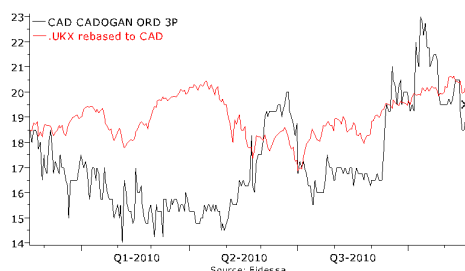


# Cadogan Petroleum Plc £0.20

## Operational Break-even Imminent. New Valuation

23 November 2010

### Share Price: £0.20



**12m High:** £0.240  
**12m Low:** £0.130  
**Market Cap:** £46.2m  
**Shares in Issue:** 231,091,734  
 231,091800 fully diluted

**Debt:** Nil  
**Cash at Hand** £24.4m (19/11/10)  
**Current Net Production** approx 500 boepd  
**One-off Receivables** \$36.5m (min)

**LSE Code:** CAD  
**Sector:** Oil & Gas  
**Market:** LSE  
**Website:** www.cadoganpetroleum.com  
**Broker:** Matrix Group  
**Company Contact:** 0207 2450801

**Description:** Independent E&P gas specialist operating in Ukraine with sufficient operating cash to meet all current commitments as well as advance exploration and development targets.

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**Tel:** 020 79293399  
**Email:** ian@hardmanandco.com

Cadogan Petroleum Plc (LSE:CAD) is an independent oil & gas exploration and production company operating in Ukraine. It has had problems, technical, legal and managerial, and is continuing rebuilding investor confidence in its new management and operational structure following its wholesale re-organisation in 2009.

Following successful resolution of an outstanding court case Cadogan has announced that it has withdrawn the Pirkovskoe, Zagoryanskoe and Pokrovskoe licenses from its farm-out process. Our previous valuation excluded the bulk of these licenses as a result of their being in the farm-out. These are significant fields so it is right that we now bring their value back into the company's asset column.

There are some difficulties in valuation of these assets, but those issues are in the company's favour. The data upon which the CPR volumetrics and development scenarios were based is starting to seem more and more conservative. The company's recent drilling success with Zag-3 suggests that the Zagoryanskoe resource may be larger than the 1C contingent resource shown. This has potential impacts for the adjacent Pirkovskoe reservoir and together the pre-existing wells on these licenses may offer a low-cost stepped development scenario not considered by the CPR.

The company is almost at break-even in terms of normal operations vs. production volumes (though exceptions remain in the ongoing litigation against former officers of the company). This is a significant psychological milestone for any company and should be celebrated as such. We also note that this has been achieved with no LTIs.

We present two valuations. The first is ultra-conservative based only on current production, cash and receivables. This suggests fair market value for Cadogan of 25.5p/sh. The second valuation is for the 1C Contingent Resources that the company recently brought back in from the farm-out process. Again we have tried to be as conservative as the data allows us to be in reaching a value of 88.7/sh for the eastern assets based on a combined 23-year DCF20 including all drilling and development expenses but un-risked.

Cadogan Petroleum is now the new company that it set out to be at the beginning of this year. It is smaller, more agile, smarter and more honest with itself about what it can achieve in a challenging emerging market. It is also now profitable in all but dividend and building a production base from the ground up. It has the licenses. It has the in-situ resources and it has plenty of upside remaining as well. Its time to re-rate Cadogan Petroleum.

Y/E	Group Sales	Declared Profit	Adjusted Profit	Adjusted EPS	P/E ratio	Divi	Yield
	£ 000s	£ 000s	£ 000s	£/sh		£	%
2008A	1,792	(24,877)	(34,363)	(0.17)	N/A	N/A	N/A
2009A	2,342	(107,303)	(118,680)	(0.46)	N/A	N/A	N/A
2010E			No	Estimates			
2011E			No	Estimates			

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**Summary of Eastern Licenses**

Formal announcement that the Pirkovskoe, Zagoryanskoe and Pokrovskoe licenses have all been withdrawn from the farm-out process allows us to value two of these licenses on the basis of the resource estimates (shown below) and production profiles suggested by Gaffney, Cline Associates in their Reserves and Resources Evaluation report of February 2010 (the latest competent persons report on Cadogan’s geological assets). We will leave the Pokrovskoe field as unvalued upside at present.

