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In the High Court of Justice
Business and Property Courts
Of England & Wales

Claim No. BL-2020-001343

Between:

London Capital & Finance Plc & Ors

Claimants

- and -

Mr Michael Andrew Thomson & Ors

Defendants

Expert report of Chris Osborne

Confidential

29 September 2023

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Glossary

Term	Definition
Administrators	Finbar O'Connell et al
Assets	LOG's interests in IOG
BSM	Black Scholes Merton
CER	CalEnergy Resources
Claimants	LCF, LOG and the Administrators of LCF and LOG
CLN 1	£ 10,000,000 Loan Agreement between LOG and IOG dated 5 February 2016
CLN 2	£ 10,000,000 Loan Agreement between LOG and IOG dated 20 February 2018
Defendants	Michael Andrew Thomson, Simon Hume-Kendall, Elten Barker, Spencer Golding, Paul Careless, Surge Financial Limited, John Russell-Murphy, Robert Sedgewick, Grosvenor Park Intelligent Investment Limited and Helen Hume-Kendall
Facilities Agreements	Five separate facilities agreements representing LOG's funds advanced to IOG
Hannam	Hannam and Partners
Hannam Report	A document prepared by Hannam entitled 'Project Acropolis – Process Update' dated May 2022
LCF	London Capital & Finance Plc
LOG	London Oil & Gas Limited
LOG's investments	LOG's interests in IOG
IOG	Independent Oil & Gas Plc
LPC	London Power Corporation Limited
Petrogas	Petrogas E&P LLC
RockRose	RockRose Energy plc
WACC	Weighted average cost of capital
Waldorf	Waldorf Production UK plc
Warrant 1	The £ 2,750,000 Loan Agreement between LOG and IOG dated 4 December 2015
Warrant 2	£ 800,000 Loan Agreement between LOG and IOG dated 22 December 2015
Warrant 3	£ 15,000,000 Loan Agreement between LOG and IOG dated 13 September 2018

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1. Introduction and summary of conclusions

Introduction

1.1 My name is Chris Osborne. I am the principal founder and Managing Director of Osborne Partners, a global expert services firm specialising, *inter alia*, in valuation, economic and financial analysis, and the assessment of losses in the context of litigation and arbitration.

1.2 I am a Fellow of the Institute of Chartered Accountants in England and Wales and holds an MSc in economics, with a focus on competition and regulation. I was previously (2016-2018) the global head of FTI Consulting's economic consulting practice having held a range of positions at FTI and its predecessor firm LECG since 2001. Prior to that, I was for 10 years a partner in the accounting firm Arthur Andersen.

1.3 I have served as an expert many times and given evidence on multiple occasions, in the English High Court, in the Competition Appeals Tribunal and its predecessor organisations, in the US Tax Court, and in multiple international commercial or investor/ state arbitrations in multiple fora. My experience is summarised within the CV at Appendix 1.

1.4 I am instructed by Mishcon de Reya LLP, solicitors for London Capital & Finance Plc (In Administration) (**'LCF'**), London Oil & Gas Limited (**'LOG'**), Finbarr O'Connell, Adam Stephens, Colin Hardman and Geoffrey Rowley (the administrators of LCF) and Finbarr O'Connell, Adam Stephens, Colin Hardman and Lane Bednash (the administrators of LOG or the **'Administrators'**) (collectively, the 'Claimants') to provide my expert opinion as to the matters set out below which arise in the context of the Claimants' claims in the High Court against Michael Andrew Thomson, Simon Hume-Kendall, Elten Barker, Spencer Golding, Paul Careless, Surge Financial Limited, John Russell-Murphy, Robert Sedgewick, Grosvenor Park Intelligent Investment Limited and Helen Hume-Kendall (collectively, the **'Defendants'**). I refer to the Claimants and Defendants, together, as the **'Parties'**.

1.5 This report contains my opinions on the matters that I have been instructed to address. I have been assisted in its preparation by staff at Osborne Partners. All work has been carried out under my supervision, and the opinions expressed within this report are my own.

1.6 I understand that this report will be used in proceedings between the Claimant and the Respondent ('Parties') and will be provided to the Court, the Parties, and their advisers. In all other respects, this report is confidential. It should not be used, reproduced, or circulated for any other purposes, in whole or in part, without our prior written consent.

