20 March 2012

ATON

EQUITY RESEARCH

OIL AND GAS

# FSU EXPLORATION PRODUCTION

## Catching Up with the Oil Price



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| | |
|---|---|
| **KMG** | |
| MktCap | $7.8bn |
| Target MktCap | $9.8bn |
| Target price | $23.2 |
| RATING | BUY |
| Upside potential | 25% |
| **DGO** | |
| MktCap | $4.9bn |
| Target MktCap | $6.5bn |
| Target price | GBp817 |
| RATING | BUY |
| Upside potential | 32% |
| **ZKM** | |
| MktCap | $2.2bn |
| Target MktCap | $2.4bn |
| Target price | $13.0 |
| RATING | HOLD |
| Upside potential | 9% |

**With this report we initiate coverage of the three largest E&P companies in the Former Soviet Union: KazMunaiGas Exploration and Production (KMG EP), Dragon Oil (DGO) and Zhaikmunai (ZKM).** We rate **DGO** and **KMG** a **BUY** with target prices of **GBp817/share** (upside potential of 32%) and **$23.2/GDR (**upside potential of 25%), respectively. We believe that the market underestimates DGO's growth opportunities, and overlooks KMG's impressive cash pile. We rate **ZKM** a **HOLD** with a target price of **$13.0/GDR**, implying 9% upside potential. Once full capacity production is reached in 1Q12, we do not believe the company will show any further growth for the next several years.

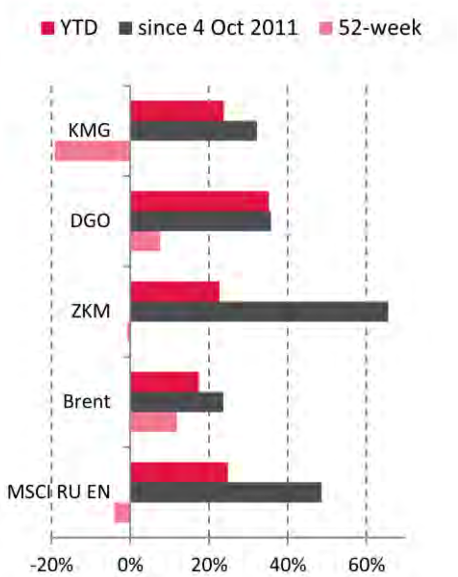
**Benefiting from oil price growth and more liberal tax regimes.** As a rule, Central Asian concessions and PSAs offer much better tax regimes than Russia's and those applied to KMG, DGO and ZKM are no exception. Not only do they facilitate better returns on investment, they frequently imply that the respective companies have greater sensitivity to the oil price. We estimate that our companies receive 33-60% from a marginal dollar, vs just 12% for Russian upstream, and 24% for Russian integrated. Structurally, 17-70% of marginal tax in Central Asia is income-based vs 3.2-14% in Russia.

**… while at the same time surviving the oil price decline.** Our top picks **DGO and KMG** would be able to survive an extreme drop in the oil price **(for DGO down to $12/bbl, and KMG EP down to $37/bbl)** thanks to the maturity of their asset portfolios and their rich cash piles. Given its relative youth and financial leverage, ZKM requires a higher oil price ($40/bbl) to remain profitable.

**Growth or dividends or both.** Longer term, all three companies' appeal depends on their growth and potential dividends, in our view. KMG EP has always been a reasonable dividend payer with yields of some 3-4% in 2006-10. A potential special dividend of $2.6/GDR ($2.1/GDR discounted) yielding 20% (16% discounted) payable in June 2013 to settle NC KMG's bond adds to KMG's draw, in our opinion. We believe even DGO's modest dividends, yielding about 2% annualised look good for a company that plans to grow 10-15% in the next four years.

**…but relative performance is quite weak** Since their low point on 4 Oct 2011, KMG EP and DGO's shares have gained 32% and 36%, respectively. This performance is better than Brent (20%) but insignificant compared to MSCI Russia's approximately 40% growth in the same period. We believe this reflects investor's political concerns as well as fears that the companies' tremendous cash piles will be judiciously invested. ZKM was a clear outperformer with its share price gaining 66% following the long-awaited launch of its Gas Treatment Facility (GTF).

**Relative performance**




Source: Bloomberg, Aton estimates

**Aton share ratings summary**

| Stock | Ticker | MktCap ($mn) | EV ($mn) | CP ($/share) | TP ($/share) | Upside potential(%) | Rating |
|---|---|---|---|---|---|---|---|
| KMG EP | KMG LI | 7,795 | 4,827 | 18.5 | 23.2 | 25% | BUY |
| Dragon Oil | DGO LN | 4,890 | 3,363 | 619 | 817 | 32% | BUY |
| Zhaikmunai | ZKM LI | 2,222 | 2,545 | 11.9 | 13.0 | 9% | HOLD |

Source: Bloomberg, Aton estimates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Prices as of close 13 Mar 2012

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## Executive Summary

| Kazakhstan in 2011 | |
|---|---|
| Crude oil proved reserves (bn bbls) | 39.8 |
| % of world total | 2.9% |
| Crude oil reserves life (years) | 68 |
| Oil production (mnt) | 80.1 |
| % growth | 0.5% |
| % of world total | 2.1% |
| Gas proved reserves (bcm) | 1,846 |
| % of world total | 1.0% |
| Gas reserves life (years) | 47 |
| Gas production (bcm) | 39.5 |
| % growth | 5.7% |
| % of world total | 1.2% |
| Crude exports (mnt) | 71.1 |
| % of production | 89% |
| Gas export | 11.7 |
| % of production | 30% |

Source: InfoTEK, BP Statistical Review, Aton estimates

| Turkmenistan in 2010 | |
|---|---|
| Crude oil proved reserves (bn bbls) | 0.6 |
| % of world total | 0.04% |
| Crude oil reserves life (years) | 8 |
| Oil production (mnt) | 10.7 |
| % growth | 2.9% |
| % of world total | 0.3% |
| Gas proved reserves (bcm) | 8,030 |
| % of world total | 4.3% |
| Gas reserves life (years) | 190 |
| Gas production (bcm) | 42.4 |
| % growth | 16.4% |
| % of world total | 1.3% |
| Crude exports (mnt) | na |
| % of production | na |
| Gas export | 30.0 |
| % of production | 71% |

Source: InfoTEK, BP Statistical Review, Aton estimates

**Kazakhstan and Turkmenistan each contain around 2% of global hydrocarbon proved reserves. Kazakhstan is primarily oil-rich (2.9% of global oil and gas condensate reserves, vs just 1% of gas), while Turkmenistan's reserves are predominantly gas (4.3% of global gas reserves vs just 0.04% of oil and gas condensate).**

The recent election results in Kazakhstan and Turkmenistan demonstrate political maturity and stability and therefore, we believe, minimal political risk. Furthermore, the danger of asset expropriation is fairly limited given the companies' good track records and arguably strong existing political connections. Taxation is relatively benign, allowing higher company takes than in Russia. With infrastructure debottlenecking gradually taking place (with the construction of the Kazakhstan-China oil pipeline, and the Turkmenistan –China gas pipeline, and a number of expected expansions), the countries ought to be able to benefit from international expansion and exposure to new markets far more than before.

**Out of 13 companies offering exposure to these regions, KMG, DGO and ZKM are the most investable, in our view.** They are the largest, trade with reasonable liquidity, and have a good composition of assets in their portfolios, in our opinion. We note that these names are for investors with a limited interest in exploration given that assets beyond 2P reserves represents only approximately a quarter (DGO) to a half (ZKM) of the total portfolios of the three names.

- **KMG EP** is a 62% state-owned company focused on upstream. The company benefits from its links to the state primarily through access to assets available for sale in Kazakhstan. There are also risks related to the state's ownership: KMG's net cash (including an NC KMG bond) of $4.9bn at YE11 is not really at KMG's disposal, though we believe the risk is priced-in.

- **Dragon Oil** is a Turkmenistan- focused company, which operates an offshore block on fairly mild PSA terms. Having resolved its infrastructure issues and secured sufficient drilling rigs, the company is now well-positioned, in our view, to deliver healthy 10-15% growth over the next four years. We believe the risks of overpaying for acquisitions are overstated, and furthermore that the potential upside associated with its expansion is too severely discounted.

- **Zhaikmunai** – the smallest of the three companies covered in this report, operates a sole Chinarevskoye field in Kazakhstan under the most attractive PSA in the region. However, we feel that unless the company accelerates its GTF expansion following the first stage's completion in 1Q12, growth is likely to be limited as soon as the company achieves the plateau level determined by its infrastructure capacity.

**Figure 1: Key qualitative characteristics of the companies**

| | KMG EP | DGO | ZKM |
|---|---|---|---|
| Growth | non-organic | 10-15% in 2012-15E | after 2014 |
| Execution | relatively weak | strong | weak |
| Assets beyond 2P | 34% | 26% | 51% |
| Management | new team | strong | strong |
| Funding needs | no need - net cash | no need - net cash | no extra needs |
| Break-even oil price | $37/bbl | $12/bbl | $40/bbl |
| Dividend yields | 3-4% (possible more) | around 2% | no dividends |

Source: Aton estimates

**Russia offers fairly limited opportunities in the upstream oil and gas sector** (see a detailed discussion in our Russian oil majors initiation report RUSSIAN OILS: Strangled by Taxes, 23 May 2011) predominantly due to the country's comparatively punitive tax regime, **obliging investors to seek opportunities beyond the country's borders**. E&P companies, and particularly those in Central Asia, are just such an opportunity and we see three key reasons to take a closer look:

- **E&P companies, as a rule, offer much more exciting growth prospects than majors and vertically integrated companies**. Among the three companies in this report, for example, DGO promises 10-15% annual production growth in 2012-15E, an achievable target, in our view. ZKM expects to more than double its production after 2015 from the level sustained over 2012-15E.
- **E&P companies in Central Asia are much better exposures to oil price volatility, given the region's superior taxation structure**. We estimate that our three companies enjoy marginal takes between 44% and 53%, while Russian upstream and integrated companies receive 12% and 24% on average, respectively.
- **Growth and better taxation facilitate healthier free cash flows**. We estimate that over the lives of their respective projects, DGO will receive free cash flows of \$19.2/boe; ZKM, \$15.3/boe; and KMG, \$13.2/boe. This is far more attractive than the \$8.9/boe generated by Russian upstream companies, on average.

**Our top pick is DGO (BUY, TP: GBp817/share)**

- **The company offers sustainable growth in the next five years**. DGO promises a 10-15% CAGR over 2012-15E. We believe that this is entirely achievable in light of its recently resolved infrastructure issues.
- **Very sizable cash pillow and the highest free cash flow generation among its peers would protect DGO in the case of a very sharp oil price decline.** We estimate that the company could survive an oil price decrease to \$12/bbl.
- **Dragon Oil has performed worse than Russian integrated names and ZKM since its low of Oct 2011.** The company has underperformed its peers since 4 Oct 2011 gaining 36% vs ZKM's 66% and 49% for MSCI Energy Russia.

**We believe KMG EP (BUY, TP: \$23.2/GDR)** also offers interesting investment opportunities at its current valuation:

- **The market undervalues the potential upside from its equity investments.** The company is traded at a 2012E EV/EBITDA of 3.2x (before adjustments for equity investments), on par with its Russian peers
- **The company offers an attractive dividend stream**. We anticipate that the company will pay out 30% of its net income as dividends going forward, which yields around 4.9% at the current share price. If approved, 2011 dividends will offer an even higher 8.0% yield.
- **KMG EP's performance has been relatively weak** on the back of overstated political apprehensions, in our view.

**We are more sceptical about ZKM (HOLD, TP: \$13.0/GDR)**

- **Zhaikmunai offers limited growth in the next two-three years** once full capacity is reached at its gas treatment facility and oil processing unit.
- **ZKM's growth requires sizable investments** in the next several years. We assume that the company will spend around \$1.0bn in 2012-15E.
- **The company has outperformed its peers since 04 Oct 2011** and we do not see immediate strong triggers for continued over performance

## Valuing E&P Companies

### Asset Types

In order to properly value an E&P company it is crucial to understand the quality of its assets. A typical E&P company holds exploration assets (acreages where the existence of hydrocarbons is still in question) and production assets (where fields have already been discovered and the existence of hydrocarbons simply requires confirmation). The higher the share of production assets, the more mature a company's assets base.

Unlike oil and gas majors and vertically integrated companies, the asset bases of which are primarily defined by proved reserves, for smaller E&P companies so-called 2P reserves (proved plus probable) are the most important. Possible reserves, even though they refer to fields that have already been discovered, carry much higher risks than 2P reserves and therefore, in our view, should be placed among risked resources rather than the reserves category, at least for valuation purposes. For a detailed description of reserves and resources, please see page 79.

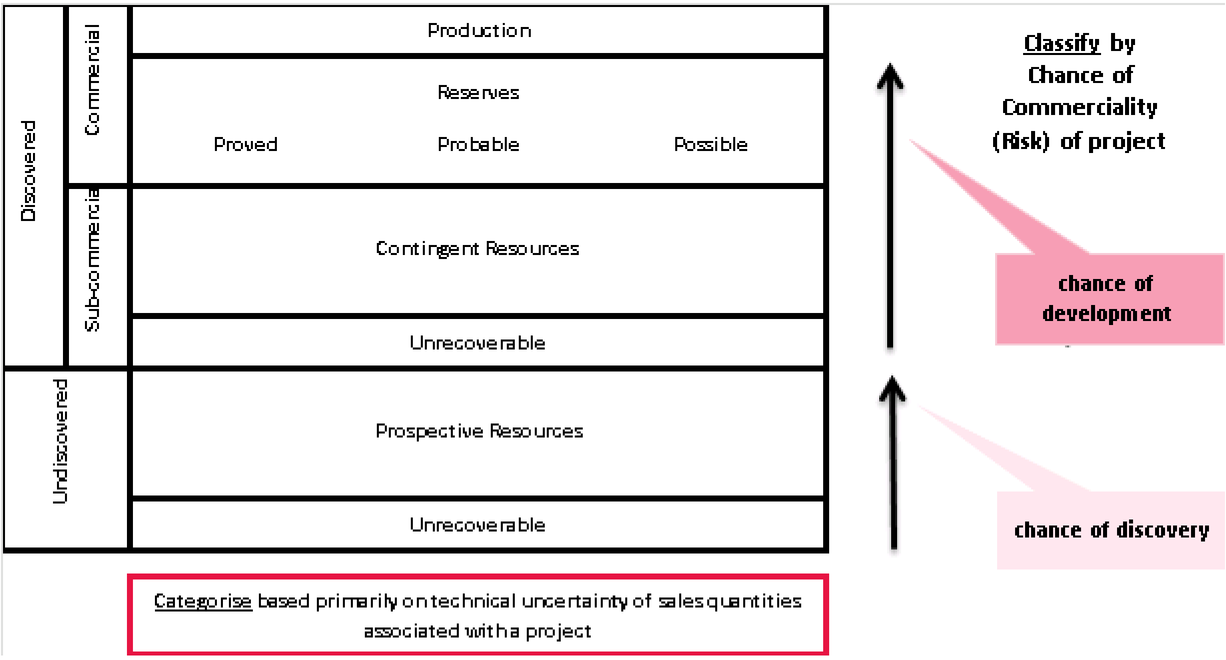
**In this report, we principally use three categories of reserves and resources:**

**2P reserves** – proved plus probable reserves. These are the most valuable reserves which form the key assets for cash flow generation purposes. Cash flows from 2P reserves are more or less predictable.

**Risked resources** - everything else a company owns. This includes possible reserves and risked contingent and prospective resources. If risked resources are not disclosed we apply the industry average discount of approximately 80% to unrisked resources.

**Total resources** – the arithmetic sum of 2P reserves and risked resources. This would comprise all of the assets a company owns. The distribution of total resources between 2P reserves and risked resources is a measure of a company's asset maturity and is one of the most important characteristics of an E&P company for valuation purposes.

**Figure 2: Reserves and Resources under SPE definitions**




Note: SPE stands for Society of Petroleum Engineers (www.spe.org)
The formal definitions of the different types of assets can be found on page 79

Source: SPE, Aton estimates

## Peer Group Valuation

**Given that KMG EP, Zhaikmunai and Dragon Oil are pure E&P companies, we believe their best peer group is the Former Soviet Union (FSU) E&P oil and gas universe.** We use different subsets of FSU names to compare the companies' market values and estimate the fair values of their 2P reserves and resources.

Given the maturity of the three companies' portfolios, we chose an FSU E&P peer subset with companies that have 2P reserves exceeding 50mn boe (see Figure 3). The subset includes five names in Russia (Exillon Energy, PetroNeft Resources, RusPetro, Volga Gas and Urals Energy), two companies in Ukraine (Regal Petroleum and JKX) and International Petroleum, which has assets in Russia and Kazakhstan. The average share of 2P reserves in the total portfolios of the peer companies is about 46% with the lowest share held by PetroNeft Resources at just 11%.

Traditionally E&P companies are compared with each other on EV/2P reserves and EV/total resources ratios (see Figure 4 and Figure 4) and via the arithmetic average of peer group companies. On these straight-forward multiples all of our companies on which we initiate look expensive.

However, we argue that this approach is one-dimensional and does not take into account three very important features of the companies:

- The composition of assets (all three have very high 2P reserve ratios)
- reserves life (lower reserves life increases NPV, bringing cash flows forward)
- reserves growth history

DGO has the highest 2P to total portfolio ratio at 74%, excluding its share in the newly acquired Bargou project in Tunisia. With this project included, the share would decline to 63%. KMG EP has the second-largest share at 66%, while ZhaikMunai offers 49%. We believe that maturity of assets (as well as the companies' capital structures) should be reflected in their market capitalisations.

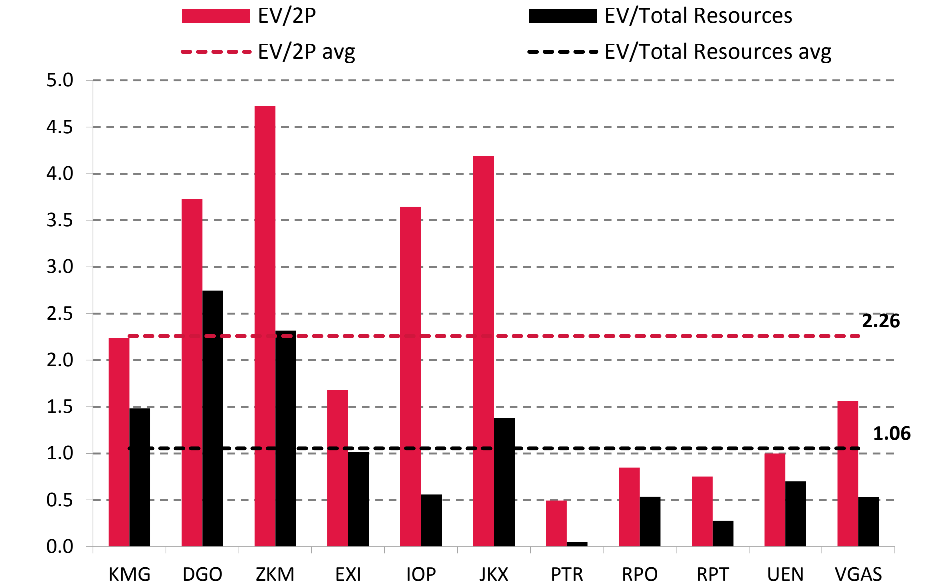
**Figure 3: The peer group**

| | Ticker | Price | Market Cap | Net Debt | EV | 1P | 2P | Total Resources | EV/ 1P | EV/ 2P | EV/Total Resources | EV*/ 2P | EV*/ Resources beyond 2P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (GBp or $) | ($mn) | ($mn) | ($mn) | (mn boe) | | (mn boe) | ($/boe) | | ($/boe) | ($/boe) | |
| KazMunaiGas EP | KMG LI | 18.50 | 7,795 | -2,968 | 4,827 | 87 | 2,141 | 3,237 | 5.53 | 2.25 | 1.49 | 2.05 | 0.41 |
| Dragon Oil | DGO LN | 619.0 | 4,890 | -1,527 | 3,363 | 30 | 902 | 1,224 | 11.1 | 3.73 | 2.75 | 3.48 | 0.70 |
| Zhaikmunai | ZKM LI | 11.90 | 2,222 | 322 | 2,545 | 14 | 539 | 1,095 | 17.7 | 4.72 | 2.32 | 3.91 | 0.78 |
| Exillon Energy | EXI LN | 220.2 | 550 | -104 | 445 | 12 | 265 | 439 | 3.56 | 1.68 | 1.01 | 1.49 | 0.30 |
| International Petroleum | IOP AO | 0.20 | 186 | 14 | 200 | 0 | 55 | 358 | na | 3.64 | 0.56 | 1.74 | 0.35 |
| JKX Oil & Gas | JKX LN | 133.5 | 354 | -5 | 350 | 0 | 83 | 253 | na | 4.19 | 1.38 | 2.97 | 0.59 |
| PetroNeft Resources | PTR LN | 8.88 | 57 | -9 | 48 | 13 | 97 | 895 | 3.60 | 0.50 | 0.05 | 0.19 | 0.04 |
| Regal Petroleum | RPT LN | 30.63 | 152 | -25 | 127 | 0 | 169 | 453 | na | 0.75 | 0.28 | 0.56 | 0.11 |
| RusPetro | RPO LN | 200.00 | 1,031 | 187 | 1,217 | 15 | 1,437 | 2,274 | 7.74 | 0.85 | 0.54 | 0.76 | 0.15 |
| Urals Energy | UEN LN | 7.50 | 28 | 30 | 59 | 34 | 59 | 84 | 1.72 | 1.00 | 0.70 | 0.92 | 0.18 |
| Volga Gas | VGAS LN | 100.00 | 125 | -5 | 120 | 45 | 77 | 225 | 2.66 | 1.56 | 0.53 | 1.13 | 0.23 |
| **Average** | | | | | | | | | **6.72** | **2.26** | **1.06** | **1.74** | **0.35** |
| **Median** | | | | | | | | | **4.56** | **1.68** | **0.70** | **1.49** | **0.30** |

Note: All prices are in GBp per share except for KMG EP and ZKM where it is $/GDR.
EV*means a part of EV related to the specified resources category (2P or Resources beyond 2P). Resource multiple is 20% of 2P multiple and sum of two EV*s is equal to current market EV.

Source: Company data, Bloomberg, Aton estimates

Figure 4: Comparative market valuation ($/boe)



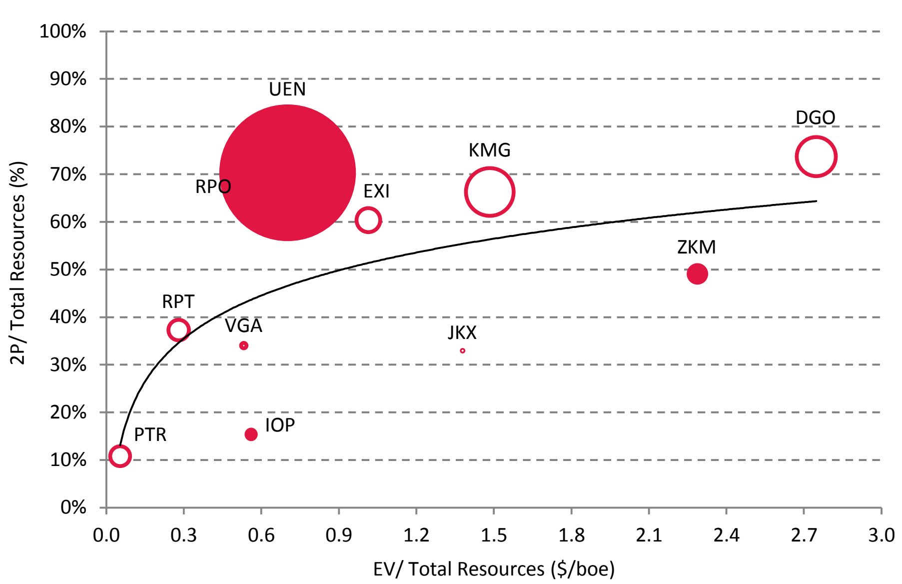

Note: Volga Gas does not report its 2P reserves under international standards

Source: Bloomberg, Aton estimates

When adding the relative composition of assets to the chart (see 2P reserves/total resources ratio in Figure 5 on the vertical axis), we noted that portfolio quality clearly matters and companies with a higher proportion of 2P reserves in their total portfolios tend to achieve higher valuations on an EV/total resources basis.

As illustrated in Figure 5, both KMG EP and DGO are traded above the best-fit line, which is an approximation of the peer group's fair relative market ratios. In both cases, the market seems to be ignoring the maturity of portfolios and the net cash available to both companies. We also believe the market is concerned with the rationale behind the companies' decisions to acquire new assets.

Figure 5: Comparative valuation – assets maturity matters ($/boe)

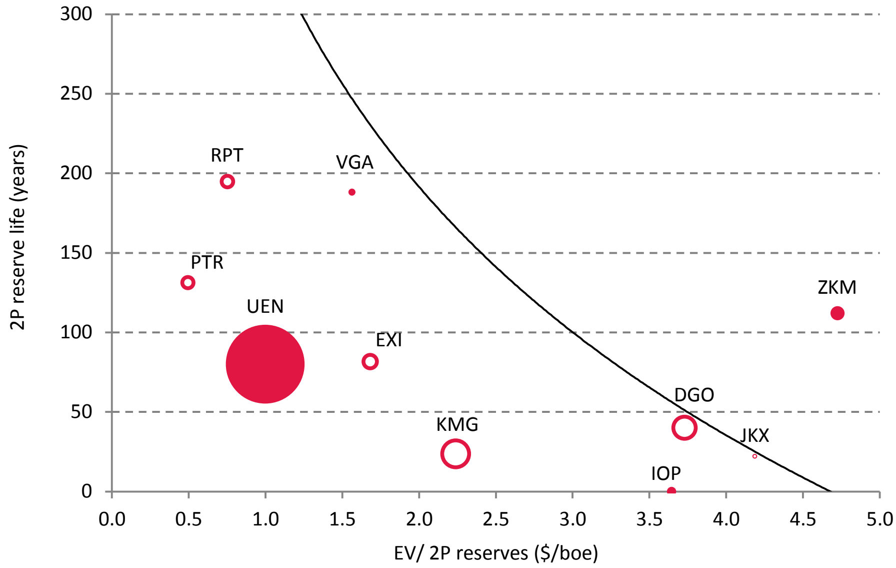



Note: The bubbles represent the relative value of the company's net debt (red) or net cash (white) to equity ratio. UEN's ratio is 103%.

Source: Bloomberg, Aton estimates

ZKM trades below the line of best fit, clearly demonstrating, in our opinion, the market's belief that it will be able to continue enhancing its 2P reserves at the rate seen since the change of control in 2004. Since 2006, for example, the company has increased its 2P reserves by 70%, implying a CAGR of 14.2%.

**Figure 6: Comparative valuation – reserves life matters ($/boe)**

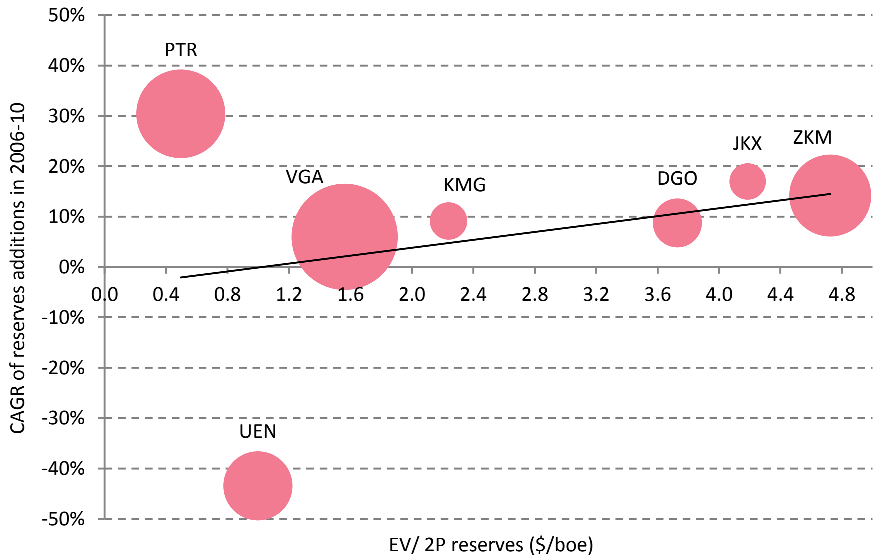



Note: RPO's reserves life (>1000 years) is outside of the chart but contributes to the trend line.

Source: Bloomberg, Aton estimates

As a rule (see Figure 6), companies with the shortest reserves life are more expensive than their peers with longer lives because the shorter the life of the reserves, the more front-loaded the cash flows. On this metric KMG is trading significantly below its fair value, as suggested by the best-fit line and DGO look fairly valued. ZKM, however, is more expensive than we believe is appropriate, its high price implying that the company will continue growing and consequently shorten its reserves life.

**Figure 7: Comparative valuation – reserves addition matters ($/boe)**




Note: Bubble size reflects the company reserves life. PTR's reserves life was 131 years at YE11.

Source: Bloomberg, Aton estimates

Unsurprisingly, investors are happier to pay more for companies with a good track record of bringing resources into reserves vs their less successful peers (see **Figure 7**).

Between 2006 and 2010, **KMG EP increased its 2P reserves from 1,510mn boe to 2,141mn boe**, implying a **CAGR of 9.1%**. This growth came primarily from acquisitions. During that period the company acquired stakes in KazGerMunai, Karazhanbasmunai, and PetroKazakhstan and deals to acquire MangistauMunaiGas (MMG), Kazakhoil Actobe (KOA) and KazakhTurkmunai (KTM) are pending. For the same period, **DGO increased its reserves from 643mn boe to 899mn boe (CAGR 8.7%) and ZKM from 317mn boe to 539mn boe (CAGR 14.2%).**

Based on EV/2P reserves adjusted for reserves growth history, we believe that DGO and ZKM are reasonably priced, while KMG EP is trading significantly cheaper than it should. We believe the market prefers organic reserves growth to non-organic reserves growth via acquisitions.

Based on financial ratios (see Figure 8), E&P companies usually trade at a significant premium to their more mature vertically-integrated peers. This is explained by their much higher implied growth rates (we talk more about the implied growth rates of E&P companies on page 33).

KMG EP is an exception: with a 2012 EV/EBITDA of 3.9x and P/E of 5.8x, it trades at a significant discount on P/E (25%) and on par on EV/EBITDA to Russian vertically-integrated companies (see Figure 24). The discount clearly evidences, in our view, the market's disappointment with the company's organic growth prospects and concerns that it might not be able to use its cash pile effectively.

However, even organically growing ZKM and DGO are among the cheapest stocks in the peer group. Both trade at 7-8x 2012 P/E on our and consensus estimates, suggesting the market factors in no growth after 2012 (see Benjamin Graham's formula on page 33), which is highly conservative, in our view.

We believe that the market is ignoring that DGO can generate healthy cash flows (over $300mn annually in 2012-14E under a $90/bbl scenario) and bears limited exploration- and no funding risk. ZKM is not yet generating free cash flow and its execution so far has raised considerable concerns, which explains the discount, in our view.

**Figure 8: Selected financial valuation multiples**

| | Bloomberg Ticker | Price (Currency /share) | Market Cap ($mn) | Net Debt ($mn) | EV ($mn) | EV/EBITDA 2010 | EV/EBITDA 2011E | EV/EBITDA 2012E | P/E 2010 | P/E 2011E | P/E 2012E |
|---|---|---|---|---|---|---|---|---|---|---|---|
| KazMunaiGas EP (Aton) | KMG LI | 18.50 | 7,795 | -2,968 | 4,827 | 3.1 | 3.2 | 3.9 | 4.9 | 5.5 | 5.8 |
| KazMunaiGas EP (Consensus) | | | | | | 3.1 | 3.2 | 2.7 | 4.9 | 5.5 | 4.7 |
| Dragon Oil (Aton) | DGO LN | 619.0 | 4,890 | -1,527 | 3,363 | 5.0 | 3.2 | 3.3 | 12.7 | 7.5 | 7.4 |
| Dragon Oil (Consensus) | | | | | | 5.0 | 3.2 | 3.3 | 12.7 | 7.5 | 7.8 |
| Zhaikmunai (Aton) | ZKM LI | 11.90 | 2,222 | 322 | 2,545 | 26.7 | 14.3 | 4.9 | 96.6 | 27.2 | 7.7 |
| Zhaikmunai (Consensus) | | | | | | 26.7 | 14.3 | 4.1 | 96.6 | 27.1 | 6.5 |
| Exillon Energy | EXI LN | 220.2 | 550 | -104 | 445 | 117 | 9.6 | 3.7 | nm | 23.0 | 8.0 |
| International Petroleum | IOP AO | 0.20 | 186 | 14 | 200 | nm | na | na | nm | na | na |
| JKX Oil & Gas | JKX LN | 133.5 | 354 | -5 | 350 | 2.4 | 2.5 | 1.9 | 16.7 | 5.2 | 3.8 |
| PetroNeft Resources | PTR LN | 8.88 | 57 | -9 | 48 | nm | 6.1 | 1.4 | nm | 17.9 | 6.2 |
| Regal Petroleum | RPT LN | 30.63 | 152 | -25 | 127 | 50.8 | 35.1 | 6.8 | nm | nm | 584 |
| RusPetro | RPO LN | 200.0 | 1,031 | 187 | 1,217 | na | nm | 28.5 | na | nm | nm |
| Urals Energy | UEN LN | 7.50 | 28 | 30 | 59 | nm | na | na | 0.5 | na | na |
| Volga Gas | VGAS LN | 100.0 | 125 | -5 | 120 | nm | 12.0 | 5.0 | nm | 18.0 | 10.7 |

Source: Bloomberg, Company data, Aton estimates

## Value of Proved Reserves

**In his book *International Petroleum Fiscal Systems and Production Sharing Contracts* (Pennwell Books, 1994), Daniel Johnston introduces a useful rule of thumb for estimating the value of proved producing reserves. According to the formula:**

EV/producing reserves = (between 1/3 and 1/2) * Company's take * Wellhead price,

where a company's take is its upstream free cash flow after all related taxes have been deducted, and the government's take is the total upstream-related taxes collected. Together, the company and government takes are equal to 100%.

We slightly adjust the formula to reflect the fair value of the proved reserves and the higher current oil price than that used for the fair value estimates:

EV/proved reserves = 1/2 * Company's take* Wellhead price.

As Figure 9 and Figure 10 show, the values estimated according to the adjusted Daniel Johnston formula correlate reasonably well with Bloomberg's consensus EV/proved reserves figures for GEM and Russian oil majors and their international peers, as well as with KMG, DGO and ZKM. We used the companies' ASC 932 (formerly called SFAS 69) disclosures at the most recent reporting date (YE11 or YE10), which means that the calculated fair values are understated given the lower-than-current oil price used in the disclosures.