Field Name	% Interest	Status
Debeslavetske	98.29	Producing Gas, 3 additional production wells planned for production H1 2011
Cheremkhivske	49.8	Producing Gas
Sloboda Rungurske	100	Shut
Pirkovskoe-1	97.0	3P Gas Reserves Defined. Producing light oil
Pirkovskoe	97.0	3C Resources Defined. Plans to test
Zagoryanskoe	90.0	Producing gas and condensate from Upper Visean (V18 horizon). 3C Resources Defined
Pokrovskoe	100	3C Resources Defined. Deepening in progress to test possible Lower Visean reservoir (V26 reflector).

**Table 1: Summary of % interest and operational status of assets not under farm-out conditions.**

Field Name	Proven (1P) (Bcf)	Proven & Probable (2P) (Bcf)	Proven, Probable & Possible (3P) (Bcf)
Debeslavetske	0.68	1.30	1.80
Cheremkhivske	0.21	0.26	0.31
Sloboda Rungurske			
Pirkovskoe-1	1.50	10.0	29.00
<b>Total</b>	<b>2.39</b>	<b>11.56</b>	<b>31.11</b>

**Table 2 : Most current deterministic volumetrics for fields/wells close to or in production with the exception of Zag-3. Production from Zag-3 is considered to be from Contingent Resources until formal volumetrics are published.**

In our valuation models we have used only proven (1P) reserves in the full knowledge that the convention is to use 2P reserves as the most likely outcome statistically. This builds in an inherent conservatism into our valuation that is only really warranted in cases such as Cadogan’s where some of the core geological and/or engineering data has been brought into question.

We are starting to perceive in Cadogan’s news and accounts that new data is starting to replace old and new baselines are being found upon which to build operating assumptions. This process is by no means complete, but having the confidence to bring three major assets out of the farm-out process shows that the company believes in its new path on a technical as well as a strategic level.

There are another step or two that we believe should taken before Cadogan looks towards commissioning a new Competent Person’s Report and Reserves/Resources Statement but these are operational and well within the abilities and scope of the current management. The Pirk/Zag geological model needs to be refined and the potential for the deeper Tournasian horizons defined. This could be done on the basis of data gathered during the re-working of the wells on these two licenses scheduled for 2011.

The Pok field needs to go through the complete development cycle that is currently under way with the deepening of Pok-1 and which followed the reprocessing of 3D seismic from the area. This data gathering cycle should provide sufficient data with high enough quality to produce a reliable resource estimates, but it will also take into account a new development ethos that seems to value profitable production ahead of project size.

As we discuss later in this note this shift in development strategy leaves much of the modelling done in the last Competent Person’s Report as an interesting side-note rather than a direct comment on current activity. It also provides us with some difficulties in reaching a satisfactory valuation, though the problem is mainly in defining the upside.

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**Contingent Resources**
**Gas**

Field Name	1C (Bcf)	2C (Bcf)	3C (Bcf)
Pirkovskoe	49	547	1,101
Zagoryanskoe	69	394	777
<b>Total</b>	<b>118</b>	<b>941</b>	<b>1,878</b>

Table 3: Currently attributable 3C Contingent Gas Resources.

**Condensate**

Field Name	1C (MMbbl)	2C (MMbbl)	3C (MMbbl)
Pirkovskoe	3.4	35.6	72.7
Zagoryanskoe	4.5	25.5	50.3
<b>Total</b>	<b>7.9</b>	<b>61.1</b>	<b>123.0</b>

Table 4: Currently attributable 3C Contingent Condensate Resources.

**Prospective Resources**

Field Name	Low (Bcf)	Best (Bcf)	High (Bcf)
Gas			
Pokrovskoe	92	237	950
Condensate			
Pokrovskoe	3.0	8.4	32.8

Table 5: Prospective Resources in the Pokrovskoe field.

**Valuation Assumptions**

All assets are less than 5,000m depth. There is a step down in royalty payments at 5,000m TVD, but many of the assets span this dividing line so until wells are drilled and tested the exact royalty payment due is uncertain. We are using the conservative, higher, rates of royalty. Total production taxation and royalty payments are therefore assumed to be US\$0.9347 Mcf gas and US\$18.79/bbl oil or condensate.