Background

1.7 I understand that LCF was incorporated on 12 July 2012 as South Eastern Counties Finance Limited and that from September 2013, LCF sold bonds to public investors with promised returns of up to 8%. The monies raised from the sale of the bonds were then on-lent by LCF into a small number of companies, including LOG. At December 2018, I understand that the total products issued by LCF had a face value of around £ 237.2 million.

Source: Mouseinthecourt.co.uk

1.8 LOG was incorporated on 15 August 2015. Between 4 December 2015 and 13 September 2018, LOG made five loans to Independent Oil & Gas Plc (**'IOG'**) using the funds lent to it by LCF. IOG is a junior exploration and production company focused on extracting oil and gas from legacy assets in the UK waters of the North Sea. IOG's shares are listed on the London AIM market.

1.9 LOG's funds were advanced to IOG under the terms of five separate facilities agreements (the **'Facilities Agreements'**), namely:

(i) a £ 2,750,000 Loan Agreement dated 4 December 2015 (**'Warrant 1'**). A warrant instrument signed on the same date provided LOG with warrants to subscribe to 5,777,310 shares in IOG at a price of £ 0.119 per share prior to 30 December 2016;

(ii) a £ 800,000 Loan Agreement dated 22 December 2015 (**'Warrant 2'**). A warrant instrument signed on the same date provided LOG with warrants to subscribe to 7,500,000 shares in IOG at a price of £ 0.08 per share prior to 31 December 2016;

(iii) a £ 10,000,000 Loan Agreement dated 5 February 2016 (**'CLN 1'**), convertible into up to 125,000,000 shares at a price of £ 0.08 per share prior to 31 December 2019;

(iv) a £ 10,000,000 Loan Agreement dated 20 February 2018 (**'CLN 2'**) convertible into up to 52,631,579 shares at a price of £ 0.19 per share prior to 21 February 2021; and

(v) a £ 15,000,000 Loan Agreement dated 13 September 2018 (**'Warrant 3'**). A warrant instrument signed on the same date provided LOG with warrants to subscribe to 20,000,000 shares in IOG at a price of £ 0.3218 per share prior to 13 September 2023.

1.10 The interest rate on the loans from LOG to IOG was 1-month LIBOR plus 9% on Warrant 1, Warrant 2 and CLN 1 and 6-month LIBOR plus 9% on CLN 2 and Warrant 3.

1.11 I understand that LCF was placed into administration on 30 January 2019 and that LOG was placed into administration from 18 March 2019.[1] It appears that the Administrators subsequently received:

(i) three offers to purchase LOG's investments in IOG, subject only to minimal conditions, from RockRose Energy plc (**'RockRose'**) between 12 March and 1 April 2019; and

(ii) non-binding offers subject to due diligence from each of Waldorf Production UK plc (**'Waldorf'**) and Petrogas E&P LLC (**'Petrogas'**) on or around 3 May 2022.

1.12 To date, the Administrators have declined to progress any of the apparent offers for the investments but have at various times negotiated a restructuring of those investments, exercised their rights to acquire shares under the various facilities and transacted in IOG's shares.

[1] My understanding is that 18 March 2019 is the date on which the notice of appointment was filed, with the actual appointment formally taking effect on the following day.

Source: Mouseinthecourt.co.uk

My instructions

1.13 I have been instructed to offer my opinion as to the value of LOG's interest in IOG (**'LOG's investments**' or the **'Assets'**) for use by the Claimants in this matter. Specifically, I have been instructed to consider the value of the Assets during the periods:

(i) from December 2015 to April 2019. I have construed that instruction as requiring valuations between 4 December 2015, when Warrant 1 was signed, to 1 April 2019, when the RockRose offer expired/was withdrawn;

(ii) from April 2019 to 1 September 2023; and

(iii) at a convenient date close to the date of this report.