In most cases, the companies' fair value ratios are below those at which they are traded. Once again, we explain this by the much lower oil prices assumed in the YE11 disclosures (and even more so at YE10) when compared to current prices.

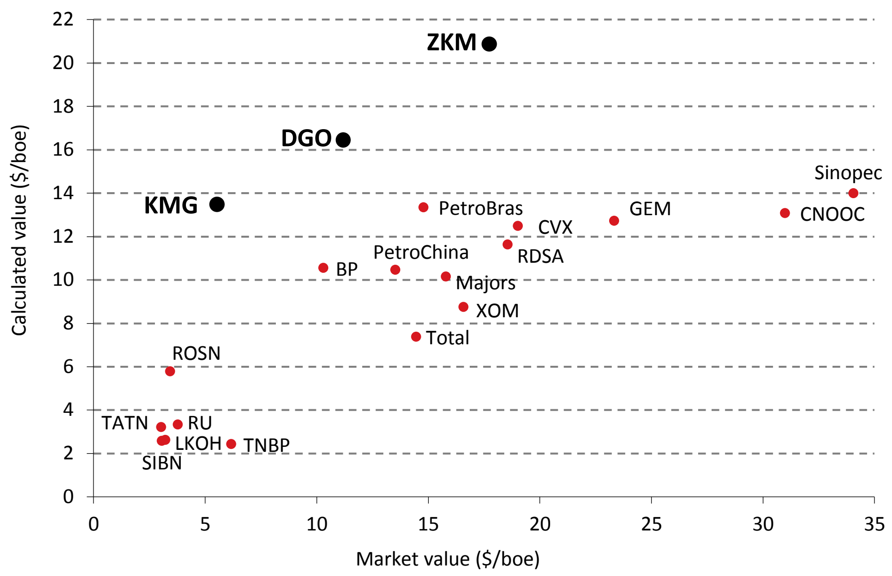
At the same time, KMG, DGO and ZKM's market valuations are below their fair estimates, which, we believe, is most likely explained by the overstatement of the respective political risk in the countries in which they companies operate, and underestimations of the companies' tax takes.

**Figure 9: Traded EV/proved reserves multiples vs fair multiples estimates**

| Company | Country | Bloomberg ticker | EV/Proved ($/boe) Traded multiple | Fair multiple |
|---|---|---|---|---|
| Rosneft | Russia | ROSN RU | 3.44 | 5.78 |
| LUKOIL | Russia | LKOH RU | 3.22 | 2.61 |
| TNK-BP Holding | Russia | TNBP RU | 6.18 | 2.41 |
| Gazprom Neft | Russia | SIBN RU | 3.06 | 2.57 |
| Tatneft | Russia | TATN RU | 3.04 | 3.20 |
| **Russia** | | **Russia** | **3.79** | **3.31** |
| BP | UK | BP/LN | 10.31 | 10.53 |
| Chevron | US | CVX US | 19.03 | 12.47 |
| ExxonMobil | US | XOM US | 16.60 | 8.74 |
| RoyalDutchShell | Netherland | RDSA LN | 18.56 | 11.61 |
| Total SA | France | FP FP | 14.47 | 7.36 |
| **Majors** | | **Majors** | **15.80** | **10.14** |
| CNOOC | | 883 HK | 31.01 | 13.07 |
| PetroChina | China | 857 HK | 13.54 | 10.44 |
| Sinopec | China | 386 HK | 34.06 | 13.98 |
| PetroBras | Brazil | PETR3 BZ | 14.80 | 13.34 |
| **GEM** | | **GEMs** | **23.35** | **12.71** |
| KazMunaiGas EP | Kazakhstan | KMG LI | 5.53 | 13.48 |
| Dragon Oil | Turkmenistan | DGO LN | 11.19 | 16.45 |
| Zhaikmunai | Kazakhstan | ZKM LI | 17.73 | 20.88 |

Source: Company data, Bloomberg, Aton estimates

**Figure 10: Fair value of the companies proved reserves vs market value ($/boe)**




Note: Calculated value represents fair EV per barrel value of proved reserves estimated based on Daniel Johnston's formula. Market value is EV/proved reserves at the current market prices

Source: Bloomberg, Aton estimates

## Value of 2P Reserves

### DCF-based

We believe that one of the best ways to estimate the fair value of 2P reserves is to discount the free cash flows related to a company's production from those reserves. Given that the production profile from 2P assets is much easier to forecast than production from much riskier resource categories, the discounted cash flow model is usually quite reliable, in our view. Moreover, it accounts for many of the specific features of each company.

At the same time, a DCF model is not necessarily a good proxy for a company's future financials, as expenditures in the short term and production (longer term) from possible reserves and exploration assets are not included in the calculations. Later in this report we examine the value of 2P reserves based on ratios (see Figure 16).

We use the following approach to estimate the equity contribution of each company's 2P assets:

- We adjust the company's EBIT for income tax and add back non-cash expenses (primarily DD&A). We then adjust for changes in working capital and deduct investments.

- We further discount the resulting unleveraged free cash flows (FCF) at the weighted average cost of capital (WACC – see Figure 11) to obtain an enterprise value for the company generated by its 2P reserves. After adjusting for net debt, we derive a per-share value of the company's 2P reserves.

- Our 12-month forward estimate of the per-share equity value contribution is obtained by summing our estimates at the beginning of 2012 and 2013, with each weighted according to the number of days remaining until the beginning of 2013 and the number of days that have passed in 2012, respectively. The values at the end of the relevant years are presented in Figure 13 to Figure 15.

**Figure 11: WACC estimates**

| | KMG | DGO | ZKM |
|---|---|---|---|
| Risk-free rate | 4.50% | 4.50% | 4.50% |
| Standard equity risk premium | 4.00% | 4.00% | 4.00% |
| Country specific equity premium | 5.50% | 6.00% | 5.50% |
| Liquidity premium | 0.00% | 0.00% | 1.00% |
| Company specific risk premium | 1.50% | 0.50% | 2.00% |
| **Cost of equity** | **15.50%** | **15.00%** | **17.00%** |
| Cost of debt (after-tax) | | | 7.70% |
| Target debt share | 0% | 0% | 30% |
| **WACC** | **15.50%** | **15.00%** | **14.21%** |

Source: Bloomberg, Aton estimates

- **Cost of equity:** Our cost of equity is the sum of the following components:
  - Risk-free rate is based on an expected 12M yield to maturity (YtM) for 30-year US treasury bonds
  - Standard equity risk premium is based on the historical difference in returns between US stocks and bonds
  - Country-specific equity risk premium: CDS multiplied by the (KAZE) volatility ratio to the volatility of the S&P 500. For Turkmenistan, we arbitrarily add 1.5% to Kazakhstan's equity risk premium.
  - Company-specific liquidity risk premium. Both KMG EP and DGO are quite liquid (average daily trading volumes in London $5.0mn and $8.2mn over the past six months, respectively), but not ZKM – trading volumes amounted to only $0.5mn in the same period.
  - Corporate governance equity risk premium (ERP). We ranked the companies according to their key corporate governance components (see Figure 12).

**Figure 12: Corporate government matrix**

| | KMG | DGO | ZKM |
|---|---|---|---|
| Transparency of ownership | +++ | +++ | --- |
| Concentration and influence of ownership | +++ | ++ | + |
| Influence of external stakeholders | ----- | - | --- |
| Voting and shareholder meeting procedures | -- | - | - |
| Ownership and financial rights | +++ | + | - |
| Shareholder rights disclosure | + | + | + |
| Takeover defence | ++ | --- | + |
| Ownership structure | + | + | - |
| Financial information and audit process | + | ++ | - |
| Board and management information | - | - | - |
| Board and management remuneration disclosure | ++ | ++ | ++ |
| Board composition | ++ | ++ | ++ |
| Board effectiveness | -+ | -+ | -+ |
| Board and executive compensation | ++ | ++ | ++ |

Note: "+"and "-" imply positive and negative impact on corporate governance quality, respectively

Source: S&P, Aton estimates

- **WACC:** Given that KMG EP and DGO are cash-rich and unlikely to change their capital structure in the forecast period, or raise debt, we use cost of equity for discounting cash flows in our financial model. ZKM has historically financed its business via a mixture of debt and equity, so we assume the target debt share at

30% and the cost of debt at 11% pre-tax (based on the current yield of ZKM's bond) and 7.7% after-tax.

We use the length of the production-sharing agreements for Dragon Oil (to 2035, including a possible extension) and Zhaikmunai (to 2033) as our forecast period. For KMG EP, we use a standard combination of annual cash flow projections for the period 2012-16E and the terminal value of the business assuming the going concern principle. As a result, we established the following values (see Figure 13 to Figure 15).

**Figure 13: KMG EP - DCF valuation model (based on 2P reserves)**

| ($mn, except where noted) | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | Terminal |
|---|---|---|---|---|---|---|---|
| Adjusted EBIT | | 938 | 1,022 | 1,022 | 1,022 | 1,022 | |
| Tax rate (%) | | 31% | 30% | 30% | 30% | 29% | |
| Fully taxed | | 649 | 712 | 715 | 718 | 721 | |
| Depreciation plus exploration expense | | 313 | 322 | 322 | 322 | 322 | |
| Net investing (core assets) | | -852 | -620 | -620 | -620 | -620 | |
| Movements in working capital | | 25 | -20 | 3 | -2 | 1 | |
| Free cash flows (core assets) | | 135 | 395 | 421 | 419 | 424 | 2,218 |
| Cash flows from JV's and associates | | 428 | 412 | 392 | 375 | 358 | 1,875 |
| **Total free cash flows** | | **563** | **806** | **812** | **794** | **782** | **4,093** |
| Net debt | -2,968 | -3,576 | -4,986 | -5,520 | -6,053 | | |
| NPV unleveraged free cash flows (EV) | 4,437 | 4,562 | 4,462 | 4,341 | 4,220 | | |
| **Equity value** | **7,405** | **8,137** | **9,448** | **9,861** | **10,274** | | |
| **Per share, at the end of period ($/GDR)** | **17.57** | **19.31** | **22.42** | **23.40** | **24.38** | | |

Note: Tax rate represents effective tax rate that includes income tax and excess profit tax

Source: Aton estimates

**Figure 14: DGO - DCF valuation model (based on 2P reserves)**

| ($mn, except where noted) | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017-35E |
|---|---|---|---|---|---|---|---|
| Adjusted EBIT | | 839 | 977 | 1,077 | 1,183 | 1,053 | 10,982 |
| Tax rate (%) | | 25% | 25% | 25% | 25% | 25% | |
| Fully taxed | | 629 | 733 | 808 | 887 | 790 | 8,236 |
| Depreciation plus exploration expense | | 184 | 202 | 243 | 223 | 209 | 5,589 |
| Unleveraged cash flows | | 814 | 935 | 1,051 | 1,110 | 999 | 13,825 |
| Net investing | | -520 | -656 | -724 | -430 | -180 | -2,320 |
| Movements in working capital | | -1 | 0 | 0 | 0 | 0 | 76 |
| **Unleveraged free cash flows** | | 293 | 279 | 327 | 680 | 819 | 11,581 |
| NPV unleveraged free cash flows (EV) | 3,749 | 4,018 | 4,341 | 4,665 | 4,685 | 4,569 | |
| Net debt | -1,527 | -1,624 | -1,734 | -1,867 | -2,283 | -2,828 | |
| **Equity value** | **5,275** | **5,642** | **6,075** | **6,532** | **6,967** | **7,396** | |
| **Per share, year end** | **638.7** | **689.9** | **742.8** | **798.8** | **852.0** | **904.4** | |

Source: Aton estimates

**Figure 15: ZKM - DCF valuation model (based on 2P reserves)**

| ($mn, except where noted) | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017-33E |
|---|---|---|---|---|---|---|---|
| Adjusted EBIT | | 462 | 501 | 494 | 733 | 826 | 3,947 |
| Tax rate (%) | | 30% | 30% | 30% | 30% | 30% | |
| Fully taxed | | 323 | 350 | 346 | 513 | 578 | 2,763 |
| Depreciation plus exploration expense | | 61 | 53 | 53 | 91 | 101 | 565 |
| Unleveraged cash flows | | 384 | 403 | 398 | 604 | 678 | 3,328 |
| Net investing | | -150 | -320 | -320 | -170 | -81 | -194 |
| Movements in working capital | | 0 | 0 | 0 | 0 | 0 | 0 |
| **Unleveraged free cash flows** | | **234** | **83** | **78** | **434** | **598** | **3,134** |
| NPV unleveraged free cash flows (EV) | 2,191 | 2,269 | 2,508 | 2,786 | 2,748 | 2,541 | 2,276 |
| Net debt | 322 | 142 | 97 | 52 | -314 | -834 | -1,401 |
| **Equity value** | **1,869** | **2,127** | **2,411** | **2,734** | **3,062** | **3,375** | |
| **Per share, year end** | **9.99** | **11.36** | **12.85** | **14.57** | **16.31** | **17.97** | |

Source: Aton estimates

### Multiple-based

We further tested our DCF-derived value of 2P reserves with a multiple-based valuation (see Figure 16). We applied the averages of FSU peers (the entire 30-company universe), closest peers (the 11 companies described in Figure 3), and M&A deal averages (see Figure 23). As a result, we have quite a wide range of fair values.

Only historic M&A deals imply potential upside for KMG, but not for fast-growing DGO and ZKM. We note again that all typical average ratios fail to account for either composition of assets or capital structures.

**Figure 16: Multiple-based valuation of 2P reserves**

| | EV/2P ($/boe) | KMG | DGO | ZKM |
|---|---|---|---|---|
| **2P Reserves (mn boe)** | | **2,141** | **902** | **539** |
| **Implied EV range ($mn)** | | | | |
| Closest peers | 1.74 | 3,732 | 1,572 | 939 |
| FSU peers | 1.98 | 4,242 | 1,787 | 1,067 |
| M&A deals | 2.94 | 6,302 | 2,655 | 1,585 |
| Net debt YE12 ($mn) | | -3,576 | -1,624 | 142 |
| **Equity contribution from 2P ($mn)** | | | | |
| Closest peers | | 7,308 | 3,197 | 797 |
| FSU peers | | 7,817 | 3,411 | 925 |
| M&A deals | | 9,878 | 4,280 | 1,444 |
| **2P contribution per share/GDR** | | | | |
| Closest peers | | 17.3 | 404.7 | 4.3 |
| FSU peers | | 18.6 | 431.8 | 5.0 |
| M&A deals | | 23.4 | 541.7 | 7.7 |
| **Upside potential (%)** | | | | |
| Closest peers | | -6% | -35% | -64% |
| FSU peers | | 0% | -30% | -58% |
| M&A deals | | 27% | -12% | -35% |

Source: Company data. Aton estimates

## What Resources Might Add to Company Value?

It is hardly surprising that resources (and the companies exploring them) are traditionally much cheaper than reserves (and their producing companies). However, even though a huge exploration risk is attached to investments in resources, they undoubtedly add some value. We estimate that on average, purely exploration companies are traded at about $0.36/boe (see Figure 22), while the entire universe is valued at about $0.92/boe of total resources (see Figure 21). This clearly indicates how much value can be added by increasing the share of 2P reserves.

Of the three companies in this report, only KMG EP holds a large portfolio of exploration assets (see Figure 17), while the other companies can boast hardly any at all.

KMG EP's resources beyond 2P include 848mn boe of risked resources and 248mn boe of possible reserves. According to KMG, the most sizable geological resources are contained in Fedorovskiy (162mn boe of risked resources), Karaton (136mn boe of risked resources) and Zharkamys (134mn boe of risked resources).

DGO's resources in Turkmenistan primarily consist of contingent gas volumes which are subject to further clarification based on gas monetisation alternatives. DGO successfully moved a portion of its resources into reserves in 2011 and we expect it to continue upgrading its resources going forward.

**Figure 17: KMG EP's exploration projects**

| | Project | Share | Area (km2) | Net recoverable resources (mn bbls) Unrisked | Risked | Geological success rate | Test production start | Capex ($mn) 2012-16 |
|---|---|---|---|---|---|---|---|---|
| 1 | Liman | 100% | 6,468 | 146 | 51 | 35% | 2015 | 5 |
| 2 | R-9 | 100% | 5,894 | 63 | *19* | *30%* | | 0 |
| 3 | Taisogan | 100% | 9,605 | 22 | *7* | *30%* | | 0 |
| 4 | Karaton-Sarkamys | 100% | 3,718 | 412 | 136 | 33% | 2017 | 112 |
| 5 | Uzen-Karamandybas | 100% | 2,100 | 135 | 58 | 43% | 2016 | 42 |
| 6 | Temir | 100% | 3,874 | 453 | *149* | *33%* | | 0 |
| 7 | Tereshken | 100% | 4,928 | | | | | 0 |
| 8 | Zharkamys East I | 100% | 1,190 | 479 | 134 | 28% | 2015 | 72 |
| 9 | Karpovskiy Severnyi | 100% | 1,669 | 240 | 72 | 30% | | 0 |
| 10 | Fedorovskiy | 50% | 3,128 | 208 | 162 | 78% | 2016 | 113 |
| 11 | White Bear | 35% | 213 | *200* | *60* | *30%* | | 0 |
| | **Total** | | **42,787** | **2,357** | **848** | **36%** | | **344** |

Note: Figures in italic are our estimates based on KMG EP guidance and FSU E&P statistics

Source: Company data. Aton estimates

Beyond Turkmenistan, DGO recently announced its first acquisition which involves exploration assets in Tunisia. DGO signed a farm-in agreement with a commitment to pay 75% of the cost of drilling a well ($20mn) at the Bargou Exploration Permit area. The company will then earn a 55% participating interest in the project and become the operator during the development phase. Current estimates of Bargou's prospective resources vary widely from 130mn boe to 600mn boe on a gross basis (72-330mn boe net to DGO). The acquisition price did not exceed $0.28/boe, which we view as reasonable. However, it is too early to estimate the value that Bargou may add to DGO, in our view.

**Figure 18: Compositions of companies' asset portfolios**

| Subsidiary/ contract | Location | Interest (%) | Proved (mn boe) | Probable (mn boe) | 2P reserves (mn boe) | Possible (mn boe) | 3P (mn boe) | Contingent resources (mn boe) | Unrisked prospective resources (mn boe) | Risked prospective resources (mn boe) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dragon Oil** | | | | | | | | | | |
| Cheleken contract area | Turkmenistan | 100% | 301 | 601 | 902 | 0 | 902 | 322 | | |
| Bargou Exploration | Tunisia | 55% | | | | | | | | 201 |
| Block 35 | Yemen | 10% | | | | | | | | |
| **Total** | | | **301** | **601** | **902** | | **902** | **322** | | **201** |
| **KMG EP** | | | | | | | | | | |
| Uzen | Kazakhstan | 100% | 452 | 808 | 1,260 | 136 | 1,396 | | | |
| Emba | Kazakhstan | 100% | 149 | 85 | 447 | 112 | 559 | | | |
| KazGerMunai | Kazakhstan | 50% | 90 | 0 | 90 | 0 | 90 | | | |
| CCEL | Kazakhstan | 50% | 182 | 43 | 225 | 0 | 225 | | | |
| PetroKazakhstan | Kazakhstan | 33% | 0 | 134 | 119 | | 119 | | | |
| Mangistaumunaigas | Kazakhstan | 50% | | | 278 | | 278 | | | |
| Kazakhoil Aktobe (KOA) | Kazakhstan | 50% | | | 109 | | 109 | | | |
| Kazakturkmunai (KTM) | Kazakhstan | 51% | | | 21 | | 21 | | | |
| Exploration contracts | Kazakhstan, North Sea | 35%-100% | | | | | | | 2,357 | 848 |
| **Total** | | | **873** | **1,070** | **2,549** | **248** | **2,797** | | **2,357** | **848** |
| **Zhaikmunai** | | | | | | | | | | |
| Chinarevskoye field | Kazakhstan | 100% | 144 | 395 | 539 | 556 | 1,095 | | | |

Note: DGO doesn't disclose its proved reserves; we assume their volume as one-third of 2P reserves. We do not include Bargou's resources in DGO's valuation. Acquisition of MMG, KOA and KTM is not completed and corresponding assets are not incorporated in KMG EP's valuation.

Source: Company data. Aton estimates

**Zhaikmunai is not focused on exploration**. Its exploration licence expired in May 2011 and while the company has applied for an extension, no answer has been received from the authorities yet. The company has not even disclosed its possible reserves estimates at YE10 in its 2011 management report referring to the fact that ZKM carried out no appraisal activities in 2010 or 2011. However, we believe this approach is overly conservative.

To achieve a resources valuation estimate (beyond 2P), we employed the ratios of resource companies (or companies with primarily exploration assets, such as Max Petroleum, Tethys Petroleum, Cadogan Petroleum, etc. – see Figure 22 for companies with resources representing more than 90% of their total portfolio) and M&A deals that primarily involved resource companies (see Figure 23).

**Figure 19: Multiple-based valuation of resources beyond 2P**

| | EV/ Resources ($/boe) | KMG | DGO | ZKM |
|---|---|---|---|---|
| **Resources beyond 2P (mn boe)** | | **1,096** | **322** | **556** |
| Implied EV range = Equity value addition ($mn) | | | | |
| Closest peers | 0.35 | 382 | 112 | 194 |
| FSU peers | 0.36 | 393 | 115 | 199 |
| M&A deals | 0.59 | 647 | 190 | 328 |
| **Resources addition per share/GDR** | | | | |
| Closest peers | | 0.9 | 14.2 | 1.0 |
| FSU peers | | 0.9 | 14.6 | 1.1 |
| M&A deals | | 1.5 | 24.0 | 1.8 |

Source: Source: Company data, Aton estimates

As shown in Figure 19, these resources contribute from $0.9 to $1.5/GDR (or 4-7%) to the KMG EP 2P value, from GBp14.2 to GBp24/share (or 2-3%) to DGO's 2P value and $1.0-1.8/GDR (or 9-15%) to the target price of ZKM's reserves.

## Fair Value

We estimate the target prices of the companies' shares by adding the value of their respective resources (at the average multiples of their traded peers, and recent M&A deals) to the DCF-derived fair value of the companies' 2P reserves (see Figure 20).

We then include potential upside from acquisitions (the Bargou farm-in for DGO and MMG, KOA and KTM for KMG) and DGO's potential shifting of contingent resources to 2P reserves.

The target price estimates obtained via the above mentioned method imply 32% upside potential to the current share price for DGO, 25% for KMG, and 9% for ZKM.

**Figure 20: Valuation summary (currency per GDR or share, except as noted)**

| | KMG | DGO | ZKM |
|---|---|---|---|
| **2P valuation:** | | | |
| Value of 2P assets - DCF | 19.9 | 700 | 11.7 |
| Weight of DCF-derived | 100% | 100% | 100% |
| Value of 2P assets - multiples (average) | 18.6 | 432 | 5.0 |
| **Value of 2P assets** | **19.9** | **700** | **11.7** |
| Exploration upside (average) | 1.1 | 18 | 1.3 |
| Upside from acquisitions (farm-ins) | 2.1 | 26 | |
| Transfer of contingent resources to 2P | | 73 | |
| **Target price including additional upsides** | **23.2** | **817** | **13.0** |
| **Total upside potential (%)** | **25%** | **32%** | **9%** |

Source: Aton estimates

**Figure 21: Traded E&P companies in FSU**

| | Ticker | Price (Currency /share) | Price ($/share) | Shares out | Market Cap ($mn) | Net Debt ($mn) | EV ($mn) | 2P Reserves (mn boe) | Total Resources (mn boe) | EV/2P ($/boe) | EV/ Total Resources ($/boe) | Assets |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aladdin Oil & Gas | AOGC NS | 1.75 | **0.29** | 64 | **19** | 16 | **35** | 38 | 337 | 0.93 | 0.10 | Russia |
| Cadogan Petroleum | CAD LN | 28.25 | **0.44** | 231 | **101** | -31 | **70** | 2 | 522 | 35.55 | 0.13 | Ukraine |
| Caspian Energy | CEK CN | 0.24 | **0.24** | 221 | **52** | -1 | **51** | 2 | 100 | 21.91 | 0.51 | Kazakhstan |
| Condor Petroleum | CPI CN | 0.45 | **0.44** | 346 | **153** | -70 | **83** | 0 | 154 | | 0.54 | Kazakhstan |
| Cub Energy (3P Intl) | KUB CN | 0.40 | **0.39** | 80 | **31** | -16 | **15** | 4 | 9 | 3.35 | 1.59 | Ukraine |
| Dragon Oil | DGO LN | 619.00 | **9.57** | 511 | **4,890** | -1,527 | **3,363** | 902 | 1,224 | 3.73 | 2.75 | Turkmenistan |
| Exillon Energy | EXI LN | 220.20 | **3.40** | 162 | **550** | -104 | **445** | 265 | 439 | 1.68 | 1.01 | Russia |
| Frontera Resources | FRR LN | 1.08 | **0.02** | 2,013 | **33** | 115 | **148** | 0 | 162 | | 0.92 | Georgia |
| Greenfields Petroleum | GNF CN | 5.95 | **5.85** | 15 | **87** | -46 | **41** | 21 | 244 | 1.93 | 0.17 | Azerbaijan |
| Hawkley Oil & Gas | HOG AU | 0.18 | **0.17** | 286 | **49** | -15 | **34** | 8 | 49 | 4.40 | 0.71 | Ukraine |
| International Petroleum | IOP AO | 0.20 | **0.20** | 949 | **186** | 14 | **200** | 55 | 358 | 3.64 | 0.56 | Russia, Kazakhstan |
| JKX Oil & Gas | JKX LN | 133.50 | **2.06** | 172 | **354** | -5 | **350** | 83 | 253 | 4.19 | 1.38 | Ukraine, Russia, Hungary |
| Jupiter Energy | JPR AU | 0.67 | **0.69** | 116 | **79** | -14 | **65** | 24 | 80 | 2.69 | 0.81 | Kazakhstan |
| KazMunaiGas EP | KMG LI | 18.5000 | **18.50** | 421 | **7,795** | -2,968 | **4,827** | 2,141 | 3,237 | 2.25 | 1.49 | Kazakhstan |
| Manas Petroleum | MNAP US | 0.25 | **0.25** | 170 | **43** | -2 | **41** | 0 | 100 | | 0.41 | Tajikistan, Kyrgyzstan, Mongolia, Albania |
| Matra Petroleum | MTA LN | 0.91 | **0.01** | 1,355 | **19** | -3 | **16** | 0 | 31 | | 0.52 | Russia |
| Max Petroleum | MXP LN | 13.25 | **0.20** | 1,012 | **207** | 96 | **303** | 13 | 1,173 | 22.70 | 0.26 | Kazakhstan |
| Orca Energy (ex | OGY AU | 0.04 | **0.04** | 460 | **18** | 0 | **18** | 0 | 396 | | 0.05 | Kyrgyzstan |
| PetrolInvest | OIL PW | 2.35 | **0.67** | 129 | **86** | 66 | **152** | 0 | 416 | | 0.36 | Russia |
| Petrogrand | PETRO SS | 17.30 | **2.51** | 40 | **101** | -26 | **75** | 0 | 231 | | 0.32 | Poland, Kazakhstan |
| Petroneft Resources | PTR LN | 8.88 | **0.14** | 416 | **57** | -9 | **48** | 97 | 895 | 0.50 | 0.05 | Russia |
| Regal Petroleum | RPT LN | 30.63 | **0.47** | 321 | **152** | -25 | **127** | 169 | 453 | 0.75 | 0.28 | Ukraine |
| Roxi Petroleum | RXP LN | 4.88 | **0.08** | 610 | **46** | 37 | **83** | 3 | 129 | 32.26 | 0.64 | Kazakhstan |
| RusPetro | RPO LN | 200.00 | **3.09** | 333 | **1,031** | 187 | **1,217** | 1,437 | 2,274 | 0.85 | 0.54 | Russia |
| Selena Oil and Gas | SOGH SS | 6.25 | **0.91** | 43 | **39** | 1 | **40** | 22 | 53 | 1.83 | 0.75 | Russia |
| Shelton Petroleum | SHELB SS | 13.60 | **1.97** | 11 | **21** | 1 | **22** | 5 | 91 | 4.77 | 0.24 | Ukraine, Russia |
| Tethys Petroleum | TPL CN | 0.90 | **0.88** | 287 | **254** | -24 | **229** | 20 | 1,031 | 11.57 | 0.22 | Kazakhstan, Uzbekistan, Tajikistan |
| Transeuro Energy | TSU CN | 0.12 | **0.12** | 317 | **37** | -2 | **35** | 0 | 255 | | 0.14 | Ukraine, Canada |
| Urals Energy | UEN LN | 7.50 | **0.12** | 245 | **28** | 30 | **59** | 59 | 84 | 1.00 | 0.70 | Russia |
| Volga Gas | VGAS LN | 100.00 | **1.55** | 81 | **125** | -5 | **120** | 77 | 225 | 1.56 | 0.53 | Russia |
| Victoria Oil & Gas | VOG LN | 4.63 | **0.07** | 2,569 | **184** | -6 | **177** | 48 | 583 | 3.70 | 0.30 | Cameroon, Russia |
| Zhaikmunai | ZKM LI | 11.90 | **11.90** | 187 | **2,222** | 322 | **2,545** | 539 | 1,095 | 4.72 | 2.32 | Kazakhstan |
| **Total/ Average** | | | | | **19,030** | | **14,998** | **5,995** | **16,348** | **2.41** | **0.92** | |

Source: Bloomberg, company data, Aton estimates

## Figure 22: Analysis of current market asset-based multiples

| | Ticker | Price (Currency /share) | Market Cap ($mn) | EV ($mn) | 2P Reserves (mn boe) | Total Resources (mn boe) | 2P/ Total Resources (%) | EV/ Resources only | Remaining EV/2P |
|---|---|---|---|---|---|---|---|---|---|
| Condor Petroleum | CPI CN | 0.45 | 153 | 83 | 0 | 154 | 0% | 0.54 | |
| Frontera Resources | FRR LN | 1.08 | 33 | 148 | 0 | 162 | 0% | 0.92 | |
| Manas Petroleum | MNAP US | 0.25 | 43 | 41 | 0 | 100 | 0% | 0.41 | |
| Matra Petroleum | MTA LN | 0.91 | 19 | 16 | 0 | 31 | 0% | 0.52 | |
| Orca Energy (ex Monitor) | OGY AU | 0.04 | 18 | 18 | 0 | 396 | 0% | 0.05 | |
| PetrolInvest | OIL PW | 2.35 | 86 | 152 | 0 | 416 | 0% | 0.36 | |
| Petrogrand | PETRO SS | 17.30 | 101 | 75 | 0 | 231 | 0% | 0.32 | |
| Transeuro Energy | TSU CN | 0.12 | 37 | 35 | 0 | 255 | 0% | 0.14 | |
| Cadogan Petroleum | CAD LN | 28.25 | 101 | 70 | 2 | 522 | 0% | 0.13 | |
| Max Petroleum | MXP LN | 13.25 | 207 | 303 | 13 | 1,173 | 1% | 0.26 | |
| Tethys Petroleum | TPL CN | 0.90 | 254 | 229 | 20 | 1,031 | 2% | 0.22 | |
| Roxi Petroleum | RXP LN | 4.88 | 46 | 83 | 3 | 129 | 2% | 0.64 | |
| Caspian Energy | CEK CN | 0.24 | 52 | 51 | 2 | 100 | 2% | 0.51 | |
| Shelton Petroleum | SHELB SS | 13.60 | 21 | 22 | 5 | 91 | 5% | 0.24 | |
| Victoria Oil & Gas | VOG LN | 4.63 | 184 | 177 | 48 | 583 | 8% | 0.30 | |
| Greenfields Petroleum | GNF CN | 5.95 | 87 | 41 | 21 | 244 | 9% | 0.17 | |
| Petroneft Resources | PTR LN | 8.88 | 57 | 48 | 97 | 895 | 11% | | |
| Aladdin Oil & Gas | AOGC NS | 1.75 | 19 | 35 | 38 | 337 | 11% | | |
| International Petroleum | IOP AO | 0.20 | 186 | 200 | 55 | 358 | 15% | | 1.67 |
| Hawkley Oil & Gas | HOG AU | 0.18 | 49 | 34 | 8 | 49 | 16% | | 2.52 |
| Jupiter Energy | JPR AU | 0.67 | 79 | 65 | 24 | 80 | 30% | | 1.86 |
| JKX Oil & Gas | JKX LN | 133.5 | 354 | 350 | 83 | 253 | 33% | | 3.46 |
| Volga Gas | VGAS LN | 100.0 | 125 | 120 | 77 | 225 | 34% | | 0.87 |
| Regal Petroleum | RPT LN | 30.63 | 152 | 127 | 169 | 453 | 37% | | 0.15 |
| Selena Oil and Gas | SOGH SS | 6.25 | 39 | 40 | 22 | 53 | 41% | | 1.32 |
| Zhaikmunai | ZKM LI | 11.90 | 2,222 | 2,545 | 539 | 1,095 | 49% | | 4.35 |
| Cub Energy (3P Intl) | KUB CN | 0.40 | 31 | 15 | 4 | 9 | 47% | | 2.95 |
| Exillon Energy | EXI LN | 220.2 | 550 | 445 | 265 | 439 | 60% | | 1.45 |
| RusPetro | RPO LN | 200.0 | 1,031 | 1,217 | 1,437 | 2,274 | 63% | | 0.64 |
| KazMunaiGas EP | KMG LI | 18.50 | 7,795 | 4,827 | 2,141 | 3,237 | 66% | | 2.07 |
| Urals Energy | UEN LN | 7.50 | 28 | 59 | 59 | 84 | 70% | | 0.85 |
| Dragon Oil | DGO LN | 619.0 | 4,890 | 3,363 | 902 | 1,224 | 74% | | 3.60 |
| **Average = Fair value** | | | | | | | | **0.36** | **1.98** |
| **Median** | | | | | | | | **0.31** | **1.77** |