We have assumed that CAPEX and OPEX estimates made by GCA in their CPR of Feb 2010 are realistic. On the basis of recent E&P costs shown in Cadogan's accounts these costs appear on the high side and further inspection shows that they are based upon costs incurred during the company's previous organisational and management structure. It is too early to establish a new E&P cost baseline though we will regularly revisit our assumptions and pay special attention to this area, one that should be affected significantly by the corporate restructuring.

We have assumed that the forward oil price forecast produced by Sproule on 31 October 2010 is valid to 2020 and have added an incremental 2% pa for production after that time. We are also taking Sproule's US/UK exchange rate assumptions to end 2010 and projecting flat thereafter. There is so much volatility in FX at present that our valuation is best treated as a spot value rather than a projection.

We have assumed that light oil sales from the Pirkovskoe field will attract a \$22/bbl discount from Brent crude, that Sloboda Rungurske production will sell at a \$38/bbl discount (which makes that field uneconomic at present), that condensate sales attract 78% of Brent crude and that GCA estimates for gas sales to industrial customers hold between 2011 and 2015 and then rise at 2% pa after that point.

The one sales price that we will highlight as being subject to probable revision is the GCA Ukrainian industrial gas price. This is locally negotiated on a year-by-year and contract by contract basis, so may vary as Ukrainian demand rises and falls. Cadogan's current average sale price is apparently \$8/Mcf vs. GCA estimated \$8.59/Mcf (a 7% variance). We have used the current average sales price for 2010 and the CGA estimate thereafter.

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We feel that this is a valid assumption since there is a distinct possibility that any gas produced in the western licences may be exported rather than used locally. It would then attract European standard pricing, be payable in Euro and so is subject to some exchange rate uncertainty at this point in time. The valuation presented here can only be taken as indicative, so we feel that 7% variance is an acceptable tolerance to work to on this variable.

We have only valued the 1C Contingent resources for the Zagoryanskoe and Pirkovskoe fields. The reason is that the company is obviously learning quickly, both operationally and geologically and populating that database with all the new information found. However, whilst that has resulted in excellent returns so far (higher flow rates at a lower than expected drilling cost for Zag-3) this is still to a large part an Exploration story, though the exploration is significantly de-risked by the company and previous operators having shown gas and condensate is present. We have not yet placed a value on the Pokrovskoe field as it is in an earlier stage of development.

The reserve restatement in early 2010 remains the final, largest hurdle to Cadogan's rehabilitation and while some may push for a quick recalculation in the light of recent successes we would prefer to see significant new data being brought to the table before being anything but very cautious regarding contingent resources. Our valuation of 1C contingent resources (using a DCF20) and all the other common assumptions shown above as applied to current production is the right way to proceed, for now.

**Valuation**

Our valuation of current production is \$18.9m based on a 13-year DCF20.

This does not include any additional expected production from the Debeslavtska field though additional production wells have been drilled.

Our un-risked valuation of the Zagoryanskoe and Pirkovskoe fields based upon GCA 1C attributable Contingent resources only is \$344.6m over a combined 22-year DCF20 using the baseline development scenarios outlined in that CPR. While this valuation has been substantially de-risked in recent months geographical, political, exchange rate, financing and other non-specific (force majeure) risks remain before these fields reach their potential production rates. That coupled with the growing sense that the development scenarios used in the GCA reserve and resource estimate could be substantially overpriced provides us with a relatively low confidence in our ability to reliably estimate the value of Cadogan's in-situ contingent resources.

The company has shown an ability and flexibility to find solutions outside the development scenarios and a skill in interpreting the existing data that has resulted in CPR production estimates being exceeded. We therefore present our resource valuation in its un-risked form because until more drilling is done we don't know where our models are deficient. It could (indeed it should) be that cost models are no longer applicable under the new company working structure. The development scenarios based upon those models are therefore necessarily overpriced and depending on the geology, are possibly sub-optimal. The success with Zag-3 shows that expected returns can be exceeded in these structures, even today, so employing directional drilling and re-working of existing wells could provide returns comparable to what were essentially new field development scenarios shown in the GCA CPR, but without requiring the expansive drilling programs. However it would probably take longer and result in a flatter revenue curve (see below), so it isn't all positive news for shareholders.

