates

Brazil

Since 1999, Galp has acquired a sizeable portfolio of exploration offshore Brazil

Since 1999, Galp has been involved in several onshore and offshore exploration projects in Brazil. Since that time, the Brazilian government has offered licences for oil and gas exploration in several blocks in successive bidding rounds. Galp has participated in four of these licensing rounds and has accumulated a sizeable portfolio of exploration blocks, all of them in partnership with Petrobrás, the Brazilian state oil company. Most of Galp's exploration success in Brazil has been offshore in the Santos Basin.

Galp has interests in four offshore blocks: BM-S-8 (14%), BM-S-11 (10%), BM-S-21 (20%) and BM-S-24 (20%). Key assets for Galp include the giant Tupi oil discovery, the significant Jupiter gas/condensate find, the Iara oil discovery and also the Bem-te-vi and Caramba oil discoveries, which may form part of the potentially super-giant Carioca-Sugarloaf accumulation.

Galp also has other contingent resources offshore and onshore assets.

Pre-salt cluster of the Santos Basin offshore Brazil

The map in Figure 7 shows the key accumulations in this key region for Galp Energia.

Also, the table in Figure 8 shows our assumptions for the gross reserves and equity stakes by discovery/block and also the implicit net reserves by company exposed to this resource base.

Having risked the likelihood of resources becoming reserves, and using our base-case unit NPV assumptions, we can estimate the net value of this region by company.

Galp has potentially 3.45bn boe reserves in pre-salt Santos Basin…

Based on our calculations, Galp has potentially a 9.4% exposure to the total resource base estimated to exist in the pre-salt cluster of the Santos Basin. This equates to around 3.45bn boe reserves.

… and this exposure is potentially worth US$17.8bn

Moreovoer our estimated NAV for this asset base is c.US$17.8bn, which compares to Galp's market cap at US$15.0bn. To put it another way, our estimate for the value of Galp's interests in the pre-salt cluster of the Santo Basin is 118.8% of Galp's current corporate market valuation: truly significant.

For comparison, Petrobras' exposure to pre-salt resources in the Santos Basin is potentially as large as 21.29bn boe, and estimated to be worth c.US$99.4bn, which is equivalent to around 48% of its current market cap.

Furthermore, BG Group also has a significant exposure relative to its size. We see its c.4.76bn boe resource exposure as potentially worth US$21.05bn, which is equivalent to around 31.1% of BG Group's current market cap.

Similarly, Repsol has a resource base estimated at 1.54bn boe worth perhaps some US$3.6bn (9.5% of its current market cap).

Galp is by far the most leveraged to value upside from this region

While not denying the potential resource and value upside for other players in this important hydrocarbon play, based on our analysis, we believe that Galp Energia is by far the most leveraged to this asset base and has the most potential to see value upside from the region.

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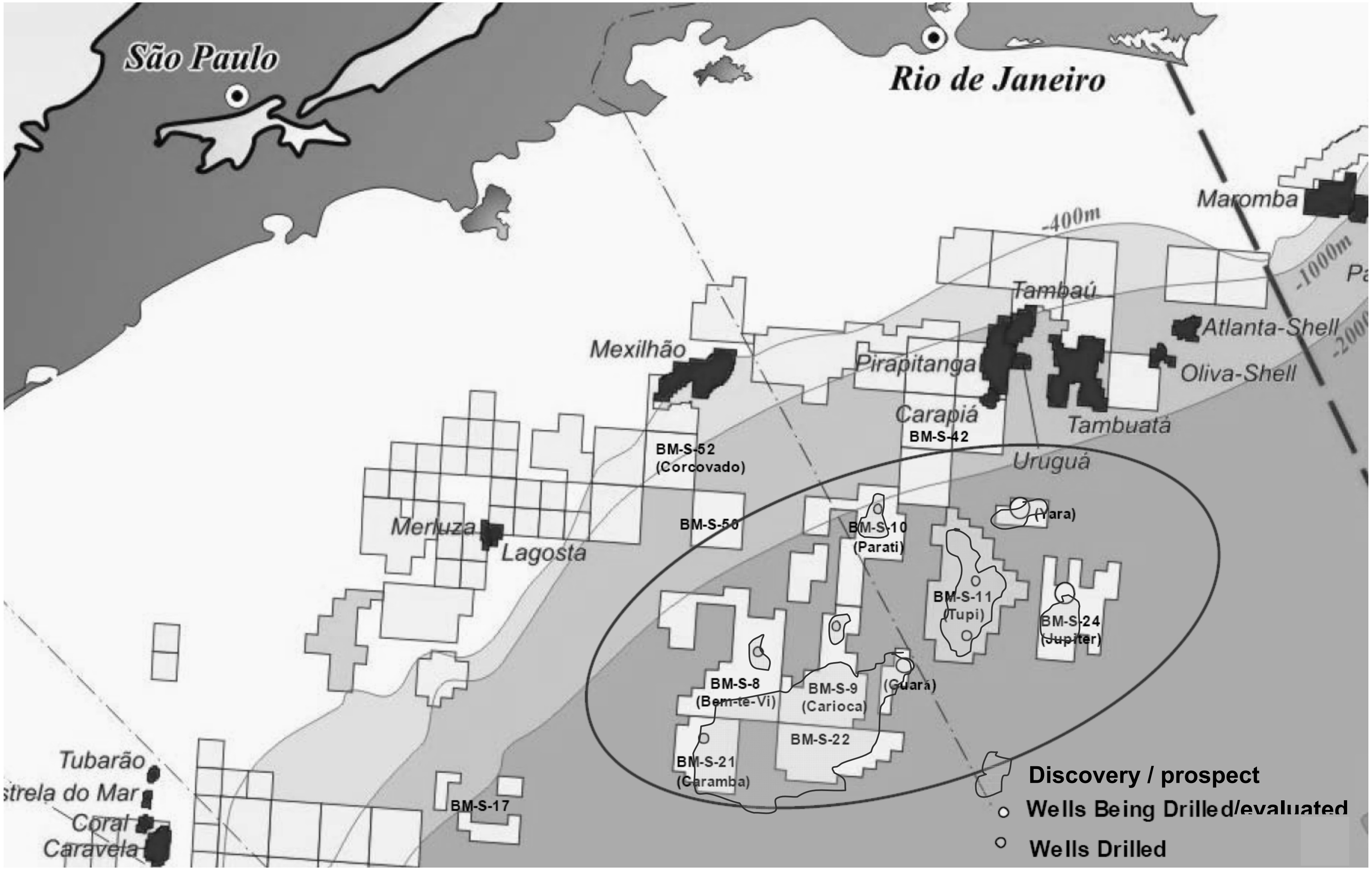
Fig 7 Map of pre-salt cluster – Santos Basin, offshore Brazil



Source: Petrobras; ING estimates

Fig 8 Brazil pre-salt cluster of the Santos Basin – reserves/unitisation data

Block	Pre-salt structure Discovery/ prospect*	Gross mboe	Oil (%)	Equity stake (%)								Net reserves (mboe)								Risk factor	NPV	NPV (risked)	Net asset value (US$m)							
				PBR	BG	REP	Galp	RDS	XOM	Hess	Partx	PBR	BG	REP	Galp	RDS	XOM	Hess	Partx		US$/bbl	US$/bbl	PBR	BG	REP	Galp	RDS	XOM	Hess	Partx
BM-S-9	Carioca	550	100	45.0	30.0	25.0						247.5	165	137.5	0	0	0	0	0	1	6.00	6.00	1,485	990	825	0	0	0	0	0
BM-S-9	Guara	600	100	45.0	30.0	25.0						270	180	150	0	0	0	0	0	1	6.00	6.00	1,620	1,080	900	0	0	0	0	0
BM-S-9	Iguacu Complex*	5,000	100	45.0	30.0	25.0						2,250	1,500	1,250	0	0	0	0	0	0.25	6.00	1.50	3,375	2,250	1,875	0	0	0	0	0
BM-S-8	Bem-te-vi	2,500	100	66.0			14.0	20.0				1,650	0	0	350	500	0	0	0	1	6.00	6.00	9,900	0	0	2,100	3,000	0	0	0
BM-S-21	Caramba	3,500	100	80.0			20.0					2,800	0	0	700	0	0	0	0	1	6.00	6.00	16,800	0	0	4,200	0	0	0	0
BM-S-22	Pao-de-Acucar*	6,500	80	20.0					40.0	40.0		1,300	0	0	0	0	2,600	2,600	0	0.25	6.00	1.50	1,950	0	0	0	0	3,900	3,900	0
Unitised	Carioca-Sugarloaf	18,650	66.2	45.7	9.9	8.2	5.6	2.7	13.9	13.9	0.0	8,518	1,845	1,538	1,050	500	2,600	2,600	0				35,130	4,320	3,600	6,300	3,000	3,900	3,900	0
BM-S-11	Tupi	6,500	85	65.0	25.0		10.0					4,225	1,625	0	650	0	0	0	0	1	6.00	6.00	25,350	9,750	0	3,900	0	0	0	0
BM-S-11	Tupi Sul	1,500	85	65.0	25.0		10.0					975	375	0	150	0	0	0	0	1	6.00	6.00	5,850	2,250	0	900	0	0	0	0
BM-S-11	Iracema (Tupi N)*	1,000	85	65.0	25.0		10.0					650	250	0	100	0	0	0	0	0.50	6.00	3.00	1,950	750	0	300	0	0	0	0
Unitised	Tupi	9,000	85.0	65.0	25.0	0.0	10.0	0.0	0.0	0.0	0.0	5,850	2,250	0	900	0	0	0	0				33,150	12,750	0	5,100	0	0	0	0
BM-S-11	Iara	2,000	100	65.0	25.0		10.0					1,300	500	0	200	0	0	0	0	1	6.00	6.00	7,800	3,000	0	1,200	0	0	0	0
BM-S-10	Parati	650	100	65.0	25.0						10.0	422.5	162.5	0	0	0	0	0	65	1	6.00	6.00	2,535	975	0	0	0	0	0	390
BM-S-24	Jupiter	6,500	20	80.0			20.0					5,200	0	0	1,300	0	0	0	0	1	4.00	4.00	20,800	0	0	5,200	0	0	0	0
Overall share		36,800	65.1	57.9	12.9	4.2	9.4	1.4	7.1	7.1	0.2	21,290	4,758	1,538	3,450	500	2,600	2,600	65				99,415	21,045	3,600	17,800	3,000	3,900	3,900	390
Mkt cap	(US$m 13-08-08)																						206,479	67,570	38,023	14,977	213,070	413,026	31,190	
NAV/mkt cap (%)																							48.1	31.1	9.5	118.8	1.4	0.9	12.5	

* Prospect (undrilled/untested)

Source: Company data, ING estimates

BM-S-8/21: Carioca-Sugarloaf (Bem-te-vi, Caramba)

While we outline the background for Galp's interests in individual discoveries in the region and net potential by block, it is perhaps worth looking first at the potential super-giant Carioca-Sugarloaf accumulation crossing BM-S-8, BM-S-9, BM-S-22 & BM-S-21.

Carioca-Sugar Loaf could hold 33bn boe hydrocarbons: with 18.65bn boe

Galp has a stake in the Bem-te-vi discovery in BM-S-8 and also the Caramba find located in BM-S-21. These blocks are adjacent to Petrobrás' Carioca and Guara discoveries and the Iguacu Complex prospect located in BM-S-9 and the as-yet-untested potential resources in BM-S-22 (Pao-de-Acucar). Combined, the discoveries and prospects in these four blocks could form one massive oil and gas field.

Galp could have 1.05bn boe net recoverable reserves in Carioca-Sugarloaf

While subject to further drilling an appraisal, and potentially significant unitisation negotiations, initial estimates of hydrocarbons in place for the whole of the Carioca-Sugarloaf accumulation are for some 33bn boe of resource.

Recoverable reserves for Carioca-Sugarloaf could total 13-3bn boe.

We assume recoverable reserves of 18.65bn boe.

Galp's interest in BM-S-8 and BM-S-9 could imply 1.05bn boe net reserves.

BM-S-8 (Bem-te-vi discovery)

Galp has a 14% interest in BM-S-8. In May 2008, the partners in BM-S-8 announced that the 1-SPS-52A (Bem-te-vi) well had proved the existence of oil in the pre-salt reservoirs of the Santos Basin. Preliminary tests indicated an API gravity of 25-28, which is similar to other oil identified in the pre-salt of Santos Basin. The exploration well was located 250km from the coast of the state of São Paulo in a water depth of 2,139 metres. The final well's depth was 6,773 metres.

The contractor group is preparing a Discovery Assessment Plan that will be sent to ANP, in accordance with the terms of the Concession Agreement. The contractor group for BM-S-8 also includes Petrobrás (operator 66%) and RD Shell (20%).

We assume gross reserves of 2.50bn boe for Bem-te-vi and Block BM-S-8 (net 350m boe for Galp).

Bem-te-vi: part of Carioca- Sugarloaf?

Bem-te-vi may represent some 13.4% of total Carioca-Sugarloaf reserves if the larger accumulation is shown to be continuous across BM-S-8, BM-S-9, BM-S-21, BM-S-22.

BM-S-21 (Caramba discovery)

This block contains the Caramba discovery (Galp 20%), which was announced in December 2007. The well was not tested due to operational and logistic issues. This is quite common in this area because most wells have come close to prognosis and Petrobrás is keen to drill as many wells as possible ahead of impending relinquishment requirements.

Galp's partner on BM-S-21 is Petrobrás (80%). Plans to evaluate this discovery have already been approved by the ANP.

We assume gross reserves of 3.50bn boe for Caramba and Block BM-S-21 (net 700mboe for Galp).

Caramba: part of Carioca- Sugarloaf?

Caramba may represent some 18.8% of total Carioca-Sugarloaf reserves if the larger accumulation is shown to be continuous across BM-S-8, BM-S-9, BM-S-21, BM-S-22.

Other Carioca-Sugarloaf discoveries/prospects

While Galp does not have a stake in the BM-S-9 block and Carioca and Guara discoveries, for completeness we include background detail below for these resources that may well form part of the larger Carioca-Sugarloaf accumulation in time.

Carioca: part of Carioca-Sugarloaf?

The Carioca discovery well flowed 2,900 barrels of oil and 57,000 cubic metres of gas per day, although these flow rates were constrained by test equipment. We assume 550mboe gross reserves associated with this find.

Guara: part of Carioca-Sugarloaf?

The Guara discovery well was announced in June 2008. It found high quality oil (28 degree API) at a depth of 5,000 metres. We assume 600m boe gross reserves associated with this accumulation.