**Figure 23: M&A deals**

| Date | Buyer | Target | Stake (%) | Consideration ($mn) | 2P Reserves (mn boe) | EV/2P Reserves ($/boe) | Total resources (mn boe) | EV/Total Resources ($/boe) |
|---|---|---|---|---|---|---|---|---|
| Mar-06 | LUKOIL | Chaparral Resources | 40% | 89 | 88 | 2.53 | 88 | |
| Jun-06 | RF Energy Investments Limited | LLC NK Recher-Komi | 100% | 10 | 5,496 | 0.00 | 5,496 | |
| Jul-06 | NC KazMunaiGas | Petrokazakhstan | 33% | 1,400 | 550 | 7.71 | 550 | |
| Jul-06 | NC KazMunaiGas | KazGerMunai | 50% | 1,000 | 438 | 4.57 | 442 | |
| Dec-06 | India Mittal Investments | Caspian investment resources | 50% | 980 | 270 | 7.27 | 270 | |
| Dec-06 | CITIC Group | Nations Energy (Karazhanbasmunai) | 98% | 1,910 | 438 | 4.47 | 442 | |
| Dec-06 | Sinopec | Udmurtneft | 97% | 3,541 | 922 | 3.97 | 922 | |
| Apr-07 | KazMunaiGas (KMG EP) | KazGerMunai | 50% | 971 | 180 | 10.79 | 194 | |
| Apr-07 | CITIC Resources | Renowned Nation Ltd | 100% | 1,004 | 219 | 4.58 | 219 | |
| May-07 | Roxi Petroleum | RS Munai BV, Beibars BV and Ravninnoe BV | 50% | 40 | 5 | 15.18 | 6 | |
| Jun-07 | Arawak Energy | Saigak Investments | 40% | 25 | 6 | 11.21 | 6 | |
| Aug-07 | Institutional investors | Tethys Petroleum Ltd | 18% | 22 | 11 | 11.59 | 131 | 0.96 |
| Dec-07 | KazMunaiGas (KMG EP) | CITIC Canada Energy (Karazhanbasmunai) | 50% | 932 | 448 | 4.16 | 450 | |
| Jun-08 | Jupiter Energy Ltd | North West Zhetybai | 50% | 26 | 5 | 11.56 | 5 | |
| Aug-08 | ONGC | Imperial Energy | 100% | 1,900 | 920 | 2.07 | 920 | |
| Jan-09 | ONGC Mittal Energy | Satpayev oil field | 25% | 80 | | | 1,847 | 0.17 |
| Jan-09 | Vitol | Arawak Energy | 57% | 133 | 62 | 3.78 | 89 | 2.63 |
| Apr-09 | CNPC | MangistauMunaiGaz | 50% | 1,700 | 500 | 6.80 | 500 | |
| May-09 | NOVATEK | Yamal-LNG | 51% | 650 | 2,223 | 0.57 | 7,410 | 0.17 |
| Aug-09 | Sberbank | Dulisma | 100% | 180 | 200 | 0.90 | 200 | |
| Oct-09 | China Investment Corporation | KazMunaiGas EP | 11% | 939 | 1,800 | 4.74 | 1,800 | |
| Nov-09 | Sberbank | TAAS-Yuriakh | 35% | 450 | 720 | 1.77 | 720 | |
| Dec-09 | KMG EP | PetroKazakhstan | 33% | 932 | 364 | 7.76 | 364 | |
| Dec-09 | Gasprom Neft | STS-Service | 100% | 118 | 140 | 0.84 | 140 | |
| Dec-09 | KNOC | Sumbe | 85% | 335 | 58 | 6.82 | 58 | |

Note: table continued below

Source: Company data, M&A Journal, Aton estimate

**Figure 23: M&A deals (continued)**

| Date | Buyer | Target | Stake (%) | Consideration ($mn) | 2P Reserves (mn boe) | EV/2P Reserves ($/boe) | Total resources (mn boe) | EV/Total Resources ($/boe) |
|---|---|---|---|---|---|---|---|---|
| Feb-10 | Total | Terneftegas | 49% | 33 | 200 | 0.33 | 200 | |
| Apr-10 | LG International | Galaz Energy | 40% | 16 | 15 | 2.67 | 15 | |
| Jul-10 | NOVATEK | Tambeyneftegas | 100% | 10 | 600 | 0.02 | 1,200 | 0.01 |
| Sep-10 | KMG EP | NBK | 100% | 35 | 13 | 2.69 | 13 | |
| Sep-10 | KMG EP | SBS | 100% | 30 | | | 134 | 0.22 |
| Sep-10 | Russneft | Ryabovskoye | 100% | 55 | 15 | 3.77 | 15 | |
| Nov-10 | NOVATEK | Sibneftegas | 51% | 1,223 | 1,200 | 2.00 | 2,401 | 1.00 |
| Sep-10 | Mineral and Bio Oil Fuels Limited | Ring Oil | 75% | 300 | 40 | 10.01 | 1,010 | 0.40 |
| Feb-11 | MIE Holdings | Emir Oil (BMB Munai) | 100% | 170 | 82 | 2.06 | 82 | |
| Mar-11 | KMG EP | Feodorovskiy block | 50% | 164 | | | 324 | 1.01 |
| Mar-11 | Total | NOVATEK | 12% | 4,108 | 13,386 | 2.54 | 24,286 | 1.40 |
| Apr-11 | KMG EP | 4 blocks from NC KMG | 100% | 40 | | | 450 | 0.09 |
| Sep-11 | NOVATEK | Yamal-LNG | 49% | 986 | 5,493 | 0.37 | 7,526 | 0.27 |
| Oct-11 | Total | Yamal-LNG | 20% | 425 | 5,493 | 0.39 | 7,526 | 0.28 |
| Dec-11 | KMG EP | Karpovskiy Severnyi block | 100% | 59 | | | 240 | 0.25 |
| Dec-11 | Repsol | Evrotek (two gas condensate fields) | 100% | 230 | 236 | 0.98 | 236 | |
| Dec-11 | LUKOIL | Bashneft-Polyus (Trebs and Titov field) | 25% | 94 | | | 1,023 | 0.37 |
| | **Average 2006-11** | | | | | **4.54** | | **0.61** |
| | **Average 2009-11** | | | | | **2.94** | | **0.59** |

Source: Company data, M&A Journal, Aton estimate

**Figure 24: Peer group valuation – Russian and international majors**

| | Country | Bloomberg ticker | CP (currency/ share) | MktCap ($mn) | P/E (x) 2010 | P/E (x) 2011E | P/E (x) 2012E | EV/EBITDA (x) 2010 | EV/EBITDA (x) 2011E | EV/EBITDA (x) 2012E | EV/1P ($/boe) | EV/Prod, ($/boe) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KMG EP | Kazakhstan | KMG LI | 18.50 | 7,795 | 4.9 | 5.5 | 5.8 | 3.1 | 3.2 | 3.9 | 5.53 | 53 |
| Dragon Oil | Turkmenistan | DGO LN | 619.0 | 4,890 | 12.7 | 7.5 | 7.4 | 5.0 | 3.2 | 3.3 | 11.19 | 150 |
| Zhaikmunai | Kazakhstan | ZKM LI | 11.90 | 2,222 | 96.6 | 27.2 | 7.7 | 26.7 | 14.3 | 4.9 | 17.73 | 530 |
| **Average / Total** | | | | **14,907** | **38.1** | **13.4** | **6.9** | **11.6** | **6.9** | **4.0** | **11.5** | **244** |
| **Oil majors CIS** | | | | | | | | | | | | |
| Rosneft | Russia | ROSN RU | 7.54 | 72,410 | 7.5 | 6.4 | 7.4 | 4.2 | 3.7 | 4.1 | 3.4 | 89 |
| LUKOIL | Russia | LKOH RU | 65.13 | 50,888 | 6.2 | 5.3 | 5.1 | 3.6 | 3.5 | 3.0 | 3.2 | 71 |
| TNK-BP Holding | Russia | TNBP RU | 3.4 | 52,316 | 8.0 | 5.8 | 6.4 | 5.4 | 5.4 | 4.2 | 6.2 | 90 |
| Gazprom Neft | Russia | SIBN RU | 5.34 | 25,310 | 8.0 | 4.7 | 5.7 | 3.5 | 2.9 | 3.2 | 3.1 | 60 |
| Surgutneftegas | Russia | SNGS RU | 1.08 | 44,112 | 10.3 | 6.0 | 8.1 | 3.5 | 3.3 | 3.7 | 3.0 | 66 |
| Tatneft | Russia | TATN RU | 6.76 | 14,849 | 10.0 | 6.9 | 6.6 | 7.2 | 5.3 | 4.9 | 3.0 | 93 |
| Bashneft | | | 62.90 | 12,760 | 7.5 | 6.3 | 7.5 | 4.6 | 4.3 | 4.7 | 6.0 | 156 |
| **Average / Total** | | | | **272,644** | **8.2** | **5.9** | **6.7** | **4.6** | **4.0** | **4.0** | **4.0** | **89** |
| **Oil majors international** | | | | | | | | | | | | |
| BP | UK | BP/LN | 8.1 | 153,476 | 6.0 | 7.4 | 7.0 | 4.4 | 4.1 | 3.8 | 10.3 | 143 |
| Chevron | US | CVX US | 111.2 | 219,819 | 8.2 | 8.9 | 8.5 | 4.2 | 3.7 | 3.5 | 19.0 | 219 |
| ConocoPhillips | US | COP US | 77.8 | 99,509 | 8.0 | 9.3 | 9.0 | 4.4 | 3.9 | 3.8 | 13.9 | 196 |
| Exxon Mobil | US | XOM US | 86.9 | 409,390 | 10.0 | 10.9 | 10.2 | 5.9 | 4.9 | 4.7 | 16.6 | 244 |
| Royal Dutch Shell | Netherland | RDSA LN | 37.0 | 234,051 | 7.6 | 8.5 | 7.9 | 4.6 | 4.1 | 3.8 | 18.6 | 213 |
| Total SA | France | FP FP | 55.8 | 131,902 | 7.8 | 8.1 | 7.9 | 3.4 | 3.4 | 3.4 | 14.5 | 178 |
| **Average / Total** | | | | **1,248,147** | **7.9** | **8.8** | **8.4** | **4.5** | **4.0** | **3.8** | **15.5** | **199** |
| **Oil majors GEM** | | | | | | | | | | | | |
| CNOOC | Hong Kong | 883 HK | 2.2 | 99,195 | 9.5 | 9.4 | 8.9 | 5.0 | 4.8 | 4.5 | 31.0 | 283 |
| ONGC | India | ONGC IN | 5.8 | 49,265 | 8.4 | 8.7 | 8.1 | 3.6 | 3.7 | 3.6 | 7.2 | 114 |
| PetroChina | China | 857 HK | 1.5 | 275,964 | 13.2 | 11.0 | 9.9 | 6.1 | 5.2 | 4.8 | 13.5 | 248 |
| Petroleo Brasileiro | Brazil | PETR3 BZ | 14.3 | 186,693 | 9.5 | 9.1 | 8.7 | 5.2 | 4.7 | 4.1 | 14.8 | 217 |
| Sinopec | China | 386 HK | 1.2 | 100,675 | 8.7 | 7.5 | 6.7 | 5.0 | 4.3 | 3.9 | 34.1 | 328 |
| **Average / Total** | | | | **711,793** | **9.9** | **9.1** | **8.5** | **5.0** | **4.5** | **4.2** | **20.1** | **238** |

Source: Bloomberg, company data, Aton estimates

## Which Tax Regime is the Best?

There are two major types of tax regimes in the global oil and gas industry: concessions and contracts (see Figure 89 on page 80). KazMunaiGas EP, Zhaikmunai, and Dragon Oil fall under both systems.

**Concessions** – These involve agreements between a government and a company, whereby the company is granted the right to explore, develop, produce, transport and market hydrocarbons or minerals within a fixed area under a tax regime that includes both royalties and income tax (see Figure 89 in the appendices on different tax regimes). KazMunaiGas EP and its subsidiaries operate under this regime.

**Production Sharing Agreements** (PSAs, or Contracts) are a form of tax regime under which the resource holder (the state) and an oil company share the oil produced by the company. These contracts may vary significantly from country to country. The mechanism for calculating the profit share, limits on cost compensation and uplift terms are usually the key features of these agreements. Zhaikmunai in Kazakhstan and Dragon Oil in Turkmenistan both operate under PSAs, in each case under highly attractive terms, in our view.

Countries that feature a high level of political risk tend to favour PSAs over concessions and offer better-than-average terms. However, as oil prices rise and assets mature these countries tend to increase their takes from such projects.

As illustrated in Figure 26 and Figure 27, both regimes in Kazakhstan and Dragon Oil's PSA in Turkmenistan offer much better tax terms than the current system in Russia, despite the fact that:

- Kazakhstan completely changed its tax regime starting from 1 Jan 2009 – the new system moved closer to Russia's system with a higher overall tax take, a greater share of revenue-based taxes and more transparency.

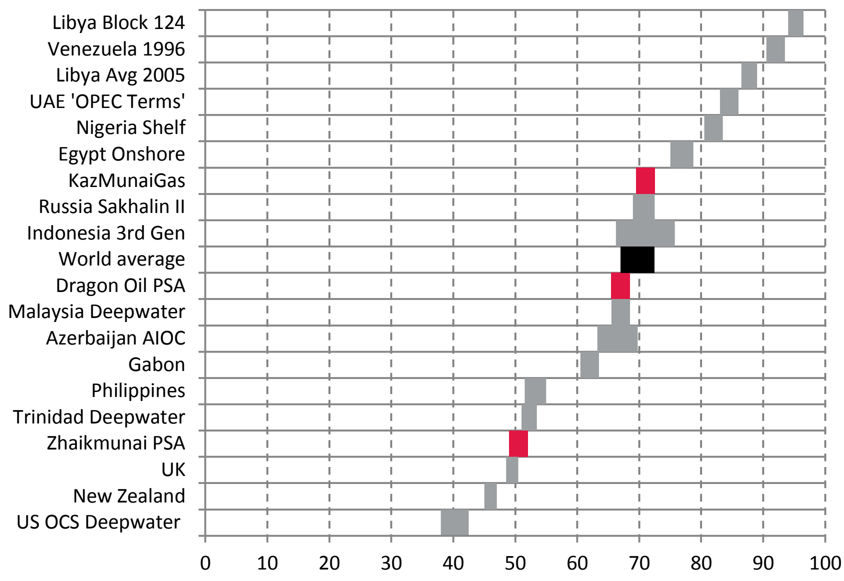
- Turkmenistan did not permit a lower income tax rate. Even though the country reduced its corporate income tax rate to 8% for residents and 20% for foreign entities (down from 25% for both) in the Tax Code introduced in 2004, DGO had to return to the 25% rate from 2008 after the Law on Hydrocarbon Resources took precedence over the Tax Code. We understand that the Law on Hydrocarbon Resources stipulates grandfathered status of PSAs, and therefore, no changes are applicable to the respective original income tax rate.

The question remains whether the host governments will tighten the tax terms for the three companies. We do not believe the risks are high:

- Apart from KazMunaiGas EP, which is one of the largest oil producers in Kazakhstan (which recently changed its tax system), other local projects are relatively small and unlikely to face a review of their fiscal terms before larger projects are scrutinised, in our view. We therefore do not see much risk for ZKM due to its modest size yet. Moreover, we understand that ZKM has just completed talks with the state on increasing its social commitments.

- Dragon Oil is an oil producer in a gas country, a 'good citizen' with notable social responsibilities. Moreover, its take approximates the global average, implying the tax regime is reasonable. We think this should help the company in negotiations with the state when the original contract expires in 2025.

**Figure 25: Government takes in KMG, DGO and ZKM**




Source: International Petroleum Fiscal Systems and World Trends by David Johnston , Aton estimates

As seen in Figure 25 and Figure 26, not only do the three companies in this report offer investors exposure to countries with much better upstream taxation systems than Russia, the tax rates for those assets look reasonable within a global context.

**Figure 26: Per barrel analysis (2010-2011)**

| | Global | GEM | Russian majors | | KMG | | ZKM | | DGO | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **2010** | **2010** | **2010** | **2011E** | **2010** | **2011** | **2010** | **2011** | **2010** | **2011** |
| **Brent Dated** | **79.7** | **79.7** | **79.7** | **111.1** | **79.7** | **111.1** | **79.7** | **111.1** | **79.7** | **111.1** |
| Net realised price | 54.3 | 62.1 | 34.0 | 70.2 | 55.6 | 71.4 | 67.6 | 88.5 | 72.3 | 100.6 |
| *% of Brent* | *68%* | *78%* | *43%* | *63%* | *70%* | *64%* | *85%* | *80%* | *91%* | *91%* |
| Production costs | -6.1 | -24.8 | -4.4 | -4.7 | -15.4 | -19.7 | -18.2 | -27.5 | -6.3 | -4.5 |
| Taxes other than income tax | -3.5 | -1.0 | -28.1 | -47.9 | -18.2 | -27.8 | -3.7 | -2.2 | -28.2 | -47.3 |
| **EBITDA** | **45.5** | **37.1** | **1.9** | **18.2** | **22.6** | **24.5** | **46.5** | **59.6** | **38.7** | **49.7** |
| *% of Brent* | *57%* | *47%* | *2%* | *16%* | *28%* | *22%* | *58%* | *54%* | *49%* | *45%* |
| **FCF** | **8.9** | **7.5** | **7.8** | **12.8** | **8.9** | **21.4** | **-0.6** | **-3.1** | **11.5** | **27.8** |
| Total taxes | 21.8 | 11.3 | 30.3 | 50.5 | 24.3 | 35.3 | 17.1 | 16.2 | 35.6 | 57.2 |
| **Company take** | **29%** | **40%** | **20%** | **20%** | **27%** | **38%** | **nm** | **nm** | **24%** | **33%** |

Note: Production costs are presented excluding DD&A, but including G&A expenses

Source: Company data, Aton estimates

**Figure 27: Per barrel analysis (over the life of the project)**

| | KMG | ZKM | DGO |
|---|---|---|---|
| **Brent Dated** | **90.0** | **90.0** | **90.0** |
| Net realised price | 63.4 | 42.5 | 67.5 |
| *% of Brent* | *70%* | *47%* | *75%* |
| Production costs | -19.2 | -7.0 | -3.5 |
| Taxes other than income tax | -25.1 | -13.0 | -36.9 |
| **EBITDA** | **19.7** | **23.1** | **27.8** |
| *% of Brent* | *22%* | *26%* | *31%* |
| **FCF** | **13.2** | **15.3** | **19.2** |
| Total taxes | 30.6 | 17.2 | 42.7 |
| **Company take** | **30%** | **47%** | **31%** |

Note: Production costs are presented excluding DD&A, but including G&A expenses.

Source: Source: Company data, Aton estimates

## Regressive vs Progressive Taxation

**With a progressive tax, the rate increases as the base increases. Under a regressive tax the rate decreases as the base increases (or vice versa).**

Under this definition the sliding scales of royalties and export duties may seem progressive, but this is not the case, given that the tax base is revenue (the volume produced) rather than income.

As such, a more accurate definition of progressive and regressive taxes would reveal that:

- Royalties are regressive because they are levied on gross revenues. For less profitable ventures, the relative percentage of royalties increases. When considering where taxes are levied, we find that the further down the income statement is from gross revenues, the more progressive the system becomes.

- Most sliding scales are not truly progressive – they do not focus on profitability. Fiscal system design today must ensure that government take is progressive – when profitability increases, the government share of profit must increase.

To measure the regressiveness of the tax regimes under which our three companies operate, we compared the marginal takes of each company (vs that of Russia's, both upstream and integrated).

**Figure 28: Marginal takes**

| | Russia (upstream) | Russia (integrated) | DGO | KMG | ZKM |
|---|---|---|---|---|---|
| Company take | 12% | 24% | 42% | 53% | 50% |
| Government take | 88% | 76% | 58% | 47% | 50% |
| Share of income based taxes | 3.2% | 14% | 24% | 38% | 44% |

Source: Aton estimate

## Kazakhstan Oil Industry Taxation (Concession)

**Following the general trend of tax increases in the new era of higher oil prices, Kazakhstan significantly increased its tax take from 1 Jan 2009.**

KMG EP, its JVs and associates that work under the concessionary system are now subject to the following main taxes:

- **Mineral extraction tax (MET).** This replaced royalty payments. This tax is based on the value of extracted volumes of oil and gas condensate calculated separately for each licence. There are different calculation algorithms and tax rates for exported and domestically used oil volumes. The exported oil volume is defined as total production less volumes for own use, domestic deliveries and oil in kind transferred for certain tax payments (including MET). The value of exported oil equals the product of the above-mentioned volume multiplied by the international oil price, which is dated Brent or Urals depending on the sales contract terms. Tax rates vary from 5% (if expected annual production does not exceed 250,000 tonnes) to 18% (if expected annual production reaches 10mn tonnes or more). For domestic deliveries, the taxable value is actual revenue (i.e. actual volumes sold multiplied by the actual realised price); this tax rate is 50% less than for exports.

- **Export rent tax**. Kazakhstan reintroduced export rent tax in 2009. First introduced in 2004, the tax was applicable only to contracts signed after 1 Jan 2004, excluding, therefore, a number of contracts that had been signed prior to its introduction. The new 2009 tax code made the export rent tax mandatory for all contracts except PSAs signed before 1 Jan 2009 (Zhaikmunai's, for example). The current export rent tax is quite similar to its predecessor – 7-32% of the exported oil value. The minimum rate is 7% when the oil price does not exceed $50/bbl, while the maximum rate totals 32% when the oil price is higher than $190/bbl (earlier the rate was 1% from $19/bbl, up to 33% when oil price was above $40/share)

- **Corporate income tax (CIT).** The base rate was reduced to 20% in 2009 vs 30% previously. The government planned a gradual reduction to 17.5% in 2010 and 15% in 2011. Later, the Ministry of Finance postponed the first reduction to 2013. In Nov 2010 a tax rate of 20% was fixed for at least 2011-13. We believe there will be no changes to CIT in the near future as the oil market remains volatile. The tax rate for dividends received is 15%.

- **Excess profit tax (EPT).** EPT was originally introduced in 1995, but until 1997 the tax was individually defined in each specific contract and was in most cases defined based on the project's IRR. From 1997 to 2008 Kazakhstan tried to unify the EPT calculation and make the tax obligatory for all subsoil users (even those with grandfathered contracts signed before EPT's introduction). Only in 2008 as part of a massive tax reform, did the country finally reintroduce the tax, abolish stabilisation and make EPT obligatory for every contract (with the exception of 14 grandfathered PSAs). However, from 2009, Kazakhstan significantly simplified the tax. Currently it applies to the tax base (taxable income for CIT minus capex) that exceeds 25% of the relevant expenses (opex+capex), and the rates vary from 0-60%.

Other payments include:

- **Customs export duty.** An export duty was first introduced in May 2008 at $109.9/tonne ($15/bbl) and then increased to $203.8/tonne ($28/bbl) in Oct 2008. In Jan 2009, this duty was cancelled following a dramatic decline in international oil prices. The export duty was reintroduced in Aug 2010. The initial rate was set at $20 per tonne ($2.7/bbl) and then increased to $40/t ($5.4/bbl) from the beginning of 2011. Kazakhstan's government has promised not to change the rate for the next several years. The export duty goes to the state budget, while the rent export tax is paid to the National Fund.

- **Signing bonus and commercial discovery bonus.** A signing bonus is paid to the state when a licence is acquired; the amount depends on the licence type. A commercial discovery bonus is paid when recoverable reserves are confirmed for a licence. The bonus payment is calculated as the reserves value based on the international oil price (defined the same way as MET) multiplied by 0.1%.

We note that oil exports are actually taxed three times in Kazakhstan: with MET, the rent tax and the export duty.

The country's oil taxation has evolved quite significantly during the past 20 years. The most significant changes took place in 2008 when the country completely changed its hydrocarbon taxation and abolished stabilisation (or a sub-surface user's right to stick to the tax regime defined in its specific contracts, irrespective of any tax regulation changes in the country). The overall tax burden on hydrocarbon producers increased, moving in line with the Russian, predominantly revenue-based system.

## PSA Terms for Zhaikmunai

PSAs always differ from project to project, but there are typical contracts that can be used as proxies for estimating other, similar projects. As shown in Figure 89 (page 80), there are several types of PSA, depending on the way production or profit is shared with the host government. ZKM's contract – as well as DGO's – is Indonesian, which implies that profit oil (or oil remaining after compensation for royalty and costs) rather than gross production is shared with the government.

- **Royalty oil** The monthly royalty payments made by ZKM to the state depend on the volume of hydrocarbons extracted, calculated according to the realised value for each class of hydrocarbon sales at its final destination, less the cost of transportation and any discounts incurred due to the quality of hydrocarbons produced, compared to a benchmark quality level. The state's share was limited to 1% of ZKM's hydrocarbon production during the exploration phase of the Tournaisian reservoir (before 1 Jan 2007).

**Figure 29: Royalty oil**

| Annual production (tonnes) | Daily production (bpd) | Rate |
|---|---|---|
| < 100,000 | < 2,000 | 3.0% |
| 100,000 - 300,000 | 2,000 – 6,000 | 4.0% |
| 300,000 - 600,000 | 6,000 - 12,000 | 5.0% |
| 600,000 - 1,000,000 | 12,000 - 20,000 | 6.0% |
| > 1,000,000 | > 20,000 | 7.0% |

Source: Company data

**Figure 30: Royalty gas**

| Annual production (mcm) | Daily production (mcmpd) | Rate |
|---|---|---|
| < 1,000,000 | < 2,740 | 4.0% |
| 1,000,000 – 2,000,000 | 2,740 - 5,479 | 4.5% |
| 2,000,000 – 3,000,000 | 5,479 - 8,219 | 5.0% |
| 3,000,000 – 4,000,000 | 8,219 - 10,959 | 6.0% |
| 4,000,000 – 6,000,000 | 10,959 - 16,438 | 7.0% |
| > 6,000,000 | > 16,438 | 9.0% |

Source: Company data

There is no clarity yet on royalty payments for LPG. We expect gas condensate volumes (to be further processed into LPG) to be taxed at the same rates as crude oil.

The share received by the state is calculated by first notionally separating production into cost oil and profit oil.

- **Cost oil** is the amount of crude oil produced with a market value equal to ZKM's monthly PSA-deductible expenses. Deductible expenses for the purposes of cost oil include all operating, exploration and development costs up to an annual maximum of 90% of the annual gross realised value of hydrocarbon production. Any unused expenses may be carried forward indefinitely in the calculation of cost oil.

- **Profit oil** is the difference between the total volume of crude oil produced each month and cost oil. Profit oil is shared between the state and ZKM. The state's share of profit oil must be physically delivered to the state or, alternatively, the state can elect to receive an amount equal to the value of the profit oil on a monthly basis. To date, the state has elected to receive a monetary payment. Any such amounts delivered or paid are based on actual monthly production volumes.

**Figure 31: Government share (oil)**

| Annual production (tonnes) | Daily production (bpd) | Rate |
|---|---|---|
| < 2,000,000 | < 40,000 | 10.0% |
| 2,000,000 – 2,500,000 | 40,000 - 50,000 | 20.0% |
| 2,500,000 - 3,000,000 | 50,000 - 60,000 | 30.0% |
| > 3,000,000 | > 60,000 | 40.0% |

Source: Company data

**Figure 32: Government share (gas)**

| Annual production (mcm) | Daily production (mcmpd) | Rate |
|---|---|---|
| < 2,000,000 | < 5,479 | 10.0% |
| 2,000,000 – 2,500,000 | 5,479 - 6,849 | 20.0% |
| 2,500,000 - 3,000,000 | 6,849 - 8,219 | 30.0% |
| > 3,000,000 | > 8,219 | 40.0% |

Source: Company data

In relation to the corporate income tax (CIT), Zhaikmunai was able to fully offset its capital investments against its sales of crude oil during the exploration period of the Tournaisian horizon. As the exploration period is now completed, the company is liable to pay income tax on volumes produced from the area covered by the production permit, but not for test production.

Figure 27 illustrates that ZKM has by far the highest company take vs its Russian and Kazakhstani peers, as well as the only other company with a PSA in the universe, Dragon Oil.

Assuming the currently applicable tax rates (royalty, state profit share and corporate income tax), we estimate that ZKM will pay $17.2/boe in total taxes over the life of the project at an oil price of $90/bbl and will earn $15.3/boe of free cash flows in the same period.

DGO, we forecast, will pay 42.7/boe in total taxes and retain about $19.2/boe of free cash flows. KMG will earn the least at $13.2/boe and pay $30.6/boe to the state as taxes, according to our figures.

## Turkmenistan Oil Industry Taxation (Concession)

The fiscal regime in Turkmenistan experienced some changes in 2008: the new Law on Petroleum was a partial step towards creating a more transparent policy in the oil and gas sector.

Oil and gas companies are subject to a sub-surface tax:

- The taxable base is revenue from the sale of hydrocarbon resources (crude oil and natural gas) before VAT
- Tax rates: crude oil: 10%; natural and oil gas: 22%

**Corporate Profit Tax**

The corporate tax rate depends on residence status: it is 8% for residents and 20% for foreign entities, according to the Tax Code introduced in 2005.

However, in 2008 the new edition of the Law on Hydrocarbon Resources stipulated that income tax for resources companies operating under PSA should be as it was at the time the respective PSA was signed. We believe it is for this reason that DGO now pays 25% in corporate income tax.

## Dragon Oil's PSA Terms

We note that PSAs in Turkmenistan are negotiated on an individual basis and Dragon Oil does not provide extensive details on its PSA.

PSA holders are regulated in large part by the 2008 Petroleum Law. They are subject to income tax and royalties ranging from 1% to 15%, depending on the level of production. A social welfare tax (20% of the total local staff payroll) is paid by all foreign investors and their subcontractors.

We understand that because of stabilisation rules on tax rates, Dragon Oil did not benefit when the government reduced the income tax from 20% to 25%: the company was held to the 25% rate that was included in the PSA it signed in 2000.

Given that Dragon Oil never disclosed the details of its PSA (referring to the confidentiality agreement between the company and the Turkmen government), we apply the terms of similar projects (for example, that of Burren Energy) in Turkmenistan. By taking this approach, we estimate that Dragon Oil could be exposed to the following taxes:

- **Initial oil production** of 4,400bpd in 2000, declining by 7.5% per year, is allocated to Turkmenneft. The initial oil production is deducted from total production for royalty calculations.

- **Royalty oil** (**and gas).** The rate of royalty payments made by DGO to the state depends on the volume of hydrocarbons extracted minus initial production. We assume that the rate will be applicable to oil equivalents, which would include gas as well.

**Figure 33: Royalty oil**

| Annual production (tonnes) | Daily production (bpd) | Rate |
|---|---|---|
| < 250,000 | < 5,000 | 1.0% |
| 250,000 – 1,250,000 | 5,000 – 25,000 | 3.0% |
| 1,250,000- 2,500,000 | 25,000 - 50,000 | 5.0% |
| 2,500,000- 3,750,000 | 50,000 - 75,000 | 7.0% |
| 3,750,000 - 5,000,000 | 75,000-100,000 | 10.0% |
| > 5,000,000 | > 100,000 | 15.0% |

Source: Aton estimates, WoodMac

- **Cost oil** is the amount of crude oil produced with a market value that equals DGO's PSA-deductible expenses. Deductible expenses for the purposes of cost oil include all operating, exploration and development costs up to an annual maximum of 70% of the annual gross realised value of hydrocarbon production minus the royalty. Any unused expenses may be carried forward indefinitely in the calculation of cost oil.

- **Profit oil** is the difference between the total volume of crude oil produced and initial oil, royalty oil and cost oil. Profit oil is shared between the state and DGO. DGO has always delivered crude (rather than the cash equivalent) to the state, which uses the oil to produce refined products for domestic use.

The profit oil is split between DGO and the state, depending on the R-factor:

R-factor = (Cost Oil + Contractor Profit Oil) / Cumulative Costs (capex + opex)

**Figure 34: Government share (oil)**

| R-Factor | Rate |
|---|---|
| < 1.0 | 40.0% |
| 1.0 < 1.5 | 50.0% |
| > = 1.5 | 60.0% |

Source: Aton estimates, WoodMac

- **Abandonment fund.** DGO was originally required to put some 7.5% of its profit oil in a reserve fund to pay for the plugging and abandonment of unsuccessful or depleted wells. We understand that currently, the company is holding talks with the relevant state agency on lowering this amount to 5%.

- **Corporate income tax (CIT).** Corporate income tax was reduced to 20% for resource companies (from 25% before) in Nov 2004 in the newly issued Tax Code. Before that, DGO had a 25% rate stipulated in its PSA. We understand that DGO switched to paying 20% from 2005. In 2008, however, Turkmenistan introduced a new Law on Hydrocarbon Resources, which took precedence over the Tax Code. According to the Law on Hydrocarbon Resources, DGO had to pay its taxes as originally assumed in the PSA. We understand that DGO and the government are now negotiating possible additional tax obligations with respect to the 5% difference for years 2005-08. However, the amount is not material ($40-50mn, according to the company's estimates) and the government is unlikely to hold the company to it, in our view, given how much social responsibility DGO assumes.

## Sensitivity to Oil Price

### Sensitivity as a Result of Regressive/Progressive Tax Regime

To conduct a DCF-based valuation of 2P reserves, we used our in-house oil price estimate of $90/bbl to the end of our forecast period. This assumption looks conservative now with Brent above $120/bbl. Therefore, given our expectation of significant oil price volatility due to potential conflicts with Iran and growing concerns over the global financial system, we believe it makes sense to examine the sensitivity of our target prices to different oil price levels. We also looked at the sensitivity to our WACC assumptions, given potential changes in risk aversion driven by financial difficulties in Europe.

We have always argued the following hypothesis: that a company's oil price sensitivity can be determined by its marginal take (see our report Russian Oils: Strangled by Taxes, released 23 May 2011). A lower marginal take implies lower sensitivity as a major part of the upside from the oil price is taxed away.

As shown in Figure 28, of the companies now under coverage, ZKM receives the highest marginal benefits from an increase in the oil price (60%); KMG gets 51%; DGO lags behind with 33%. However, even 33% looks good compared to the Russian average of 12% (even before adjusting for rouble appreciation, which would slash another 3% from the marginal take for every additional dollar added to the oil price).

**Figure 35: Target price sensitivity per share/GDR**

| | KMG ($/GDR) | DGO (GBp/share) | ZKM ($/GDR) |
|---|---|---|---|
| Brent $70/bbl | 15.6 | 668 | 7.9 |
| Brent $80/bbl | 19.3 | 743 | 10.4 |
| **Brent $90/bbl (base case)** | **23.2** | **817** | **13.0** |
| Brent $100/bbl | 26.4 | 892 | 15.5 |
| Brent $110/bbl | 29.4 | 966 | 18.1 |
| WACC -1ppt | 24.5 | 884 | 14.4 |
| WACC -2ppt | 23.8 | 849 | 13.7 |
| **WACC base case** | **23.2** | **817** | **13.0** |
| WACC +1ppt | 22.6 | 789 | 12.4 |
| WACC +2ppt | 22.1 | 762 | 11.8 |

Source: Aton estimates

Figure 35 and Figure 36 clearly prove our hypothesis that KMG and ZKM – with the highest marginal tax takes – have the highest sensitivity to the oil price, while DGO is much less sensitive to oil price changes. In ZKM's case, we also believe that its financial leverage (we assume the company will retain a 30% gearing ratio over the life of the project) and relatively early project stage add to its sensitivity.

**Figure 36: Target price sensitivity (%)**

| | KMG | DGO | ZKM |
|---|---|---|---|
| Brent $70/bbl | -33% | -18% | -39% |
| Brent $80/bbl | -17% | -9% | -20% |
| **Brent $90/bbl (base case)** | **0%** | **0%** | **0%** |
| Brent $100/bbl | 14% | 9% | 20% |
| Brent $110/bbl | 27% | 18% | 40% |
| WACC -1ppt | 6% | 8% | 11% |
| WACC -2ppt | 3% | 4% | 5% |
| **WACC (base case)** | 0% | 0% | 0% |
| WACC +1ppt | -2% | -4% | -5% |
| WACC +2ppt | -5% | -7% | -9% |

Source: Aton estimates

## Break-even Oil Price

**ZKM also has the highest breakeven oil price** (around $40/bbl). It is somewhat lower for KMG EP ($36-38/bbl), mostly on the back of high production costs and lesser growth prospects relative to its peers.