Based on current share issue and the Feb 2010 development scenarios, the 1C contingent resource of the Zag and Pirk fields is worth £0.89/sh, though we believe that there is significant upside in this valuation based upon low cost re-working of existing wells, better drilling management and better constrained geological models. We are using the most conservative volumetrics available in order to try and hedge against the uncertainty in the degree of upside. It is difficult to find a downside in the geology, but as always the unexpected is just that.

This upside is supported by production that we value (using a 13 year DCF20) at \$18.9m, cash of \$39m and a one-off receivable of \$36.5m, giving a total net value of \$94.4m or £59m (at \$1.60 to £1.00) against a current market cap of £46m. Excluding exceptionals, the company is now cash-positive by \$200k per month.

**Western Licenses**

The company has announced that it has completed a 2D seismic survey over the Bitlyanska license (on budget, on time, on quality) and that discussions continue with regard to farming out these potentially large but complex gas fields. These fields are very close to the Polish border and could be developed along with others on the other side of that line, so attracting the European transit price for gas rather than the local Ukrainian price. This could have several knock-on impacts with regard to the size and complexity of potential projects and partnerships but we will discuss those at a later date. Suffice it to say that it is not only the geology that is more complex in these Carpathian fields and that extended discussions should be worth the effort if the right partner is found.

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**New Board Members**

The Cadogan board has been strengthened with the addition of a CFO, Gordon Stein, with extensive local and oil industry experience. Mr Stein was CFO for Regal Petroleum until Jan 2008 but has also held senior or management positions in LASMO plc, Monument Oil & Gas plc, Centrica plc and BG plc .

In August Alessandro Benedetti and Bertrand des Palliers were appointed as non-executive Directors after SAE Capital Holdings SA became the company's largest shareholder. Neither gentleman is considered an independent Director and both have waived the right to any fees from the company.

**Conclusions**

Throwing away a geological database is never an option unless it proves so unreliable as to contradict reality. Cadogan's geological database does not contradict reality, their gas shows are real gas shows, but as the company found to its cost last year it is not just a correlation between geological reality and geological data that is required to provide reassurance to investors. Cadogan has now completed the corporate clear-out and is embarking on the building of a new company. Core to that process is updating the database where it was found to be deficient and providing a new interpretation based on a synthesis of old and new data. Once this is done a new reserves and resources estimate can be made. Until that point it would be a waste of time and money to undertake in our opinion as the data would not have changed significantly.

Meanwhile back in geological reality the gas is still in the ground and can be put into production almost as a by-product of updating that database. We understand that the company has 0.85MMcm additional installed but unutilized production capacity that can be brought on stream quickly plus an additional 0.9MMcm of capacity in stock ready for construction wherever it is required. If this seems contradictory it should because Cadogan is currently valued as a gas trader with no value attributed to pre-production and exploration assets.

In our first draft of this note we had a forward production curve based upon the baseline development scenarios suggested by the last CPR. We decided that the market is right. That data no longer has any major relevance, but we have retained our faith in the 1C volumetrics and those suggest that Cadogan should be re-rated. Geology is worth something, whether it be in resale or production. Our suggestion is that Cadogan's slice of the Eastern Ukraine's geology is worth 88.7p/sh on top of an operating value of 25.5p/sh.

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Management		Major Shareholders		
Non-exec Chairman	Simon Duffy	SAE Capital Holdings	67,298,498	29.10%
CEO	Ian Baron	QVT Financial LP	33,644,064	14.56%
CFO & Director	Gordon Stein	HBK Capital Management	14,826,233	6.42%
Non-exec Director	Philip Dayer	Lloyds TSB Group	21,007,277	9.09%
Non-exec Director	Alan Cole	EBRD Ltd	11,632,866	5.03%
Non-exec Director	Nicholas Hooke			
Non-exec Director	Alessandro Benedetti			
Non-exec Director	Bertrand Des Pallieres			
Key Dates		Key Milestones for 2010/11		
Final Results	March/April	-	Debeslavtska shallow production wells drilled 12/2010	
Interim Mgt Statement	1 <sup>st</sup> Half May	-	Debeslavtska shallow production wells tested Q1 2011	
Half-yearly Report	August	-	Completion of farm-out 2011	
Interim Mgt Statement	2 <sup>nd</sup> Half November			

Table 6: Key company data.



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