Iguacu Complex: potentially massive

The Iguacu Complex prospect is assumed to lie chiefly in BM-S-9. We have assumed some 5bn boe reserves for this accumulation. Exploration drilling is expected end 2008 with results possible in Q109. Given the structure is higher than surrounding finds, a fair likelihood of success is expected. However, for valuation purposes, we would suggest to risk our reserves figure at 25% in any NAV calculation.

Pao-de-Acucar : potentially massive too

Galp does not have an interest in the BM-S-22 block. However, Pao-de-Acucar (Sugarloaf) is also an un-drilled prospect thought to lie chiefly in this block and may well form part of the larger Carioca-Sugarloaf accumulation too. We have assumed some 6.5bn boe reserves for this accumulation. Exploration drilling is expected end 2008 with results possible in 1Q09. Given the structure is higher than surrounding finds, a fair likelihood of success is expected. However, for valuation purposes, we would suggest to risk our reserves figure at 25% in any NAV calculation.

BM-S-11: Tupi and Iara

The BM-S-11 block contains the world-scale Tupi and Tupi Sul discoveries, the Iracema (Tupi North) prospect, and also the recently announced Iara find. Iara is considered to be a separate accumulation from the giant Tupi resource.

Tupi : key for Galp

The valuation of the giant Tupi oil/gas discovery in particular is key to the valuation of Galp's E&P assets and indeed the whole company.

Tupi

In November 2007, Petrobrás (the operator) stated that Tupi's recoverable oil and gas reserves were estimated to be between 5 billion and 8 billion boe. It is also estimated that around 85% of these reserves are oil and around 15% natural gas. Petrobrás' management has also highlighted the possibility that reserves could eventually prove to be higher than this. In February 2008, partner BG Group indicated that resources in place for Tupi could range between 12 and 30bn boe.

Tupi: 900mboe net for Galp

ING assumes recoverable reserves of 9.0bn boe for Tupi (including Tupi Sul and Iracema) and an 85% oil split. If resources are assumed to total 30bn boe in the Tupi accumulation, our assumed reserve figure equates to around a 30% recovery factor, in line with Petrobras' guidance of 27%. This implies net 900mboe reserves for Galp.

Petrobrás plans to start a long-term production test on the Tupi field in March 2009. The test will last two to three months, during which time the company will produce around 20 kb/d from three wells. The company already has a platform available for a long-term test, and it is already searching for a rig for a pilot production phase of 100kb/d of oil and 4m cubic metres of gas per day starting in December 2010.

Petrobrás has said that Tupi could eventually reach an output peak of up to 1m b/d by 2018. However, peak production may not be reached until after 2020.

The company has also contracted three new exploration rigs for ultra-deep waters of more than 3,000 metres. Two of them will be available for the Tupi field as of 2009.

It is worth highlighting that despite its size, Tupi is unlikely to be an easy asset to develop. The Tupi field lies in the Santos Basin's pre-salt area. Oil found there is at a water depth of more than 2,000 metres, and a further 5,000 metres below sand, rocks and salt, making production challenging and expensive.

Tupi valuation

Galp valuation highly sensitive to Tupi

Our first inclination was to value Tupi by using the Roncador field as a guide. Roncador is one of the largest fields discovered offshore Brazil, although it is far smaller than Tupi. Roncador contains around 2bn barrels of oil and 1TCF of natural gas. We estimate that Roncador is worth around US$9 per barrel. However, further analysis has led us to the conclusion that Tupi's unit valuation is lower than that of Roncador. This reflects the fact that:

- Development costs at Tupi are likely to be higher than at Roncador;
- Production from Tupi is likely to be spread over a much longer time period, so the discounting effect will reduce the unit (present) value.

We now believe that Tupi's reserves are worth around US$6/boe. If we assume Tupi has recoverable reserves of 9.0bn barrels, Galp's 10% interest in Tupi is worth around US$5.1bn. Nevertheless, we recognise that this valuation is tentative given the early stage in the field's appraisal. Thus, it is prudent to consider some of the upside potential and downside risks:

Tupi – upside potential:

Galp's management has stated that the consortium's top-end estimate of 30bn barrels of oil in place should not be regarded as the maximum possible;

Petrobras' implied assumption that 27% of the oil in place will be recoverable is also potentially conservative if enhanced oil recovery techniques are used.

Tupi - downside risks:

Based on the scale of the discovery, it will prove tempting for the Brazilian government to seek a higher proportion of the economic rent from Tupi. This may render our US$6/barrel valuation to be overly optimistic;

Given its scale and complexity, the risks are that it will take longer than planned to develop and that it will be more costly than expected to develop (witness Kashagan). The need to build up to 10 Floating Production, Storage and Offloading vessels (FPSOs) could put pressure on the capacity of the oil services sector and upward pressure on costs. This again means that our US$6/barrel valuation may prove to be optimistic.

While there are significant downside risks, we believe that our valuation is a realistic balance of upside potential and downside risks, particularly given the potential for further resource upside during the appraisal process.

BM-S-11 - Iara

The BM-S-11 partners announced the Iara discovery in August 2008. The exploration well discovered 30 degree API light crude at its first objective and is currently still being drilled to evaluate deeper horizons. We assume recoverable reserves of 2.0bn boe in the Iara accumulations. Galp's stake implies a net 200m boe reserves.

BM-S-24: Jupiter

Significant gas/condensate find

Block BM-S-24 contains the important Jupiter discovery (Galp 20%). Like Tupi, the Jupiter field is key to the valuation of Galp.

The Jupiter discovery is believed to contain large natural gas and condensate reserves. The well was drilled to a total depth of 5,252 metres, 290km offshore Brazil and 37km east of the Tupi area. The well has been drilled to a water depth of 2,187 metres. A side-track on the original discovery well is currently being drilled. At the time of writing, all the indications from the well are positive. Petrobrás' estimate is that the hydrocarbon-bearing rock is more than 120 metres thick. The area dimensions of the reservoir are presumed to be similar in size to those of the Tupi discovery.

Lower unit value than an oil field (albeit still significant)

The Jupiter field is thought to be similar in size to the initial Tupi find (pre-Tupi Sul and excluding Iracema) ie, between 5 and 8bn barrels. However, Jupiter is a gas and condensate find, which would imply reserves of between 30-48 TCF. As a gas asset it is likely to have a lower unit value than Tupi. This reflects three key factors:

- The gas price that the partners will receive in Brazil will likely be below oil parity,
- The development of Jupiter is likely to take place later than Tupi, and
- Jupiter is likely to be produced over a longer-term timeframe than Tupi.

We have assumed that pilot production from Jupiter starts in 2012. Jupiter is likely to be produced over a longer period than Tupi because it is doubtful that the Brazilian gas market could absorb all of Jupiter's maximum output potential in the short term. However, it is possible that part of Jupiter's production could be exported from Brazil via an LNG project, which would incur higher costs but also higher realisations. Jupiter could also attract incremental value by acting as a processing centre and providing transportation options for gas from the Tupi and other discoveries in the region too.

We assume that Jupiter has reserves of around 39 TCF, or around 6.5bn boe. Valuing these reserves at a tentative US$4/boe implies a total value of US$5.2bn net to Galp, slightly more than its stake in Tupi contributes to our SOTP valuation.

Onshore Brazil

New oil find announced 14 August

Galp's onshore Brazil operations are small in relation to its offshore potential. Most of Galp's onshore Brazilian acreage is owned 50:50 with Petrobras, with Galp the operator on much of it. Galp's 2P reserves onshore Brazil are estimated at 17m boe (net). Capex to date has totalled US$80m. This implies costs of around US$4.7/barrel, which is competitive.

Galp has made 12 discoveries onshore to date (including the oil find in Brazil's Rio Grande do Norte state announced on 14 August 2008), three of which are significant. The potential profitability of these reserves is enhanced by the fact that no new infrastructure will be needed to produce them. Galp is negotiating access to Petrobras' pipeline system and has applied for regulatory approval to develop these fields.

Brazil – Summary valuation

Our valuation of Galp's Brazilian assets is based on industry benchmarks. Figure 9 shows our key assumptions and valuations.

Brazil worth US$19.5bn for Galp

Using industry benchmarks, we value Galp's Brazilian interest at nearly US$19.5bn. This implies an average valuation of around US$5.31/bbl. This partly reflects the fact that all of these resources are as undeveloped. As a gas/condensate accumulation, the Jupiter asset carries a lower unit valuation (see discussion earlier).

Fig 9 Galp's Brazilian asset base – NAV calculation and sensitivity

Block	Discovery/prospect*	Working int (%)	Gross (mboe)	Net (mboe)	Net value (US$m)	Valuation (US$/boe)	Sensitivity -50% (US$m)	Sensitivity +50% (US$m)
BM-S-9	Carioca	-	550	-	-	-	-	-
BM-S-9	Guara	-	600	-	-	-	-	-
BM-S-9	Iguacu Complex*	-	5,000	-	-	-	-	-
BM-S-8	**Bem-te-vi**	**14.0**	**2,500**	**350**	**2,100**	**6.00**	**1,050**	**3,150**
BM-S-21	**Caramba**	**20.0**	**3,500**	**700**	**4,200**	**6.00**	**2,100**	**6,300**
BM-S-22	Pao-de-Acucar*	-	6,500	-	-	-	-	-
Unitised	**Carioca-Sugarloaf**	**5.6**	**18,650**	**1,050**	**6,300**	**6.00**	**3,150**	**9,450**
BM-S-11	Tupi	10.0	6,500	650	3,900	6.00	1,950	5,850
BM-S-11	Tupi Sul	10.0	1,500	150	900	6.00	450	1,350
BM-S-11	Iracema (Tupi N) *	10.0	1,000	100	300	3.00	150	450
Unitised	**Tupi**	**10.0**	**9,000**	**900**	**5,100**	**5.67**	**2,550**	**7,650**
BM-S-11	**Iara**	**10.0**	**2,000**	**200**	**1,200**	**6.00**	**600**	**1,800**
BM-S-24	**Jupiter**	**20.0**	**6,500**	**1,300**	**5,200**	**4.00**	**2,600**	**7,800**
BM-S-10	Parati		650	-	-	-	-	-
			36,800	3,450	17,800	5.16	8,900	26,700
	Other offshore		2,000	200	1,500	7.50	750	2,250
	Onshore		34	17	170	10.00	85	255
Total Brazil			**38,834**	**3,667**	**19,470**	**5.31**	**9,735**	**29,205**

Source: Company data, ING estimates

Venezuela

Recent innovative deal signed with PDVSA

Galp enjoys good relations with PDVSA and recently announced a wide-ranging and innovative agreement with PDVSA, the Venezuelan state oil company.

LNG

Venezuelan LNG could provide flexibility for Iberian gas position

Galp is in negotiation to take a 15% stake in two trains of a key LNG project in Venezuela, which will use source gas from the offshore Delta Caribe and Mariscal Sucre assets. Total processing capacity would be 13 bcm/year. PDVSA would have a 60% interest. The final investment decision is expected to be taken around end 2009/early 2010, with first production in 2014.

Under the terms of the agreement, Galp would have the right to acquire 15% of the LNG output, ie, 2bcm/year. The total costs of the two projects are believed to be in the vicinity of US$10bn.

The completion of this agreement could provide Galp with an additional supply source for its Iberian gas marketing business, and it would also supply an extra element of supply flexibility.

Heavy oil

Significant resource opportunity…

Galp has agreed to consider investment in Boyaca-6 Block in the west of the Orinoco heavy oil belt. Galp is still attempting to certify the reserves in Boyaca-6. Oil in place is believed to be between 60-80bn barrels, with 12-16bn barrels recoverable.

…with integrated value a possibility too

In order to exploit these reserves effectively and efficiently, Galp would also need to build an upgrader with output capacity of 250,000 b/d to convert the heavy oil to lighter 25-30 degree API crude.

Total costs are estimated to be in the vicinity of US$10bn. Galp's interest would be financed 60% debt/40% equity. Its threshold rate of return is 12-14% on total capital employed, based on the fact that Venezuela is considered by Galp to be 'low risk'[2].

Crude supply agreement

Guaranteed supply for Portuguese refining

Galp is also negotiating a crude supply agreement under which it will acquire between 2 and 4 mboe/year of Venezuelan crude at market prices. This represents around 3% of Galp's overall refinery needs.

Technical assistance

Galp is also considering a technical assistance agreement covering Wind Power, under which it will provide Venezuela with technical input and employee training.

Venezuela valuation

ING cautious of value upside currently

Galp is optimistic that Venezuela will eventually become a third leg of its E&P business. However, we are taking a cautious view on this part of the business.

The only parts of the proposed deal with PDVSA that could add significant value to Galp are the heavy oil venture and the LNG projects. Neither of these elements of the overall agreement have been finally agreed.

Moreover, following the recent tightening of fiscal terms in Venezuela and the nationalisation of Exxon's and Conoco's assets, we regard operations in Venezuela as high-risk. In our view, this reduces the value of any agreements that may be eventually established with PDVSA.

In the light of these considerations, we have not included the expected cash flows from any future Venezuelan ventures.

From a management perspective, we are surprised that Galp is considering a capital-intensive investment programme in Venezuela at a time when it has far more attractive options in which to invest in Brazil. However, the business diversification and integrated approach is in line with Galp's stated corporate strategy and as such is a position to watch.

[2] Galp 1Q08 results conference call.

E&P – Production outlook

Superior oil and gas production growth – long term

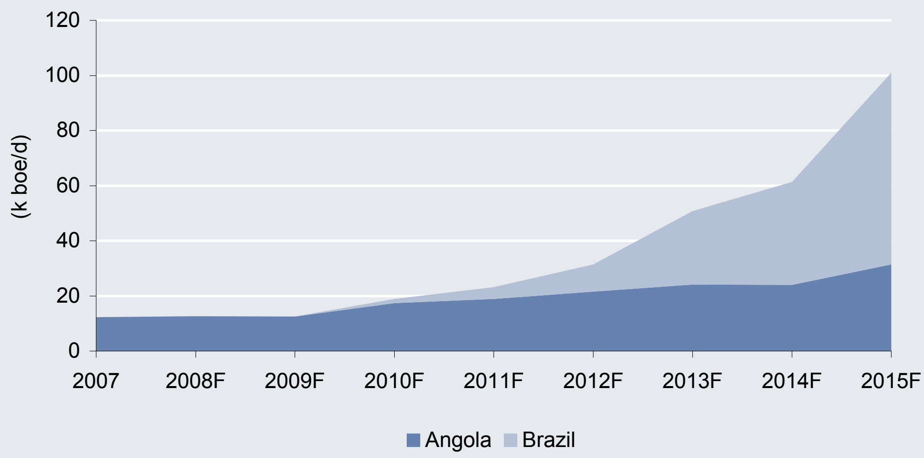
Galp is poised to deliver superior oil and gas production growth, relative to the peer group, due to its recent exploration success in Brazil. Figure 10 shows our estimates of Galp's oil and gas production between 2007 and 2015.