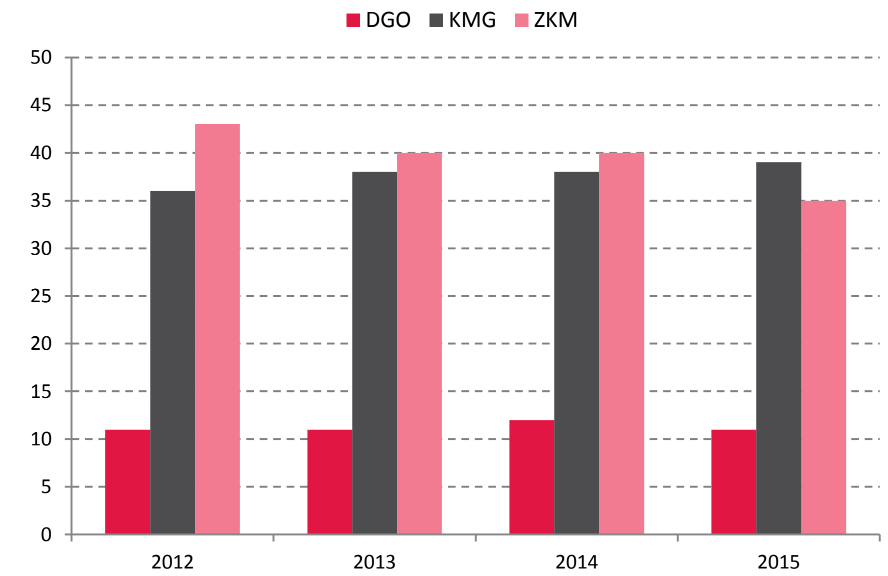
**DGO ($11-12/bbl) could survive under much more challenging oil price scenarios**. As we see in Figure 27, DGO earns the highest unit EBITDA ($27.8/boe under a $90/boe oil price assumption) on average, over the life of the project and earns the highest free cash flow of $19.2/boe, despite a relatively high absolute tax payment (over $42.7/boe) over the project life, on our estimates.

**The capital structures of the companies are important, as well.**

Given that neither KMG nor DGO has to service any debt, they benefit from their cash deposited in international banks.

Meanwhile, ZKM is at a much earlier stage of development and its operating leverage is much higher than that of the mature KMG and DGO. In addition, we assume that the company will sustain around 30% in debt as part of its capital structure.

**Figure 37: Break-even oil price ($/bbl)**




Note: Break-even price is Brent which results in zero net income for each company.

Source: Bloomberg, Aton estimates

## Growth and Dividends

E&P companies are usually considered growth stories given their focus on shifting assets from resources to reserves and further to production. KMG EP is clearly an exception, given that the company can only grow through acquisitions.

At the same time E&P companies rarely pay any dividends, given their massive investment needs. KMG and DGO are exceptions here. Even though DGO has just started paying dividends, and they are still low, it adds attractiveness to the company's investment case, in our view. KMG has always been a reasonably good dividend payer.

### Growth

Growth might come from a production acceleration and from any increases in reserves (new discoveries or exploration/appraisal drilling to upgrade the reserves to higher classes)

Analysis guru Benjamin Graham offers the following simple formula for valuing growth companies in his book *The Intelligent Investor*:

Value = Current (Normal) Earnings * (8.5 + 2*Expected Annual Growth Rate),

where the growth figure represents growth expected over the next seven to 10 years.

We have slightly modified the formula to arrive at:

2011E fair P/E = 8.5 + 2*Expected Annual Growth Rate

### Applying Graham's Formula

Back-testing the implied growth rate formula, we see that current market P/Es assume 9% growth for **ZKM** and a 0.5% earnings decline for **DGO** (see Figure 38). That is below their expected growth in the next four years as well as our 10-year average estimates (based on 2012), and for **DGO** is below the terminal growth rate.

**Figure 38: Implied growth rates**

| | Net Income ($mn) | | | Current | 10-year growth | |
|---|---|---|---|---|---|---|
| | 2011 | 2012 | 2015 | 2011 P/E | Aton | Implied |
| **DGO** | 648 | 663 | 933 | 7.5 | 6% | -0.5% |
| **ZKM** | 82 | 290 | 480 | 27.2 | 29% | 9% |

Source: Benjamin Graham *The Intelligent Investor*, Bloomberg, Aton estimates

By directly applying the formula we arrive at what Graham might have considered the fair 2011E P/E for our growth stories (Figure 39). Nonetheless, we emphasise that ZKM's growth will start only in 2015, due to limited infrastructure capacity, which will be ramped-up, we expect, only by 2016 (see Figure 74). Moreover our 2011-22E growth estimate for the company is inflated due to the low-base effect.

**Figure 39: Fair P/E for growth stocks**

| | Net income ($mn) | | | Net income CAGR | | Terminal | Average growth | | Current | Graham 2011E P/E | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2011 | 2012 | 2015 | 2011-15E | 2012-15E | growth | 2011-21E | 2012-22E | 2011 P/E | 2011-based | 2012-based |
| **DGO** | 648 | 663 | 933 | 10% | 19% | 2% | 6% | 7% | 7.5 | 20.5 | 23.0 |
| **ZKM** | 82 | 290 | 480 | 56% | 18% | 2% | 29% | 10% | 27.2 | 66.2 | 28.8 |

Source: Benjamin Graham *The Intelligent Investor*, Bloomberg, Aton estimates

## Dividends

With respect to dividends, to date DGO has been quite a lot less generous than KMG. Though both companies possess quite sizable cash piles (in each case around 35% of their market capitalisations) and are focused on acquisitions, DGO has just started paying dividends in 2011 and has not yet announced its dividend policy. The company distributed 19% of 2010 net income to its shareholders, and proposed paying out 16% of its 2011 net income as dividends.

**Figure 40: DGO dividend history**

| Year | Period | Dividend per share ($) | Dividend per share (GBp) | Share price at announcement date (GBp) | Yield (%) | Announcement date |
|---|---|---|---|---|---|---|
| 2010 | Full-year | 0.14 | 8.63 | 577.00 | 1.5% | 22-Feb-11 |
| 2011 | Interim | 0.09 | 5.52 | 454.25 | 1.2% | 10-Aug-11 |
| 2011 | Final | 0.11 | 6.94 | 563.50 | 1.2% | 21-Feb-12 |
| 2012E | Interim | 0.09 | 5.84 | | 1.0% | Aug-12 |
| 2012E | Final | 0.09 | 5.84 | | 1.0% | Feb-13 |
| 2013E | Interim | 0.11 | 6.77 | | 1.2% | Aug-13 |
| 2013E | Final | 0.11 | 6.77 | | 1.2% | Feb-14 |
| 2014E | Interim | 0.12 | 7.69 | | 1.3% | Aug-14 |
| 2014E | Final | 0.12 | 7.69 | | 1.3% | Feb-15 |
| 2015E | Interim | 0.12 | 7.51 | | 1.3% | Aug-15 |
| 2015E | Final | 0.12 | 7.51 | | 1.3% | Feb-16 |

Note: Historic yields (2010-11) are calculated on the base of the share price at the announcement date, and for future estimates at the current price

Source: Company data, Bloomberg, Aton estimates

KMG's dividend policy suggests a payout of 15% of its net income every year, though the actual payout has varied from 20% to 44% over the past five years. There is a potential special dividend in July 2013 to offset its parent company's bond, but we remain sceptical on this (see pages 42-43).

**Figure 41: KMG dividend history**

| Year | Period | Dividend (KZT/share) | Dividend ($/GDR) | Share price at announcement date ($/GDR) | Yield (%) | Announcement date (AGM) |
|---|---|---|---|---|---|---|
| 2006 | Full-year | 500 | 0.69 | 20.00 | 3.5% | 18 May 2007 |
| 2007 | Full-year | 563 | 0.78 | 31.71 | 2.5% | 28 May 2008 |
| 2008 | Full-year | 656 | 0.73 | 18.90 | 3.9% | 28 May 2009 |
| 2009 | Full-year | 704 | 0.80 | 18.80 | 4.3% | 25 May 2010 |
| 2010 | Full-year | 800 | 0.91 | 22.17 | 4.1% | 05 May 2011 |
| 2011 | Full-year | 1,300 | 1.48 | 18.50 | 8.0% | 14 Mar 2012 |
| 2012E | Full-year | 800 | 0.90 | | 4.9% | Mar 2013 |
| 2013E | Full-year | 812 | 0.91 | | 4.9% | Mar 2014 |
| 2014E | Full-year | 802 | 0.90 | | 4.9% | Mar 2015 |
| 2015E | Full-year | 797 | 0.90 | | 4.9% | Mar 2016 |

Note: Dividend for 2011 is announced on 14 Mar and is subject to AGM approval.
Historic yields (2006-11) are calculated on the base of share price at the announcement date, and future estimates – at the current price

Source: Company data, Bloomberg, Aton estimates

Going forward we expect a 30% payout for KMG EP and 15% for DGO. We do not expect ZKM to start paying dividends in the next five years. KMG is clearly the most interesting from a dividends perspective, while DGO's appeal is certainly elsewhere.

# KAZMUNAIGAS EP

## Ultimate Consolidator

**BUY**

| | |
|---|---|
| Target price | $23.2 |
| Upside potential | 25% |

| | |
|---|---|
| Bloomberg code | KMG LI |
| Reuters code | KMGq.L |
| Current price ($) | 18.50 |
| GDR: common share | 6:1 |
| **Share data** | |
| No. of ordinary GDRs (mn) | 421 |
| Daily turnover ($mn) | 5.0 |
| Free float (%) | 24% |
| Market capitalisation ($mn) | 7,795 |
| Enterprise value ($mn) | 4,827 |
| **Major shareholders** | |
| NC KMG | 61.3% |
| CIC | 11.0% |
| Treasury shares | 3.3% |

| **OPERATIONS** | **2011** | | |
|---|---|---|---|
| 2P Reserves (mn boe) | 2,141 | | |
| Total Resources (mn boe) | 3,240 | | |
| Production (kboepd) | 250 | | |
| **FINANCIALS ($mn)** | **2011** | **2012E** | **2013E** |
| Revenue | 4,919 | 4,603 | 4,876 |
| EBITDA | 1,497 | 1,250 | 1,344 |
| EBIT | 1,119 | 938 | 1,022 |
| Net income | 1,425 | 1,340 | 1,360 |
| EPS | 3.4 | 3.2 | 3.2 |
| DPS | 1.6 | 1.0 | 1.0 |

| **VALUATION** | **2011** | **2012E** | **2013E** |
|---|---|---|---|
| EV/Sales | 1.0 | 1.0 | 0.6 |
| EV/EBITDA | 3.2 | 3.9 | 2.1 |
| P/E | 5.5 | 5.8 | 5.7 |
| EV/Reserves ($/boe) | 2.3 | 2.0 | 1.3 |
| EV/Production($/boe) | 53 | 44 | 29 |

| **PERFORMANCE** | |
|---|---|
| 1 month | 15% |
| 3 month | 22% |
| 12 month | -20% |
| 52-week high | 23.5 |
| 52-week low | 13.8 |

Source: Bloomberg, Company data, Aton estimates

**With this report we initiate coverage of KazMunaiGas Exploration and Production (KMG EP), the largest in its peer group with a BUY and a target price of $23.2/GDR implying 25% upside potential.**

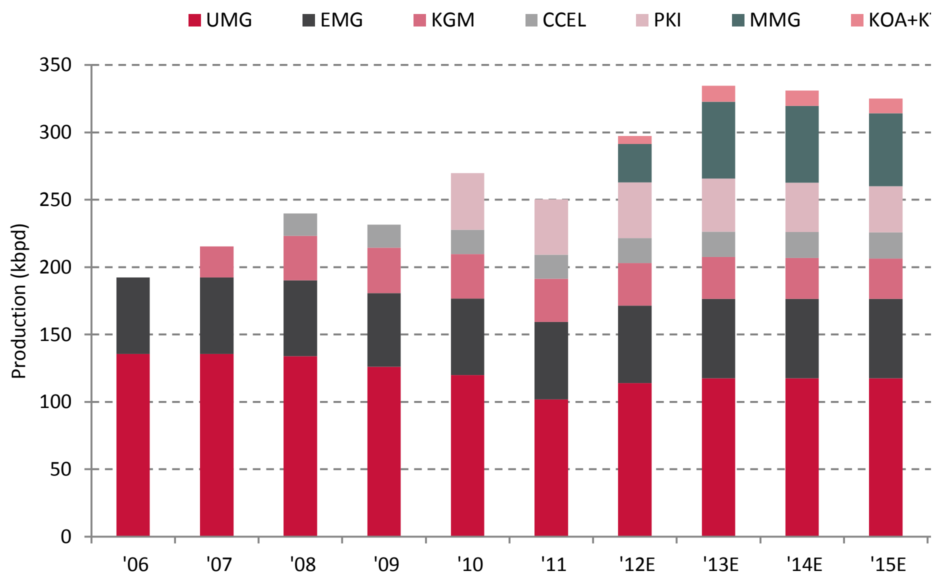
### Investment Case

**The ultimate consolidator of onshore assets.** KMG EP is well placed to be at the forefront of the Kazakh oil and gas sector's consolidation, and M&A activity is likely to be one of the major share-price drivers in the foreseeable future. Thanks to the company's relationship with the government, KMG EP may exercise pre-emptive rights for any oil asset transaction and has the right of first refusal for new licences.

**Potential expansion via offshore projects.** NC KMG (the parent of KMG EP) has sizable stakes in various Kazakh upstream companies including offshore entities. In our view, it is highly likely that some of these assets will eventually be consolidated under KMG EP's control. The company is specifically targeting stakes in the KazMunaiTeniz and Kashagan offshore projects. These acquisitions, if completed, could significantly expand KMG EP's reserves and resources base, in our view.

**Enticing valuations.** Despite a reasonable valuation on EV/EBITDA (around 3.55x average for 2011-12E on our estimates), KMG EP is traded with 20% discount to its Russian and international peers on 2012E P/E. KMG's 5.65x average for 2011-12 P/E clearly demonstrates that the market is not accounting for its strong cash position (about $7/GDR) or the sizable contribution from its equity investments.

**Figure 42: KMG EP growth via acquisitions**




Note: UMG and EMG are core assets, the others are JVs and associates, including promised 2012 acquisitions; the 2012-16 forecast is based on KMG EP's and our estimates

Source: Company data, Aton estimates

## Triggers

**Value-accretive acquisitions**. The company's recent domestic acquisitions added substantial value, in our view, and were cleverly structured and executed. With three recently announced deals still awaiting completion, the company has a number of new acquisition ideas in the pipeline. We believe that the company has both the experience and incentive (any new M&A from NC KMG will decrease the parent company's outstanding debt to KMG EP) to negotiate the deals on good terms for shareholders.

**IPO of parent NC KMG (or reverse takeover)**. For the past two years Kazakhstan has been talking about NC KMG's IPO as a way to raise money for financing its massive investment programme. Recently Samruk-Kazyna state fund officials announced that NC KMG's IPO was scheduled for 2015. We believe that this presents a number of opportunities for KMG EP's minority shareholders. A pre-IPO share buyback, a reverse takeover or a post-IPO share swap between NC KMG and KMG EP are, in our opinion, likely to be executed at fair terms. Given how important the IPO is expected to be for the national company, we do not believe it will risk the success of the placement by violating KMG EP minority shareholders' rights.

**Special dividend.** In July 2010, KMG EP announced the purchase of a 7% $1.5bn bond maturing in July 2013 issued by NC KMG. Among other terms, KMG EP has promised to pay a special dividend to its shareholders if NC KMG is unable to repay the bond's principal. We estimate the size of that dividend to be $2.6/GDR with a discounted present value of $2.07/GDR, yielding some 14%. While we are sceptical about this dividend, as it brings no cash to NC KMG, we believe KMG EP may pay out a higher share of net income as dividends next year than our quite conservative 30% estimate (as proposed for 2011). By doing so, KMG EP would decrease the ultimate special dividend.

## Risks

**Risk of being cash stripped.** Given NC KMG's weak financial position and huge cash deficit (in contrast to the excess of cash on KMG EP's balance sheet), the potential threat of NC KMG violating minority shareholders' rights by expropriating KMG EP's cash definitely exists. We do not believe, however, that this risk is too high. NC KMG has been in the same position for years and to date has obtained cash from KMG EP in an acceptable manner – via dividends or asset sales (at reasonable terms, in our opinion).

**Risk of overpaying for assets.** Despite the above, we would emphasise that KMG EP's purchase of NC KMG's bond was an example of a value-destroying deal with a related party, in our view. Moreover, we believe that NC KMG now has a much greater incentive to obtain the highest price for its assets when selling them to KMG EP in order to minimize the special dividend, as any acquisitions beyond the first $800mn will be offset against NC KMG's debt, according to the deal's terms.

**Risk of further increase in tax burden.** Over the past four years, Kazakhstan has changed its oil industry tax system dramatically. Most importantly, the country abolished the stabilisation of subsoil contracts, leaving no hope for tax stability. In 2010 Kazakhstan reintroduced the export duty on crude oil and gas condensate at $20/tonne, doubling the rate to $40/tonne from 1 Jan 2011. Given that Kazakhstan's appetite for higher tax collections from extraction industries increases in proportion to oil price growth, we fear more negative changes may be on the horizon. There is certainly some room for manoeuvre, as Kazakhstan still takes only 70% from companies' cash flows with marginal takes of 49% vs 80% and 88% in Russia.

## How Will Parent NC KMG Utilise KMG EP's Cash Reserves?

It is well known to the market that KMG EP's majority shareholder NC KMG is in serious need of cash, primarily to finance its share in the North Caspian Project Consortium (NCPC), operator of the giant Kashagan field. According to our estimates, NC KMG will have to invest about $5.5bn in the project over the next five years. In addition, NC KMG must service its considerable debt ($10.9bn on 30 Sep 2011) which costs the company about $1.2bn every year.

Dividends and cash for assets received from KMG EP have always been a good source of cash for its parent company. We calculate that since its IPO in Sep 2006, KMG EP has paid approximately $1.2bn in dividends to the parent company and another $1bn for assets. In addition, in July 2010, KMG EP announced the purchase of NC KMG's $1.5bn, 7% coupon bond. We expect another payment for three pending acquisitions (stakes in MMG, KOA, and KTM – see Figure 45) by the end of 2012. The final price has not yet been announced, but it will clearly be higher than the total consideration of $2.25bn initially touted, given that the oil price has subsequently gained 72%. We believe that KMG EP might end up paying 50% more in cash, as the target companies' net debt has notably declined (we estimate it has more than halved from $1.5bn).

In addition, NC KMG is receiving even healthier dividends from TengizChevroil (cumulative dividends in 2007-11E reached about $5.5bn) and other subsidiaries.

**However, the dividend stream from subsidiaries is insufficient to finance all of NC KMG's projects.** We estimate that NC KMG will have to raise about $10bn over the next decade. On 28 Feb 2011, the new head of the state's National Welfare Fund Samruk-Kazyna said that the fund might provide NC KMG with a $4bn loan. This would still leave NC KMG extremely short and investors are concerned about the role to be played by cash-rich KMG EP in meeting the parent's need for funds.

Kazakhstan continues to send conflicting messages regarding its plans to resolve NC KMG's financial issues.

- On 23 June 2010, NC KMG's CEO Kairgeldy Kabyldin said that the national company was considering an IPO and that it is reviewing an option to buy back KMG EP's shares (owned by minorities) as part of the pre-IPO restructuring process.

- On 7 Oct 2010, Kabyldin said there was no need for NC KMG to go public as there would be no associated economic benefits. Moreover, he added that $20bn in investments planned for 2010-14 could be financed without an IPO.

- On 29 Oct 2010, the head of the management board of Samruk-Kazyna (the 100% owner of NC KMG), Kairat Kelimbetov, said that an IPO was the only option for NC KMG. The best mechanism, he said, would be a reverse takeover or merger of the 100% government-owned NC KMG with publically owned KMG EP in order to accelerate the process.

- On 11 Feb 2011, Kazakhstan's President Nursultan Nazarbayev told the government to launch a number of "national IPOs" of state-owned companies, including NC KMG. Nazarbayev indicated that the process should start in 2011 and that NC KMG's IPO was scheduled for 2012-13.

- On 22 July 2011, Samruk-Kazyna approved a draft programme for the so-called people's IPO. The programme envisaged the gradual movement of companies controlled by Samruk-Kazyna towards IPOs starting in 2012. The draft programme also contained proposals for improving the law on legal entities.

- On 5 Sep 2011, President Nazarbayev called on the government to submit a draft law on the people's IPO programme to parliament as soon as possible and asked the lawmakers to approve the regulation.

- On 20 Sep 2011, minister of Economic Development and Trade Kairat Kelimbetov said that Kazakhstan would move ahead with plans to sell shares in some of its largest companies to the public as part of the people's IPO, despite the current global market turmoil. According to Kelimbetov, major companies such as KazMunaiGas and Kazatomprom could launch their IPOs starting in 2015 in the absence of any negative developments.

- 27 Oct 2011, Kuandyk Bishimaev, the deputy head of Samryk-Kazyna, said that NC KMG and Kazatomprom would become public via people's IPOs in 2015.

- 16 Feb 2012, Umirzak Shukeyev, head of Samruk-Kazyna, told *Kommersant* that the fund was considering a reverse takeover of NC KMG by KMG EP.

Judging by these comments the most frequently discussed options are:

- An IPO by NC KMG with a buyback of KMG EP's minorities prior to the offering, or;

- A merger of NC KMG and KMG EP or reverse takeover

There are two other options, in our view, which we believe have been incorrectly omitted:

- Consolidation of KMG EP's minorities and a swap of its shares for NC KMG shares after the latter's IPO

- The sale of NC KMG's stake (or part of it) in NCPC (the Kashagan project) to KMG EP

We argue that the latter option is the most logical and would be the easiest to effect. Although a reverse takeover seems a reasonable way to take NC KMG public and provide it with a means to raise equity, the direct sale of the Kashagan stake to EP KMG is the best solution, in our view.

Of all the options, we estimate that this approach would be the least time consuming and would allow NC KMG to maintain 100% control over the oil and gas transportation companies, which are strategically important assets for the country. It would also make KMG EP a growth story. However, Kazakhstan currently seems to be overly concerned about minority shareholders' access to Kashagan via KMG EP.

**A Reverse Takeover Option**

Given concerns about a potential reverse takeover and some confusion over the process, we believe that some comments on the method are warranted.

In simple terms, a reverse takeover (also called a reverse merger or reverse IPO, or more colloquially the *Poor Man's IPO*) is a non-traditional way of going public. The process includes the acquisition of a public company by a private company, which allows the private company to bypass the lengthy and complex process of going public.

In a traditional reverse takeover, shareholders in the private company purchase control of the public shell company and then merge it with the private company. The publicly traded corporation is called a 'shell' since all that exists of the original company is its organisational structure. The private company's shareholders receive a substantial majority of the shares of the public company and control of its board of directors. This kind of transaction could be accomplished within weeks, in our opinion.

In the case of NC KMG and KMG EP, that KMG EP is already traded and 60% owned by NC KMG (or effectively the same shareholder as NC KMG – the government) adds considerable sense to the reverse takeover idea, in our view. As noted, we see this as the second-best solution available.

Reverse takeovers are often severely criticised as inferior alternatives to IPOs. We believe that both approaches offer pluses and minuses.

**Figure 43: Reverse takeover vs IPO**

| Pluses | Minuses |
|---|---|
| The mechanism is fast and inexpensive | Usually implies no capital raising during the process |
| Takes several weeks to complete | No pre-IPO scrutiny of the business |

Source: Aton estimates

As illustrated in Figure 44, to determine the potential impact of a reverse takeover on the equity value attributable to KMG EP's minority shareholders, we estimate the enterprise value of the new company (NewCo) by applying the current EV/EBITDA of KMG EP and three other EV/EBITDA estimates (12.5% lower than KMG EP, Russian peers and the average of Russian peers and KMG EP) to our forecast of the combined company's 2011E EBITDA ($5.285bn). We then deduct consolidated debt ($6.644bn) from this figure.

**Figure 44: Reverse takeover ($mn, except noted)**

| | Low | KMG EP current | Average | Russian peers |
|---|---|---|---|---|
| **EV/EBITDA (x)** | **2.8** | **3.2** | **3.6** | **4.0** |
| 2011E EBITDA of NewCo | 5,285 | 5,285 | 5,285 | 5,285 |
| Share of KMG EP in consolidated EBITDA | 28% | 28% | 28% | 28% |
| **EV of NewCo** | **14,799** | **16,913** | **19,027** | **21,141** |
| Net debt of NewCo | 6,644 | 6,644 | 6,644 | 6,644 |
| **Fair equity value of NewCo** | **8,154** | **10,269** | **12,383** | **14,497** |
| Debt to Equity of NewCo | 0.81 | 0.65 | 0.54 | 0.46 |
| Share of KMG EP in equity value | 7,160 | 7,759 | 8,358 | 8,957 |
| Share of KMG EP in equity value | 88% | 76% | 67% | 62% |
| Share of Samruk-Kazyna in NewCo | 65% | 70% | 73% | 76% |
| **Share of KMG EP's minorities in NewCo** | **35%** | **30%** | **27%** | **24%** |
| **Equity value attributable to KMG EP's minorities** | **2,814** | **3,049** | **3,285** | **3,520** |

Source: Aton estimate

Depending on the valuation ratios used for estimating the fair equity value of NewCo, KMG EP's share (and, therefore, the share of KMG EP's minorities) in the new company could differ significantly.

Currently, we estimate that minority shareholders in KMG EP possess $3.049bn of equity. So, the equity value attributable to minority shareholders in our example (see Figure 44) might range from $2.814bn to $3.520bn, offering from 7.7% downside to 15.4% upside.

## Are Exploration Projects Value Accretive?

Earlier in this report we looked at the composition of KMG EP's portfolio, which includes 248mn boe of possible reserves and 848mn boe of risked resources (see Figure 17 and Figure 18).

KMG EP currently has 10 exploration projects in Kazakhstan: Liman, R-9, Taisoigan, Zharkamys Vostochnyi, Temir, Teresken, Karaton-Sarkamys, Uzen-Karamandybas, Kolzhan and Fedorovsky.

The company is now analysing geological data, drilling exploration wells and performing 2D and 3D seismic surveys on these properties. KMG EP spent about $90mn on exploration in 2011 vs about $47mn in 2010.

KMG EP claims a geological success rate of 28-78%, a very good performance in our view when compared to the global average of about 10%.

**Recent geological developments include:**

- In Oct 2010, KMG EP discovered crude at the Liman exploration block. The first exploration well demonstrated a flow of good-quality oil: light crude with a density of 34°API at a depth of 1,200 m. KMG EP will continue shooting 3D seismic surveys this year and is planning to drill two exploration wells to better understand the deposit's geological structure.

- In Sep 2010, KMG EP acquired Sapabarlau Service (SBS), now called KMG RA, for about $30mn, and exploration company NBK for $35mn. SBS's exploration contract expires at the end of 2012 and can be extended. SBS's assets are located near Kazakhoil Aktobe and Kazakhturkmunai, both of which KMG EP hopes to acquire soon. KMG EP believes that SBS and NBK's areas offer significant potential.

  The exploration and production contract for NBK's Novobogatinsk West licence area expires in 2027, but it is extendable. Novobogatinsk West is located next to Embamunaigaz's operations, allowing it to use the latter's infrastructure or perhaps even jointly develop assets.

- In Mar 2011, KMG EP acquired a 50% stake in Ural Group, which holds the licence for the Fedorovsky exploration block containing the Rozhkovsky oil and gas field, discovered by Ural Group in 2008. No final evaluation of the field is available yet. According to the company, the Fedorovsky block harbours 416mn boe of unrisked (324mn boe of risked) resources.

  The block's location is quite advantageous: Gazprom's gas pipeline crosses the Fedorovsky block and the Atyrau-Samara and Karachaganak-Atyrau crude pipelines (with the latter offering access to CPC) are also located nearby.

- KMG EP acquired the Temir, Teresken, Uzen-Karamandybas and Karaton-Sarkamys exploration blocks in Apr 2011. The company estimates the resources of these blocks at 1.5bn boe. Uzen-Karamandybas, Karaton-Sarkamys and Temir's contracts expire in 2016 with the possibility of an extension. Post-expiration in 2012, Teresken's contract may be extended to 2015.

KMG EP believes that resources at its exploration blocks could add 850mn bbls of reserves by 2018, with a further 600mn bbls potentially coming from assets the company plans to acquire shortly. During a road show in autumn 2011, KMG EP said that it planned to invest about $1bn in exploration over the next three years.

Exploration, rather than purely development, is becoming the core of the company's strategy as it attempts to accelerate the process of adding reserves.

Longer term, KMG EP plans to start exploring frontier regions in Kazakhstan which have rarely been surveyed by geologists. According to the company, the most promising region is North Kazakhstan.

We estimated that KMG EP's current portfolio of resources adds $0.9-1.6/GDR or 5%-9% to the current value of its GDRs (see Figure 19). If KMG EP is successful in moving more of its resources into reserves, its exploration portfolio would bring much more value to the company. As a rule, we assume that moving a barrel of resources into reserves increases its value contribution approximately five-fold.

## Further Acquisition Plans

KMG EP hopes to quickly complete the three acquisitions it announced in Aug 2010. We believe that the key obstacle is the price of the deal. When the oil price started to rise significantly starting in Aug 2010, the seller clearly wanted to adjust the original sale price upwards. In addition, with the passage of time some agreements are expiring and another round of negotiations will be needed.

NC KMG possesses a number of other exploration assets which are of interest to KMG EP (see Figure 45). Given that the company's new strategy is focused on exploration, we believe the chances of those assets ending up on KMG EP's balance sheet are quite high. In this regard, KMG EP signed a memorandum of understanding with NC KMG in May 2011. That agreement provides KMG EP with access to detailed geophysical and economic data for the exploration projects.

Since 2008, KMG EP has been considering overseas acquisitions, either independently or via a consortium. In Aug 2010 it signed a deal with British Gas (BG) for 35% of the White Bear exploration block in the UK sector of the North Sea. The project operator must drill one well in 2012 to comply with the licence obligations. KMG EP is committed to spending $25-30mn on this project.

In Oct 2010, KMG EP won a tender to develop Iraq's Akkas gas field, bidding jointly with South Korea's Kogas. However, in May 2011, KMG EP decided not to pursue this project.

According to the company, the cost of the acquisitions currently under consideration totals $2-2.5bn. This includes deals announced earlier but excludes its possible participation in super-projects such as Kashagan and Karachaganak. We believe the latter projects are good options for KMG EP (depending on the deal price, of course), and their sale would be the easiest way for NC KMG to resolve its funding issues.

**Figure 45: List of potential acquisitions from NC KMG**

| | Type of asset | Stake | Net Reserves (mn boe) | Acreage (m2) |
|---|---|---|---|---|
| Mangistaumunaigas (MMG) | production & exploration | 50% | 278 | |
| Kazakhoil Aktobe (KOA) | production | 50% | 109 | |
| Kazakhturkmunai (KTM) | production | 51% | 21 | |
| C1 block | exploration offshore | | | 1,584 |
| C2 block | exploration offshore | | | 1,203 |
| Godina | exploration offshore | | | 425 |
| Zhambyl | exploration offshore | | | 1,935 |
| Zhenis | exploration offshore | | | 5,400 |
| Ustyurt (Mertvyi Kultuk) | exploration offshore | | | 7,273 |
| Urikhtau | exploration onshore | | | n/a |

Source: Company data, Aton estimates

## Is a Special Dividend Possible? Or Too Good to Be True?

On 16 July 2010, KMG EP purchased bonds issued by NC KMG on the Kazakhstan Stock Exchange for KZT221.5bn ($1.5bn), which represented 89% of the total issue. The bonds mature in June 2013 and carry a coupon of 7% per year to be paid semi-annually, and indexed to the $/KZT exchange rate on the date of issuance. The outstanding amount was KZT187bn ($1.26bn) at 30 Sep 2011.

We believe the following issues must be taken into account over the life of the bond:

- All dividends payable to NC KMG will be offset against outstanding debt. In May 2011 pursuant to the NC KMG debt instrument agreement the company performed a non-cash offset of the declared dividends payable to the parent company against part of the debt instrument in an amount of KZT34.5bn (including principal of KZT33.3). A partial buyback of the bonds is also possible. According to the prospectus, NC KMG may buy back a portion of the bonds if 75% of the holders agree. Given that 89% of the bonds are owned by KMG EP, we are certain this threshold would be passed.

- If the outstanding debt is not paid in cash at maturity, KMG EP must pay a special dividend to its shareholders in an amount sufficient to settle NC KMG's debt. In our view, this option is very attractive for KMG EP's minority shareholders as the estimated special dividend would be $2.6/GDR vs annual dividends of $1.0-1.5/GDR in 2012-13E, on our estimates. However, we do not believe the special dividend will be paid and do not include it in our projections.

- Some of the outstanding debt may be settled with assets acquired from NC KMG when the aggregate value of the acquisitions exceeds $800mn. In 2011, KMG EP acquired a number of exploration licences (including Uzen-Karamandybas, Karaton-Sarkamys, Temir, and Teresken) for $40mn. The total equity value of pending acquisitions (KOA, KTM and MMG) was initially $750mn and we believe it is much higher now. In addition to that, the next group of acquisitions are eligible for the settlement. In addition, given that the company's current strategy envisages a move to offshore development and exploration, we believe that EP KMG is interested in offshore assets such as the Atash, Tyub-Karagan, Aral and Zhemchuzhiny projects, and a stake in the Kashagan project.

- There is also a special option for bondholders if there is a change in the issuer's status (including the sale of shares by the Republic of Kazakhstan, an IPO or any reorganisation resulting in a credit rating downgrade). In this case KMG EP is allowed to sell its bonds to NC KMG at 101% of the indexed nominal value plus accrued coupon.