1.14 On 25 August 2019, I met with Mr Jonathan Wright, who I understand has been instructed by the Defendants to perform a task similar to my own. Pursuant to our meeting and subsequent discussions, Mr Wright and I have shared our respective understandings of the chronology of relevant events, and have agreed:

(i) to perform our valuations on dates on which LOG concluded the Facilities Agreements with IOG, the date on which LOG entered administration, the date of the London Power Corporation Limited (**'LPC'**) preference share SPA, the date of the restructuring of the facilities extended by LOG to IOG and the dates of the apparent offers received from RockRose, Waldorf and Petrogas;

(ii) to use a Black Scholes Merton (**'BSM'** or **'Black Scholes'**) framework for assessing the value of the derivative instruments in the Facilities Agreements;

(iii) to round our valuations appropriately. I have used a rounding level of £100,000. The Black Scholes framework requires the use of certain assumptions, suggesting that use of a more precise figure would involve a degree of spurious accuracy; and

(iv) to rely on IOG's calculations in respect of the interest due on LOG's loans to IOG up to 31 July 2019; and

Contents of this report

1.15 **Section 2** sets out a summary of the key facts in relation to the assets that I have been instructed to value. In part, the section describes some relevant characteristics of IOG and its shares and, in part, the relevant characteristics of LOG's investments in IOG.

1.16 **Section 3** explains my approach to valuing the assets and how I have sought to identify the value of the loans, shares and options held by LOG during the course of the period I have been instructed to consider.

1.17 **Section 4** considers the value of each of the five loans made by LOG to IOG during my instructed range of dates using the valuation principles explained in Section 3.

1.18 **Section 5** contains my conclusions in respect of the assets I have been asked to value. The purpose of Section 5 is, principally, to consider the discounts that a market participant would in practice apply to the theoretical value of the assets assessed in Section 4.

1.19 **Section 6** contains my expert declaration and serves as a signature page for this report. Our conclusions follow below.

Source: Mouseinthecourt.co.uk

1.20 **Appendix 2** contains a list of the documents on which I have relied in preparing this report. Where these documents have not previously been exhibited in this matter, we have exhibited them to this report. These exhibits are referred to as "CO" exhibits, for example "Exhibit CO-01".

Summary of conclusions

1.21 My conclusions are set out in Section 5. Within that section, I discuss the various reasons why a market valuation might differ from the theoretical valuations that can be calculated based on the characteristics of the loans, warrants and convertible loans that formed LOG's portfolio of assets.

1.22 The Black Scholes model that Mr Wright and I have agreed to use is based on a number of normative assumptions that are unlikely to hold true in relation to derivative instruments in illiquid shares in a small AIM-listed company. Some discounts are required, therefore, in translating a theoretical valuation into an assessment of market value.

1.23 Those discounts, however, cannot in reality be identified with precision. For that reason, I have identified the value on the dates that I have been asked to consider as lying within a range, governed by the range of discounts that might be applicable at any given time.

1.24 The range of values resulting is shown in the table below, together with the mid-point of that range (note that the figures exclude 'cash', by which I mean the cash generated by earlier sales of shares and/or the repayment of debt). I anticipate, based on my interactions to date with Mr Wright, that it may be possible to narrow that range following the discussions that are scheduled to take place between us following the exchange of our initial reports.

1.25 I should note that at many of the dates there would have been practical difficulties associated with realising even the discounted values shown in the table – including, by 2018 (but prior to the administration), the potential of triggering a mandatory takeover bid. I should also note that the amounts are gross of any tax that might be payable in the event the implied values were realised.

Figure 1.1 **My valuations of the LOG portfolio (excluding cash), £ m**

Date	Low value	Midpoint	High value
22-Dec-15	1.08	1.16	1.23
05-Feb-16	0.59	0.63	0.67
20-Feb-18	13.8	17.2	20.7
27-Jul-18	26.4	40.0	53.6
13-Sep-18	28.0	42.5	57.0
18-Mar-19	36.9	44.1	51.4
01-Apr-19	33.1	37.3	41.5
24-Apr-19	34.1	38.6	43.0
28-Oct-19	30.8	33.6	36.3
03-May-22	46.5	50.4	54.2
01-Sep-23	2.3	5.2	8.1

Source: Annexe 1

Source: Mouseinthecourt.co.uk

2. Background

Introduction

2.1 The purpose of this section is to set out certain facts in relation to the investments by LOG in IOG. First, I consider the dates, amounts and characteristics of the loan investments made by LOG in IOG. I then explain certain aspects of the history and financial performance of IOG.

2.2 I have also set out certain relevant facts relating to the period of the administration of LOG, in particular how the administrators have proceeded to realise value from LOG's investments in IOG. I conclude with a summary of the offers received for LOG's investments in 2022.