Oil and gas production is forecast to increase at an average annual rate of 30% over the next eight years, to reach around 100,000 b/d in 2015F.

We expect Galp to generate the fastest organic E&P volume growth of any company in the peer group over this period. For comparison, output CAGR 2007-15F from the combined pan-European oil sector will likely be only 3%.

Galp's phenomenal volume growth primarily reflects the upside in production from the Tupi and the Jupiter fields in Brazil. By 2015F we expect Brazil to contribute over two-thirds of total group production. With other material reserve positions in Brazil also, by 2020F, this region is likely to continue to dominate Galp's valuation for decades.

Fig 10 Galp – upstream production volumes to 2015F



Source: ING estimates

E&P – Summary valuation

Galp's E&P business worth US$21.4bn

We estimate that Galp has exposure to gross contingent reserves of around 42.5bn boe. Our estimates imply that Galp has net contingent reserves of around 3.94bn boe.

Galp's net reserves are split 93% Brazil (3,667m boe) and 7% Angola (273m boe).

Our analysis suggests that Galp's E&P business is worth over US$21.4bn, with 90.9% of this value located in Brazil.

Fig 11 Galp's upstream asset base – NAV calculation and sensitivity sum of the parts valuation

	(US$m)	(€m)	Base (€/share)	Sensitivity -50%	Sensitivity +50%
Angola	1,953	1,286	1.55	0.78	2.33
Brazil	19,470	12,822	15.46	7.73	23.19
Total E&P	**21,423**	**14,108**	**17.01**	**8.51**	**25.52**

Assumes EUR/US$ exchange rate US$1.52 = €1

Source: ING estimates

Refining and marketing

Key division 2007-2012F

In 2007, Galp's R&M division was the largest contributor to replacement cost operating profits, accounting for 43% of the total. Based on current earnings, Galp is still primarily a downstream refining & marketing company. This is likely to remain the case through 2012F, with near-term capex focused on improving efficiency in this division.

Galp is the only refiner and the largest marketer of petroleum products in Portugal. The company effectively manages all the crude oil and some of the refined products imports into Portugal. It also manages 80% of the storage capacity of crude oil and refined products and has an important position in Portugal's logistics infrastructure.

Galp stores and transports oil products using either its wholly owned storage assets or its affiliated logistics companies. The company owns the four largest tank farms in Portugal.

In marketing, Galp is the market leader in Portugal and has a growing presence in Spain and Africa.

Galp's market share in the Portuguese LPG market was 44% in 2007. A recent decline in LPG sales volumes in Portugal, due to the growth of natural gas sales, has been offset by volume growth in Spain.

Refining

Key position in Iberian refining

Galp operates two refineries in Portugal at Sines and Oporto. These two refineries together represent 20% of *Iberian* refining capacity. The Sines facility is a cracking refinery and Oporto is a hydro-skimming refinery.

Galp supplies 90% of Portugal's oil product demand

Its refining business is responsible for the supply of oil products to its retail, wholesale and LPG marketing divisions, competitors and foreign customers, as well as for the operation of its refining and logistics assets. Its two refineries supply nearly 90% of Portugal's petroleum product demand. The company has an extensive product slate including gasoline, diesel, jet fuel, fuel oil, LPG, bitumen & several aromatic products.

Galp is engaged in several projects to improve the energy efficiency of its refineries, including the construction of a cogeneration facility at the Sines refinery.

Guidance concerning the positive margin enhancement resulting from Galp's investment in upgrading projects was recently raised in Q208 results in early August, reflecting confidence in value accretion from its investment activities.

Sines refinery

The Sines refinery began operations in 1979. Its current distillation capacity is approximately 10.5m tonnes/year (220,000 b/d), making it Portugal's main refinery. It is also one of the largest refineries in Iberia. The refinery's coastal location and harbour facilities are convenient for both crude procurement and product exports. A major maintenance turnaround is scheduled for September/October 2008.

The current refinery configuration includes a topping unit, two vacuum distillation units, fluid catalytic cracking, a visbreaker and two diesel hydrodesulphurisation units. The Sines refinery has been exporting reformulated gasoline to the US since the early 1990s.The current Nelson complexity index of the refinery is 5.3.

Galp intends to add a new hydrocracker unit at the Sines refinery, which will convert heavier fractions of crude oil (such as vacuum residue) into light and medium distillates (such as high quality diesel). The current high crack spreads between diesel and fuel oil, leading to higher refining margins, are driving the project. Alternatively, Galp will be able to utilise heavier grades of crude oil, which trade at a significant price discount to light crude grades. This capacity will raise the refinery's Nelson complexity factor to 6.8. The new capacity is expected on stream in 2011.

Oporto refinery

The Oporto refinery complex, located on the north west coast of Portugal, began operation in 1969 and currently has an annual distillation capacity of approximately 4.4m tonnes (90,000 b/d). The refinery's current configuration includes a hydro-skimming fuel plant, an aromatics plant, a base oil plant and a lubricant blending plant. The current Nelson complexity index of the refinery is 6.9.

Planned new investment at Porto includes a vacuum distillation unit and a visbreaker. This capacity is expected on stream in 2010 and will raise the Nelson complexity factor to around 7.9.

Refinery investment programme

Galp is intending to invest €1.2-1.3bn in refining upgrading

Galp intends to invest around €1.2 to €1.3bn in new capacity and an upgrading plant at Sines and Porto.

Today Galp's refineries are geared to produce gasoline, so earnings are sensitive to the gasoline/fuel oil crack spread. The narrowing of this spread in 2Q08 led to a sharp contraction in earnings, despite a widening of refining margins. The completion of the group's refinery investment programme will give it the flexibility to produce more gasoil/diesel, enabling it to exploit the gasoil/fuel oil crack spread also.

When these projects were announced, the diesel/fuel oil crack spread was around US$23/barrel and its target is to improve its gross refining margin by around US$3/barrel, or EBITDA of around €260m, by 2012.

Margin enhancement from upgrading investment expected at US$6/bbl

More recently, the diesel/fuel oil crack spread has widened significantly. In 2Q08, the crack spread reached US$89/barrel. On this basis of the average diesel/fuel oil crack spread seen in 2Q08, Galp estimates that its upgrading projects will improve EBITDA margins by around US$6/barrel, or around €520m.

In addition, Galp is investing €424m to improve the efficiency of its refining operation. This includes the construction of new co-generation power generation plants, which will be the responsibility of the Gas & Power division. This investment, together with other efficiency improvements, is expected to yield an incremental EBITDA margin of around US$0.5/barrel, or EBITDA of around €43m, in 2012F.

Supply and trading of crude oil and refined products

As part of its recent agreement with Venezuela, Galp could acquire 2-4m boe/yr of heavy Venezuelan crude at market prices. This is a small part of its overall needs of 90-100m boe/year.

Like many other European countries, Portugal and Spain are net exporters of gasoline and net importers of medium distillates, especially diesel. Iberia's location allows imports from Europe, the Middle East, North and West Africa and South America, and exports to most major product markets in the Mediterranean and the Atlantic Basin.

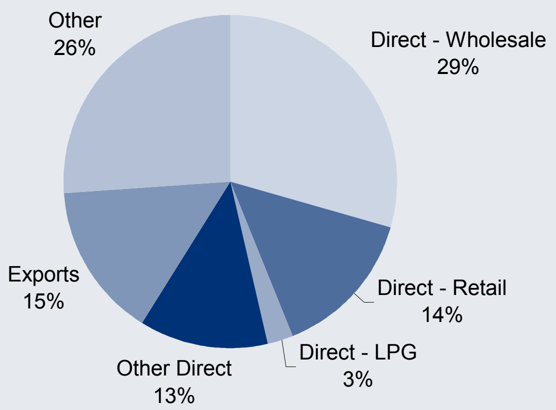
Advantaged and flexible logistics system

Galp's extensive logistics system enables it to deliver products in a cost-effective manner and provides it with supply and distribution flexibility. The group's logistics platform provides it with a competitive advantage over companies that import product.

Marketing

Galp has a strong market position in Portugal. Figure 12 shows the breakdown of Galp's refined product sales in 2007. It can be seen that the Wholesale channel is the most important, accounting for around 29% of total sales. The second-largest sales channel is Exports, accounting for 15% of total sales.

Fig 12 Galp: Refined product sales (2007)



Source: Company data

In 2007, total product sales in Iberia increased by 4% to 9.4m tonnes, with growth in Spain of 11%.

Retail

Market leader in Portugal

Galp is the retail market leader in Portugal. Its branded fuel is sold to retail customers through a network of 1,038 fuel service stations in Iberia (816 in Portugal and 222 in Spain). In Portugal, 52% of its service stations are 'Company owned, dealer operated', while in Spain, 53% are 'Company owned, company operated'.

Its service stations in Portugal have a market share of around 37% by volume, with a total throughput of 2,527 thousand m³ of petroleum products in 2007. In Spain, Galp had a retail market share of 4% with a total volume of 2.9 million tonnes in 2007.

Fig 13 Evolution of Galp's service station network

	1Q06	2Q06	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08
Service stations	1,050	1,043	1,046	1,045	1,041	1,042	1,040	1,038	1,025	1,024
C-Stores	184	189	198	201	203	208	208	210	213	225

Source: Company data

Additionally, through its affiliated companies, Galp participates in the distribution and commercialisation of liquid fuels in the African market, notably in Angola, Cape Verde, Mozambique and Guinea Bissau, where it has 56 service stations.

Wholesale

Sound growth in Wholesale marketing

Galp's Wholesale marketing business is engaged in the sale of branded oil products, including gasoil, gasoline, fuel oil, jet fuel, lubricants and bitumen, directly to over 4,300 industrial and commercial users in Portugal and Spain. Sales in 2007 totalled around 4.7m tonnes, up 7% on the previous year. Portugal accounted for around 70% of total sales. YoY growth in Portugal was around 6%, while growth in Spain was around 8%.

LPG

44% market share in Portugal

In 2007, Galp had a leading 44% market share in the Portuguese LPG market and a growing presence in Spain, with a 2% market share. By segment, bottled LPG is still the most important, accounting for around 65% of total sales. The company is also focused on expanding piped LPG sales, which is a higher margin activity.

Galp's LPG marketing business has over one million customers in the residential, industrial services and automotive fuel segments. In 2005, Galp launched a new, light-weight 'Pluma' cylinder, manufactured in Portugal, which is much easier to lift and transport than its steel predecessors. Currently, only Galp and BP offer this type of cylinder in Portugal and the market has responded positively to this new product. The Pluma cylinder is internationally recognised and has received several awards.

In Africa, Galp markets LPG in Cape Verde, Guinea-Bissau, Angola and Mozambique. The company has a significant market share in all four markets. In 2007, Galp sold 369,000 tonnes of product in these countries. Total turnover was around €170m.

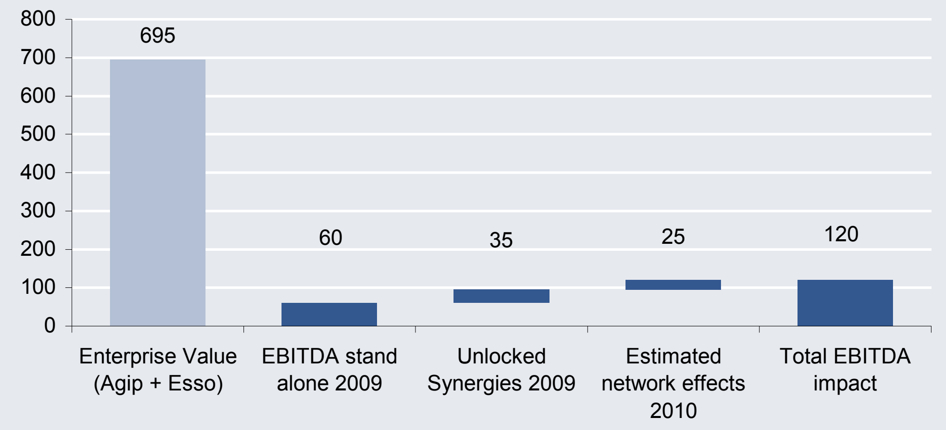
Marketing acquisitions

Key deals signed with ENI (Agip) and ExxonMobil

In early August 2008, Galp announced the acquisitions in the field of petroleum product marketing. The two most important involved the purchase of Agip and ExxonMobil's Iberian petroleum retailing businesses. A third deal involved the purchase of some of RD Shell's African marketing operations.

Details of the individual deals with Agip and ExxonMobil are confidential. However, Galp has revealed that the purchase cost of these two entities was around €695m, including any debt assumed. As highlighted in Figure 14, Galp is acquiring EBITDA of €60m from Agip and Esso. Galp believes that it can generate synergies of at least €35m from improved supply management, reduced logistic costs and fixed cost dilution. In the longer term it believes it can generate network benefits of over €25m annually. Network benefits include the better utilisation of its customer base via loyalty cards, its fleet business and synergies in its C-stores. Taken together, it is Galp's view that these two acquisitions can increase EBITDA by around €120m/yr longer term.

Fig 14 Galp: increased Iberian position captures economies of scale (€m)



1. Enterprise Value is total for both Agip and Esso deals combined. The transactions are still subject to regulatory approval (close expected 3Q08 and 1Q09, respectively). Full-year impact expected 2010F.
2. Unlocked synergies cover supply management and logistics costs + fixed costs dilution

Source: Galp Energia

Agip acquisition

In October 2007, Galp agreed to buy AGIP Portugal e AGIP España, Eni's operations marketing oil products in Portugal and Spain. The price was determined by three investment banks jointly selected by the parties. The selection of this method aimed to ensure a transparent process as well as a transaction priced at a fair market value.

This transaction is still subject to the approval of the competition authorities and is expected to close 3Q08. Following this acquisition, Galp will have more than 500 service stations in Spain and sales will increase to more than 5m tonnes per year. This implies that Galp's market share in Spain will rise from 4% to around 7%.

Exxon acquisition

In April 2008, Galp announced an agreement whereby it will acquire Exxon's Iberian fuels and lubricants businesses. The transaction covers petroleum product sales of around one million tons per year and includes Exxon's retail network in the two countries, currently comprising 130 service stations, and its Industrial, Wholesale, LPG and Aviation fuels businesses. In addition, the bulk of the lubricant businesses conducted by ExxonMobil in these countries will be transferred to Galp.