**Figure 46: Special dividends**

| | | 25-Dec-10 | 25-Jun-11 | 25-Dec-11 | 25-Jun-12 | 25-Dec-12 | 25-Jun-13 |
|---|---|---|---|---|---|---|---|
| Exchange rate | KZT/$ | 147.4 | 147.9 | 148.4 | 148.2 | 148.0 | 148.0 |
| | | | | | | | |
| Coupon accrued | KZT mn | 7,691 | 7,596 | 6,468 | 6,683 | 4,754 | 4,728 |
| Dividends to NC KMG accrued | KZT mn | -30,389 | -34,470 | | -60,898 | | -37,489 |
| offset against principal | | | 33,335 | | 54,216 | | 32,761 |
| offset against interest | | | 1,134 | | 6,683 | | 4,728 |
| Bonds purchase/repayment | KZT mn | -221,543 | 33,335 | 0 | 54,216 | 0 | 133,594 |
| Debt outstanding | KZT mn | 220,711 | 185,466 | 187,810 | 133,594 | 133,594 | 0 |
| | | | | | | | |
| Cash flow to KMG EP: | | | | | | | |
| Bonds purchase/repayment | | -221,543 | 0 | 0 | 0 | 0 | 100,833 |
| Coupon received | | 7,691 | 6,462 | 6,544 | 0 | 4,754 | 0 |
| Special dividends paid | KZT mn | | | | | | -160,053 |
| Total cash flow | KZT mn | -213,852 | 6,462 | 6,544 | 0 | 4,754 | -59,220 |
| Total cash flow | $mn | -1,451 | 44 | 44 | 0 | 32 | -400 |
| | | | | | | | |
| Dividends paid | KZT mn | | 59,486 | | 96,664 | | 59,506 |
| Dividends | $/GDR | | 1.0 | | 1.5 | | 1.0 |
| Special dividends | $/GDR | | | | | | 2.6 |
| PV of special dividends | $/GDR | 2.07 | | | | | |

Source: Company data, Aton estimates

## Introduction

KazMunaiGas EP (KMG EP) is the second-largest oil producer in Kazakhstan (after TengizChevroil) with total production (including shares in associated companies) of 270kbpd in 2010 and 250kbpd in 2011. The company is responsible for about 17% of Kazakhstan's production and 5.4% of its reserves. Following recent acquisitions, 2P reserves now stand at 2,141mn boe with associated companies adding 25% to the 1,707mn boe contributed by core assets.

Majority owned and controlled by the local government, KMG EP enjoys special status among regional oil and gas companies in terms of access to Kazakh assets. Given that its core assets are highly mature and cannot provide organic growth, an aggressive acquisition strategy is the only way for the company to grow.

KMG EP has an exceptionally strong balance sheet with $3.6bn of accumulated cash as of 31 Dec 2011 (excluding $1.3bn of NC KMG bond). Following recent deals with related parties the performance of the stock has been rather poor. We see potential risks associated with its dealings with its parent company, National Company KazMunayGas (NC KMG).

## Board of Directors and Management

**Figure 47: Board of directors**

| Name and title | Date of appointment | Experience |
|---|---|---|
| **Lyazzat Kiinov**<br>Chairman | | Chairman of the management board of NC KMG. He graduated from Kazakh Polytechnic Institute and is a Doctor of Technical Sciences and an Academician of the International Academy of Engineering. Kiinov has been involved In the oil and gas industry since 1971. He worked in various technical positions at Zhetibayneft, Mangyshlakneftepromhim, Karazhanbasstermneft and Komsomolskneft. Kiinov has held senior positions in NC KMG, in the Caspian Pipeline Consortium, and in the Ministry of Oil and Gas of Kazakhstan. |
| **Sisengali Utegaliyev**<br>Director | 2009 | General manager for production projects, managing director for oil and gas production (2007-09) at NC KMG. He is a graduate of the Tyumen Industry Institute from the geological exploration department. He was an authorized representative of KMG and chairman of the supervisory board at Kazakhoil Aktobe, authorized representative of KMG in Kazakhturkmunai. |
| **Alik Aidarbayev**<br>Director, chairman of the management board (CEO) | Feb 2012 | Chairman of the board of directors of KMG EP until Dec 2011. Aidarbayev graduated from the Lenin Kazakh Polytechnic Institute and has been working in the oil and gas industry since 1985. He worked at a number of technical positions at Zhetybayneft (a subsidiary of Mangyshlakneft). He has held senior positions in the Yuzhkazneftegaz and served as a general director of Turgai-Petroleum and Mangistaumunaigaz. Managing director of exploration and production at NC KMG since Apr 2011. |
| **Yerzhan Zhangaulov**<br>Director | June 2006 | General manager for legal affairs at NC KMG. He obtained a law degree from Karaganda State Institute in 1992. Previously, he was head of the legal service and HR department in Kazakhstan's Presidential Administration and was an adviser to the vice president of NC KMG. |
| **Assia Syrgabekova**<br>Director | Mar 2010 | Chief financial officer of NC KMG since July 2006. She was first deputy chairman at Halyk Bank in 2003-06 as well as chairman of the management board of Halyk Bank. From 1998 to 2003, Syrgabekova held various top management positions in KazakhOil and KaztransGas. She graduated from Kazakh state University's Department of Economics in 1982. |

| | | |
|---|---|---|
| **Paul Manduca**<br>Independent director | Aug 2006 | Manduca worked as CEO for a number of companies including Threadneedle Asset Management, Rothschild Asset Management and Deutsche Asset Management. He has served on a number of boards as an independent director over the past 10 years. He holds a Master's Degree from Oxford University in Modern Languages. |
| **Edward Walshe**<br>Independent director | Aug 2006 | Over 35 years of experience in the oil and gas sector. Walshe previously held positions in British Petroleum and British Gas including the overseas exploration and productions operations of these companies in Nigeria, Abu-Dhabi, Central Asia and Southeast Asia. Walshe has a Ph.D. in Solid State Chemistry from the University of Dublin. |
| **Philip Dayer**<br>Independent director | May 2010 | Dayer has 25 years in investment banking, specialising in advising UK listed companies. He gained experience in companies such as Barclays de Zoete Wedd and Citicorp. After his retirement from ABN AMRO Hoare Govett in 2005, he acted as an adviser to Rosneft on its successful flotation in 2006 and currently sits on a number of boards, including Dana Petroleum and AVEVA Group, as an independent |

Source: Company data

**Figure 48: Management team**

| Name and title | Date of appointment | Experience |
|---|---|---|
| **Alik Aidarbayev**<br>CEO | Dec 2011 | See **Figure 47** |
| **Vladimir Miroshnikov**<br>Deputy general director | Apr 2004 | In the oil and gas industry since 1973, working with Uzenneft as an operator and chief engineer and in management roles with Mangistaumunaygas, JV Karakudukmunay, and with NC KMG since 2002. |
| **Abat Nurseitov**<br>Deputy general director for production | Jan 2012 | At KMG EP since 2006. He has been working in the oil and gas industry since 1986, starting his career as an oil well operator and progressing to the head of Zhetybaineft. He has held various managerial posts at NIPIneftegaz, Turgai-Petroleum, and the Kazakh branch of LukOil Overseas Service. |
| Benjamin Fraser<br>Managing director and financial controller | Sep 2011 | Joined the company in Jan 2009 as head of the internal audit department. He previously worked as group risk manager at Kazakhmys and has held positions at Deloitte, N M Rothschild & Sons Limited and HSBC Holding. He is a member of the Institute of Chartered Accountants in England and Wales. |
| **Malik Saulebay**<br>Managing director for legal issues | Apr 2011 | Worked at KazMunaiGas Refinery and Marketing, KazMunaiGas Trade House, KazTransOil-Service and KazTransGas. He has also served in various banking and governmental institutions. Graduated from the Kazakh Academy of Labour and Social Relations and the Kazakh State Academy of Management, specialising in law and business management. |
| **Eldan Salimov**<br>Managing director for logistics and contracts | Apr 2004 | Worked as deputy general director at KazMunaiGas Trade House, as well as other enterprises in the trading sector. He graduated from the Kazakh State Academy of Management and Kainar University. |
| **Botagoz Ashirbekova**<br>Director of the HR department | Dec 2011 | Held positions in human resources at Mangistaumunaigas, Turgai-Petroleum, NK KOR, and in the banking and education sectors. She graduated from Kazan Federal University and has a Ph.D. in sociology. |

Source: Company data

## Assets Review

The company was created via the merger of Uzenmunaigas (UMG) and Embamunaigas (EMG) in Mar 2004. KMG EP operates 41 fields in Western Kazakhstan with the Uzen field the largest in its portfolio.

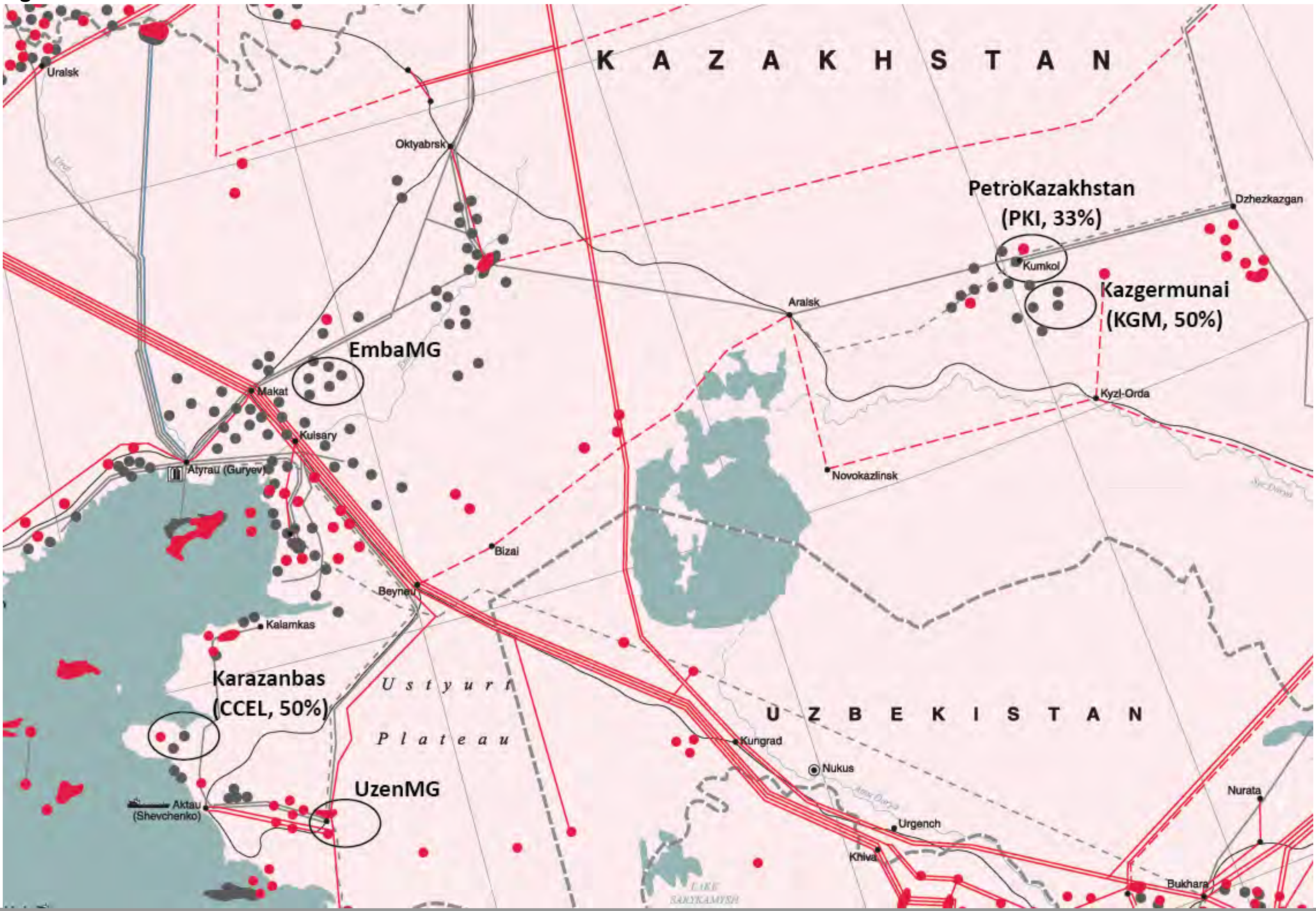
After a significant fall in core asset production in the mid-1990s, KMG EP managed to halt and then reverse the decline. Production rose by 80% from 1998 to 2006 on the back of major investments in drilling and more efficient recovery techniques at its existing fields (including the use of modern technologies such as hydrofracturing). The company's strategy now focuses on maintaining production from existing assets at the current level.

The acquisition of new assets has become the major growth driver for the company. In Apr 2007, KMG EP acquired 50% of Kazgermunai. In Dec 2007, it acquired a 50% stake in CCEL (Karazhanbasmunai); in Dec 2009 it purchased 33% of PetroKazakhstan. These acquisitions drove an increase in production and significant gains in oil reserves.

KMG EP's updated strategy is focused on the acquisition of exploration assets. The company acquired 100% of SapaBarlauService (currently KMG EP Exploration Assets or KMG EP EA) and 100% of NBK in Sep 2010; 50% of Urals Group (which owns the licence for the Fedorovskiy block) in Mar 2011; four exploration blocks (Temir, Teresken, Uzen-Karamandybas and Karaton-Sarkamys) in Apr 2011; and the Karpovskiy Severnyi exploration block in Dec 2011.

The company plans to implement a broad-based exploration programme which will include the drilling of exploration and appraisal wells and seismic work. Management believes some reserves will be added as a result of exploration activity in 2011.

**Figure 49: KMG EP's main assets' location**




Source: Company data, Petroleum Economist

## Financial Review

KMG EP's cash flows and our DCF model include two main components: cash flows generated by core assets and those from JVs and associates. The second component comprises dividends received by KMG EP less corresponding investments. We incorporate the postponed acquisition of MMG, KOA and KTM as additional upside in our DCF model assuming a reduced production forecast and a 75% dividend payout ratio of all three entities. A detailed financial review of KMG EP's core assets, Uzenmunaigas and Embamunaigas, is presented next.

**Revenues.** The company is required to sell about 20% of its production on the domestic market. Remaining production goes in two export directions: the Uzen-Atyrau-Samara (UAS) pipeline and via the Caspian Pipeline Consortium (CPC). KMG EP has reached agreements that provide guaranteed access to both pipelines. UAS is responsible most of the company's exports, but CPC is the more profitable route in terms of netback prices (see Figure 50 and Figure 52).

**Operating costs.** Production costs are relatively high on a per-barrel basis. In 2007-09 KMG EP spent $8.5-9.2/bbl of oil produced (excluding DD&A), but costs increased to $11.6/bbl in 2010 and $13.8/bbl in 2011. Last year's performance was negatively affected by a strike-related production decline. This year the company is facing another negative factor: it needs to establish two service companies (transportation and drilling) with more than 2,000 employees in order to ease social tensions by creating jobs in the Mangistau region. As a result, KMG EP estimates additional operating expenses of $83mn, or $0.9/bbl in 2012. We assume production costs of $14.5/bbl for the entire forecast period. The structure of total operating expenses is presented in Figure 53.

**Figure 50: UAS netback price**

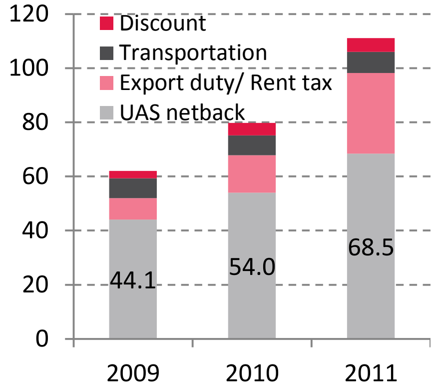



**Figure 51: CPC netback price**

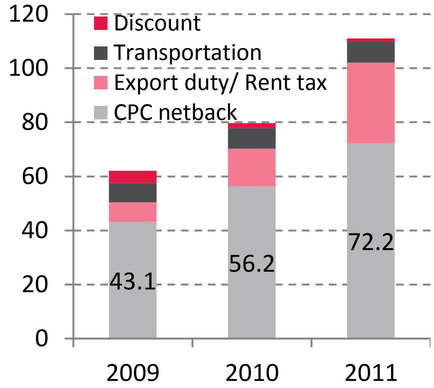
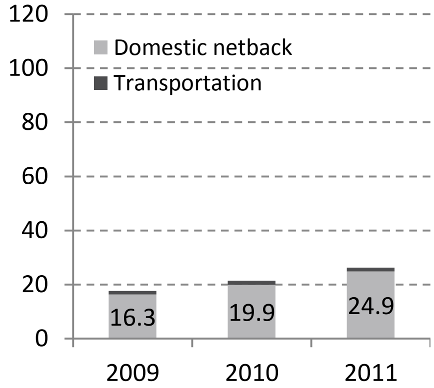



**Figure 52: Domestic netback price**




Note: The total of the four components is equal to the average Brent price. Transportation and taxes by each direction are taken from KMG EP's operating and financial review. The discount is the difference between Brent and the calculated realised price (= Revenues / Sales volumes)

Source: Company data, Aton estimates

**Taxes.** KMG EP pays rent tax, MET, export duty, corporate income tax (20% of taxable profit) and excess profit tax (the effective rate was 7.2% in 2009, 4.4% in 2010 and 8.4% in 2011). A detailed description of these taxes is provided in the *Regressive vs Progressive Taxation* section of this report (see pages 25-26).

**Capital expenditures.** We forecast development capital costs based on guidance provided by KMG EP in recent presentations. We include no capex related to exploration projects (see Figure 17) or potential acquisitions.

**Financing.** Cash and financial assets (including NC KMG's bonds) amounted to $4.9bn at YE11 and represent about half of KMG EP's total assets. Cash is mainly allocated between local banks (Halyk, KKB – 24%), international banks (HSBS, Citi, Deutsche Bank – 25%) and the NC KMG bond (27%). The company's debt principally relates to the PKI acquisition and totalled $0.6bn at YE11. Current net cash (excluding the bonds) reaches $3bn.

We do not believe the company will raise any debt in the near future but it may need to do so if a reverse takeover takes place with NC KMG.

**Figure 53: KMG EP's operating expenses per barrel of production**

| | 2008 | 2009 | 2010 | 2011 | 2012-15E |
|---|---|---|---|---|---|
| Production costs | 9.2 | 8.5 | 11.6 | 13.8 | 14.5 |
| DD&A | 4.1 | 3.2 | 3.7 | 5.3 | 5.0 |
| Taxes other than income tax | 12.0 | 12.2 | 18.9 | 33.3 | 28.3 |
| SG&A | 8.8 | 8.4 | 9.7 | 11.8 | 11.5 |
| Other | 1.5 | 1.6 | 0.4 | 1.2 | |
| **Total operating expenses** | **35.6** | **34.0** | **44.4** | **65.4** | **58.6** |

Source: Company data, Aton Estimates

**Figure 54: Operating data**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| **Proved and Probable reserves (mn boe)** | **2,133** | **2,200** | **2,141** | **2,141** | **2,141** | **2,141** | **2,141** | **2,141** | **2,141** |
| Share of associates (%) | 17% | 22% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| Liquids production (mnt) | 11.9 | 11.5 | 13.3 | 12.3 | 13.0 | 13.1 | 13.0 | 12.8 | 12.7 |
| **Liquids production (bpd)** | **240** | **232** | **270** | **250** | **263** | **266** | **263** | **260** | **257** |
| Share of associates (%) | 20% | 22% | 34% | 36% | 34% | 33% | 33% | 32% | 31% |

Note: Reserves at YE10 are presented as per annual report without further restatements. Restated figure for 2010 is 2,168mn boe

Source: Company data, Aton estimates

**Figure 55: Income statement summary ($mn, except where noted)**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| **Total revenue** | **5,029** | **3,291** | **4,135** | **4,919** | **4,603** | **4,876** | **4,876** | **4,876** | **4,876** |
| **EBITDA** | **2,952** | **1,367** | **1,683** | **1,497** | **1,250** | **1,344** | **1,344** | **1,344** | **1,344** |
| *EBITDA margin (%)* | *59%* | *42%* | *41%* | *30%* | *27%* | *28%* | *28%* | *28%* | *28%* |
| Share of result of JVs and associates | 479 | -17 | 384 | 575 | 570 | 549 | 522 | 500 | 477 |
| **Net profit** | **2,006** | **1,422** | **1,591** | **1,425** | **1,340** | **1,360** | **1,342** | **1,335** | **1,326** |
| *Net margin (%)* | *40%* | *43%* | *38%* | *29%* | *29%* | *28%* | *28%* | *27%* | *27%* |

Note: EBITDA does not incorporate corresponding share in JVs and associates.

Source: Company data, Aton estimates

**Figure 56: Abridged funds flow and balance sheet ($mn)**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| Cash & equivalents | 4,544 | 4,337 | 3,231 | 3,561 | 3,799 | 4,986 | 5,520 | 6,053 | 6,587 |
| Receivables | 313 | 336 | 445 | 567 | 537 | 569 | 569 | 569 | 569 |
| PP&E | 2,057 | 1,741 | 2,018 | 2,283 | 2,829 | 3,127 | 3,424 | 3,722 | 4,020 |
| Other assets | 1,512 | 2,319 | 3,999 | 3,973 | 3,567 | 2,803 | 2,949 | 3,089 | 3,224 |
| **Total assets** | **8,426** | **8,734** | **9,693** | **10,384** | **10,732** | **11,484** | **12,462** | **13,434** | **14,399** |
| Gross debt | 169 | 930 | 831 | 593 | 223 | | | | |
| Current liabilities | 729 | 375 | 741 | 772 | 742 | 780 | 783 | 782 | 782 |
| Non-current liabilities | 320 | 239 | 254 | 269 | | | | | |
| Shareholders' funds | 7,208 | 7,190 | 7,867 | 8,751 | 9,766 | 10,704 | 11,679 | 12,652 | 13,617 |
| **Total liabilities & equity** | **8,426** | **8,734** | **9,693** | **10,384** | **10,732** | **11,484** | **12,462** | **13,434** | **14,399** |
| Cash flow from operations | 1,362 | 1,011 | 785 | 1,011 | 908 | 992 | 993 | 991 | 990 |
| Cash flow from investments | 1,168 | -1,713 | -214 | 234 | -317 | -94 | -79 | -79 | -81 |
| Cash flow from financing | -340 | -501 | -633 | -508 | -362 | 289 | -380 | -378 | -376 |
| **Net cash flow** | **2,190** | **-1,203** | **-62** | **737** | **229** | **1,187** | **534** | **534** | **533** |

Source: Company data, Aton estimates

**Figure 57: DCF valuation ($mn, except where noted)**

| | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | Terminal value |
|---|---|---|---|---|---|---|---|
| Adjusted EBIT | | 938 | 1,022 | 1,022 | 1,022 | 1,022 | |
| Tax rate (%) | | 31% | 30% | 30% | 30% | 29% | |
| Fully taxed | | 649 | 712 | 715 | 718 | 721 | |
| Depreciation plus exploration expense | | 313 | 322 | 322 | 322 | 322 | |
| Net investing (core assets) | | -852 | -620 | -620 | -620 | -620 | |
| Movements in working capital | | 25 | -20 | 3 | -2 | 1 | |
| Free cash flows (core assets) | | 135 | 395 | 421 | 419 | 424 | 2,218 |
| Cash flows from JV's and associates | | 428 | 412 | 392 | 375 | 358 | 1,875 |
| **Total free cash flows** | | **563** | **806** | **812** | **794** | **782** | **4,093** |
| Net debt | -2,968 | -3,576 | -4,986 | -5,520 | -6,053 | | |
| NPV unleveraged free cash flows (EV) | 4,437 | 4,562 | 4,462 | 4,341 | 4,220 | | |
| **Equity value** | **7,405** | **8,137** | **9,448** | **9,861** | **10,274** | | |
| **Per share, at the end of period ($/GDR)** | **17.57** | **19.31** | **22.42** | **23.40** | **24.38** | | |

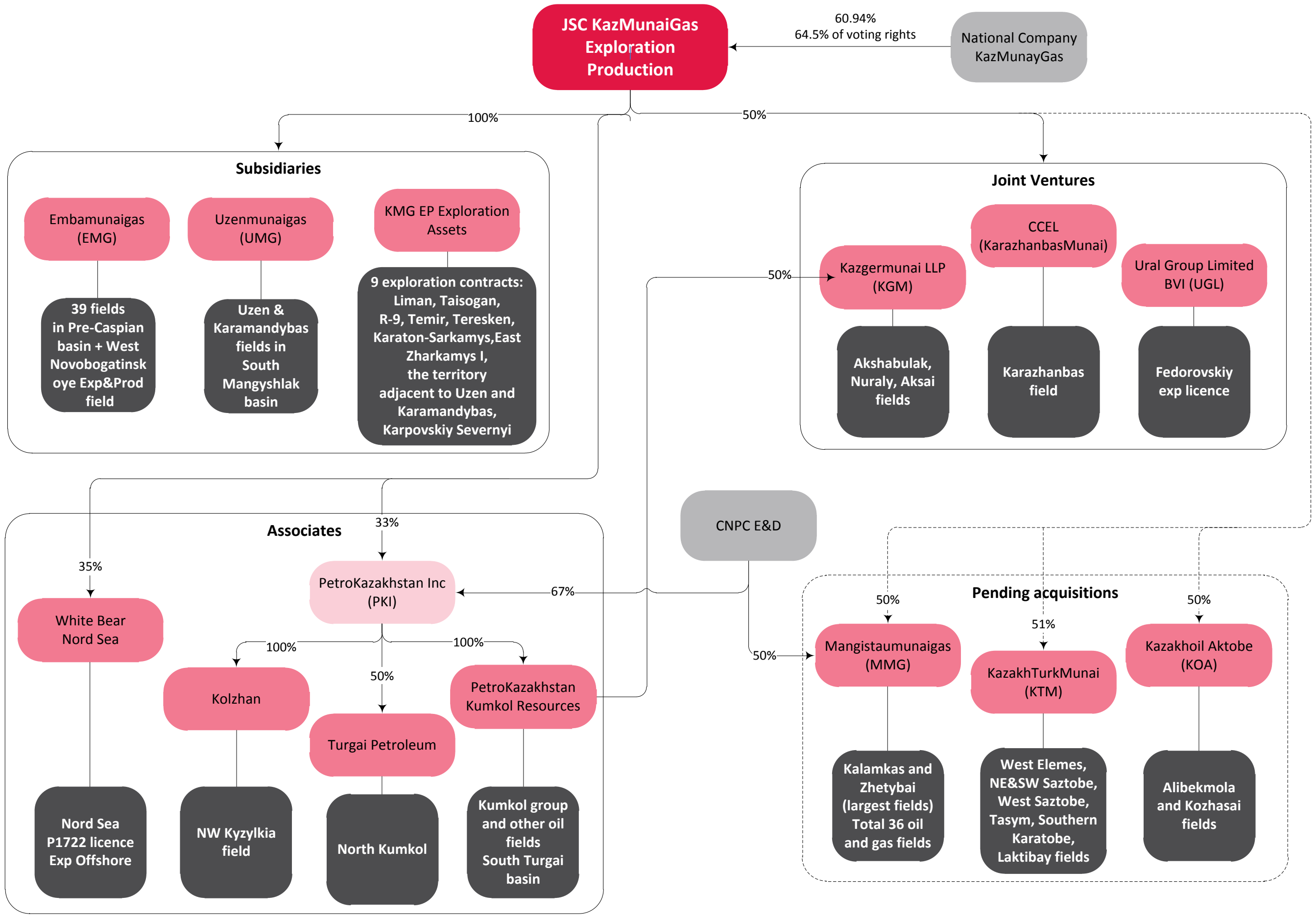
Source: Company data, Aton estimates

## GDR Price and Corporate Structure

**Figure 58: GDR price performance since IPO**


Source: Bloomberg

**Figure 59: Corporate structure**



# DRAGON OIL

## The Best of the Best

BUY

Target price GBp817

Upside potential 32%

| | |
|---|---|
| Bloomberg code | DGO LN |
| Reuters code | DGO.L |
| Current price (GBp) | 619 |

| **Share data** | |
|---|---|
| No. of ordinary shares (mn) | 511 |
| Daily turnover ($mn) | 8.2 |
| Free float (%) | 48% |
| Market capitalisation ($mn) | 4,890 |
| Enterprise value ($mn) | 3,363 |
| **Major shareholders** | |
| ENOC | 51.9% |

| **OPERATIONS** | **2011** | | |
|---|---|---|---|
| 2P Reserves | 902 | | |
| Total Resources | 1,224 | | |
| Production (boepd) | 61,500 | | |
| **FINANCIALS ($mn)** | **2011** | **2012E** | **2013E** |
| Revenue | 1,151 | 1,116 | 1,265 |
| EBITDA | 1,062 | 1,024 | 1,180 |
| EBIT | 856 | 839 | 977 |
| Net income | 648 | 663 | 771 |
| EPS | 1.27 | 1.30 | 1.51 |
| DPS | 0.23 | 0.21 | 0.21 |
| **VALUATION** | **2011E** | **2012E** | **2013E** |
| EV/Sales | 2.9 | 3.0 | 2.5 |
| EV/EBITDA | 3.2 | 3.3 | 2.7 |
| P/E | 7.5 | 7.4 | 6.3 |
| EV/Reserves ($/boe) | 3.7 | 3.7 | 3.7 |
| EV/Output ($/boe) | 150 | 126 | 109 |

| **PERFORMANCE** | |
|---|---|
| 1 month | 16% |
| 3 month | 35% |
| 12 month | 20% |
| 52-week high | 645.0 |
| 52-week low | 387.8 |

Source: Bloomberg, Company data, Aton estimates

**With this report we initiate coverage of Dragon Oil (DGO), the second-largest company in our peer group. We rate the share a BUY with target price of GBp817/share implying 32% potential upside.**

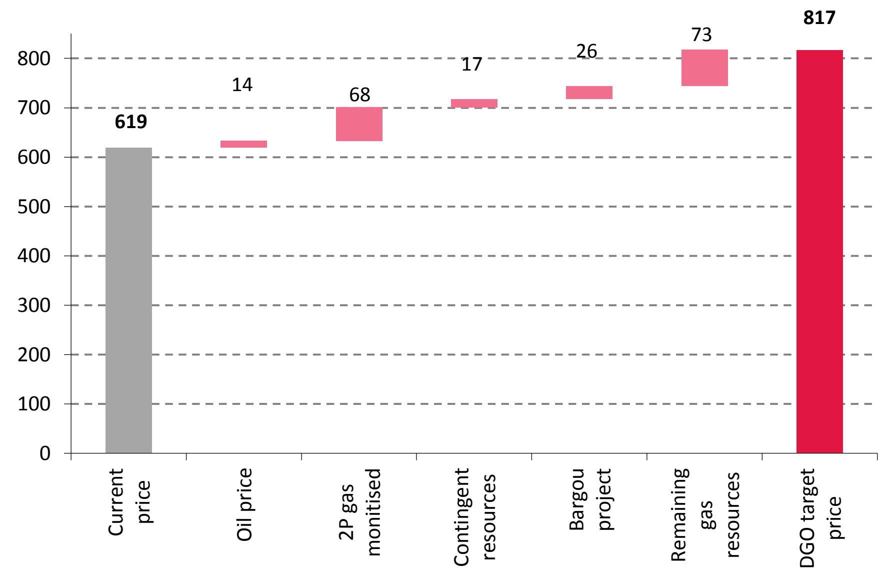
### Investment Case

**Double-digit organic production growth.** The company operates rather old and challenging offshore oilfields. Discovered and brought into production during Soviet times, these fields were on the decline when DGO entered a PSA with the Turkmen government. Since then DGO has been increasing production at a CAGR of over 20% (see Figure 60). In 2011 DGO increased gross production by 30% YoY, which makes its 2012-15E average production growth target of 10-15% look more than achievable, in our view.

**Extremely healthy balance sheet.** At YE11, Dragon Oil's net cash position stood at about $1.5bn, about a third of its current market capitalisation. This suggests it has no funding or financial risks and implies that it could spend money on acquisitions and still pay dividends. While the company has not yet defined its annual payout ratio, management recently announced its intention to pay dividends semi-annually.

**Current market price implies that 2P reserves are being developed at $80/bbl and without gas monetisation.** We estimated that an additional GBp14/share comes from high oil prices ($90/bbl), GBp68/share from gas reserves included in 2P, and GBp17/share from contingent resources. A further GBp26/share could be brought in by the Bargou project and GBp73/share by moving gas resources to reserves.

**Figure 60: DGO value build–up (GBp/share)**




Source: Company data, Aton estimates

## Triggers

**More gas resources moved into reserves.** In Jan 2011 DGO announced that its reserves auditor Gaffney, Cline and Associates had moved more than half of its contingent gas resources (1.6tcf or 260mn boe out of 3.0tcf or 494mn boe) to the 2P reserves category based on the planned capacity of the company's Gas Treatment Facility (GTF). As of YE11, gas 2P reserves decreased slightly to 1.5tcf (250mn boe) as a result of unresolved issues with Turkmenistan's government over a gas sales agreement. We believe further upgrades are possible if a reported gas contract with the Turkmen government is signed and more visibility is achieved on GTF's further upgrade and gas production optimisation.

**Timely delivery of Super M2 (Caspian Driller) rig.** At the start of 2010, DGO ordered a special jack-up rig from a Chinese company, Yantai Raffles. DGO expects the rig to be delivered in 1H12 and be available for the following seven years. We think the timely delivery of this rig would significantly increase the credibility of DGO's production growth plans for 2012-15E. In recent years the company has managed the issue of rig availability quite successfully, in our view, and we expect a similar performance in the future.

**Limited exploration risks.** DGO's assets in Turkmenistan offer no exploration risk (and no exploration upside potential, either) due to the structure of its asset portfolio. The company's 1.4tcf (234mn boe) of contingent gas resources are conditional on economic rather than geological factors. DGO plans to expand its portfolio by acquiring attractive exploration areas in Africa, the Middle East (focused on, but not limited to, Iraq) and Central Asia. So far the company has been cautious in choosing its acquisition targets. Its first marginal exposure to exploration in Yemen brought no success and DGO is now moving to exit the project. A new deal was announced in Oct 2011, when the company farmed into the Bargou offshore exploration project in Tunisia. At the start of 2012, DGO decided against acquiring the much riskier Bowleven project.

## Risks

**Acquisition of poor assets or overpaying for exploration acreage.** DGO is determined to find a sizable (50-100mn boe), high-quality exploration project to supplement its primarily development portfolio. We think it missed a good opportunity to acquire assets during the financial crisis and is now struggling to find a high-value asset at a reasonable price. We believe the chances of overpaying are high due to elevated oil prices and increased competition for good acreage. However, DGO has always been cautious about choosing the right target and the recent appointment of an exploration manager gives us some comfort.

**Revision of PSA terms.** Dragon Oil's PSA features good terms, in our view. We estimate the company's absolute take over the life of the project at 29% and its marginal take at 33%. The government has the right to review the terms after 2025. However, we do not see any substantial risk. DGO operates under a rehabilitation PSA (the government receives all of the naturally declining production and a share of incremental production), which reduces the incentives for the state to change its terms, in our view. Moreover, DGO has been a good corporate citizen: it pays its taxes and has invested in social infrastructure.

**Sole major shareholder.** ENOC holds 51.9% of DGO's shares and effectively controls the company. While there are positive aspects here (ENOC reportedly has good relations with the Turkmen government), ENOC does not seem very interested in enhancing shareholder value as it apparently wants to keep the door open on a potential minority buyout, giving it little incentive to increase the share price.