The transaction remains subject to the approval of the relevant competition authorities. We have assumed that the acquisition will be completed in 1Q09.

Galp's strengthening retail position

Iberian retail market share improves from 8% to 12%

This acquisition of these businesses will increase the size of Galp's Iberian operations, its core downstream market. These acquisitions will also result in significant economies of scale by combining the two networks.

Galp's overriding goals for the marketing of petroleum products are to maximise returns on the retail network by raising efficiency and to increase its sales volume in-line with planned refining capacity.

The key parameters of Galp's Iberian marketing business before and after these acquisitions are shown in the table below.

Fig 15 Galp's retail marketing position post acquisitions

	Galp (at end 2007)	Galp + Agip + Exxon
Number of sites	1,038	1,553
Number of CO's/C-stores	670/210	995/585
Iberian retail market share (%)	8	12
Volumes (million tonnes)	9.4	12.4
Iberian distribution oil market share (%)	12	16

Source: Galp Energia (all numbers based on December 2007 data)

The two deals highlighted above give Galp critical mass in the Iberian market. In particular, the deals increase Galp's Iberian market share from 8% to 12%.

Refining coverage to increase to 94%

Galp estimates that 72% of its refinery output has gone on its own marketing channels in the past. Following these acquisitions, this will increase to around 94%.

Stabilising earnings, reducing cost of capital, increasing value

Under a normal market position, refining margins are negatively correlated with marketing margins. Thus, the expansion of Galp's marketing sales should help to stabilise Galp's R&M earnings. In theory, a reduction in the group's earnings volatility should reduce its cost of capital and increase the value of the business.

RD Shell acquisition

Galp has also signed an agreement to buy Royal Dutch Shell's fuel businesses in Mozambique, Swaziland and Gambia, for a total of US$55m (enterprise value).

Consolidating in Africa

The acquisition will result in a 45% increase in Galp's sales volumes in the African downstream, diversify its operations in Africa and develop its businesses around the Mozambique/Swaziland and Cap-Verde/Guinea-Bissau /Gambia axes. Galp's regional focus in Africa includes its business being built in Angola.

This acquisition is consistent with Galp's strategy of increasing its presence in Africa. Galp currently markets oil products in Angola, Cape Verde, Guinea-Bissau and Mozambique. In 2007, its international sales grew 38%, with a total of 369 thousand m^3 being sold across retail, wholesale, LPG and lubricants.

We have assumed that this acquisition is completed in 4Q08. In addition, Galp should be able to reduce costs by removing the overlaps with its existing businesses in Africa.

R&M targets

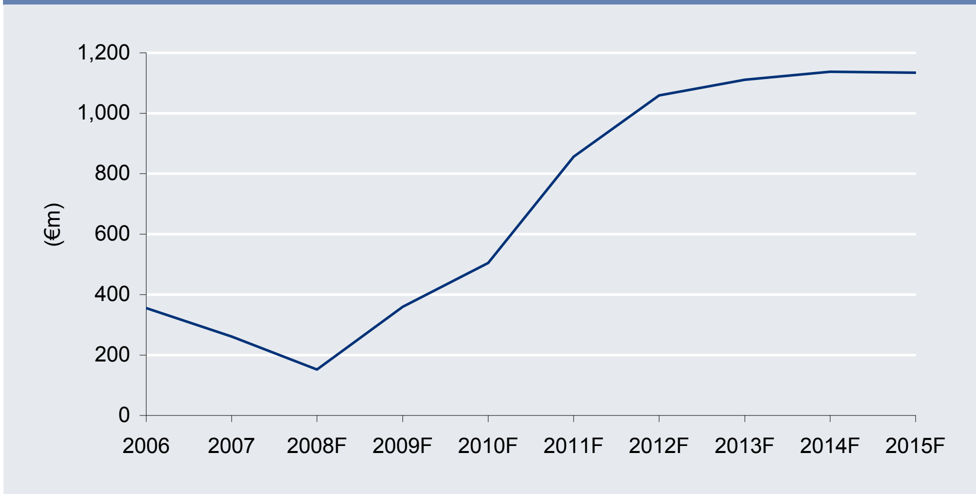
Galp's downstream targets include:

- Raising refinery capacity/throughput to around 300k b/d by 2012;
- Improving refining efficiency by investing in upgrading capacity, adding US$3.5/barrel to gross margins. However, we believe that its investment programme will add around US$7.5/barrel to gross margins in the current market conditions, and
- Achieving better balance between refining and marketing by raising marketing sales to around 300,000 b/d by 2012.

Notable earnings enhancement from sound investment and consolidation strategy

Our forecasts assume that Galp meets or exceeds all these targets. Our forecasts for Galp's R&M earnings are shown in Figure 16. The sharp rise in forecast earnings between 2010 and 2012 reflects the impact of the new conversion capacity currently under construction and the absorption of its recently announced retail acquisitions.

Fig 16 Galp: Refining and marketing operating profit; upside expected

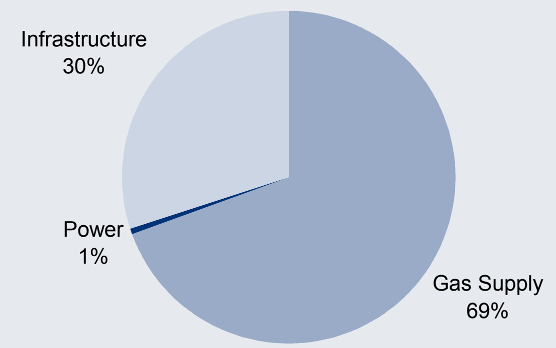


Source: Company data, ING estimates

Gas & power

In 2007, Galp's Gas & Power (G&P) division accounted for around 35% of total operating earnings. The G&P division comprises Galp's gas supply business, its infrastructure business and its power generation business. The earnings contribution of these three components in 1H08 is shown in Figure 17.

Fig 17 Galp: Gas and power earnings (1H08)



Source: Company data, ING estimates

The Power Generation business contributes little in the way of earnings at present but is poised for rapid growth in the medium term.

Gas Supply is key to divisional earnings

The Gas Supply business contributes the bulk of earnings, with most of these coming from the liberalised market. Earnings from the regulated market are controlled by a formula based on return on assets. As there are few assets in the regulated marketing business, its earnings contribution is negligible.

Over time, the G&P division is expected to become far more integrated, with significant incremental quantities of natural gas going into the company's own power generation capacity.

The main issue confronting Galp's G&P business is inadequate supply. There is no doubt that the growth in its sales could be accelerated should sufficient natural gas supplies be available. This could be solved via LNG imports, perhaps from its recent Venezuelan deal making.

The outlook for the natural gas business was recently clarified by the publication of a new regime for the business. The industry regulator, ERSE[3], published the new code in June 2008.

Natural gas

Rapid growth in gas demand in Portugal

The Portuguese market is still relatively young in relation to other European markets. As such, it is still enjoying rapid growth. Moreover, sales to large scale users in the power generation and industrial sectors are the foundation of the market. Galp's projections for growth in the Iberian gas market are shown in Figure 18.

[3] Entidade Reguladora dos Serviços Energéticos

Fig 18 Growth in Iberia gas consumption (bcm) & Galp gas sales

(bcm/yr)	2007	2012F	CAGR (%)
Portugal	4.2	7.6	12.6
Spain	35	44.8	5.1
Total	**39.2**	**52.4**	**6.0**
Galp	5.4	7.3	6.4

Source: Company data, ING estimates

Consumption CAGR 13% in Portugal; 6% across Iberia 2007-12F

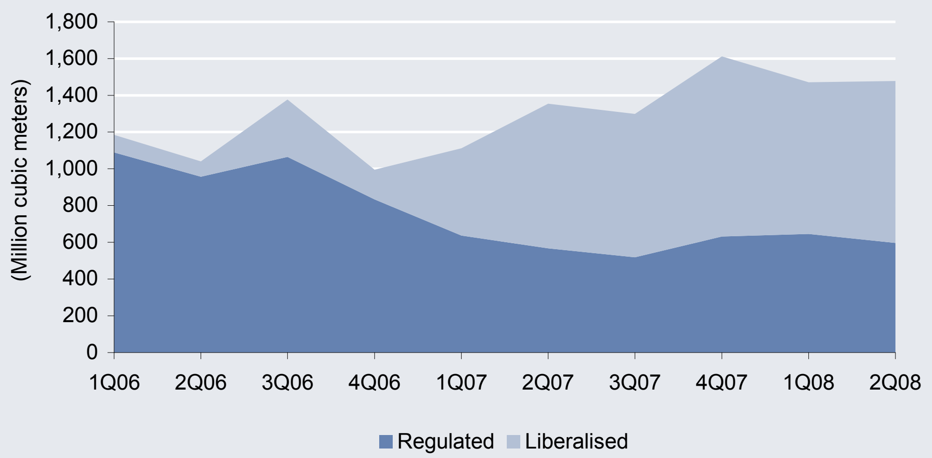
Gas consumption in Portugal is expected to grow by 13% annually between 2007 and 2012F, while consumption is expected to increase by 6% annually in the Iberian market over the same period.

In 2006, Galp spun off its natural gas transportation, LNG re-gasification activities and part of its gas storage business. These assets were sold to REN. In 2007, the overall volume of natural gas sales was 5.4 bcm, a 17% increase compared to 2006. Currently, Galp has contracts for the supply of around 6 bcm pa of natural gas. In order to cover the Portuguese market's future needs, and at least keep its current market share of 13% in the Iberian Peninsula, Galp will need new supply sources.

Gas marketing and distribution

Galp supplies gas to the liberalised and the regulated gas markets. Figure 19 shows the evolution of sales into these two market segments in recent years.

Fig 19 Evolution of Galp's natural gas sales



Source: Company data

Galp Energia was awarded a license to supply natural gas to eligible customers in the liberalised market on 1 January 2007. In 2Q08, Galp sold 1.48bcm, of which 60% was in the liberalised market. Galp supplies natural gas to:

- High volume industrial users with a natural gas consumption of 2 mcm/yr or more
- Power companies,
- Local distribution companies and
- AGUs, which supply natural gas to end-customers, with a natural gas consumption of less than 2m cm/yr

In addition, Galp conducts natural gas trading operations.

Sources of natural gas supply

Galp's strategy is to build its position in the market mainly through long-term contracts and occasionally through purchases on the spot market. In 2007, Galp Energia sourced around 5.4bcm of natural gas, up 17% from the previous year. Most of its gas came from:

- Sonatrach, in the form of piped natural gas transported from Algeria to Portugal by the EMPL pipeline and the Al-Andaluz and Extremadura pipelines in Spain.
- NLNG in Nigeria in the form of liquefied natural gas. The build-up of purchases under the Nigerian LNG contract ended in 2007, which gave Galp more flexibility in its procurement management.

In addition, Galp sourced a small amount of gas from the spot market in the form of LNG.

Venezuelan LNG could provide flexibility for Iberian gas position

Looking ahead, Galp is in negotiation to take a 15% stake in two trains of a key LNG project in Venezuela, which will use source gas from the offshore Delta Caribe and Mariscal Sucre assets. Total processing capacity would be 13bcm/year. PDVSA would have a 60% interest. The final investment decision is expected to be taken around end 2009/early 2010, with first production in 2014.

Under the terms of the agreement, Galp would have the right to acquire 15% of the LNG output ie, 2bcm /year. The total costs of the two projects are believed to be in the region of US$10bn.

The completion of this agreement could provide Galp with an additional supply source for its Iberian gas marketing business, and it would also supply an extra element of supply flexibility.

Gas storage

Transgás Armazenagem, Galp's new company responsible for storage of natural gas in Portugal, began operations in 2007. It owns and operates one existing underground cavern at Pombal, with a storage capacity of 35mcm. The company is now engaged in the construction of a second cavern. Start-up of the second cavern, which will have capacity of 45mcm of natural gas, is scheduled for 2011.

Key rights for additional storage capability

In addition, Galp has subsoil usage rights to build up to four additional caverns with capacity of 110mcm within an expansion area in Pombal. However, Transgás Armazenagem will be required to sell additional caverns to REN Armazenagem, on terms to be agreed by both parties, if REN Armazenagem's expansion capacity is exhausted.

The regulatory framework for the storage business was recently overhauled. The key parameters of the current regulatory regime are:

- An allowed rate of return of 8% (pre-tax);
- A Regulatory Asset Base (RAB) of €17m, and
- A concession period of 40 years.

These parameters imply an operating profit of around €1.4 million annually.

High pressure transportation

Galp owns (through Transgás) minority shares in three international pipelines:

- Gasoducto Al Andalus,
- Gasoducto de Extremadura, and
- The Europe-Maghreb pipeline.

Key infrastructure interests sourcing Algerian supply

These pipelines carry gas from Algeria into Portugal and have total capacity of 3.7m cm/yr. These operations are unregulated. In 2007, they contributed €37m (post-tax) to earnings through the Associates line.

Distribution (medium/low pressure)

Natural gas distribution in Portugal is divided into six local distribution companies (LDCs) and four AGUs (Autonomous Gas distribution Units).

Incumbent supplier

Galp has a significant interest in five of the LDCs and has a 100% interest in all the AGUs, which supply natural gas to residential, commercial and industrial customers with an annual consumption below 2mcm.

Each LDC has a 40-year exclusive concession, starting 1 January 2008, for its respective local operating area. Concession agreements were put in place in order to develop natural gas distribution throughout the major Portuguese urban areas linked to the high pressure network.

AGUs were established in areas where it was not economically viable to construct a high pressure network. AGUs are supplied by car tank from the LNG terminal and have local distribution networks to provide natural gas to residential, commercial and small industrial customers. The AGUs have licences similar to the LDC concession agreements but with a 20-year duration. Both the concession agreements and the licences establish the price level and the revision mechanisms.

Most of the medium and low pressure pipelines are owned by the local distribution companies; Transgás owns small portions of these pipelines.

Natural gas is provided directly from the medium pressure pipelines to some of Transgás' industrial customers and the low pressure pipelines of the LDCs and AGUs. These low pressure pipelines deliver natural gas to residential and commercial customers as well as smaller industrial customers.

Under the new regulatory regime, announced in June 2008, concession assets were re-valued using past CPI inflation figures to establish an initial Regulatory Asset Base (RAB) as at 1 January 2008.

The RAB is to be re-valued at the start of each regulatory period (every three years), again in-line with past movements in the CPI. The current RAB of the LDCs and AGUs are shown in Figure 20.

Galp's net RAB is c.€1bn

The gross RAB of these distribution entities is €1.2bn; Galp's net interest in this RAB is around €1bn.

Rate of return is 9% (pre-tax)

These entities are allowed to earn a rate of return of 9% (pre-tax). This implies total operating profits of €91m. The allowable rate of return is fixed for the next two regulatory periods (six years); if it is then reduced, Galp will be entitled to compensation.

Fig 20 LDC regulatory asset bases (€m)

Distribution entity	Galp interest (%)	Gross RAB at June 2008	Net RAB to Galp
Berigas	60	55	33
Lisboagas	100	605	605
Lusitaniagas	85	269	228
Setgas	45	144	65
Tagusgas	41	57	23
AGUs	100	62	62
Total		**1,192**	**1,016**

Source: Company data

In total, the five LDCs in which Galp has an interest, have a total of over 800,000 customers. Allowable revenues in the distribution sector comprise the cost of capital and net operating costs. In this context the cost of capital is the RAB multiplied by the allowable rate of return (9%) plus depreciation.

Gas supply

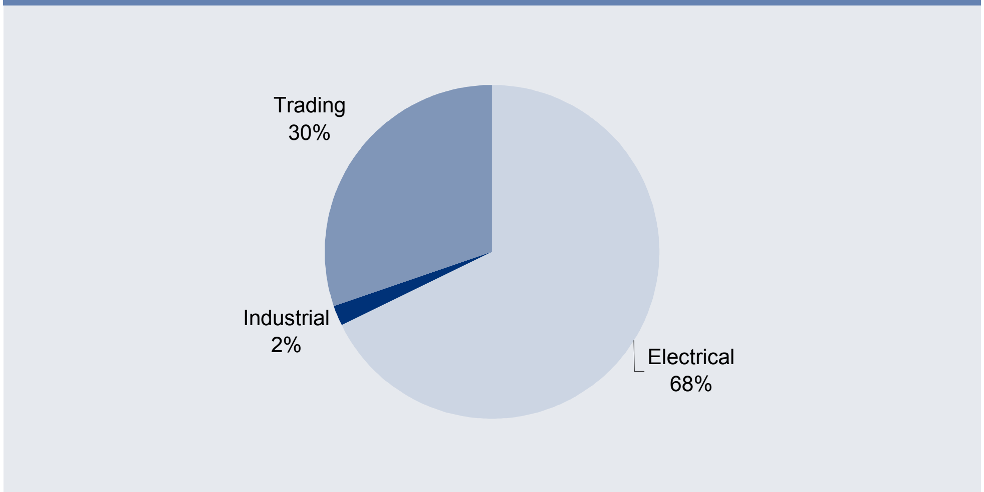
Galp supplies gas to customers in both the liberalised and the regulated markets.

Liberalised market

Sales to power generators 68% of total

Galp's sales into the liberalised market totalled 881mcm in 2Q08. Since the start of 2007, sales into the electricity generation sector have been the mainstay of sales in the liberalised sector. Over the first half of 2008, sales to power generators accounted for 68% of Galp's sales into the liberalised market.

Fig 21 Galp: Liberalised natural gas sales (1H08)



Source: Company data, ING estimates

Most other sales into the liberalised market are termed 'Trading' sales. This mainly comprises sales into the Spanish market.

The geographical expansion of natural gas sales started in 2007 with the award to Galp of a licence to market natural gas in Spain, thereby paving the way to a highly profitable market. The first contracts to supply industrial customers in Spain were negotiated in late 2007 for a volume exceeding 60 mcm/yr.

Sales into liberalised market to increase due to liberalisation…

Sales into the liberalised market are scheduled to increase as the Portuguese market is progressively liberalised.

The timetable for this process is as follows:

- Customers using more than 1 mcm have been de-regulated since 1 January 2008;
- Customers using more than 10kcm will be de-regulated from 1 January 2009, and
- All other customers will be de-regulated from 1 January 2010.

....and also because of Galp's own powergen

In addition, sales into the liberalised market will expand as Galp's own new power generation capacity comes on stream (see Power Generation below). Galp's two cogeneration plants each have a capacity of 82MW and its 800MW combined cycle plants at Sines should increase demand for natural gas by around 1.2bcm/yr, or 38% of the current market for natural gas in Portugal.

This consumption will stabilise Galp's sales of natural gas and raise its efficiency in the management of its procurement contracts.

Regulated market

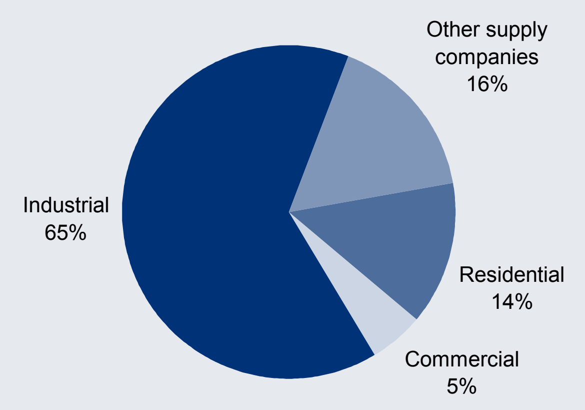
Galp's sales of gas into the regulated market totalled 597mcm in 2Q08, and 775mcm over 1H08. Sales into the regulated market have declined as the market has been progressively liberalised. Galp's regulated sales are divided into two parts:

- Wholesale: Galp is the 'Last Resort Supplier Wholesale'. This is defined as sales to customers that use more than 2mcm/yr.
- Retail: Galp is the 'Last Resort Supplier Retail'. This is defined as sales to customers that use less than 2mcm/yr.

Industrial sales key for regulated business

The breakdown of Galp's regulated gas sales in 1H08 is shown in Figure 22. The industrial market is the most important sales segment, accounting for around 65% of total sales in 1H08.

Fig 22 Regulated natural gas sales (1H08)



Source: Company data, ING estimates

Regulated sales expected to decline due to liberalisation

Galp's regulated gas sales are expected to decline further as the market continues to be liberalised. However, anticipated sales growth in the liberalised market means that we expect Galp's overall gas sales to increase at an average annual rate of 6% between 2007 and 2012F.

Gas supply regulation

Under the regulatory regime for the Supply business announced in June 2008, allowed revenues comprise three main elements:

- Net operating costs, including depreciation;
- A commercialisation margin that remunerates the Supply businesses' working capital, which will comprise an estimated €2.5m in the 2008/9 gas year, and
- Clients' remuneration of €4/client/ year during the first five regulatory periods (15 years), in order to encourage Galp to connect new customers. This component of revenue will total an estimated €3.1m in the 2008/9 gas year.

Based on this new regulatory regime, average gas prices for end-consumers in the gas year 2008-09 (July 2008 to June 2009) are described in the table below.

Fig 23 End-consumer gas prices for 2008-09 (€/kwH)

Annual purchased volume	2008-09	% shift from 2Q08
< 10,000 m^3	0.0698	-3.40
>10,000 m^3 < 2 million m^3	0.03173	-3.60
> 2 million m^3	0.02497	0.60

Source: Company data, ING estimates

Tariffs to increase to "reflect energy acquisition costs"

These published tariffs will be in force between July 2008 and June 2009 and will be updated annually for clients buying less than 10,000m^3 a year and quarterly for clients buying more than 10,000m^3, so that "prices can better reflect energy acquisition costs".

Power Generation

Key stakes in three cogeneration units

Currently, Galp's power generation business comprises three cogeneration plants in which it holds equity stakes (70% of Powercer, 65% of Carriço and 35% of Energin) through its wholly owned subsidiary Galp Power SGPS, SA ("Galp Power").

The Power business provides major industrial customers with electrical and thermal energy. All three cogeneration plants generate electricity and heat by burning natural gas, making them one of the largest customers of its Natural Gas Supply business.

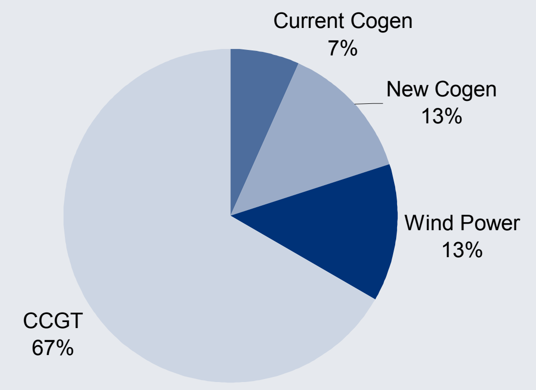
Potentially 1.2GW by 2010F

Galp's three cogeneration plants had a total capacity of over 80MW at year-end 2007. In 2007, these plants produced 1,610GWh of electricity and used 175mcm of natural gas. The company's target is to increase power generation capacity to 1.2GW by 2010. The expected breakdown of this capacity is shown in Figure 24.

Aim is to leverage from gas expertise and to vertically integrate

Galp plans to become a key player in the Portuguese electricity market. It plans to leverage its expertise in the gas business by building two 400 MW CCGT plants. The company intends to vertically integrate this business by developing an electricity supply business, further develop its cogeneration business and enter into the renewable energy business.

Fig 24 Breakdown of Galp's power generation capacity (2010F)



Source: Company data, ING estimates

Electricity production under the 'Special Regime'

Electricity produced under the 'Special Regime' has priority access to the network and is sold at a regulated price. This price is calculated so as to cover the costs avoided by not investing in alternative capacity ie, operating and maintenance costs, fuel costs and the environmental opportunity cost. As a reference, assuming a price of US$50/barrel for Brent Blend crude oil, the price would be €65.69/MWh.

Galp Energia's current cogeneration plants: Carriço, Powercer and Energin, all operate under the special regime.

Two new cogen plants under construction

Currently, Galp is developing two new cogeneration plants: Sinecogeração and Portecogeração, with a capacity of 82 MW each. Both plants will be located at the company's refinery sites. The main objectives of these projects are to raise the energy efficiency of Galp's refineries, reduce thermal power costs and curb emissions of sulphur and nitrogen oxides. These two plants will increase natural gas demand by 660mcm/yr, thereby further contributing to the integration of the natural gas and power businesses. These new plants will also operate under the "Special Regime".

Wind power

400MW of wind power by 2013F

In September 2007, the Ventinveste consortium, in which Galp Energia has a 34% interest, won Phase B of the public tender to construct 400MW of wind power capacity. The eight wind farms in the project are scheduled to come on stream by 2013F. The contract allows for capacity to be raised by a further 20% to 48 MW.

Electricity from Galp's wind farms will be sold under a special regime that, like the one applicable to cogeneration plants, consists of guaranteed sales volumes and regulated prices in the first 15 years of the project or until production of 33GWh per MW is reached. This price, which basically covers the same costs as the cogeneration rate except for fuel, is close to €73.6/MWh and is inflation-adjusted after the farms start to operate.

Galp's operation of its wind farms will help management to reduce its CO_2 emissions.

Electricity production in the liberalised market

New CCGT at Sines by 2010F

In September 2007, Galp obtained a licence to construct a CCGT plant at Sines. The plant will comprise two 400 MW units.

By investing in this plant, Galp aims not only to enter a high-growth market but also to achieve synergies with its natural gas business. The company's integration of its Gas and Power businesses provides the opportunity to benefit from its natural gas procurement contracts and, at the same time, to arbitrage between natural gas and electricity trading spreads, in what basically equates to an embedded call option, thereby raising efficiency in the management of its natural gas procurement portfolio.

Galp Energia recently launched an international public tender for the construction of the combined-cycle plants. We have assumed that the first 400 MW unit is brought on stream in 2010 and that the second 400 MW unit is brought on stream in 2011.

Hydro electric power

Additional renewable power potential

Following the launch of the Portuguese government's National Dam Plan in 2007, Galp announced its desire to add hydropower capacity to its electricity generation portfolio. This could complement its thermal capacity and wind power interests, with generation from a further renewable source under the liberalised price regime.

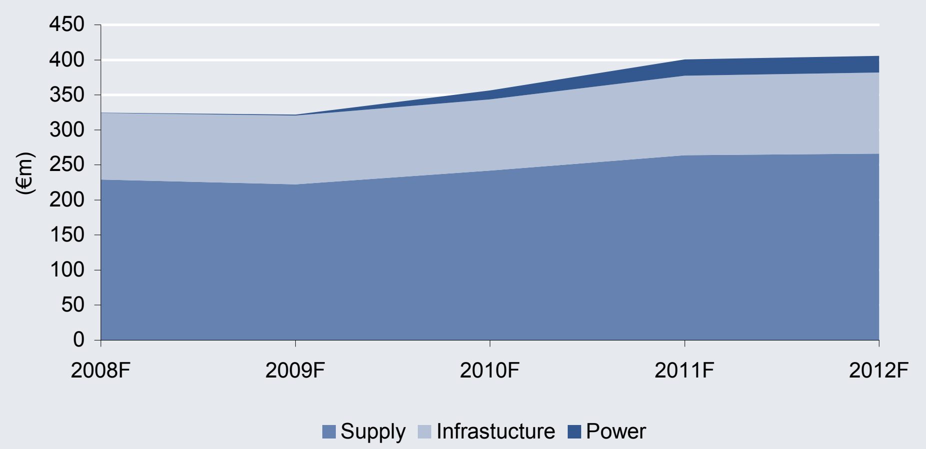
The tenders, to be launched in 2008, envisage the construction of 10 new dams, with a total capacity of 1,000 MW. Galp aims to take an interest in these projects. Such capacity will provide it with electricity supplies with a low marginal cost and low CO_2 emissions. Hydro power also offers storage options that will give Galp the opportunity to benefit from differentials between peak and off-peak prices.

Outlook for G&P earnings

5% CAGR expected

The growth in Galp's G&P earnings over the next five years is shown in Figure 25. We see a 5% CAGR in operating profit from this business 2008-12F (although it is worth noting that from 2007 to 2012F the CAGR outlook is for a 14% uplift).

Fig 25 Outlook for gas and power earnings to 2012F



Source: ING estimates

Gas supply

5% CAGR

The main drivers of gas supply earnings will be:

- Volume growth, and
- The shift of sales from the regulated sector to the liberalised market.

In our view, gas supply earnings are expected to rise only gradually over the next five years. We anticipate growth of only around 5% annually.