## Making Money Out of Gas?

DGO has long been trying to monetise its vast gas resources. Only in recent years, however, has it demonstrated any breakthroughs in this area:

- In 2011 DGO's reserves auditor added a portion of gas resources to the company's 2P reserves as of the end of 2010, reflecting the company's progress in gas talks with the government and the final FEED study for the onshore Gas Treatment Plant (GTP) for processing DGO's gas, which was completed in 3Q10.

- In 2011 DGO reduced the flaring of gas by over two-thirds after it commissioned a pipeline connecting its Central Processing Facility (CPF) to the government's compressor station, where operations commenced in 2H11. Currently, a major portion of the unprocessed gas is feeding into the compressor station. DGO continues to supply a small proportion of its gas to the town of Hazar (located near its facilities) for domestic use. While the company gains no monetary benefits from this practice, by doing so it strengthens its hand in negotiations with the government.

DGO's current plans for gas monetisation include:

- Continuing talks with the Turkmen government on a range of options (including a long-term gas sales agreement) for gas sales to export markets. We understand that many difficulties in the talks relate to gas transportation, given the limited infrastructure in western Turkmenistan.

- Completion of the GTP with a gas processing capacity of 220mn scfd (standard cubic feet per day)/6.23mn cmpd (cubic meters per day)/ 39,600boe per day, which will allow DGO to strip condensate and blend it with crude oil. DGO anticipates the tendering process for construction of the plant will start this year with the construction phase taking two years once the contract is awarded. DGO expects the plant to be completed in 2014.

DGO currently produces about 140mn scfd/4.0mn cmpd/25,200boe of gas per day, 17% more than the 120mn scfd (3.4mn cmpd/21,600boepd) produced in 2010. By extrapolating these historical results, we can estimate that the GTP's planned capacity will be sufficient to accommodate all of the gas the company will produce after achieving a plateau level of 100,000bpd in 2015.

When considering the price Turkmenistan might be willing to pay for DGO's gas (we do not believe the company will ever be able to transport and market the gas itself), we see several options:

- Export gas after paying Turkmenistan transportation fees for using the state gas pipeline. This is an unlikely option, in our view, as the government is likely to want to maintain its export monopoly (similarly to Russia) and is unlikely to allow independent producers to compete with it on the external gas market.

- Sell gas to Turkmenistan at the export netback price (the price Turkmenistan receives at the border with China or Russia minus transport costs – about \$250/mcm minus \$20/mcm for transport). This scenario is more likely than the preceding scenario, in our view.

- Sell gas to Turkmenistan at a discount to the export netback price ($150-$175/mcm assuming a $55-80/mcm discount to the netback price). This is the most likely scenario, in our view.

- Strip the condensate from the unprocessed gas at the GTF, add it to crude, and give Turkmenistan the gas for free. This is the worst-case scenario, in our view. We believe this approach could be used for a short period, but it would not be sustainable long-term. We expect that longer term, as gas pipelines are constructed in the country and China purchases more of Turkmenistan's gas, the country should be able to deliver DGO's dry export-quality gas to the final customer.

With all the uncertainties surrounding the realised price, we estimate that monetising the gas included in 2P (which should be processed in the designed GTF, which has a planned capacity of 220mn scfd) would have a limited impact on the company's valuation: we estimate it contributes about GBp68/share (or 9.7%) to the target value of 2P (GBp700/share). We assume Turkmenistan will buy DGO's export-quality gas at $175/mcm (vs the $250/mcm Turkmenistan gets from China) and processing costs of $2.5/boe. We estimate that DGO will spend about $250mn to construct the GTF (the average of the company's recent guidance of $200-300mn).

In order to bring the remaining contingent gas resources into the 2P reserves category, we estimate that DGO would need to increase its production rate and double the capacity of the GTF.

## Operating Upsides

### Sidetracking

In an attempt to optimise costs and production, where geologically possible, DGO sidetracks its least productive wells. The results so far have been quite promising. In July 2010, DGO successfully sidetracked the Lam A/129 well with a net effect of 1,140bpd of incremental production, somewhat better than the recently delivered guidance on the net effect of sidetracking of 500-1,000bpd. We believe the sidetracking of the Lam 13/140 well, performed in Jan 2012, was also successful. The well was originally drilled in Dec 2009 with a rate of 1,317bpd. With a two-year decline of about 20% per year, we estimate the well exit rate was about 800bpd in 2011. This would imply the effect of sidetracking at around 1,400bpd.

### Lam West Potential

The Lam West area is perhaps one of the most promising in Cheleken, in our view. DGO views Lam West as interesting because it is registering only a slow decline due to strong water support, the area's low depletion rate (only 15% of reserves have been produced), and low watercut. Moreover, new data on this promising area could boost the company's reserves and ease its reserves replacement efforts. At the end of 2010, DGO's contingent oil and gas condensate resources stood at 47mn bbls. By the end of 2011, oil and gas contingent resources had been boosted by 41mn bbls, mostly thanks to Lam West, which turned out to be bigger than originally expected, with shallow reservoirs. The area also accounted for the improved reserves replacement performance registered in 2011.

We understand that the first well, Lam 28/120, was drilled from the newly constructed Lam 28 platform in 1H07. The well demonstrated good results with an initial flow of 3,014bpd. Since then DGO has drilled 22 additional wells. One well has been drilled from the brand-new platform C and completed on 19 Mar 2012.

Overall, the average initial rate demonstrated by the new wells is about 2,600bpd with a higher rate coming from Lam 28 (2,962bpd), see Figure 66. Lam B demonstrated the worst results, averaging 1,801bpd. The company explained this lower productivity by the fact that Lam B is located at the westernmost edge of Lam West.

Completed in 2011, the Lam C platform is more advantageously placed and should yield better results than Lam B, the company says. DGO hopes to install the Lam D platform (in an area adjacent to Lam C) in the near future and the tendering process is now underway.

**Expansion into Zhdanov (Dzhygalybeg)**

The Zhdanov (Dzhygalybeg) field is located to the northeast of the Lam (Dzheitune) field. Initial exploration and prospecting there began in 1965 and the first production well was launched in 1972. DGO still produces from three wells drilled there in Soviet times. Since the company took over the field, DGO has completed a number of successful workovers, but never drilled a well.

DGO expects its first new platform, Zhdanov A, to be completed in 2H12. Originally targeting early 2012, the project was delayed as the company worked to choose the best drilling locations. DGO has already awarded a contract for the construction and installation of Zhdanov B platform, which DGO hopes to complete in early 2013.

While it is too early to estimate the potential productivity of Zhdanov (the company believe that the newly drilled wells will have lower productivity than LAM wells), DGO believes the experience gained in developing Lam and introducing new technologies should help it to achieve better results going forward.

**Enhanced Recovery**

DGO currently produces oil and gas only via natural flow, which points to the potential for considerable operational upside, in our view.

In 2011, DGO completed a preliminary water injection study using a dynamic simulation model for the Lam 75 area, a rather mature part of the Dzheitune field. In June 2011, it conducted a water injection test by completing one well as an injector and monitored the pressure and saturation response in nearby wells.

The results were sufficiently encouraging to prompt DGO to implement a pilot water injection project in 2012. The company expects to receive data from the project and review the results over the next two-to-three years. If the pilot project proves successful, DGO hopes to introduce secondary recovery on a wider scale in 2015.

The impact of enhanced recovery could be significant, in our view. On the cost side it would reduce the amount of drilling needed, while increased recovery could boost reserves and prolong or even increase the plateau level, in our view.

**Rig Availability**

Rig availability has always been an issue for DGO. With an aggressive drilling schedule now in place, this factor becomes vital for the company. In recent years, DGO has managed this issue fairly successfully, in our view, and we see little risk to its drilling plans.

DGO owns the land-based Rig 40 and has two rigs under contract: Iran Khazar (until early 2013) and NIS. The contract for NIS expires later this year and DGO hopes to replace it soon with a newly contracted rig. The Caspian Driller rig, originally scheduled for delivery at end-2011, is now expected to start operations in 1H12. DGO expects it to drill three wells this year. The company said it does not rule out that one or two jack-up rigs might be needed and it is searching for a possible source.

**Figure 61: Rigs availability**

| Name | Type | Status of contract | Comments |
|---|---|---|---|
| Rig 40 | Platform-based | Own | Lam 13 platform: it has completed sidetracks of the wells 13/140A and 13/144B, and is currently drilling 13/168 well; after that it is scheduled to drill one more well. |
| NIS | Platform-based | To be replaced by the newly contracted rig | After completion of 28/166 will drill three more wells |
| Land rig | Platform-based | To be contracted | Is currently being sourced and is expected to be mobilised to the field in 2H12 where it is due to complete one well. |
| Iran Khazar | Jack-up | Contracted until early 2013 | After completion of A/165 and C/167 wells is due to complete three more wells by the end of 2012 |
| Caspian Driller | Jack-up | Delivery expected in 1H12 | Three wells to be drilled in 2012 |
| New Jack-up 1 | Jack-up | To be mobilised in 2014 | |

Source: Company data, Aton estimates

## Expansion Overseas

In 2007, Dragon Oil started to explore expanding opportunities to employ the large amount of cash on its balance sheet. Given the limited opportunities available in Turkmenistan, DGO began looking for exploration assets abroad.

DGO says it is interested in oil and gas assets that offer exploration upside, offshore and onshore fields, and shallow water projects. Given the scale of its assets, the company says it is seeking acquisitions offering 50-100mn boe in order to balance its primarily development portfolio with its exploration assets, which is a sound strategy, in our view.

On 17 Dec 2007 DGO acquired a minority interest (10%) in three exploration blocks in Yemen (R2, Block 35 and 49) from Virgin Resources. The acquisition proved unsuccessful: of four exploration wells on R2 and 49, only one well flowed at an insignificant rate of 40 bpd. DGO eventually relinquished most of its interests in Yemen and is currently awaiting confirmation from the Yemen government on surrendering its remaining stake in Block 35.

In Oct 2011, DGO announced the signing of a farm-in agreement for a 55% participating interest in the Bargou Exploration Permit (offshore Tunisia). It will pay 75% of the drilling costs for the Hammamet West-3 well (about $20mn net to DGO), which will be drilled in 2012.

Following completion of the farm-in conditions, Dragon Oil will become a partner in the Bargou Joint Venture with a 55% share; other participants include Cooper Energy (30%) and Jacka Resources (15%). If the well is successful and the JV proceeds with the development of the Hammamet West oilfield, DGO will assume operatorship of the Bargou Exploration Permit, subject to confirmation by the Tunisian government.

On our estimates, the acquisition could add risked resources of 72-330mn bbls to Cheleken, DGO's primarily development asset, implying a $0.06-$0.28/bbl acquisition price. We would consider this a fair price for a project that could add exploration upside to the company's current assets. We do not include these potential resources in our base target price.

On 17 Feb 2012 DGO announced that it was considering a possible offer to acquire 100% of Bowleven's shares. Bowleven is a West Africa-focused oil and gas group based in Edinburgh which has traded on AIM since Dec 2004. Bowleven holds equity interests in offshore and onshore exploration acreages in Cameroon. Overall, its P50 contingent resources amount to 217mn boe which consist predominately of gas-associated liquids. However, on 28 Feb Dragon Oil informed the market that it would not bid for Bowleven.

Dragon Oil has been pre-qualified to participate in the fourth round of bidding for a project in Iraq in May 2012. However, management said that the fiscal terms of the contract are not very attractive (these are mainly service contracts), so it may not participate. The company is nonetheless interested in participating as a first step towards other opportunities in the country.

On 2 Feb 2012, DGO announced the appointment of an exploration manager, Ali Al Hauwaj, emphasising its interest in acquiring exploration assets. Hauwaj will lead the company's internal exploration team in evaluating overseas exploration projects. Based on his experience, we believe that DGO will become even more cautious about buying highly risked exploration assets.

The company has named Central Asia, North, East and West Africa, and the Middle East as key areas of potential expansion. However, we believe the particular focus on Africa emphasises the limited opportunities in the company's traditional areas of operation (Central Asia and the Middle East). In addition, DGO believes the major oil companies operating in Africa are likely to reshuffle their portfolios to focus on the most promising areas, which would allow mid-sized players like DGO to enter the continent.

We see many potential targets for DGO (even among traded companies in the FSU) (see Figure 21). We would not be surprised to learn that names such as Condor Petroleum, International Petroleum, Jupiter Energy, Manas Petroleum, Max Petroleum and Tethys Petroleum − all with assets in Kazakhstan − as well as Greenfield Petroleum in Azerbaijan were being scrutinized by the company. In any case, we expect some deals to be completed (or at least announced) by the company this year.

## Company Profile

### Introduction

Dragon Oil (DGO) is an independent oil and gas producer with key assets in Turkmenistan's offshore Caspian zone. The company operates the Cheleken contract area under a rehabilitation production sharing agreement (PSA) that started in 2000. The PSA envisages redevelopment of the Dzheitune (Lam) and Dzhygalybeg (Zhdanov) fields which were discovered during the Soviet era.

At the end of 2011, Dragon Oil held 902mn boe of 2P reserves (658mn bbls of which were oil and gas condensate), 88mn bbls of contingent oil and gas condensate reserves and 1.5tcf (250mn boe) of contingent gas resources.

DGO's shares are listed on the Irish stock exchange and in London. The key shareholder is Emirates National Oil Company (ENOC) with 51.9%. The remainder is held mainly by institutional investors around the world.

Dragon Oil finances its growth primarily via operating cash flows. Since 2000, the company has raised only about $148mn in equity and about $120mn in debt, which was later completely paid off. Its net cash position at the end of 2011 was approximately $1.5bn (excluding $289mn in restricted cash reserved for the future plugging and abandonment of wells and platforms taken out of operation).

### Board of Directors and Management

**Figure 62: Board of directors**

| Name and title | Date of appointment | Experience |
|---|---|---|
| **Mohammed Al Ghurair** Non-executive chairman | Apr 2007 | Executive director in a number of leading companies in the Middle East, including Dubai Aluminium, ENOC and Saudi International Petrochemical Company. He has a degree in mechanical engineering |
| **Abdul Jaleel Al Khalifa** Director, CEO | Sep 2008 | Previously managed a wide range of E&P departments in Saudi Aramco for 12 years. He has a doctorate in Petroleum Engineering from Stanford University. Founding member of the industry's Humanitarian Support Alliance NGO. |
| **Ahmad Sharaf** Non-executive vice chairman | Apr 2007 | He worked at ConocoPhillips for 15 years, then joined Dubai Holding where he held leadership positions in various sectors of the group. Chief strategy officer of Dubai Holding since 2010, chairman of Dubai Mercantile Exchange, a member of the board of ENOC. Holds a B.Sc. and M.Sc. in Petroleum Engineering from the Colorado School of Mines and an MBA from Duke University's Fuqua School of Business. |
| **Nigel McCue** Senior independent director | Apr 2002 | A director and CEO of Lamprell and the chairman of Jura Energy Corporation. Previously, McCue was a director and CFO of Lundin Oil, prior to which he held various positions in Chevron Overseas and Gulf Oil Corporation. |
| **Saeed Al Mazrooei** Independent director | May 2007 | CEO for Emirates Aluminium, a number of directorships in other Middle Eastern companies. He received a Master's Degree in Gas Engineering and Management from Salford University in the UK and has focused on the gas industry since joining Arco International in 1985. |
| **Ahmad Al Muhairbi** Independent director | May 2007 | Involved in petroleum field development and production since 1988, previously with Margham Dubai Establishment and now with Dubai Supply Authority. He has also earned a degree in petroleum engineering. |
| **Thor Haugnaess** Independent director | Feb 2012 | Working in the upstream oil and gas industry for over 25 years, predominantly within oilfield services with the Schlumberger in a variety of management roles. President of Norwegian drilling contractor Ocean Rig ASA ion 2003-06. Haugnaess has a Master's Degree in Petroleum Engineering from the University of Trondheim (NTNU) in Norway. |

Source: Company data

**Figure 63: Management team**

| Name and title | Date of appointment | Experience |
|---|---|---|
| **Hussain Al Ansari**<br>COO | | Worked with ARCO International, ENOC, Dolphin Energy and Mubadala Petroleum Services, obtaining 23 years of experience in petroleum industry. He has a Bachelor's Degree in chemical engineering from the University of California. |
| **Emad Buhulaigah**<br>General Manager of Petroleum Development | | 28 years' experience working with Gulf Oil, Saudi Aramco, Chevron and Shell. He has a Master's Degree in Petroleum Engineering from the University of Southern California. |
| **Tarun Ohri**<br>Director of Finance | | Worked in oil-related industries in Qatar and the UAE in finance, accounting and audit. He is an associate of the Institute of Chartered Accountants of India with a CISA qualification. |
| **Mark Sawyer**<br>Business Development and New Ventures Manager | | Was previously responsible for E&P business development and gas marketing for a large US multi-national energy company. He has 28 years of international experience in the energy industry. Vice president, business development with Tatweer Investments and chief business development officer for Dubai Energy. |
| **William Mandolidis**<br>Corporate Planning Manager | | 30 years of oil and gas experience with companies including Shell Canada, Wascana Energy, Nexen Energy and Wood Group ESP, in a variety of senior managerial positions. He has a degree in chemical engineering from the University of Toronto. |
| **Ali Al Hauwaj**<br>Exploration Manager | Feb 2012 | Worked for Saudi Aramco for over 30 years and for the last seven years as manager of the exploration department. In his latest position he led Saudi Aramco's exploration programme, conducted hydrocarbon exploration in the Gulf area and the start-up of the Red Sea sub-salt exploration programme, as well as Saudi Arabia's Northwestern region. Al Hauwaj's exploration skills were critical in discovering many oil and gas fields in the Central and Eastern parts of Saudi Arabia. He holds a Bachelor's Degree in Geology. President of the Dhahran Geosciences Society in 2003-04, an active member of the American Association of Petroleum Geologists. |
| **Jamel Kahoul**<br>Projects Manager | | Over 35 years in corporate and project management within the oil and gas industry. His last position prior to joining Dragon Oil was area engineering manager with Abu Dhabi Company for Onshore Oil Operations (ADCO). |
| **Faisal Al Ansari**<br>Reservoir Development Manager | | Over 25 years of experience in reservoir engineering and development as well as logistics and marine operations. Prior to joining Dragon Oil, he worked for Zakum Development Company (ZADCO) Abu Dhabi, UAE. Mr Faisal holds a Bachelor of Science degree in Physics and Mathematics from the University of Lewis and Clark, Portland, USA. |
| **Ali Al Matar**<br>Engineering Manager | | Over 28 years in gas processing, engineering and project management with Saudi Aramco. He previously led the design, construction and commissioning process for a mega-gas processing project in Saudi Aramco. Ali holds a Master's degree in construction engineering management and a Bachelor's degree in chemical engineering from the King Fahd University of Petroleum and Minerals. |
| **Rashid Redjepov**<br>Country Manager | Nov 2008 | He trained as an economist and worked for over 12 years in various aspects of the upstream oil and gas industry of Turkmenistan, in both the public and private sectors, before joining DGO. |
| **Eldar Kazimov**<br>Country Manager | Nov 2008 | He graduated from the Polytechnic Institute of Turkmenistan with an Honours Degree in Petroleum Engineering and has eight years of experience in field operations. |

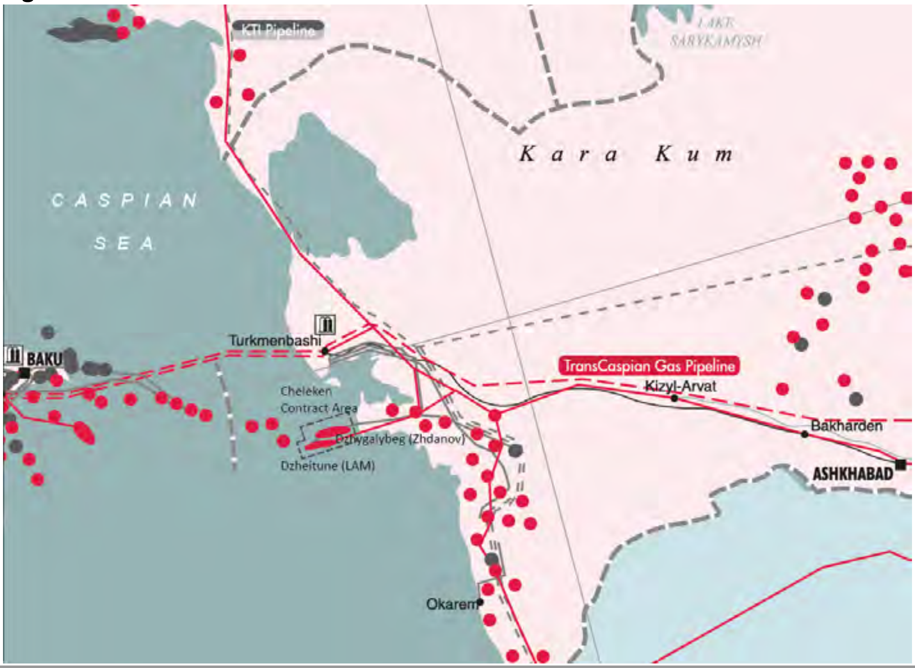
Source: Company data

## Assets Review

Dragon Oil's principal development and production asset is the Cheleken contract area in the eastern section of the Caspian Sea (offshore Turkmenistan), west of the coastal town of Hazar. The contract area covers approximately 950 km2 and comprises two offshore oil and gas fields, Dzheitune (Lam) and Dzhygalybeg (Zhdanov), in water depths between 8 and 42 metres.

Dragon Oil's operational focus is on the redevelopment of the Lam and Zhdanov fields, which were discovered during Soviet times.

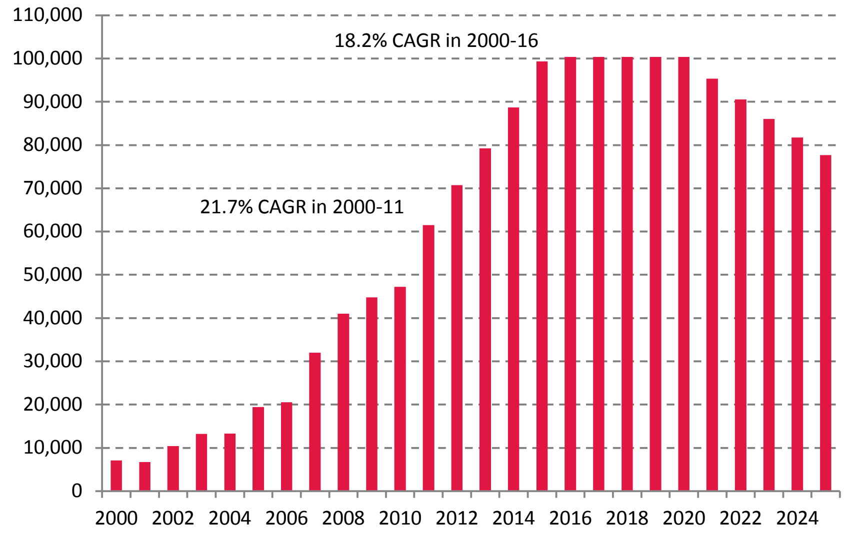
**Figure 64: DGO's assets**




Source: Company data, Petroleum Economist

Since entering the project, DGO has demonstrated superior results. The Cheleken contract area produced 7,000bpd in 2000. At YE11, gross production from the area exceeded 70,000bpd, a 10-fold increase (22% CAGR) over the period. From 2012 to 2015, DGO plans to increase production by 10-15% per year to 100,000 bpd and then maintain this plateau level for another five years.

**Figure 65: Cheleken gross production profile (bpd)**




Source: Company data, Aton estimates

These plans do not include the potential upside from implementing an enhanced recovery programme (waterflooding) or intensified drilling at the Zhdanov field. In the past (with the exception of 2010, when the company faced a serious infrastructure bottleneck), DGO has been quite conservative in setting its production targets.

**The Dzheitune (LAM) field** is located to the southwest of the Zhdanov field. The first well was drilled there in 1967 and production started in 1978. There are nine producing platforms at the field with a significant number of old and new wells in production.

Since the commencement of the PSA in 2000, Dragon Oil has drilled 68 new wells on the field, constructed and installed three new platforms, refurbished and upgraded existing platforms and performed many successful workovers.

**Figure 66: Wells drilled at LAM**

| | Wells drilled | Initial production (bpd) |
|---|---|---|
| 2000-2006 | 16 | 3,114 |
| 2007 | 7 | 2,806 |
| 2008 | 9 | 3,084 |
| 2009 | 8 | 2,210 |
| 2010 | 11 | 2,281 |
| 2011 | 13 | 2,292 |
| 2012 (Jan-Mar) | 4 | 2,660 |
| **Total** | **68** | **2,636** |

Source: Company data, Aton estimates

**The Dzhygalybeg (Zhdanov) field** is located to the northeast of the Lam field. The initial exploration and prospecting of the Zhdanov structure began in 1965. First production commenced in 1972 and three old wells are still pumping crude. Dragon Oil has completed a number of successful workovers in the Zhdanov field and plans to install its first new platform, Zhdanov A, in early 2012.

DGO is screening and evaluating a number of potential acquisition targets in Africa, Central Asia, the Middle East and selectively in Southeast Asia, aiming to create a diversified portfolio of production and exploration assets.

## Financial Review

**Revenues**. We incorporate oil, condensate and gas production in our sales forecast for Dragon Oil. Sales volumes are estimated on an entitlement basis which is calculated according to the PSA terms. Our forecast period equates to the PSA period including the potential for a 10-year extension until 2035. The company exports all of its oil at a price defined as Dated Brent less a discount (condensate will be mixed with oil). In 2010-11 the discount was 9-10%, but DGO expects it to increase to 10-13% in 2012. We assume a 10% discount (or $10/bbl at a Brent price of $90/bbl) for the entire forecast period. For gas sales we estimate a price of $175/mmcm as the company has not yet signed any contracts or provided guidance on this issue.

**Operating expenses.** Dragon Oil's production costs excluding DD&A held at $4.5-4.7/bbl of gross production in 2008-10, but then declined to $3.3/bbl in 2011 due to increased production. Total operating costs including DD&A and SG&A decreased from $17.1-17.9/bbl in 2008-10 to $13.7/bbl in 2011. We assume production costs of $2.5/bbl (excluding DD&A) from 2012 based on a further increase in production and some economies of scale. Our DD&A forecast is based on unit-of-production methodology. Estimated total operating expenses fall from $10.7/bbl in 2012 to $6.8/bbl in 2016 (assuming the GTP starts production in 2015); after a flat production period in 2016-20, they should start to increase on a per-barrel basis.

**Figure 67: DGO - Operating expenses per barrel of production**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| Production costs | 4.5 | 4.7 | 4.7 | 3.3 | 2.5 | 2.0 | 2.0 | 2.2 | 2.2 |
| DD&A | 10.0 | 11.5 | 10.9 | 9.2 | 7.1 | 7.0 | 7.5 | 4.4 | 4.1 |
| SG&A | 2.6 | 1.6 | 1.6 | 1.2 | 1.1 | 1.0 | 0.9 | 0.6 | 0.5 |
| **Total operating expenses under IFRS** | **17.1** | **17.9** | **17.2** | **13.7** | **10.7** | **10.0** | **10.4** | **7.1** | **6.8** |
| Royalty and government profit share | 36.7 | 25.8 | 28.2 | 47.3 | 38.3 | 37.3 | 37.5 | 36.0 | 39.0 |
| **Total operating expenses** | **53.8** | **43.7** | **45.4** | **61.0** | **49.0** | **47.3** | **47.8** | **43.1** | **45.9** |

Note: Production costs are net of underlift adjustments which occur as temporary differences between sales volumes and entitlement production. All expenses are presented per barrel of gross production. The company reports its revenues on an entitlement basis, i.e. net of royalty and government profit share which are actually production taxes. We include them into operating expenses for comparability with other companies.

Source: Company data, Aton estimates

**Capital expenditures.** We assume total spending of $2.2bn in 2012-15 based on company guidance: drilling costs of $18mn per well, $1bn for infrastructure projects and $250mn for GTP construction.

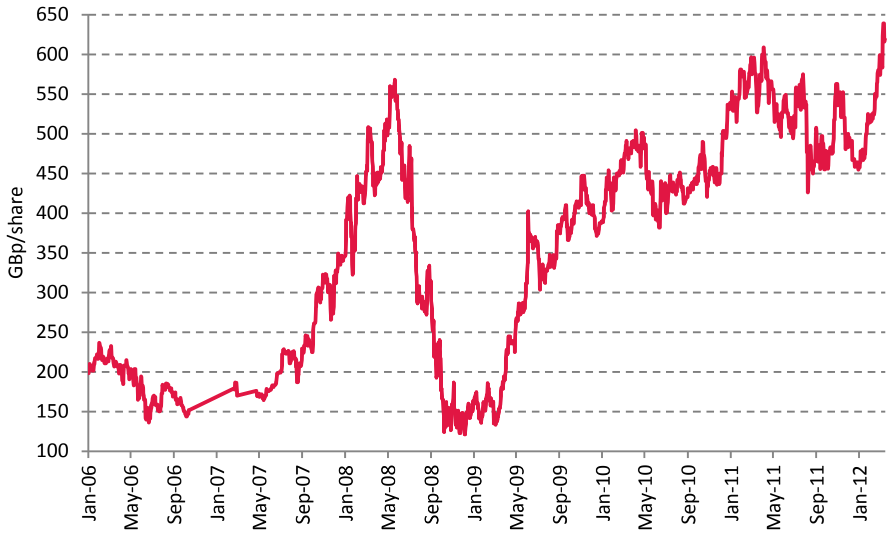
We then fix annual capex at $180mn (assuming the drilling of 10 wells at $18mn per well) for 2015-25E and $100mn for the remaining period. No exploration or acquisition costs are incorporated in our DCF model, except for $25mn related to Tunisia project farm-in commitments for 2012.

**Financing.** The company has enough cash on its balance sheet and sufficient operating cash flows to finance its near-term development, on our estimates.

At the end of 2011, DGO had a cash balance of $1.5bn (excluding $289bn in the abandonment fund). Even with an aggressive acquisition programme and plans to pay significant dividends (we assume DGO will pay about 15% of its net income in dividends), DGO's balance sheet looks strong enough to finance its aggressive growth plans and even survive an oil price collapse to $10/bbl (see **Figure 37**).