Infrastructure

The nature of the current regulatory regime means that infrastructure earnings are relatively stable. The RAB is expected to increase gradually due to the ongoing impact of capex and depreciation. However, the RAB is not scheduled to be adjusted for inflation until the end of the first regulatory period (June 2011). At this point we assume that the RAB is inflated by 9% to reflect the impact of three years of past inflation. By the end of 2012, we estimate that net RAB attributable to Galp will be €1.28 billion. We further assume that the allowable rate of return remains at 9% (pre-tax).

4% CAGR

On the basis of these assumptions, we expect Galp's infrastructure earnings to increase from €95m in 2008E to €116m in 2012E ie, a CAGR of around 4%.

Power

Increased capacity, decreasing margins

We have assumed that Galp's power generation capacity increases to over 1.2GW in 2013. However, average margins are expected to decline from around €14/MWh in 2007 to around €11.2MWh in 2012F. We have assumed that margins remain constant thereafter. The decline in margins reflects the changing mix of Galp's generation capacity and the increased capacity not covered by special regimes. It is worth noting that Galp expects to earn an attractive rate of return on its investments in its new CCGT units. On the basis of these assumptions, we expect earnings from Galp's power business to increase to around €23m in 2012.

Group earnings and financials

Rapid growth expected

In our view, Galp is poised for rapid growth over the next five years.

Rapid earnings growth

We expect a 23.6% CAGR in net profit 2007-12F and a 25% CAGR for EBIT.

Our earnings forecasts are based on the assumptions shown in Figure 26. The ING oil price assumption is relatively high in the context of other forecasts.

Fig 26 ING – Brent Oil price assumptions and US$/€

	2007	2008F	2009F	2010F	2011F	2012F	2013F	2014F	2015F
Brent (US$/bbl) - ING	72.86	120.00	130.00	130.00	120.00	110.00	100.00	95.00	90.00
Brent (US$/bbl) - Consensus	72.86	117.70	120.00	111.27	104.25	110.00	N/A	N/A	N/A
NWE Refining Margin (US$/bbl) - ING	4.85	8.55	8.00	7.50	7.00	7.00	7.00	7.00	7.00
EUR/USD - ING	1.37	1.52	1.42	1.38	1.34	1.28	1.25	1.21	1.21

Source: ING estimates; Bloomberg (consensus as at 12/08/08)

25% EBIT CAGR 2007-12F

Figure 27 shows our operating profits forecasts between 2007 and 2012F. We see an overall impressive 25% CAGR in operating profit 2007-12F.

Fig 27 Galp Energia: operating profit forecasts (€m)

Source: ING estimates

All three businesses see strong growth

On the basis of our estimates, all three of Galp's core businesses are expected to grow strongly over the next five years:

- R&M is expected to demonstrate the strongest growth, with annual average growth of 32% annually. Thus, R&M will still be the most important business in 2012, contributing 57% of total operating profits.

- E&P operating profit will likely see some 22% CAGR over the next five years and could represent 20% of earnings by 2012F. In the longer term (beyond 2012F) we expect the E&P business to provide the group's earnings momentum, as Brazil takes over as the main generator of incremental earnings.

- G&P operating profit could see 14% CAGR to 2012F and will likely still be larger than E&P in contribution in five years, contributing to 22% of operating profit 2012F.

Our adjusted earnings projections are shown in Figure 28. These numbers differ from reported earnings (shown in later tables) as they exclude eg, inventory effects (chiefly in the refining and marketing division) and also non-recurring items.

Fig 28 Income statement (€m) – adjusted earnings

Yr to Dec	2007	2008F	2009F	2010F	2011F	2012F
E&P	139	206	244	362	359	381
R&M	260	153	360	505	856	1,059
Natural Gas & Power	215	323	322	356	401	406
Corporate & other	-6	17	18	18	18	18
Total	**608**	**698**	**943**	**1,241**	**1,633**	**1,863**
Net income from investments	1	3	0	0	0	0
Net interest expenses	-49	-42	-82	-114	-136	-155
Income before tax and asso'	**620**	**707**	**911**	**1,179**	**1,552**	**1,766**
Income tax	-193	-234	-291	-387	-480	-539
Income for the period	**427**	**472**	**620**	**792**	**1,072**	**1,226**
Minority interests	-5	-4	-3	-4	-5	-6
Income for shareholders	**422**	**469**	**617**	**788**	**1,068**	**1,221**
Tax rate (%)	-31	-33	-32	-33	-31	-31
EPS (€)	**0.51**	**0.57**	**0.74**	**0.95**	**1.29**	**1.47**
EPS ($)	0.70	0.86	1.06	1.31	1.73	1.88
EPS (€) - % growth	**-9**	**11**	**32**	**28**	**35**	**14**
EPS ($) - % growth	0	23	23	24	32	9

Source: Company data, ING estimates

A key feature of our P&L projections is the sharp rise in net interest expenses. This reflects the cash outflows and the rise in debt that we anticipate as investment in the R&M business and the Tupi field in Brazil rises.

During the period to 2012F, the tax charge is expected to remain relatively stable in the range of 30-32%. In the longer term, we would expect the tax charge to rise as the share of earnings from the E&P business increases in line with new output from Brazil.

We note that the potential 'Robin Hood' corporate taxation process in Portugal is likely to only have an impact on cash flow and not earnings.

Galp could generate earnings CAGR of 23.6% 2007-2012F

On an adjusted basis we expect Galp to generate average annual earnings growth of around 23.6% annually between 2007 and 2012F.

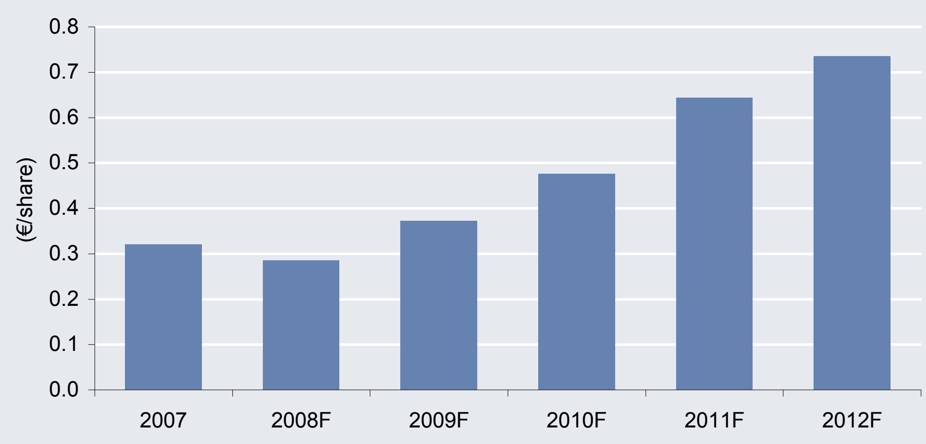
Dividend policy

Galp's dividend policy was established in 2007. The company set its payout ratio at 50% of replacement cost net income.

In addition, Galp became one of the first companies in Portugal to opt for half-yearly dividend payments. The half-yearly interim dividend payment will be equal to 50% of the previous annual dividend. Accordingly, the board of directors recommended to the AGM on 6 May 2008 that a dividend of €0.32, 5% above last year's interim dividend, be paid for 2007.

Our forecasts of the annual dividend payout are shown in Figure 29.

Fig 29 Galp: dividend forecast (€/share)



Source: ING estimates

Galp's relatively rigid dividend policy implies robust growth over the next five years.

18% CAGR for dividends possible to 2012F

Based on our relatively high oil price and refining margin assumptions, we expect dividend growth to average 18% annually over this period. The jump in the dividend in 2011 reflects the positive earnings impact of the group's investment in refinery upgrading capacity.

Strong uplift in cash flow long term

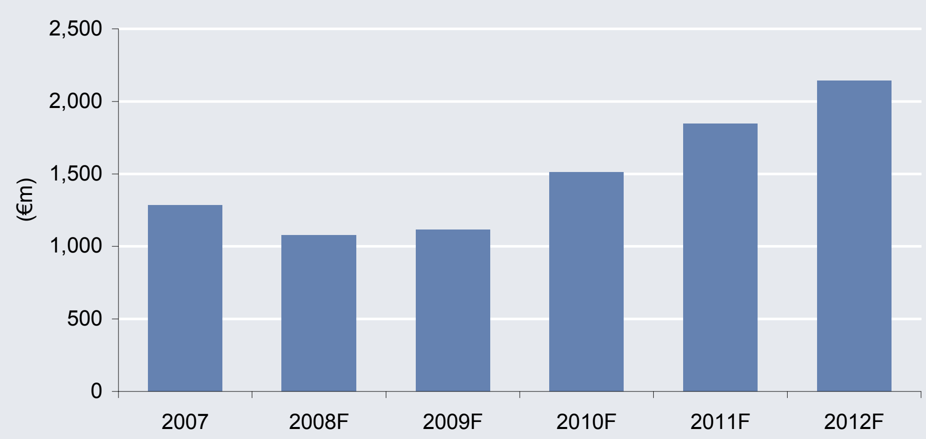
Galp's cash flow is forecast to increase strongly post 2010F reflecting:

- Upgrading of the group's refinery capacity,
- Increased power generation capacity, and
- Early production from the Tupi field in Brazil.

Brazil supports long-term cash flow upside

We expect cash flow to grow at an average annual rate of 11% annually 2007-2012F. We see strong cash flow growth post-2012F given Galp's exploration success in Brazil.

Fig 30 Galp: operating cash flow (€m)



Source: ING estimates

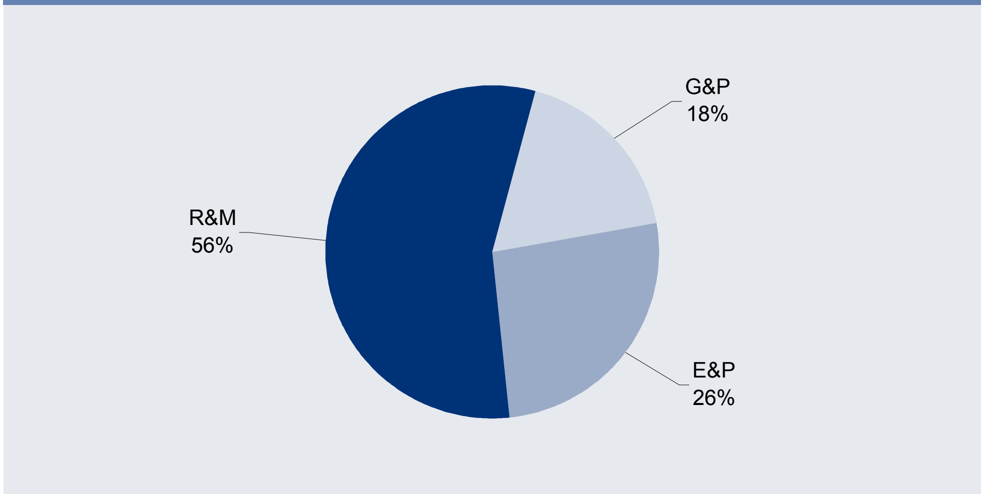
Capital expenditure

€5.3bn 2008-12F (ex- Brazil)

Galp's current capital expenditure target is €5.3bn over the five years 2008-12F. However, this figure excludes any commitment for the early development phases of Tupi or Jupiter in the deepwater Brazil region. This may be included in revised estimates for group capex expected to be delivered in early 2009.

The breakdown of Galp's current capital expenditure budget is shown Figure 31.

Fig 31 Galp : Capital expenditure (ex-Brazil) 2008-12F (€5.3bn)



Source: ING estimates

Within its overall budget, Galp expects to spend nearly €3.0bn in its R&M business, nearly €1.4bn in E&P and €950m in G&P. The predominance of the R&M spend reflects the group's investment in refining upgrading capacity.

Expect at least €1bn extra for early development of Tupi

In the medium term, E&P expenditure in Brazil is expected to dominate the group's capital expenditure budgets. We expect Galp's capital expenditure to exceed its €E5.3bn budget as spending on the phased development of the Tupi discovery builds up. We are assuming a total capex spend of €6.3bn over the five-year period.

The group's existing capex budget will be reviewed with the business plan in early 2009. While Galp may only detail 2009F changes, we still expect a significant upgrade in time for the 2008-12F period overall.

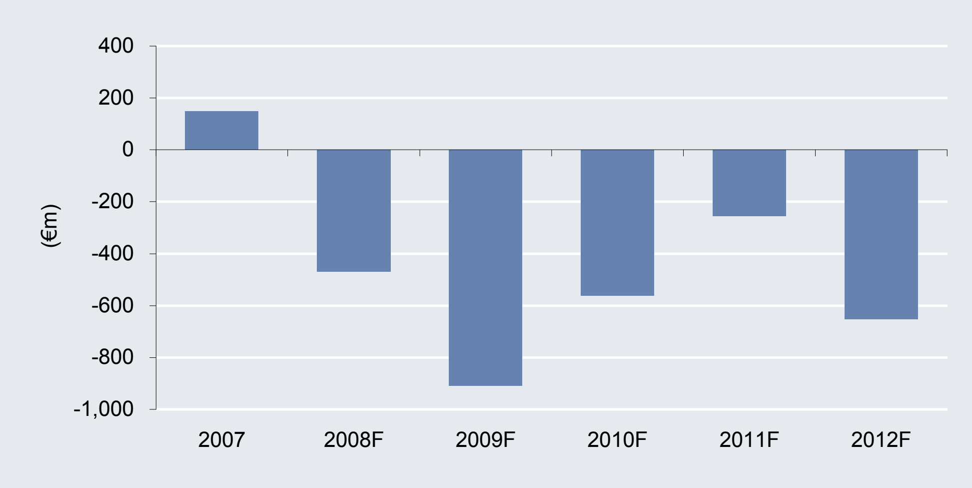
Movement in debt

Cash flow deficits imply rising debt

Galp is forecast to generate a sizeable cash flow deficit in 2008, and rising capital expenditure is likely to result in continuing cash flow deficits between 2009 and 2012.

Galp's cash flow deficit is expected to increase sharply beyond 2012 as capital expenditure in Brazil begins to accelerate.

Fig 32 Galp: forecast movements in net debt



Source: ING estimates

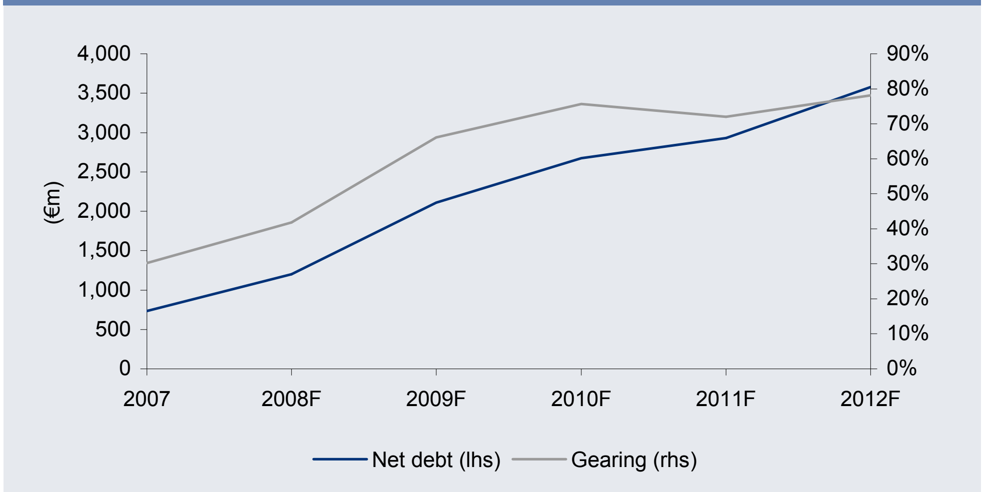
Balance sheet: rising debt on investments

A wealth of investment opportunities….

The wealth of investment opportunities becoming available to Galp means that debt is set to rise sharply in the medium term.

Management's target is to have a debt-to-equity ratio of less than 1, ie, 100%. Figure 33 shows the rise in debt and gearing levels that ING anticipates until 2012F.

Fig 33 Galp: outlook for debt and gearing



Source: ING estimates

Debt and gearing (net debt-to-equity) are expected to rise sharply in the next five years. In the short term, this reflects expenditure on upgrading the group's refineries. Longer term, the rise in debt reflect the commencement of spend on the Tupi and Jupiter fields in Brazil.

Asset disposals may offset gearing increase from new investments

These projections are necessarily tentative because Galp's management team could well take measures to improve its financial position. This could include asset disposals, the sale of an interest in the company and/or a rights issue.

Corporate considerations

Significant shareholders

On 29 December 2005, Galp's reference shareholders: Amorim Energia, the Portuguese state (through CGD) and ENI, signed a side agreement whereby they committed to keeping their holdings in Galp unchanged for a lock-in period until 31 December 2010. The holdings of the three reference shareholders are:

- Amorim Energia: 33.34%;
- CGD: 1%, and
- ENI: 33.34%.

Free float 25.3% today

In addition, Parpública has a 7% interest, implying a remaining free float of 25.3%.

In 2008, Iberdrola sold its entire 3.83% holding in Galp.

After 31 December 2010, each party may only sell its whole holding and the other parties will have pre-emptive rights to acquire the shares. The shareholder agreement expires at the end of 2013.

The agreement between the reference shareholders also lists the subjects requiring a two-thirds majority in board resolutions. These subjects include approval of strategic investments, the business plan and transactions with shareholders.

According to Galp, the shareholder agreement states that:

"The composition of both the board of directors and the executive committee, for the periods starting in 2008 and after, is governed by this agreement. The board shall have fifteen directors, five of whom shall be members of the executive committee. CGD has the right to appoint a director who will at all times be the chairman of the board. Amorim Energia and Eni shall be entitled to appointing six directors each. The three entities shall also jointly appoint an independent director. The Chief Executive Officer shall be jointly appointed by Amorim Energia and Eni, subject to CGD's approval."

The shareholder agreement is detailed in Galp's Corporate Governance Report.

Amorim Energia is based in the Netherlands and its main shareholders are Esperanza Holding BV (45%), Power, Oil & Gas Investments BV (30%), Amorim Investimentos Energéticos, SGPS, SA (20%) and Oil Investments BV (5%). Portuguese investor Américo Amorim[4] controls, directly or indirectly, 55% of Amorim Energia and the other 45% is owned by Esperanza Holding BV, controlled by Sonangol EV, Angola's state-owned oil company.

Caixa Geral de Depósitos, SA (CGD) is a financial institution wholly owned by the Portuguese state. At the end of 2007, CGD had net assets of €105 billion.

ENI is an Italian, multinational oil and gas company traded on the Milan and New York stock exchange.

Parpública is the holding vehicle for the Portuguese state's equity stakes in several companies.

[4] Américo Amorim is a Portuguese entrepreneur, ranked by Forbes as the 132nd richest person in the world. The roots of his fortune are in the production of cork, but he now has substantial interests in finance and energy.

Additional free-float could be positive.

While the free float of Galp could look limited today, there is an interesting possibility on the horizon that the Portuguese government could look to undertake a convertible bond in Galp in the near future. It has been mooted that an additional 7% stake in Galp could be made available, which if enacted could be positive for the stock.

Coping with a discontinuity and other risks

A wealth of investment opportunities could present risk

Management is aware of risks associated with financing of numerous investments

Successes in Brazil and potential projects in Venezuela mean that there could be what the management has referred to as a "discontinuity" in the company.

We assume that this relates to potential problems financing future capital expenditure commitments.

If this is the case, then the company would face a number of potential options:

- Sell-down interests in projects,
- Undertaking of a series of rights issues,
- Attracting a strategic shareholder, perhaps a sovereign wealth fund, or
- Selling the company.

In reality, a combination of the first three options could solve the problems of any discontinuity. However, before going ahead with any of these options, management has stated that it would discuss its financial strategy with shareholders.

Galp believe that it needs to agree its strategic options before the end of 2009.

Based on our current assumptions, we see limited problems for funding

Based on our current assumptions, our modelling of Galp and our understanding of likely resulting cash flows and balance sheet movements, we are of the opinion that Galp is unlikely to have any problems funding its share of current investment plans and also its likely commitment for eg, Tupi's development costs out of its own resources, while at the same time maintaining its financial flexibility.

On a Brazilian high… but what are the risks?

Are the volumes there? Will they be costly?

As highlighted throughout our report, the largest risk for our valuation and positive outlook for Galp is expected to be from the actual potential of Brazil. The impact of Brazil could be materially different from expectations in terms of:

- Volumes ie, the actual recoverable reserves may not be as the company or the market anticipates
- Valuation ie, if the scale and complexity of deepwater Brazil results in an elongated development process, or more costly development solution (witness Kashagan) the unit NAV assumptions of analysts could be too optimistic.
- Based on the scale of the discoveries offshore Brazil, it will prove tempting for the Brazilian government to seek a higher proportion of the economic rent from new developments. This may also render our unit NAV valuations as overly optimistic.

However, offsetting this is potential upside risk too.

- Galp's management has stated that the consortium's top-end estimate of 30 billion barrels of oil in place for Tupi should not be regarded as the maximum possible;
- Petrobras' implied assumption that 27% of the oil in place will be recoverable is also potentially conservative if enhanced oil recovery techniques are used.

Sensitivity analysis still supporting our BUY rating

We believe that our valuation is a realistic balance of upside potential and downside risks associated with this emerging hydrocarbon play. Our **BUY** recommendation is supported by sensitivity analysis (upside and downside) included earlier in this report.

Other risks

Risks for oil companies and their valuation include 'external risks' arising from the business climate, which are not directly controllable (competition risk, price risk (primarily the volatile oil macro), regulatory risk, developing country risk, currency risk, fiscal risk and economic risk).

There are also 'reputational risks', which could impact a company's share price, performance and future operations if actions are not aligned with responsible standards (eg, in terms of social responsibility, environmental safeguards, and compliance).

Inherent in an oil company's operations are hazards, which also require constant oversight and control ie, 'operational risks' (drilling risk, production risk, technical integrity risk, security risk).

Finally, forward-looking statements and guidance from oil companies involve risk and uncertainty because they relate to events in the future and actual results can differ from targets or views expressed today if any of the risks above change materially.

Investment conclusion

Despite an already positive performance since listing in October 2006, the sky is the limit for Galp Energia and a massive transformation is still to come. We see the stock as one to **BUY** now for short-medium-term value upside and long-term growth.

The usual valuation metrics and comparisons should be considered defunct for Galp: it is deservedly expensive but it can also accommodate significantly higher premiums based on our SOTP modelling. Significantly, Galp's truly differentiated and leveraged resource exposure and long-term growth prospects are outstanding.

23.6% CAGR in adjusted net profit 2007-2012F: and this before considering the long-term support offered from Brazil

We forecast a 23.6% CAGR in adjusted net profit 2007-12F with a 25% CAGR for group EBIT. In the near term, Galp's downstream division remains key for earnings. There is credible upside from both investment in efficiency and margin enhancement and also recent acquisitions. We also see earnings uplift in Galp's gas and power division on rapid gas demand growth across Iberia and increased power capacity. However, these gains will be notably enhanced further by upstream upside.

We see a volume growth of 30% CAGR 2007-15F upstream. This will provide notable cash flow uplift, and with the business diversification and integration added by expansion in upstream Brazil, in particular, we see valuable support for robust long-term sustainable earnings growth for the stock. Admittedly news flow covering the world-scale resource in the pre-salt horizons of the Santos Basin in Brazil remains hugely important. Key well results will likely drive the stock over H208 and early 2009 and will assist in delineation of the asset base and definition for development solutions.

While there are volume and value risks we remain optimistic for notable upside; and particularly so given Galp's exposure to significant resources relative to its size today.

With or without corporate interest, there is unquestionably significant value at Galp, and stock price uplift could be realised more quickly than the equity market expects.

Appendix 1 – Financials

Fig 34 Income statement (€m) – reported earnings

Yr to Dec	2007	2008F	2009F	2010F	2011F	2012F
Exploration & Production	136.0	196.9	243.7	362.2	359.0	380.6
Refining & Marketing	655.0	509.3	323.5	504.8	752.9	951.3
Gas & Power	213.0	325.4	321.9	356.2	400.8	405.7
Other items	(6.0)	16.6	17.8	17.8	17.8	17.8
Op profit (bef goodwill amort & except)	**638.0**	**782.1**	**934.9**	**1,240.9**	**1,609.3**	**1,837.8**
Op profit (bef goodwill & except, %ch YoY)	(5.8)	22.6	19.5	32.7	29.7	14.2
Net financial charges (CF)	(33.6)	(51.5)	(97.9)	(130.1)	(151.9)	(170.8)
Adj pre-tax profit	**673.0**	**791.3**	**902.6**	**1,178.9**	**1,528.1**	**1,740.4**
% ch adj pre-tax profit	1.4	17.6	14.1	30.6	29.6	13.9
Pre-tax profit	1,032.0	1,056.3	874.5	1,178.9	1,449.3	1,657.9
Taxes	(249.0)	(317.9)	(282.2)	(387.1)	(455.7)	(514.2)
Minorities	(5.0)	(3.6)	(2.9)	(3.9)	(4.9)	(5.6)
Net profit	**778.0**	**734.8**	**589.4**	**788.0**	**988.7**	**1,138.2**
% ch net profit	3.7	(5.6)	(19.8)	33.7	25.5	15.1
Adj net attributable profit	**419.0**	**469.7**	**617.5**	**788.0**	**1,067.5**	**1,220.6**
% ch adj net attributable profit	(9.1)	12.1	31.4	27.6	35.5	14.3
Oil & gas production (kbpd)	12.5	10.9	12.5	18.9	23.2	31.4
Volume growth (%)	73.6	(12.4)	14.2	51.4	22.5	35.4

Source: Company data, ING estimates

Fig 35 Balance sheet (€m)

Yr to Dec	2007	2008F	2009F	2010F	2011F	2012F
Cash & cash equivalents	106.0	325.0	325.0	325.0	325.0	325.0
Inventories	1,422.0	1,895.0	1,895.0	1,895.0	1,895.0	1,895.0
Trade receivables	1,077.0	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0
Other current operating assets	336.0	408.0	408.0	408.0	408.0	408.0
Total current assets	**2,941.0**	**3,813.0**	**3,813.0**	**3,813.0**	**3,813.0**	**3,813.0**
Goodwill	17.0	17.0	17.0	17.0	17.0	17.0
Other intangible assets	310.0	324.0	324.0	324.0	324.0	324.0
Tangible fixed assets	2,108.0	2,652.6	3,857.2	4,759.0	5,547.6	6,718.9
L/T investments	378.0	367.0	367.0	367.0	367.0	367.0
Total fixed assets and L/T investments	2,813.0	3,360.6	4,565.2	5,467.0	6,255.6	7,426.9
Total assets	**5,754.0**	**7,173.6**	**8,378.2**	**9,280.0**	**10,069**	**11,240**
S/T debt	560.0	838.5	1,747.6	2,310.0	2,564.3	3,216.8
Trade payables	956.0	932.0	932.0	932.0	932.0	932.0
Other current liabilities	980.0	1,229.0	1,202.0	1,203.0	1,204.0	1,205.0
L/T debt	280.0	478.0	478.0	478.0	478.0	478.0
L/T hybrid debt	0.0	0.0	0.0	0.0	0.0	0.0
L/T non-interest-bearing liabilities	552.0	615.0	615.0	615.0	615.0	615.0
Total liabilities	**3,328.0**	**4,092.5**	**4,974.6**	**5,538.0**	**5,793.3**	**6,446.8**
Minority interests (equity)	22.0	24.0	24.0	24.0	24.0	24.0
Shareholders equity	2,404.0	2,847.0	3,169.6	3,508.0	4,041.3	4,559.1
Total liabilities & group equity	**5,754.0**	**6,963.6**	**8,168.2**	**9,070.0**	**9,858.6**	**11,030**

Source: Company data, ING estimates

Fig 36 Cash flow (€m)

Yr to Dec	2007	2008F	2009F	2010F	2011F	2012F
EBITDA (CF)	2,062.7	1,803.9	2,344.9	3,074.5	3,912.1	4,514.5
Change in working capital	29.9	(175.0)	0.0	0.0	0.0	0.0
Operating cash flow (pre-tax)	1,224.1	804.5	1,162.4	1,525.6	1,948.9	2,250.2
Cash taxes	(283.6)	(168.9)	(282.2)	(387.1)	(455.7)	(514.2)
Operating cash flow (after-tax)	940.5	635.6	880.2	1,138.5	1,493.2	1,736.0
Net financial charges	(43.0)	(39.3)	(81.6)	(113.8)	(135.6)	(154.5)
Capital expenditure (net of disposals)	(485.3)	(795.0)	(1,468.6)	(1,226.1)	(1,159.0)	(1,614.1)
Free cash flow	**421.7**	**(210.9)**	**(686.4)**	**(217.7)**	**182.3**	**(48.8)**