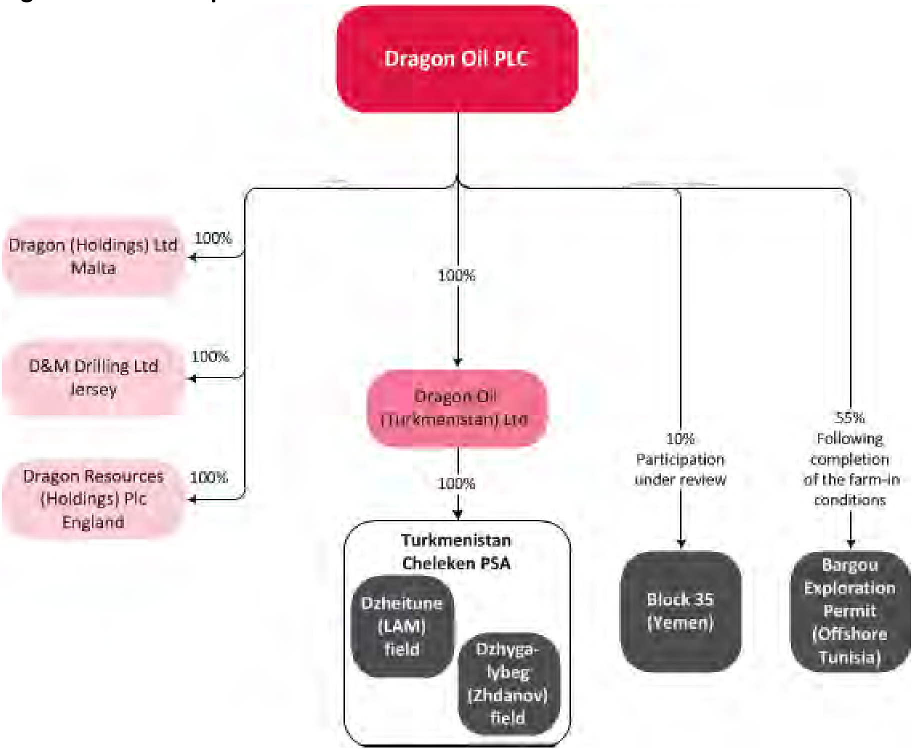
## Share Price and Corporate Structure

**Figure 68: Share price performance**




Source: Bloomberg, Aton estimates

**Figure 69: DGO corporate structure**




Source: Company data

**Figure 70: Operating data**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| **Oil & gas reserves (mn boe)** | **636** | **617** | **899** | **902** | **876** | **847** | **815** | **777** | **739** |
| Crude oil and gas condensate reserves (mn bbls) | 636 | 617 | 639 | 658 | 632 | 603 | 571 | 533 | 495 |
| Gas reserves (bcf) | 0 | 0 | 1,600 | 1,500 | 1,500 | 1,500 | 1,500 | 1,500 | 1,500 |
| **Oil & gas output (mn boe)** | **15.0** | **16.3** | **17.2** | **22.4** | **25.9** | **28.9** | **32.4** | **50.6** | **51.0** |
| Crude oil and condensate (mn bbls) | 15.0 | 16.3 | 17.2 | 22.4 | 25.9 | 28.9 | 32.4 | 37.7 | 38.2 |
| Gas (bcm) | | | | | | | | 2.05 | 2.05 |

Source: Company data, Aton estimates

**Figure 71: Income statement summary ($mn, except where noted)**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| **Total revenue** | **706** | **623** | **780** | **1,151** | **1,116** | **1,265** | **1,413** | **1,543** | **1,400** |
| **EBITDA** | **624** | **503** | **676** | **1,062** | **1,024** | **1,180** | **1,320** | **1,406** | **1,262** |
| *EBITDA margin (%)* | *88%* | *81%* | *87%* | *92%* | *92%* | *93%* | *93%* | *91%* | *90%* |
| **Net profit** | **369** | **259** | **386** | **648** | **663** | **771** | **849** | **933** | **847** |
| *Net margin (%)* | *52%* | *42%* | *49%* | *56%* | *58%* | *59%* | *59%* | *59%* | *59%* |

Source: Company data, Aton estimates

**Figure 72: Abridged funds flow and balance sheet ($mn)**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| Cash & equivalents | 876 | 1,138 | 1,337 | 1,806 | 2,003 | 2,212 | 2,459 | 3,052 | 3,795 |
| PP&E | 777 | 908 | 1,176 | 1,354 | 1,690 | 2,143 | 2,624 | 2,831 | 2,802 |
| Other assets | 117 | 102 | 145 | 192 | 217 | 217 | 217 | 217 | 217 |
| **Total assets** | **1,769** | **2,148** | **2,658** | **3,351** | **3,909** | **4,572** | **5,300** | **6,099** | **6,813** |
| Gross debt | | | | | | | | | |
| Current liabilities | 243 | 355 | 482 | 646 | 646 | 646 | 646 | 646 | 646 |
| Non-current liabilities | 84 | 89 | 83 | 116 | 116 | 116 | 116 | 116 | 116 |
| Shareholders' funds | 1,442 | 1,703 | 2,093 | 2,589 | 3,146 | 3,809 | 4,537 | 5,337 | 6,050 |
| **Total liabilities & equity** | **1,769** | **2,148** | **2,658** | **3,351** | **3,908** | **4,571** | **5,299** | **6,099** | **6,813** |
| Cash flow from operations | 579 | 500 | 595 | 1,016 | 803 | 923 | 1,037 | 1,095 | 980 |
| Cash flow from investments | -516 | -682 | -722 | -914 | -500 | -606 | -669 | -369 | -104 |
| Cash flow from financing | 12 | 0 | 2 | -155 | -106 | -108 | -122 | -134 | -134 |
| **Net cash flow** | **74** | **-182** | **-126** | **-54** | **197** | **209** | **247** | **593** | **743** |

Source: Company data, Aton estimates

**Figure 73: DCF valuation ($mn, except where noted)**

| | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017-35E |
|---|---|---|---|---|---|---|---|
| Adjusted EBIT | | 839 | 977 | 1,077 | 1,183 | 1,053 | 10,982 |
| Tax rate (%) | | 25% | 25% | 25% | 25% | 25% | |
| Fully taxed | | 629 | 733 | 808 | 887 | 790 | 8,236 |
| Depreciation plus exploration expense | | 184 | 202 | 243 | 223 | 209 | 5,589 |
| Unleveraged cash flows | | 814 | 935 | 1,051 | 1,110 | 999 | 13,825 |
| Net investing | | -520 | -656 | -724 | -430 | -180 | -2,320 |
| Movements in working capital | | -1 | 0 | 0 | 0 | 0 | 76 |
| **Unleveraged free cash flows** | | 293 | 279 | 327 | 680 | 819 | 11,581 |
| NPV unleveraged free cash flows (EV) | 3,749 | 4,018 | 4,341 | 4,665 | 4,685 | 4,569 | |
| Net debt | -1,527 | -1,624 | -1,734 | -1,867 | -2,283 | -2,828 | |
| **Equity value** | **5,275** | **5,642** | **6,075** | **6,532** | **6,967** | **7,396** | |
| **Per share, year end** | **638.7** | **689.9** | **742.8** | **798.8** | **852.0** | **904.4** | |

Source: Company data, Aton estimates

# ZHAIKMUNAI

## Wait Until the Growth Comes

HOLD

| Target price | $13.0 |
|---|---|
| Upside potential | 9% |

| | |
|---|---|
| Bloomberg code | ZKM LI |
| Reuters code | ZKMq.L |
| Current price ($) | 11.90 |
| GDR: common share | 1:1 |
| **Share data** | |
| No. of ordinary GDRs (mn) | 185 |
| Daily turnover ($mn) | 0.5 |
| Free float (%) | 25% |
| Market capitalisation ($mn) | 2,222 |
| Enterprise value ($mn) | 2,545 |
| **Major shareholders** | |
| Thyler Holding | 47.7% |
| KazStroyService | 27.0% |

| OPERATIONS | 2011 | | |
|---|---|---|---|
| 2P Reserves | 539 | | |
| Total Resources | 1,095 | | |
| Production (boepd) | 13,158 | | |
| **FINANCIALS ($mn)** | **2011** | **2012E** | **2013E** |
| Revenue | 301 | 806 | 878 |
| EBITDA | 178 | 522 | 553 |
| EBIT | 158 | 462 | 501 |
| Net income | 82 | 290 | 317 |
| EPS | 0.44 | 1.55 | 1.70 |
| DPS | 0 | 0 | 0 |

| VALUATION | 2011 | 2012E | 2013E |
|---|---|---|---|
| EV/Sales | 8.5 | 3.2 | 2.6 |
| EV/EBITDA | 14.3 | 4.9 | 4.2 |
| P/E | 27.2 | 7.7 | 7.0 |
| EV/Reserves ($/boe) | 4.7 | 4.4 | 4.4 |
| EV/Production($/boe) | 530 | 137 | 132 |

| PERFORMANCE | |
|---|---|
| 1 month | 6% |
| 3 month | 27% |
| 12 month | -4% |
| 52-week high | 12.90 |
| 52-week low | 6.85 |

Source: Bloomberg, Company data, Aton estimates

**We initiate coverage of Zhaikmunai (ZKM), the smallest of the three companies. Our rating is HOLD with a target price of $13.0/GDR implying 9% upside potential.**

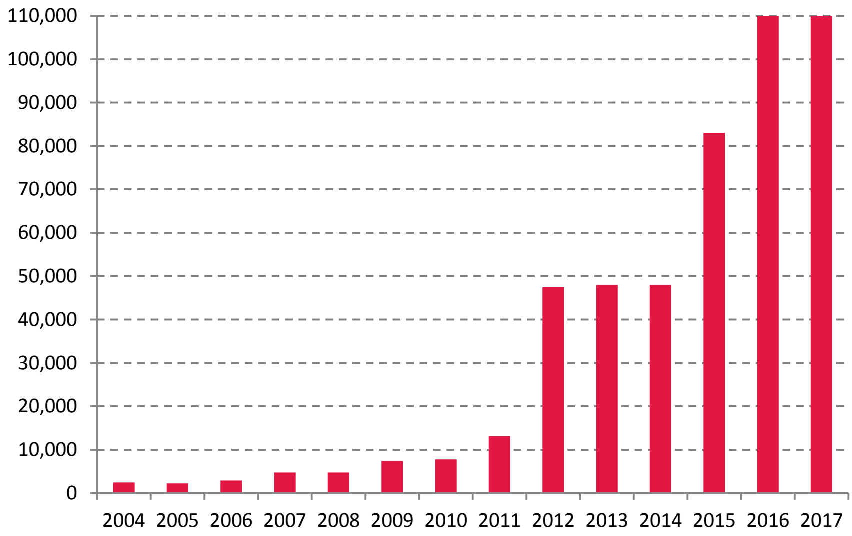
### Investment Case

**High-quality reserves...** Chinarevskoye exposes ZKM to minimal exploration risk given the substantial amount of geological information it has gathered since 2004. We understand the company has already covered 100% of the field with 2D and 3D seismic surveys. As a result, it has never drilled a single dry well. Since 2004, Zhaikmunai has discovered a number of new formations and increased its 2P reserves by more than 2.5x, adding about 340mn boe (see **Figure 80**).

**... but limited infrastructure capacity.** The first phase of the company's Gas Treatment Facility (GTF) was completed last year and ZKM expects it to reach a maximum output capacity of 48,000boepd by end-1Q12. From that point the limited capacity of its Oil Treatment Facility (8,000bpd of crude oil) and the GTF (40,000boepd of stabilised condensate, LPG and dry gas) will not allow the company to process and produce more hydrocarbons. ZKM is now considering whether to double the oil processing unit's capacity and build one or two more trains of gas processing units to reach a plateau output level of 110,000 boepd.

**No substantial growth in the near term.** On 16 Jan 2012, ZKM reached a stable output level of 42,000 boepd. By end-1Q12 the company plans to achieve 48,000boepd, limited by the maximum capacity of its infrastructure. Even though 2012E output growth looks good YoY (more than three-fold), we expect only 1% YoY growth in 2013 and flat output in 2014.

**Figure 74: Output growth to come in 2015 (boepd)**




Source: Company data, Aton estimates

## Triggers

**Delivering on promised production targets.** On 16 Jan 2012, ZKM reported that it had reached a stable output level of 42,000boepd. By the end of 1Q12 it plans to achieve a maximum capacity of 48,000boepd. Given GTF's construction delays over the last several years (during the IPO in 2008, GTF's completion was promised in May 2009; during the bond placement in 2010, it was slated for 1Q11), we believe that the timely delivery of promised output targets would impress investors.

**Obtaining a premium listing on LSE.** Zhaikmunai is considering a switch from a standard listing (GDRs) to a premium listing on the LSE (shares). A premium listing would allow the shares to be included in the FTSE 250 Index and provide access to a wider range of investors. It would also improve ZKM's image as it would have to comply with the stringent UK Corporate Governance Code − for example, this requires that at least half of the board (excluding the chairman) must consist of independent non-executive directors.

**Earlier-than-expected GTF expansion.** Zhaikmunai expects to reach a final decision on its GTF's expansion by 3Q12. This second GTF phase would involve a total capacity increase (including crude oil) from the current 48,000boepd to more than 110,000boepd by adding one or two more trains (for a total of three-four). Since the company's output growth depends on its infrastructure capacity, a prompt decision and quick completion of the second phase would imply faster production growth.

## Risks

**Takeover under unfavourable terms.** Given NC KMG's (and therefore KMG EP's) pre-emptive rights over any assets offered for sale, ZKM could theoretically end up being acquired by these national companies at a low price. However, we do not rate this risk as high. First, we do not expect ZKM to turn to the equity market (which would allow NC KMG to exercise its pre-emptive rights) anytime soon. Second, given the company's current shareholder structure (KazStroiService or KSS, the company allegedly related to the Kazakhstan president's son-in-law, Timur Kulibaev, is ZKM's current shareholder of 27%) we do not expect national companies to attempt to buy out the company at a low price.

**Revision of PSA fiscal terms.** ZKM's PSA is one of the most favourable among comparable companies, in our view. Following the revision of Kashagan's PSA and the restructuring of Kazakhstan's oil taxation regime in 2008, the government initiated talks with ZKM to review certain PSA terms. Since Jan 2009, the company has been discussing the PSA clause related to its social obligations (including training-related spending) with state officials. We understand that the discussions have been successfully completed and signed as an amendment to the PSA. Moreover, given Zhaikmunai's strong administrative support we do not expect the talks to proceed much further or lead to any serious negative changes.

**Higher-than-expected capex limits cash flow generation.** Zhaikmunai's current estimate of its 2P reserves (539mn boe) is based on the assumption that it will complete the second phase of its GTF by 2014. In 2011, ZKM forecast that the capex needed for developing its existing 2P reserves was $1.5bn for 2011-18E. ZKM estimates the full cost of the first stage of the GTF's construction at $260mn (its financial reports show that $165mn was spent in 2008-10 with a $37mn residual liability at YE11). The cost was originally expected to total around $168mn, but overruns occurred. As the contract was the turn-key, changes in design, primarily aimed at increasing the facility's output capacity were the key reasons for the higher costs. We fear that the second stage expenses could also be higher than the original estimate of $350mn.

Special Themes

## Switch to a Premium LSE Listing

To improve liquidity and provide access to the company's shares to a wider range of potential investors, ZKM is now considering a switch to a main market London premium listing. This would qualify the company for entry into the FTSE 250 Index, which might become an important trigger for the shares, in our view.

The key requirements of a premium listing include:

- Registration in the UK
- Minimum free float of 25%
- Compliance with the UK Corporate Governance Code, which requires that at least half of the board (excluding the chairman) consist of independent non-executive directors

Of these three requirements, only the change of registration would be an issue (the currently listed Zhaikmunai LP is an Isle of Man-registered company), in our view. We are concerned that a change of registration address might impose additional tax obligations. If that were the case, after the company completes its review of all possible implications, we believe it would most likely decide against the move.

According to media sources (*Financial Times,* 20 Nov 2011), the company has begun consultations with the law firm White & Case for advice on the possible listing switch.

In the framework of preparations for a switch to a premium listing, the company sought the consent of holders of $450mn in senior notes. According to a company press release on 2 Mar 2012, full consent was reached with the bondholders after the company paid 0.5% of the par value of the bonds.

We understand that the switch would require the delisting of the company's GDRs from the LSE and a new listing of the shares. However, this seems to be merely a technical procedure and we see no risks for the GDR holders in the process. Moreover, a higher-quality listing and better standards of corporate governance would add value to the company, in our view.

## Gas Treatment Facility Expansion

**All that gas: GTF-1.** The presence of gas in ZKM's total hydrocarbon production has been a key obstacle to its growth for the past three years. Kazakh law only permits gas flaring during the early exploration period of any project and Zhaikmunai therefore flared its gas prior to commencing treatment processes at its gas treatment facility (GTF). The company's gas flaring permit has been extended until Dec 2012. Thereafter, taking into consideration its capacity constraints, its current facility, GTF-1, must be expanded in order to monetise the company's vast gas reserves (we estimate they equal 58% of total 2P reserves and 54% of total resources) and boost overall hydrocarbon production.

**Current status of GTF-1 allows only for limited growth.** In a press release on 16 Jan 2012, Zhaikmunai announced that it had reached stable operations at 42,000boepd, with 35,200boepd coming from GTF-1, following the latter's gradual ramp-up of production. The company expects to reach peak production of 48,000boepd (8,000bpd of crude, 40,000boepd of LPG, stabilised condensate and dry gas from GTF-1) by the end of 1Q12.

To increase the total hydrocarbon production volume to 48,000boepd Zhaikmunai plans to utilise the full capacity of its Oil Treatment Facility of 8,000bpd. We understand that by the end of 1Q12E, the split will be as illustrated below:

**Figure 75: Product composition after gas and gas condensate processing**

| Products | 16-Jan-12 Volumes (boe pd) | % | End of 1Q12E Volumes (boe pd) | % | After expansion Volumes (boe pd) | % |
|---|---|---|---|---|---|---|
| Crude oil and condensate | 18,900 | 45% | 24,000 | 50% | 55,000 | 50% |
| *Crude oil* | *6,800* | *16%* | *8,000* | *17%* | *18,500* | *17%* |
| *Stabilized condensate* | *12,100* | *29%* | *16,000* | *33%* | *36,500* | *33%* |
| LPG | 2,520 | 6% | 3,000 | 6% | 7,000 | 6% |
| Dry gas | 20,580 | 49% | 21,000 | 44% | 48,000 | 44% |
| **Total** | **42,000** | **100%** | **48,000** | **100%** | **110,000** | **100%** |

Source: company data, Aton estimates

**GTF expansion (construction of GTF-2) is vital for the company's future growth.** However, even once full capacity utilisation is reached at GTF-1, this will still be insufficient. Therefore, ZKM's production profile and future growth prospects are heavily dependent on the timely completion and proper operation of the second phase of its GTF (GTF-2).

GTF-2 would entail the construction of an additional one or two trains (with total capacity of about 2.5bcm), as well as a power plant, condensate stabilisation unit and all related facilities at a cost of $300-400mn (management estimate). Zhaikmunai expects to reach a final decision on the GTF's expansion by 3Q12.

Assuming that the new treatment units are completed, the company would have sufficient capacity to treat 4.2bcm of gas per year.

Zhaikmunai's estimate of 2P reserves (539mn boe) at YE10 assumes that the GTF-2 will be completed by 2014. However, ZKM has struggled to bring GTF-1 into operation for the last five years, and we therefore believe that there is sizeable risk that GTF-2 will run over-schedule. In our valuation model we assume that GTF-2 will be fully operational only in 2015, facilitating an increase in overall production to 110,000boepd in 2016 from a flat 48,000boepd in 2013E-14E.

**Stormy history of GTF-1 construction** In Aug 2007, Zhaikmunai agreed with KSS to construct GTF-1. The original plan included two gas treatment trains at a total cost of $182mn. In Apr 2008 the figure increased to $227mn to reflect the addition of a gas condensate separation unit (with capacity of 23,000bpd of free condensate and output of 20,000bpd of stabilized condensate).

At the time of its IPO (Mar 2008) ZKM intended to complete the first GTF-1 train by end-2008, the second by mid-2009 and then to expand the plan by completing GTF-2 by YE10.

However, the financial crisis of 2008 and therefore funding problems, issues with the delivery of imported equipment, technical delays and other teething problems saw GTF-1's completion significantly postponed.

On 29 Sep 2010 the company reported completion of GTF-1 under Kazakh standards and in Oct 2010 the company reported a so-called Black Start with the first gas coming into the facility. GTF-1 finally produced its first test output volumes in May 2011.

## Company Profile

### Introduction

Zhaikmunai (ZKM) is a young oil and gas exploration and production company with assets located in Kazakhstan. The company operates the Chinarevskoye field under a PSA signed in 1997.

At the end of 2010, Zhaikmunai held 144mn boe of proved reserves, 395mn boe of probable reserves (totalling 539mn boe of 2P reserves) and 559mn boe of possible reserves. In 2007, in its prospectus the company said that it also owned 144mn boe of risked resources. It is not clear whether the company retained those resources following the expiration of its exploration licence in May 2011.

ZKM's major shareholders include Thyler Holding (27%), an entity controlled by Belgian businessman Frank Monstrey, KazStroyService (27%), a construction company reportedly owned by Timur Kulibaev (the son-in-law of Kazakhstan's President Nursultan Nazarbayev), and several other shareholders including Lakshmi Mittal.

The company has raised $400mn in equity and about $1.1bn in debt since 2004 when Thyler Holding acquired its stake and appointed a new management team. The debt was primarily used to refinance earlier debt issues. At the end of 2011, ZKM had a net debt position of $322mn.

### Board of Directors and Management

**Figure 76: Board of directors**

| Name and title | Date of appointment | Experience |
|---|---|---|
| **Frank Monstrey** Charmain of Board of directors | Sep 2004 | CEO of Probel (from 1991), a private equity and asset management firm in Belgium specialising in capital management in emerging markets. Holds a graduate degree in Business Economics from the University of Louvain (KUL). |
| **Kai-Uwe Kessel** Director, CEO | Nov 2007 | Prior to ZKM, a managing director of Erdgas Erdol, Gaz de France's North African E&P, and Probel. Also served as a chairman of the board of KazGermunai. Graduated from the Gubkin Russian State University of Oil and Gas. |
| **Eike von der Linden** Independent director | Nov 2007 | Managing director of Linden Advisory and Consulting Services since 1988. Previously an independent advisor to financial institutions for equity investments and project finance in the field of natural resources. Holds a Ph.D. in Mining Economics from the Technical University of Clausthal. |
| **Piet Everaert** Director | Nov 2007 | A partner in VWEW Advocaten law firm, a lawyer in Brussels. He graduated from the University of Louvain in 1984 and the College of Europe (Bruges-Belgium) in 1985. |
| **Steve McGowan** Independent director | Nov 2007 | Executive chairman of SMP Partners Fiduciary and Trust Company since Jan 2007, a member of the board of Edasco. Prior to this, served as managing director of Intertrust in 2001-07. McGowan started his banking career in 1982. |
| **Atul Gupta** Independent director | Nov 2009 | COO and later CEO for Burren Energy until 2008. Prior to that, worked for Charterhouse Petroleum, Petrofina, and Monument. Holds degree in chemical engineering from Cambridge University and in petroleum engineering from Heriot Watt University, Edinburgh. |
| **Mikhail Ivanov** Director | Nov 2009 | A partner and director at Baring Vostok, CEO of Volga Gas. Prior to that worked at different positions in Schlumberger. Ivanov holds an M.S. degree in Geophysics and an MBA from the Kellogg School of Management of Northwestern University. Member of the Society of Petroleum Engineers. |

Source: Company data

**Figure 77: Management team**

| Name and title | Date of appointment | Experience |
|---|---|---|
| **Kai-Uwe Kessel**<br>CEO | Nov 2004 | See **Figure 76** |
| **Jan Lag**<br>Deputy CEO | Jan 2010 | More than 20 years' experience working for Picanol, Berry Group, Ackermans & van Haaren and Koramic Industries. He has performed several long-term assignments in China, South Korea, the US and other countries. He has a master's degree in Electro-Mechanical Engineering from the University of Louvain and an MBA from INSEAD Fontainebleau. |
| **Jan-Ru Muller**<br>CFO | Nov 2007 | Worked in various capacities at Probel. After working with Andersen Consulting, Muller founded his own company, Axio Systems, where he was managing director. He holds a Bachelor of Engineering degree from Utrecht Municipal Institute of Technology and an MBA degree from the University of Louvain. |
| **Thomas Hartnett**<br>General counsel | Sep 2008 | A partner in the international law firm White & Case LLP, has worked in the firm's New York, Istanbul, London, Brussels and Bangkok offices over a 16-year period. Senior corporate counsel for Intercontinental Hotels Group in 1996-98. Graduated from the University of Pennsylvania and the New York University of Law. Member of the New York Bar. |
| **Viacheslav Druzhinin**<br>General director | 1997 | Worked in various positions in the field development department of KazakhGaz State Holding Company, State Holding Company Zharyk and VolkovGeologia KGGP. He graduated from the Polytechnical Institute, Tomsk, Russia and gained experience working for the USSR Ministry of Geology. Druzhinin has qualifications in mining engineering and exploration, and has also completed drilling engineer training at the Hughes Christensen Company, Houston, Texas. |
| **Alexei Erber**<br>Director of geology | Oct 2007 | Worked for Probel since 2005. Earlier he held positions in the geology and exploration departments of Erdol-Erdgas Gommern GmbH and Gaz de France. Erber has a diploma in geology and Geology engineering from the Gubkin Russian State University of Oil and Gas and a degree in Mathematical Methods in Geology from the Ernst-Moritz-Arndt-University Greifswald. |
| **Gudrun Wykrota,**<br>Financial director | Apr 2010 | Worked in senior management positions for Gazprom and Gaz de France Suez. She has over 25 years of experience in finance with the majority spent working in the oil and gas sector. Ms Wykrota graduated as a Mining Engineer Economist from the Moscow Geological Exploration Institute. |
| **Heinz Wendel**<br>Director of operations | Jan 2012 | Over 30 years of exploration and production experience, primarily as an oil and gas engineer. Served in various managerial and technical position including with East German EEG (Erdöl-Erdgas Gormmerd) and GDF SUEZ E&P Deutschland in Germany, Poland, Azerbaijan and Kazakhstan. |
| **Berik Brekeshev**<br>Commercial director | Jan 2010 | Held senior positions with Starleigh Ltd, Talahasse Holdings Limited and JSC NNGRE, and commercial roles at Nelson Resources, Kazakhoil Aktobe, Buzachi Operating, Atlas Global Investment and Western-Siberian Drilling Company. Nearly 10 year of experience in the oil and gas industry in Kazakhstan and Russia. |
| **Joerg Pahl**<br>Drilling director | 2005 | Held various positions in the drilling/workover technology department of Erdgas Erdöl GmbH and the operation and production department in the E&P division of Gaz de France. He holds qualifications in drilling from the Technical School for Deep Drilling Techniques, Stralsund, Germany and in drilling technology and fluid mining from the Technical University, TU Bergakademie Freiberg. |

Source: Company data

## Assets Review

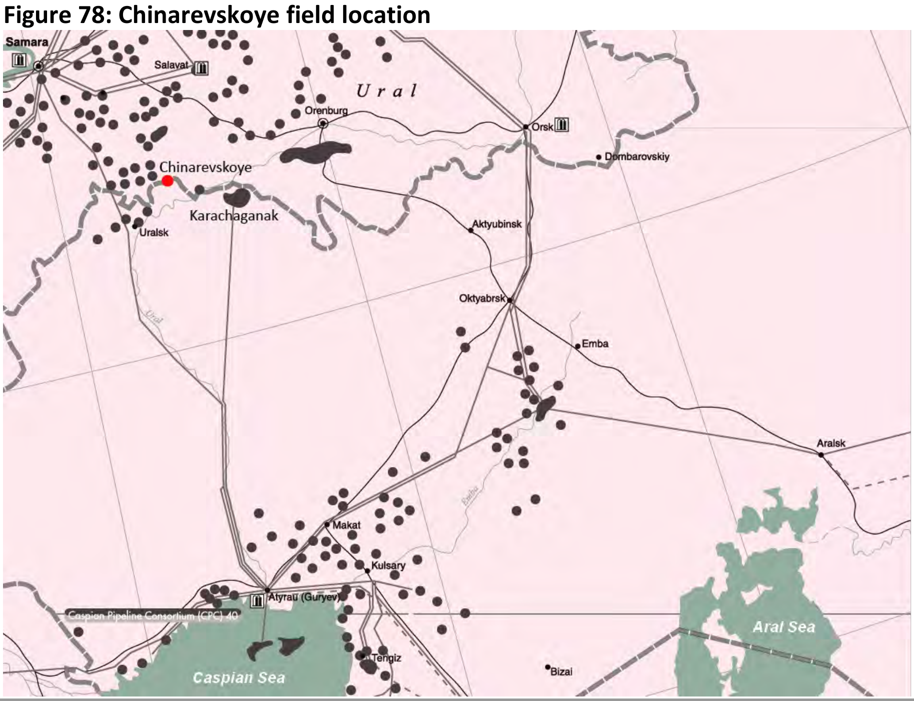
Zhaikmunai's licence area is the Chinarevskoye field located in the oil-rich Pre-Caspian Basin, some 80 km northeast of Uralsk. ZKM's facilities are located close to the Russian border (approximately 6 km) and the main transportation facilities to Western Europe.

The Chinarevskoye field is a multi-formation structure. It has tested hydrocarbons at significant rates from:

- the Lower Permian horizons at depths of 2,700 m to 2,900 m, represented by limestone and dolomitic limestone
- limestone of the Lower Carboniferous Tournaisian formation at a depth of approximately 4,200 m with a gross thickness of about 200 m
- the middle Devonian Givetian horizons at a depth of approximately 5,000 m, represented by sandstone with carbonate cement
- the middle Devonian Biski Afoninski formations at a depth of approximately 5,200 m with a gross thickness of 200 m and represented by limestone and dolomitic limestone

Oil has been found in the Lower Permian, Tournaisian and Givetian Mulinski reservoirs, while gas condensate has been found in the Tournaisian, Biski Afoninski, Givetian, Ardatovski, Famennian and Vorobyovski reservoirs.

**Figure 78: Chinarevskoye field location**




Source: Company data, Petroleum Economist

In May 1997, the company was granted exploration and production licences for the Chinarevskoye field. In Dec 2008, it received an extension of its production licence. The new production licence is valid until 2033 for all horizons (other than the Northeastern Tournaisian reservoir for which the production licence is valid until 2031) and oil and gas-condensate bearing reservoirs and covers 185 km2 of the 274 km2 in the total licence area.

**Figure 79: Discoveries history at Chinarevskoye field**

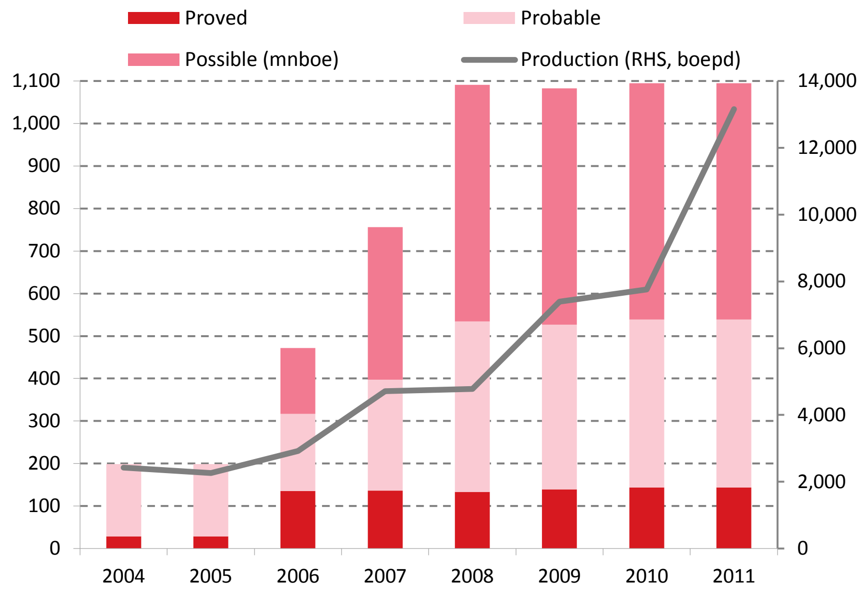
| | | |
|---|---|---|
| 1991-92 | Gas condensate | Biski, Afoninski, Tournaisian reservoirs |
| 2003 | Oil | Givetian (Mullinski) accumulation |
| 2007 | Gas condensate | Givetian (Ardatovski) and Southern Tournaisian reservoirs |
| 2007 | Oil | Bashkirian formation |
| 2008 | Oil / Gas condensate | South and west regions of the Tournasian reservoir |

Source: Company data

In Oct 1997, ZKM entered into a PSA with the government of Kazakhstan. The company must comply with the terms of the exploration permit, the production permit and the development plans during the period of the PSA terms. To date, the company has met all of its capital investment obligations under the PSA.

Since 2004, when new management was appointed at Zhaikmunai, the company's crude oil production has increased as a result of investments in infrastructure and an accelerated drilling programme. Commercial oil production started in 2007 at 4,700bpd and reached 7,750bpd in 2010. Total production of oil and gas products increased to 13,158boepd in 2011.

**Figure 80: Reserves and production growth**




Source: Company data, Aton estimates

Zhaikmunai produces a high-quality sweet crude oil with an average API gravity of 40-41.5° and a low sulphur content of approximately 0.4%. This high quality allows the company to sell its crude at a smaller discount to Brent than other oil producers in the region.

**Gas Treatment Facility.** In Aug 2007, Zhaikmunai entered into an agreement with KSS to construct the GTF. This involved the construction of two gas treatment units. ZKM estimates the total cost at $260mn with the remaining balance payable to KSS at $37mn as of YE11. The facility was completed in Sep 2010 and state approval was received at the end of December. Test production started in May 2011 and the company announced full commissioning in Oct 2011. ZKM expects the facility to reach full capacity by the end of 1Q12.

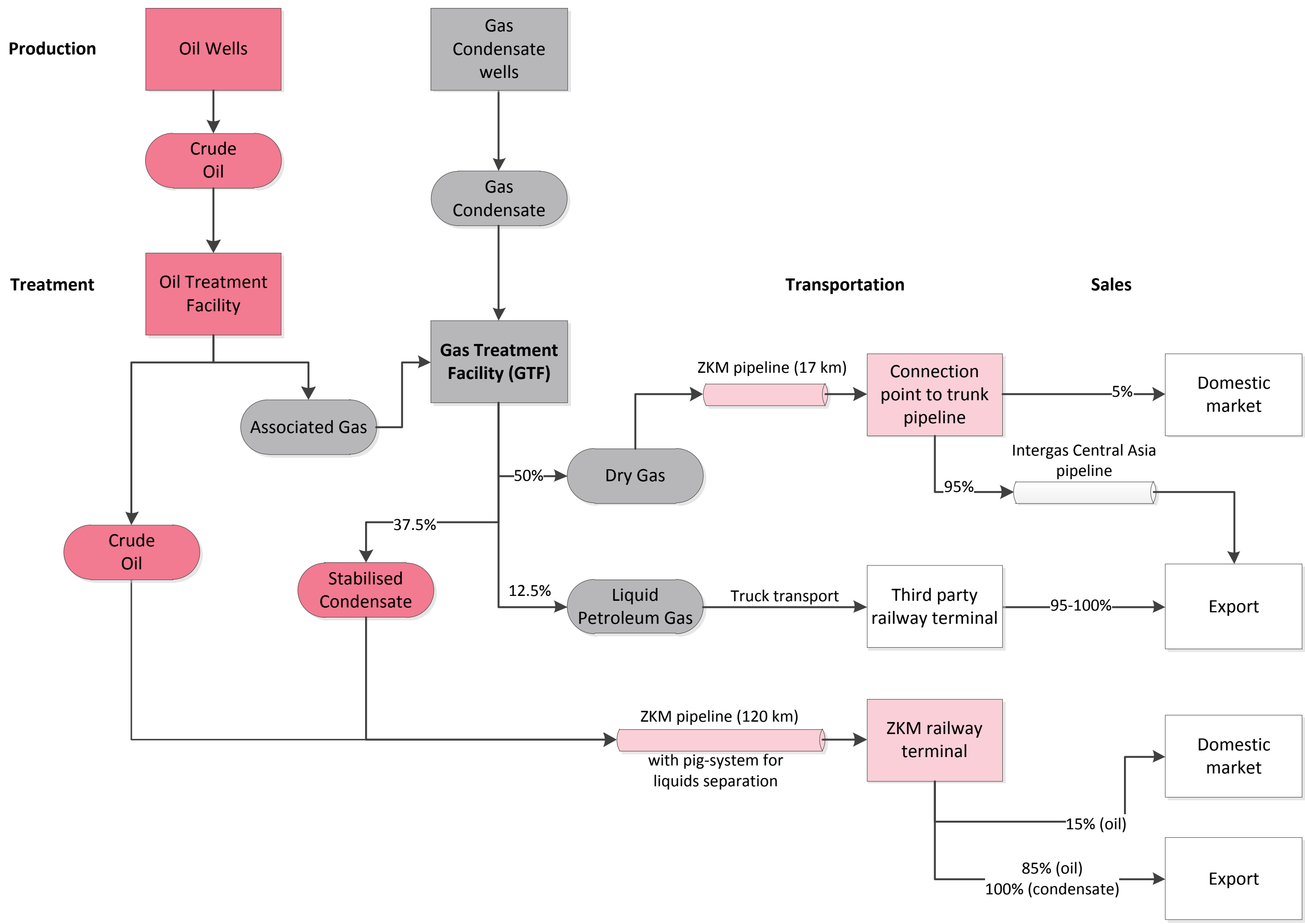
The facility processes both associated gas from crude oil reservoirs and wet gas from gas condensate reservoirs. The processing of associated gas will enable ZKM to cease flaring while its wet gas treatment capability allows it to develop gas condensate fields. Gas condensate wells also offer the opportunity of producing other oil products after processing in the GTF. These include:

- Stabilised condensate, which can be sold at a premium compared to crude oil; currently, the condensate is mixed with the crude oil and exported
- LPG (Liquid Petroleum Gas), a mix of propane and butane
- Dry gas, which is essentially methane and ethane

**Oil treatment units.** Zhaikmunai operates a crude oil treatment unit which was built and commissioned at the beginning of 2006.

**Oil pipeline and rail loading terminal.** In 2009, the construction of a 120km oil pipeline from the Chinarevskoye field to a rail terminal in Rostoshi near Uralsk was completed. The pipeline consists of three parts: the main pumping station at the field; a 120km, 324mm diameter crude oil pipeline; and a rail loading terminal. Zhaikmunai thus no longer needs to transport crude oil by road to Rostoshi.

**Figure 81: From production to sales**




Source: Company data, Aton estimates

**Reservoir pressure maintenance system.** Zhaikmunai operates a reservoir pressure maintenance system consisting of seven water production wells, two water injection wells, central pumping facilities, central water treatment facilities and infield water lines.

## Financial Review

**Revenue.** Before 2011, ZKM sold only crude oil. Most of its crude was delivered on an FCA (free carrier) Uralsk shipment basis. In 2010, the company started to sell its crude on the basis of DAF (delivery at frontier) and FOB (free on board) in order to reduce its overall transport costs.

After the start of test production at GTF in 2011, ZKM increased its revenue from the sale of stabilised condensate, dry gas and associated products. However, under IFRS, such revenues must be offset against costs during the test production stage. The company started to report revenue from gas sales in Nov 2011.