Source: Company data, ING estimates

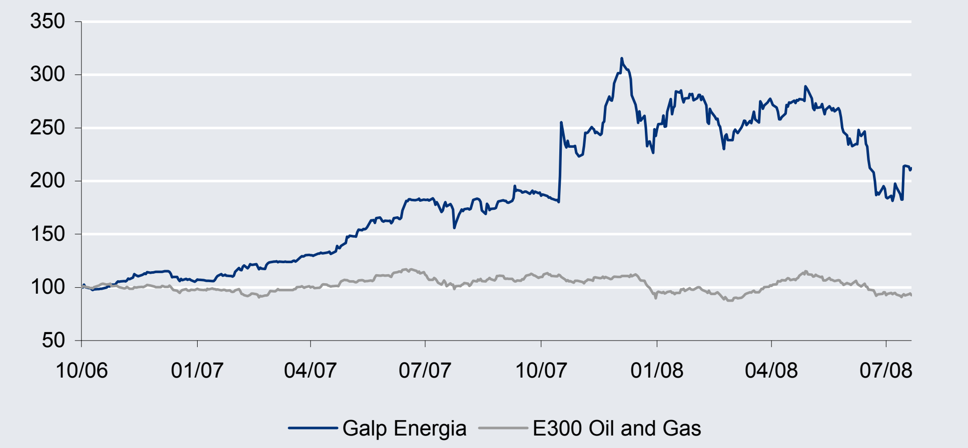
Fig 37 Per share and other data

Yr to Dec	2007	2008F	2009F	2010F	2011F	2012F
Per share data (€)						
Adj EPS	0.51	0.57	0.74	0.95	1.29	1.47
DPS	0.32	0.29	0.37	0.48	0.64	0.74
NAV	2.90	3.43	3.82	4.23	4.87	5.50
Ratios (%)						
EBITDA margin	7.2	6.2	6.3	7.8	10.0	11.8
Operating margin	5.1	4.8	4.9	6.2	8.1	9.5
EBITDA growth	(4.2)	13.5	18.2	30.6	26.5	15.2
Operating profit growth	(5.8)	22.6	19.5	32.7	29.7	14.2
Adj tax rate	40.6	42.7	33.1	34.3	30.9	30.5
ROE	35.2	28.0	19.6	23.6	26.2	26.5
ROACE	13.9	13.6	14.3	14.9	17.5	17.5
Net debt/equity	30.3	34.5	59.5	69.7	66.8	73.5
Valuation (x)						
EV/DACF	12.0	17.8	13.7	11.1	8.7	7.8
EV/EBITDA	12.7	11.5	10.5	8.4	6.7	6.1
Adj PER	25.3	22.6	17.2	13.5	9.9	8.7
Price/NAV	4.4	3.7	3.3	3.0	2.6	2.3
P/FCFPS	25.2	(50.3)	(15.5)	(48.7)	58.2	(217.1)
Adj PEG	(2.8)	1.9	0.5	0.5	0.3	0.6
Dividend yield (%)	2.5	2.2	2.9	3.7	5.0	5.8

Source: Company data, ING estimates

Appendix 2 – Performance and comps

Fig 38 Galp Energia: performance vs oils sector (relative) since 24/10/06



Source: Datastream, ING estimates

Since listing in October 2006, Galp has seen significant outperformance versus the large cap oil sector in Europe.

This performance is to be expected. Galp's management team has done an excellent job in adding value to the group's portfolio and is not resting on its laurels: witness the recently announced innovative investment deal with PDVSA; key downstream initiatives supporting earnings uplift to 2012F; and continued exploration success in Brazil.

Recent Brazil resource news flow since October 2007 has also proved particularly positive.

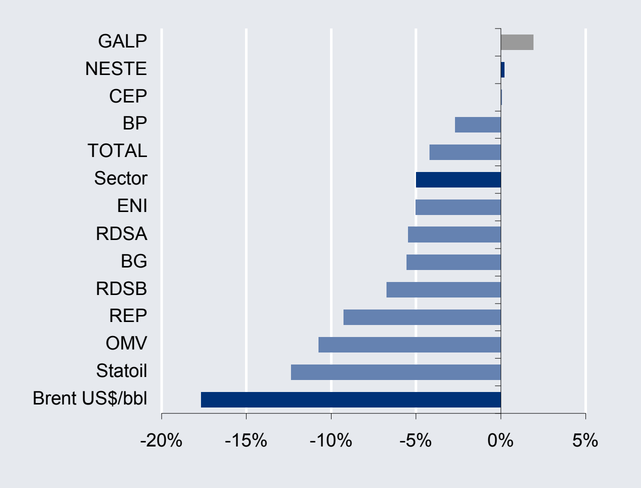
A recent uptick for Galp on further exploration success in Brazil (Iara) and also a positive outlook for margin enhancement downstream at the Q208 results (early August) reflects optimism for upside.

As detailed earlier in our report, however, there is significant value headroom still for Galp and consequently our **BUY** rating for the stock.

In the following charts it can be seen that despite upside over the last 1M, Galp still trails the sector over 3M today, and also over 6M.

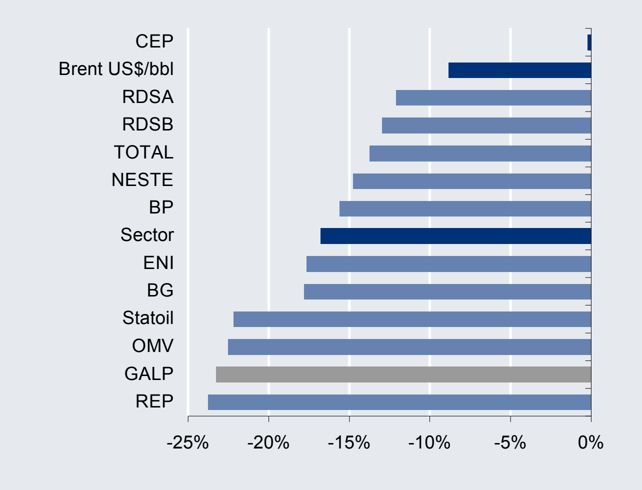
Galp is still ahead of most peers in Europe over 1Y but, relative to its size, we still see value support in Galp that can re-rate the stock in the medium term and a speedy transformation for the company into a sizeable integrated entity over the period to 2012F and beyond.

Fig 39 Oil sector and Brent performance (1M)



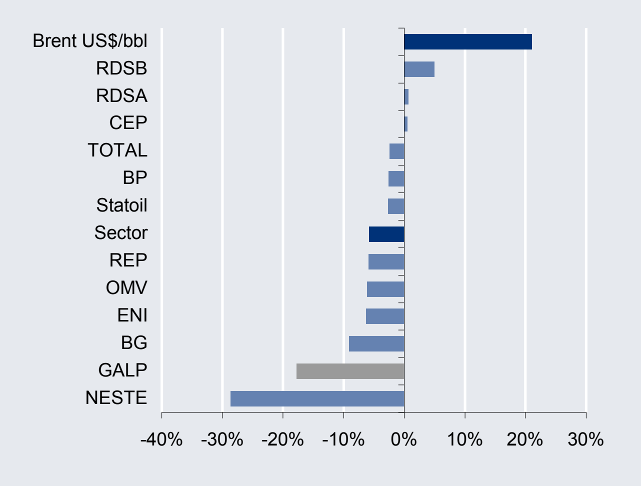
Source: Reuters

Fig 40 Oil sector and Brent performance (3M)



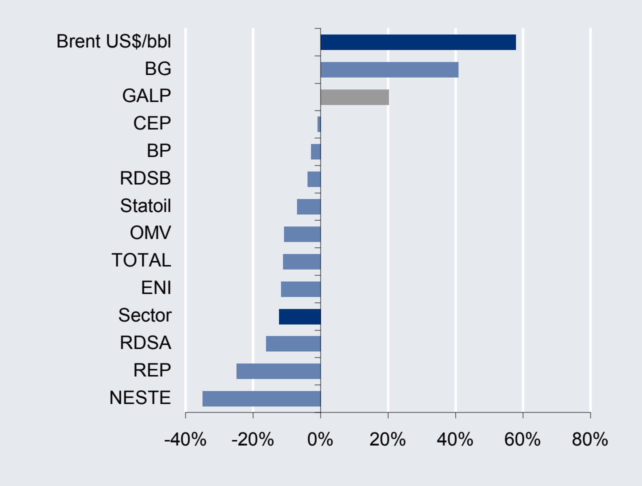
Source: Reuters

Fig 41 Oil sector and Brent performance (6M)



Source: Reuters

Fig 42 Oil sector and Brent performance (1Y)



Source: Reuters

Fig 43 Pan-European Oils: Valuation summary – updated sector comparisons and multiples (13 August 2008)

Company		Sector Avg	Ex-BG/Galp	BP (p)	RDSA (€)	RDSB (p)	TOTAL (€)	ENI (€)	Repsol (€)	StatoilHydro (NKr)	BG (p)	Galp (€)	COP	XOM	CVX
Rec		Neutral		HOLD	BUY	BUY	BUY	BUY	HOLD	HOLD	HOLD	BUY	N/R	N/R	N/R
Price	13/08/08			525	22.7	1765	47.6	21.4	20.5	150.8	1071	12.79	82.4	78.2	86.2
DCF				711	32.3	2565	74.7	31.6	27.4	204.2	1539	19.58			
Target price (DCF-20%)				569	25.8	2052	59.8	25.3	21.9	163.4	1231	15.66			
Absol' rtn (%) inc divi 2008		19.4		14.0	18.3	20.7	31.3	25.1	12.6	11.4	16.2	24.7			
Clean adj EPS	2007			51.1	2.89	1.98	5.37	2.59	2.32	22.45	52.6	0.50	9.3	7.3	8.8
	2008F			102.1	3.99	3.22	7.45	3.48	2.90	22.04	98.6	0.57	12.5	10.4	13.4
Uplift vs 2007 (in US$)		53.2		88.2	53.1	53.1	53.7	48.8	38.3	13.4	76.8	15.1	34.6	42.8	53.2
	2009F			127.9	4.69	3.88	9.21	4.53	3.18	22.11	124.4	0.74	15.7	12.8	17.9
	2010F			148.7	5.21	4.28	9.99	5.03	3.72	24.41	135.2	0.95	18.7	14.8	20.1
Clean Adj PER	2007	11.7	8.5	10.3	7.9	8.9	8.9	8.3	8.8	6.7	20.4	25.5	8.9	10.7	9.8
	2008F	8.5	6.1	5.1	5.7	5.5	6.4	6.1	7.1	6.8	10.9	22.6	6.6	7.5	6.4
2008 Prem/(disc) vs peers %				-39.3	-32.8	-35.2	-24.5	-27.4	-16.5	-19.2	28.3	166.7	-18.0	-6.8	-20.3
	2009F	6.9	5.2	4.1	4.8	4.6	5.2	4.7	6.4	6.8	8.6	17.2	5.2	6.1	4.8
	2010F	6.0	4.7	3.5	4.4	4.1	4.8	4.2	5.5	6.2	7.9	13.5	4.4	5.3	4.3
EV/DACF	2007	8.3	7.0	9.5	6.9	6.7	7.2	6.7	6.5	5.6	13.3	12.2	5.9	7.5	7.1
	2008F	7.1	5.3	5.2	4.7	4.6	6.4	5.2	6.3	4.7	7.9	19.1	4.9	5.2	4.5
2008 Prem/(disc) vs peers %				-26.4	-33.9	-35.3	-10.0	-27.3	-11.9	-34.3	10.6	168.5	-25.7	-20.4	-30.7
	2009F	5.9	4.4	4.5	4.2	4.1	4.8	4.1	5.3	4.0	7.2	15.0	4.6	5.6	3.8
	2010F	5.3	4.1	4.2	4.0	3.9	4.3	3.5	4.9	3.8	6.4	12.1	4.7	5.6	3.6
ROACE (%)	2007	17.8	18.0	20.6	16.5	16.5	20.1	16.4	9.9	25.9	20.5	13.9	14.1	31.1	22.3
	2008F	23.2	23.7	31.1	24.5	24.5	26.4	19.2	12.0	28.6	29.5	13.6	17.8	38.5	29.0
	2009F	22.2	22.2	27.5	18.5	18.5	29.8	23.1	12.7	25.4	30.4	14.3	19.3	47.7	32.2
	2010F	21.7	21.8	27.2	17.2	17.2	29.8	22.6	14.0	24.4	28.3	14.9	18.7	43.7	29.7
Pros' div yield (%)	2007	3.8	4.4	4.0	4.6	4.4	4.3	6.1	4.9	2.8	0.9	2.5	2.0	1.8	2.7
	2008F	4.4	5.1	5.6	4.6	4.4	5.7	6.6	5.9	3.0	1.2	2.2	2.2	1.9	2.8
	2009F	5.1	5.9	6.8	5.3	5.1	7.1	7.3	6.4	3.2	1.6	2.9	2.2	2.0	2.9
	2010F	5.8	6.6	7.6	5.8	5.6	8.7	8.0	7.1	3.3	1.9	3.7	2.3	2.0	3.1
Cash returns (%)	2007	5.0	6.3	7.5	6.4	6.2	5.6	7.0	4.9	6.5	2.3	2.5	7.2	9.9	5.3
	2008F	5.5	7.0	8.4	6.7	6.5	7.0	7.8	5.9	7.0	1.7	2.2	10.2	13.6	7.1
	2009F	8.5	10.8	16.7	10.9	10.7	10.7	12.8	6.4	7.7	1.5	2.9	16.5	21.1	10.4
	2010F	9.6	12.2	18.7	12.0	11.8	12.5	15.3	7.1	7.8	1.9	3.7	23.5	16.9	11.4
FCF yield (%)	2007	4.3	4.6	4.5	8.6	8.9	6.3	-4.8	3.9	4.5	3.1	3.5	12.3	9.7	15.1
	2008F	7.5	9.3	12.9	10.5	10.9	9.4	7.1	7.7	6.8	4.3	-1.9	17.6	13.9	23.9
	2009F	9.2	12.0	15.7	11.8	12.2	14.9	14.7	6.2	8.5	4.9	-6.2	14.1	14.7	30.3
	2010F	10.7	13.3	17.9	11.8	12.2	16.0	17.9	8.6	8.5	5.5	-1.8	17.2	16.9	34.3
Market cap (US$)				185.8	122.4	90.7	173.5	130.0	38.0	94.8	67.6	15.0	127.1	413.0	178.4
Market cap (local)				98.5	80.6	48.1	114.2	85.6	25.0	480.8	35.8	9.9	127.1	413.0	178.4

All premium/(disc) is vs Euro oils, except US which is vs whole peer group. Cash returns include Special Dividends (only relevent for StatoilHydro)

Source: ING estimates

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