The benchmark for Zhaikmunai's LPG is International Mediterranean LPG price Sonatrach. The company does not provide any other details on the terms of its sales contracts.

Zhaikmunai expects to export 85% of its crude oil, 100% of its condensate and about 95% of its dry gas and LPG. The remaining volumes go to the domestic market. We assume a domestic oil price of $31.8/bbl (the same as for KMG EP) in 2012. Prices for LPG and dry gas are based on the reserve report assumptions and recalculated proportionally to our Brent estimate of $90/bbl.

**Operating expenses**. Production costs per barrel were halved from 2008 to 2011 (see Figure 82). We expect a further decline as the company's production grows. ZKM discloses no details regarding costs associated with its GTF's production, so our estimates may not be accurate. Transport cost fluctuations were huge on a per-barrel basis in 2008-11 as the company tried to find more profitable sales terms. We assume transport costs of $7/bbl for oil and condensate (adding our estimated discount to Brent of $8/bbl, we receive a total netback discount to Brent of $15/bbl, which is in line with company information). For LPG sales we assume a $6/bbl transportation cost based on the assumptions in the reserve report. As we understand it, ZKM's oil exports are exempt from export duties (at least for deliveries to Ukraine). No details on gas sale contracts are available, but there are no associated transport costs as gas is sold at the entry point to the trunk pipeline.

**Figure 82: ZKM - Operating expenses per barrel of production**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| Production costs | 17.1 | 7.8 | 9.9 | 8.5 | 7.1 | 7.1 | 7.2 | 5.4 | 4.8 |
| DD&A | 4.5 | 6.0 | 5.4 | 4.0 | 3.5 | 3.0 | 3.0 | 3.0 | 2.5 |
| Royalty and government profit share | 3.9 | 2.5 | 3.7 | 2.2 | 3.8 | 5.6 | 5.9 | 12.6 | 17.5 |
| G&A | 11.6 | 11.0 | 9.6 | 7.6 | 1.8 | 1.8 | 1.9 | 1.1 | 0.8 |
| Sales and transportation expenses | 13.8 | 2.1 | 6.5 | 10.4 | 3.7 | 4.0 | 4.0 | 4.0 | 4.0 |
| **Total operating expenses** | **51.0** | **29.5** | **35.1** | **32.7** | **19.9** | **21.6** | **22.0** | **26.2** | **29.6** |

**Capex.** ZKM announced its capital spending guidance in its annual report for 2010 and no updates have been provided since that time. Our total capex estimate for 2011-18 amounts to $1.5bn in line with the somewhat outdated guidance and assumes full development of the company's 2P reserves.

**Financing.** We assume that ZKM will maintain its debt to total capital ratio at 30%.

**Figure 83: Operating data**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| Gross hydrocarbon reserves (mn boe) | 535 | 527 | 539 | 539 | 539 | 530 | 507 | 469 | 417 |
| Total hydrocarbon production (mn boe) | 1.7 | 2.7 | 2.8 | 4.8 | 17.3 | 17.5 | 17.5 | 30.3 | 40.2 |
| Total hydrocarbon production (kboepd) | 4.8 | 7.4 | 7.8 | 13.2 | 47.4 | 48.0 | 48.0 | 83.0 | 110.2 |
| Share of gas production | 0% | 0% | 0% | 29% | 53% | 50% | 50% | 50% | 50% |

Source: Company data, Aton estimates

**Figure 84: Income statement summary ($mn, except where noted)**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| **Total revenue** | **136** | **116** | **178** | **301** | **806** | **878** | **878** | **1,525** | **2,018** |
| **EBITDA** | **55** | **53** | **95** | **178** | **522** | **553** | **546** | **824** | **926** |
| *EBITDA margin (%)* | *40%* | *45%* | *53%* | *59%* | *65%* | *63%* | *62%* | *54%* | *46%* |
| **Net profit** | **69** | **-18** | **23** | **82** | **290** | **317** | **313** | **480** | **532** |
| *Net margin (%)* | *51%* | *-16%* | *13%* | *27%* | *36%* | *36%* | *36%* | *31%* | *26%* |

Source: Company data, Aton estimates

**Figure 85: Abridged funds flow and balance sheet ($mn)**

| | 2008 | 2009 | 2010 | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E |
|---|---|---|---|---|---|---|---|---|---|
| Cash & equivalents | 12 | 137 | 144 | 125 | 306 | 350 | 395 | 964 | 1,684 |
| Receivables | 1 | 14 | 2 | 13 | 34 | 37 | 37 | 64 | 85 |
| PP&E | 513 | 771 | 956 | 1,120 | 1,210 | 1,477 | 1,745 | 1,824 | 1,804 |
| Other assets | 196 | 81 | 36 | 48 | 35 | 37 | 37 | 45 | 57 |
| **Total assets** | **723** | **1,003** | **1,138** | **1,306** | **1,584** | **1,902** | **2,214** | **2,897** | **3,629** |
| Gross debt | 365 | 356 | 444 | 448 | 448 | 448 | 448 | 650 | 850 |
| Current liabilities | 69 | 75 | 71 | 100 | 88 | 88 | 88 | 88 | 88 |
| Non-current liabilities | 67 | 93 | 122 | 173 | 173 | 173 | 173 | 173 | 173 |
| Shareholders' funds | 222 | 478 | 501 | 585 | 875 | 1,193 | 1,505 | 1,985 | 2,517 |
| **Total liabilities & equity** | **722** | **1,003** | **1,138** | **1,306** | **1,584** | **1,902** | **2,214** | **2,897** | **3,629** |
| Cash flow from operations | 50 | 46 | 99 | 132 | 378 | 412 | 412 | 583 | 666 |
| Cash flow from investments | -195 | -201 | -132 | -104 | -150 | -320 | -320 | -170 | -81 |
| Cash flow from financing | 156 | 279 | 40 | -47 | -47 | -47 | -47 | 155 | 135 |
| **Net cash flow** | **10** | **125** | **6** | **-19** | **180** | **45** | **45** | **568** | **720** |

Source: Company data, Aton estimates

**Figure 86: DCF valuation ($mn, except where noted)**

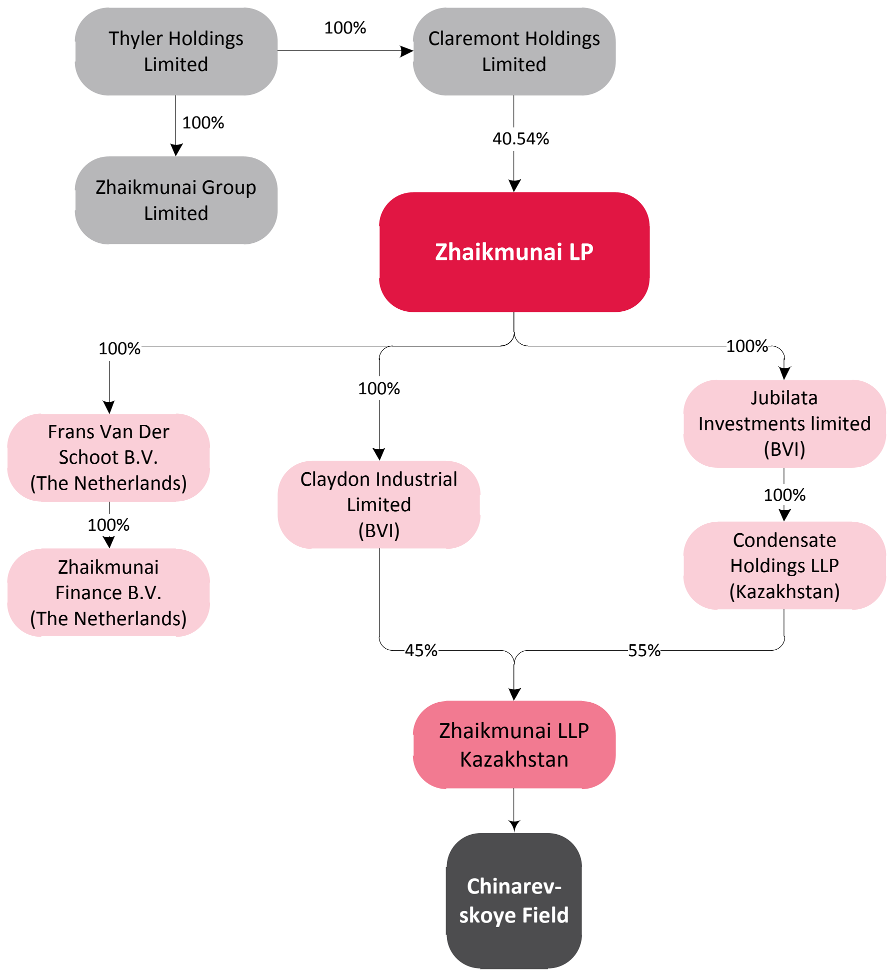
| | 2011 | 2012E | 2013E | 2014E | 2015E | 2016E | 2017-35E |
|---|---|---|---|---|---|---|---|
| Adjusted EBIT | | 462 | 501 | 494 | 733 | 826 | 3,947 |
| Tax rate (%) | | 30% | 30% | 30% | 30% | 30% | |
| Fully taxed | | 323 | 350 | 346 | 513 | 578 | 2,763 |
| Depreciation plus exploration expense | | 61 | 53 | 53 | 91 | 101 | 565 |
| Unleveraged cash flows | | 384 | 403 | 398 | 604 | 678 | 3,328 |
| Net investing | | -150 | -320 | -320 | -170 | -81 | -194 |
| Movements in working capital | | 0 | 0 | 0 | 0 | 0 | 0 |
| **Unleveraged free cash flows** | | **234** | **83** | **78** | **434** | **598** | **3,134** |
| NPV unleveraged free cash flows (EV) | 2,191 | 2,269 | 2,508 | 2,786 | 2,748 | 2,541 | 2,276 |
| Net debt | 322 | 142 | 97 | 52 | -314 | -834 | -1,401 |
| **Equity value** | **1,869** | **2,127** | **2,411** | **2,734** | **3,062** | **3,375** | |
| **Per share, year end** | **9.99** | **11.36** | **12.85** | **14.57** | **16.31** | **17.97** | |

Source: Company data, Aton estimates

**Figure 87: GDR price performance since IPO**


Source: Bloomberg

**Figure 88: ZKM corporate structure**




Source: Company data

## Reserves and Resources Definitions from the SPE Petroleum Resources Management System Guide for Non-Technical Users

Reserves represent the part of resources that is commercially recoverable and deemed a justifiable development, while contingent and prospective resources are less certain as some significant commercial or technical hurdle must be overcome prior to there being confidence in the eventual production of the volumes.

**Proved reserves (P1)** Proved reserves are those quantities of petroleum which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and underdefined economic conditions, operating methods, and government regulations. If deterministic methods are used, the term 'reasonable certainty' is intended to express a high degree of confidence that the quantities will be recovered. If probabilistic methods are used, there should be at least a 90% probability that the quantities actually recovered will equal or exceed the estimate. Often referred to as 1P, also as "Proven."

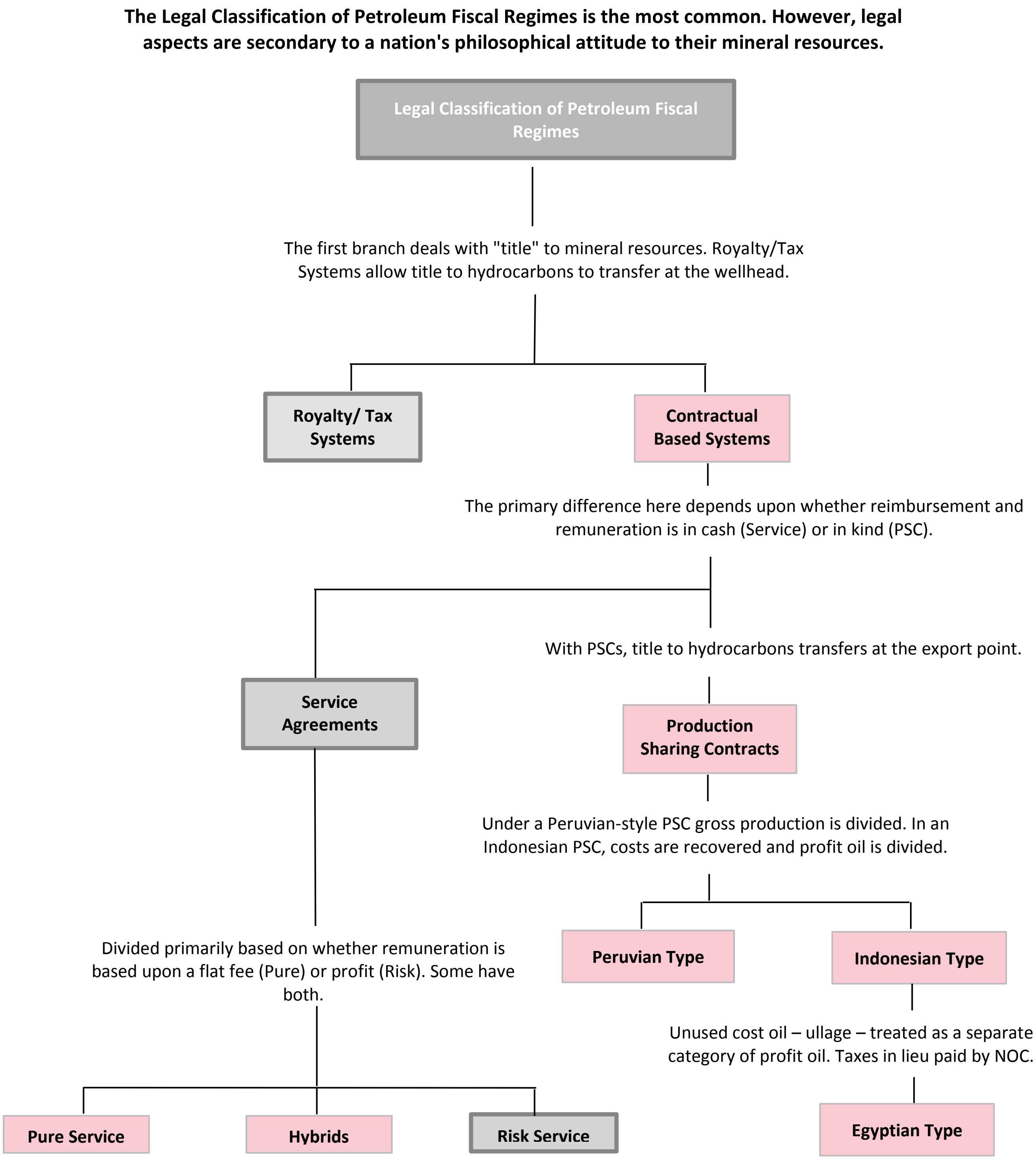
**Probable reserves (P2)** Probable reserves are those additional reserves that are less likely to be recovered than proved reserves but more certain to be recovered than possible reserves. It is equally likely that actual remaining quantities recovered will be greater than or less than the sum of the estimated proved plus probable reserves (2P). In this context, when probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the 2P estimate.

**Possible reserves (P3)** Possible reserves are those additional reserves that analysis of geoscience and engineering data suggest are less likely to be recoverable than probable reserves. The total quantities ultimately recovered from the project have a low probability to exceed the sum of proved plus probable plus possible (3P), which is equivalent to the high estimate scenario. When probabilistic methods are used, there should be at least a 10% probability that the actual quantities recovered will equal or exceed the 3P estimate

**Contingent resources** are less certain than reserves. These are resources that are potentially recoverable but not yet considered mature enough for commercial development due to technological or business hurdles. For contingent resources to move into the reserves category, the key conditions, or contingencies, that prevent commercial development must be clarified and removed. As an example, all required internal and external approvals should be in place or determined to be forthcoming, including environmental and governmental approvals. There also must be evidence of firm intention by a company's management to proceed with development within a reasonable time frame (typically five years, though it could be longer).

**Prospective resources** are estimated volumes associated with undiscovered accumulations. These represent quantities of petroleum that are estimated, as of a given date, to be potentially recoverable from oil and gas deposits identified on the basis of indirect evidence but which have not yet been drilled. This class represents a higher risk than contingent resources since the risk of discovery is also added. For prospective resources to become classified as contingent resources, hydrocarbons must be discovered, the accumulations must be further evaluated and an estimate of quantities that would be recoverable under appropriate development projects prepared.

**Figure 89: Tax systems**




Source: Daniel Johnston *International Exploration Economics, Risk, and Contract Analysis*.

## Kazakhstan

Kazakhstan is one of the main producing regions in the world, and is the second-largest oil producer in the FSU after Russia. Total production from the country's producing fields (numbering more than 250) in 2010 amounted to 79.7mnt (1.63mn bpd), of which about 85% was exported. Following recently announced delays to the start of commercial production in Kashagan (test production is likely to start by the end of this year, according to the consortium), Kazakhstan now expects to produce only about 85mnt by 2015 (down from 150mnt originally expected).

**Reserves**

Kazakhstan's proved reserves place it among the top-15 countries in the world. According to BP estimates, Kazakhstan had some 39.8bn bbls of proved reserves as of 31 Dec 2010 (2.9% of total world reserves). Kazakhstan also has sizeable proved reserves of gas, comparable to those of Canada and Kuwait. According to BP's Statistical Review, Kazakhstan's gas reserves stood at 1,846bcm as of 31 Dec 2010 (1.0% of total world reserves).

Possible offshore hydrocarbon reserves (mostly in the Kazakh sector of the Caspian Sea) are estimated to harbour between 60bn and 100bn bbls. Confirmation of the super-giant Kashagan field in 2003 justified geologists' predictions that the large reservoirs of oil and gas in western Kazakhstan were not confined to the onshore fields such as Tengiz and Karachagansk. Some estimates state that Kashagan alone may contain up to 50bn bbls of oil.

**Major projects**

**Tengiz**, the field with 6.0-9.0bn bbls of estimated recoverable crude oil reserves, is operated by Tengizchevroil (TCO). Tengiz's projects include the development of Tengiz and the adjacent Korolevskoye field. The project is being operated under a specific contract rather than a PS – the so-called Project Agreement between the operating consortium and the Kazakh government.

The current equity share structure is as follows: Chevron, 50%; ExxonMobil, 25%; NC KazMunayGas, 20%; LukArco, 5%. After the consortium successfully launched its sour gas injection (SGI) project in Nov 2006, TCO doubled its production to 25.9mnt in 2010 from 13.3mnt in 2006, as planned.

TCO produced 25.8mnt of crude oil and gas condensate in 2011.The Kazakh Ministry of Oil and Gas is currently investigating expanding the Tengiz oil field's production from the current 26mnt to 36mnt. The Future Generation Project (FGP) originally implied a production capacity increase in 2016. However, recently a number of reports have appeared hinting at a two-year delay of the rise to the plateau level of 36mnt. TCO also expects that the implementation of the project might add about 100mnt of reserves to the project.

Recoverable reserves of oil and gas condensate (until the end of the contract period in Apr 2033) amounted to 750-1,100mnt (6.0-9.0bn bbls), while oil in place is estimated at 26bn boe (Tengiz reservoir) plus 1.5bn boe (Korolevskoye's field).

Tengiz field's reservoir is one of the largest (area of 400 km2 and a net pay thickness of 1.6km) and deepest fields in the world (3,600-5,400 m).

**Kashagan,** is the giant offshore field in the Caspian Sea, one of the largest oil field discoveries outside the Middle East. Kashagan's recoverable reserves of crude oil and gas condensate are estimated at a minimum of 7-9bn bbls with total reserves placed at 38bn bbls. The project is operated by an Eni-led consortium, which includes Eni (Italy), Total (France), ExxonMobil (US), KazMunaiGas (Kazakhstan), and Royal Dutch Shell (UK), with16.81% each; as well as ConocoPhillips (US) with 8.4%, and Inpex (Japan) with 7.56%.

Eni also believes that Kashagan harbours huge natural gas resources. The field has turned out to be extremely challenging both ecologically and technologically, which has led to significant delays, cost overruns and some ecological violations.

In Aug 2007, Kazakhstan halted work on the project until ecological issues are resolved and (most likely) some of the PSA terms are re-negotiated. Kazakhstan is eager to gain a higher share of the profit oil in the contract, which was signed in a completely different oil-price environment. In 2008 an additional agreement was reached according to which the start of commercial production is expected at the end of 2012. However, if the deadline is once again not met, the consortium's expenses starting from this date and until real production commences will not be compensated.

Kashagan's output will increase to 75mnt of oil per year by 2018 or 2019 (the second phase), from a planned 50mnt a year in the first phase. In 2011 the main work on the project was suspended so that international oil companies Royal Dutch Shell and Exxon Mobil could negotiate a simplified project with the Oil and Gas Ministry of Kazakhstan in order to reduce their costs by $18-50bn.

There is a chance that the delay could postpone full-scale production until the next decade, which would make it almost impossible for the international partners to reap a profit given that contracts expire in 2037. After the Kazakh Ministry of Oil and Gas entered the consortium, a new project plan was raised for consideration. It suggests primary extraction at a level of 375,000bpd for a period of no less than three years with a further increase up to 1.5mn bpd during the second phase.

The start of commercial production at end-2012 now looks absolutely unrealistic, in our view. From the start of the first stage with annual production of about 18.5mnt, the consortium expects to gradually ramp-up the volume to 50mnt by the end of the first stage of the commercial production.

**Karachaganak,** the field with estimated recoverable reserves of 5.1bn bbls of oil and gas condensate (as well as 20tcf or 570bcm of natural gas), is being developed by Karachaganak Petroleum Operating (KPO). KPO is a joint venture between BG, Eni, Chevron, LUKOIL, and NC KMG. The field is the country's largest gas condensate producer. The project is being operated under a PSA.

In 2011, KTO produced 12.1mnt of crude oil and gas condensate (7.6mnt of crude oil and 4.5mnt of gas condensate) and 16.9bcm of natural gas. KTO has already completed two phases of the project development. The third stage envisages an increase of crude oil and gas condensate production to 15mnt and gas production to 38bcm. However, the timing of the third stage is not clear. Currently the partners and the government are deciding whether or not the Gas Treatment Plant (with 5bcm of capacity) will be included into the third stage of the project's development.

According to the agreement reached in 2011 KPO transferred a 10% share to the government of Kazakhstan. Thereafter Eni and BG Group retained 29.25% (down from 32.5%), Chevron, 18% (down from 20%), and LUKOIL, 13,5% (down from 15%).

**Transportation**
The government of Kazakhstan regulates the transportation and export of oil by quotas, amongst other means. Although Kazakh law, and other applicable regulations, do not expressly provide for the imposition of such quotas, in general the government of Kazakhstan requires certain commitments for domestic market supply.

In practice, quotas are imposed annually (with possible revisions quarterly) on the basis of the preceding year's results. Domestic supply requirements: the capacity of the internal pipeline system (run by KazTransOil, the subsidiary of NC KMG); the size of the Kazakhstan export quota through Russia (when applicable); and field-development plans.

Despite the fact that two new export systems were commissioned in 2006 – BTC and Atasu-Alashankou (Kazakhstan-China) – the export capacity constraint is still an issue for local producers.

Major oil export routes include:

**CPC (Caspian Pipeline Consortium)**, which is still the main route for Kazakh exporters. The total 2011 volume of crude oil exports through the CPC system was 34.2 mnt, slightly lower than 34.9 mnt, the pipeline's record. The consortium plans to increase the pipeline's capacity to 67mnt by 2014. However, recently the representatives of the consortium stated that a delay is possible with respect to the implementation of the expansion plans.

The CPC expansion project, which encompasses increasing the pipeline system's capacity to 67mnt envisages the construction of 10 additional pump stations (two within the territory of the Republic of Kazakhstan and eight within the Russian Federation), six crude oil tanks in the vicinity of Novorossiysk, a third single-point mooring at the CPC marine terminal and replacement of an 88 km pipeline section in Kazakhstan. Once commercial production has started, Kashagan will also export crude oil via CPC, according to Kazakhstan authorities.

**Atyrau - Samara**: Kazakhstan exported 17.5mnt in 2009, and we understand that similar amounts were exported in 2010 and 2011. The line was upgraded in 2009 by adding pumping and heating stations, but a substantial capacity increase is still questionable. The widely discussed increase to 26mnt a year by year 2015 would require delivery guarantees from Kazakhstan, which we do not believe will be forthcoming, given the country's much greater interest in delivering crude via CPC or to China.

**Aktau – Baku - Batumi:** this trans-Caspian route shipped some 5.3mnt (84kbpd) in 2011. Even though Kazakh companies consider this route one of the most attractive economically, it would not be easy to deliver more oil via this course. The key restrictive bottlenecks are that Aktau is only served by a single-track railway, the last 18km of which is privately owned and subject to special tariffs and the Baku-Batumi railways have a limited number of oil carriers**.**

**Atasu-Alashankou** - the second stage of the West Kazakhstan-West China project. The first stage of the project (Keniyak-Atyrau) was completed in spring 2003; the second (Atasu-Alashankou) was completed in Dec 2005. The construction of the third section (Kenkiyak–Kumkol) was agreed between Kazakhstan and China on 18 Aug 2007 and was completed on 11 July 2009. Currently the West Kazakhstan-West China pipeline operates at about 10mnt of capacity (11mnt was exported by Kazakhstan in 2011), but a capacity increase to 20mnt has been deferred to 2013 from the originally planned 2011.

**Kazakh Caspian Transportation System (KCTS):** to overcome its transportation problems KazMunaiGaz, TCO and KCO announced in Jan 2007 the formation of the Kazakh Caspian Transportation System (KCTS). The system will connect Kuryk port 76km from Aktau, and BTC (Baku-Tbilisi-Ceyhan).

Initial capacity was planned at 25mnt per year by 2010-11, with further expansion to 38mnt per year. In order to transfer this amount of oil, seven large-capacity tankers are to be built. The pipeline, however, does not appear to resolve the issue completely, as expansion of BTC will be required to export both Kazakh crude (from both Tengiz and Karachaganak) and Azeri Chirag-Guneshli oil.

In Oct 2010, Kazakhstan said that the KCTS system was to be postponed as it will not be needed until 2018-19, which is now when Kashagan's second phase is expected. Any decision for the KCTS pipeline, which would be constructed entirely within Kazakhstan's borders, is connected with the development of the Kashagan field.

Another potential route is a **Kazakhstan-Turkmenistan-Iran pipeline**. This pipeline, economically speaking, is considered to be the most favourable route for transporting Kazakh oil to the Persian Gulf terminals. However, it raises some complex political issues.

## Turkmenistan

Turkmenistan is the world's 52nd-largest country, comparable in size to Cameroon, and somewhat larger than the US state of California. Turkmenistan is bordered by Afghanistan to the southeast, Iran to the southwest, Uzbekistan to the northeast, Kazakhstan to the northwest, and the Caspian Sea to the west.

Turkmenistan ranks fourth in the world to Russia, Iran and Qatar in natural gas reserves. Although it is wealthy in natural resources in certain areas, most of it is covered by the Karakum (Black Sands) Desert.

The oil production industry started with the exploration of the fields in Chekelen in 1909 and Nebit Dag in the 1930s; then production leapt ahead with the discovery of the Kumdag field in 1948 and the Koturdepe field in 1959. Oil production reached peaks of 14.43mnt in 1970 and 15.725mnt in 1974, compared with 5.4mnt in 1991. Since the years of peak production, general neglect of the oil industry in favour of the gas industry has led to equipment depreciation, a lack of well repairs, and the exhaustion of deposits for which platforms have been drilled.

Gas production is the youngest, and most dynamic and promising sector of the national economy. In 1958, Turkmenistan produced only 0.9bcm of natural gas. With the discovery of large deposits of natural gas at Achak, Qizilqum, Mary, and Shatlik, production grew to 1.265bcm by 1966. Since then, the yield has grown dramatically. In 1992, gas production accounted for about 60% of GDP.

Turkmenistan quite reluctantly discloses any hydrocarbon-related information. According to BP Statistical Review 2011, in 2010 Turkmenistan produced 10.7mnt of crude oil and gas condensate and 42.4bcm of gas, and exported 30bcm of gas. In Dec 2011, Turkmenistan's Vice-President responsible for energy, Baimyrat Khodzhamukhammedov said that in 11M11 the country increased oil and gas condensate production YoY by 107.9%, gas production by 42.5%, and the export of gas by 75.2%. We conclude that in 2011, the country should have produced around 22.2mnt of crude oil and gas condensate and 60.4bcm of gas, and exported 52.2bcm gas.

Most of Turkmenistan's oil is produced from fields at Koturdepe, Nebit Dag, and Chekelen near the Caspian Sea, which have a combined estimated reserve of 700mnt. The Turkmenistan Natural Gas Company (Turkmengas) and the Turkmenistan Natural Oil Company (Turkmenneft), under the auspices of the Ministry of Oil and Gas, control oil and gas production in the republic.

In Oct 2011 the reserves auditor Gaffney, Cline & Associates (GCA) ranked Turkeminstan's South Yolotan natural gas field as the world's second-largest after South Pars in Iran, saying it could contain between 13.1tcm and 21.2tcm of gas.

**Reserves**
According to the BP Statistical Review, at 31 Dec 2010 Turkmenistan possessed about 600mn bbls of proved oil reserves (0.04% of world's total) and 8,030bcm of natural gas reserves (4.3% of the world total). Following recent political changes in the country, exploration of new deposits is expected to be encouraged. New exploration areas are located in Mary Province, in western and northern Turkmenistan, on the right bank of the Amu Darya, and offshore in the Caspian Sea.

**Major projects**

**Cheleken** - Cheleken JV, set up in 1993 by Larmag Energy Assets, was acquired by Dragon Oil in 1999, with 25-year PSA for Cheleken (Block 2) signed the same year. The Cheleken block covers 1,026 km2 and includes the Chelekenyangummez, Dzheitun (LAM) and Zhdanov oil fields. Total reserves for the block are estimated by Turkmenistan at 70mnt of oil and 62bcm of gas (876mn boe); while Dragon Oil reports 2P reserves of 903mnboe as of end of 2011. Total investment in the block is expected to reach $2.2bn. Dragon intends to raise output to 100,000bpd by 2015 (up from the originally expected plateau of 70,000bpd).

Gas produced in the block was being flared until recently (end of 2011), when Dragon Oil began to ship the majority of its wet gas into the state gas pipeline. The company is currently in talks with the state on the different options to monetise its gas output. Following completion of the gas treatment facility, the company will be able to ship export quality gas to the Turkmenistan export gas pipeline and add gas condensate stripped from the gas into its export crude volumes.

**Nebit Dag,** with an area of 1,050 km2 is located onshore in western Turkmenistan, and contains five developed oil and gas fields as well as two recently discovered oil fields. Eni has been operating in Turkmenistan since 2008, following the purchase of Burren Energy, which was an operator of the developed Burun field as well as two new fields (Uzboy and Balkan). The output for the project, however, is declining. After reaching its peak of 23,400bpd in Aug 2007, production has continued to wane. The PSA term runs until 2022, and may be extended for a further 10 years by mutual agreement with the Turkmenistan government.

**Transportation**
The country has very limited options as far as the transportation of hydrocarbons is concerned. Until recently there was only one gas pipeline that had connected Turkmenistan with Russia since Soviet times. Some proposed routes might be solutions for the debottlenecking of the region's huge gas potential.

**The Central Asia-Centre gas pipeline** is a Gazprom-controlled natural gas pipeline, which runs from Turkmenistan, via Uzbekistan and Kazakhstan, to Russia. The pipeline was built in 1974. The western branch of the pipeline runs from the Turkmen areas of the Caspian Sea region to the north. The eastern branch runs from eastern Turkmenistan and southern Uzbekistan to the northwest. The pipeline branches meet in western Kazakhstan.

From there the pipeline runs to the north where it is connected to the Russian natural gas pipeline system. Its current capacity is 44bcm. Russia and Central Asian countries had agreed to increase its capacity to 55bcm by 2010, but given the oversupply of gas on the global market that followed the financial crisis of 2008 and decreased purchases of Turkmenistan gas by Russia, the expansion is unlikely to take place in the near future, in our view.

**East-West Gas Pipeline**. Construction on this project began in May 2010. The investment is estimated at about $2bn. It is scheduled for completion in June 2015 with a target capacity of 30 bcm. The primary task of the pipeline will be the transportation of gas from the Turkmen Yolotan-Osman fields in the eastern part of the country to the Western part of the state. The gas can be directed from there to the north, to Kazakhstan and Russia, to the south, by existing pipelines to Iran, or—in the future—to the west via the TCGP.

The East-West pipeline therefore does not prejudge the direction of exports, as it gives the opportunity for infrastructure development both in the Russian version (from Turkmenistan through Russia to Europe), and the European (through the Southern Caucasus and Turkey, bypassing Russia.) The decision will depend on Turkmenistan, especially since the East-West Pipeline is being built without the participation of foreign capital. Despite Russian efforts, Gazprom has not been approved for construction of the pipeline.

**Turkmenistan-China Pipeline.** Originally planned as a pipeline between Kazakhstan and China, the project was ultimately expanded to include gas-rich Turkmenistan and Uzbekistan. Construction of the pipeline started in Aug 2007 and the first stage was completed in Dec 2009. The first stage capacity of the pipeline was 30bcm which was expanded to 40bcm in Sep 2011.

It is difficult to overestimate the importance of this gas pipeline to Turkmenistan. This route diversifies Turkmenistan's markets, puts the country in a much better position in its negotiations with Russia, and allows for further gas production growth. In 2006, the country signed an agreement with China to deliver 30bcm of gas annually for the next 30 years, and in 2011 the dialogues began on expanding the deliveries to 65bcm.

**The Trans-Caspian Gas Pipeline** is a **proposed** submarine pipeline between Turkmenbashy in Turkmenistan, and Baku in Azerbaijan. Some proposals suggest that it also include a connection between Tengiz Field in Kazakhstan, and Turkmenbashy. The aim of the Trans-Caspian Gas Pipeline project is the transportation of natural gas from Kazakhstan and Turkmenistan to central Europe, circumventing Russia.

**The Trans-Afghanistan Pipeline (TAP, or TAPI)** is a proposed, 33mnt per year natural gas pipeline being developed by the Asian Development Bank. The pipeline will transport Caspian Sea natural gas from Turkmenistan through Afghanistan into Pakistan and then to India. The 1,680 km pipeline will run from the Dauletabad gas field to Afghanistan. From there, TAPI will be constructed alongside the highway running from Herat to Kandahar, and then via Quetta and Multan in Pakistan. The final destination of the pipeline will be the Indian town of Fazilka.

The original project was started in Mar 1995, when an inaugural memorandum of understanding between the governments of Turkmenistan and Pakistan for a pipeline project was signed. In Aug 1996, the Central Asia Gas Pipeline (CentGas) consortium for construction of the pipeline, led by Unocal, was formed. The new deal on the pipeline was signed on 27 Dec 2002 by the leaders of Turkmenistan, Afghanistan and Pakistan; and in 2005 the Asian Development Bank submitted the final version of a feasibility study by UK- Based Penspen.

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