2.3 This section is intended to be brief: the facts relating to this case are covered extensively in the Parties' submissions and other documents. It is also intended to be uncontroversial: the facts and evidence discussed are not, I understand, disputed by the Parties.

LOG's loans to IOG

2.4 As noted in Section 1, LOG's funds were advanced to IOG under the terms of the Facilities Agreements described there, which for convenience I repeat here:

(i) a £ 2,750,000 Loan Agreement dated 4 December 2015 (**'Warrant 1'**). A warrant instrument signed on the same date provided LOG with warrants to subscribe to 5,777,310 shares in IOG at a price of £ 0.119 per share prior to 30 December 2016;

(ii) a £ 800,000 Loan Agreement dated 22 December 2015 (**'Warrant 2'**). A warrant instrument signed on the same date provided LOG with warrants to subscribe to 7,500,000 shares in IOG at a price of £ 0.08 per share prior to 31 December 2016;

(iii) a £ 10,000,000 Loan Agreement dated 5 February 2016 (**'CLN 1'**), convertible into up to 125,000,000 shares at a price of £ 0.08 per share prior to 31 December 2019;

(iv) a £ 10,000,000 Loan Agreement dated 20 February 2018 (**'CLN 2'**) convertible into up to 52,631,579 shares at a price of £ 0.19 per share prior to 21 February 2021; and

(v) a £ 15,000,000 Loan Agreement dated 13 September 2018 (**'Warrant 3'**). A warrant instrument signed on the same date provided LOG with warrants to subscribe to 20,000,000 shares in IOG at a price of £ 0.3218 per share prior to 13 September 2023.

2.5 The maximum amount potentially available to be drawn by IOG from LOG was therefore £ 38.6 million. The coupon rate on Warrant 1, Warrant 2 and CLN 1 was 1-month sterling LIBOR plus 9%; in respect of Warrant 3 and CLN 2, the coupon rate was 6-month sterling LIBOR plus 9%. Interest accrued on the loans, to the extent that they were drawn down, at the coupon rate and was payable in a single sum upon the maturity of the loan.

Source: Mouseinthecourt.co.uk

2.6 For convenience, the characteristics of the loans are summarised in the table below.[2]

Figure 2.1 **Summary of LOG loans to IOG**

Loans	Warrant 1	Warrant 2	CLN 1	CLN 2	Warrant 3
Contract date	04-12-2015	22-12-2015	05-02-2016	20-02-2018	13-09-2018
Maturity	31-12-2019	31-12-2019	05-02-2019	21-02-2021	31-08-2023
Facility value	2,750,000	800,000	10,000,000	10,000,000	15,000,000
No of shares	5,777,310	7,500,000	125,000,000	52,631,579	20,000,000
Exercise price	0.12	0.08	0.08	0.19	0.32

Source: Annexe 1

2.7 All of LOG's loans to IOG had call warrants attached to them, either in a separate warrant instrument agreement (Warrants 1, 2 and 3) or embedded within the nature of the facility (CLNs 1 and 2). The main difference between the call warrants attached to LOG's loans to IOG is that:

(i) the call warrants attached to Warrants 1, 2 and 3 required the payment of cash to IOG to subscribe to the shares; whereas

(ii) the call warrants embedded in CLNs 1 and 2 could be exercised by way of loan forgiveness, with no cash changing hands.

2.8 In principle, the issuance of call warrants as part of loan agreements offers upside to the lender over and above the coupon on the loan if the share price performs well. For the lender, the warrants effectively represent a leveraged bet on the company's equity. The benefit to the borrower from issuing the warrants is that the coupon rate on the loan may generally be negotiated to a lower level, reducing the cash payments required to settle the interest on the loans.

2.9 Clearly, the value of a warrant offering the right to subscribe to IOG's shares depends critically on the market value of IOG's equity, all else equal. To the extent that IOG's shares rise in value, the associated warrant instruments must also increase in value. In Section 3, I explain in more detail the factors that would be expected to influence the value of the call warrants and, by implication, the convertible loans.

Developments at IOG since 2015

Operating history [3]

2.10 IOG is one of a relatively large number of junior exploration and production companies focused on extracting oil and gas from legacy assets sold off by their former (generally larger) owners in the UK waters of the North Sea. As at 1 September 2023, more than 10 such companies were listed on the London AIM market.

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[2] Note that the maturity dates of all of the five instruments were extended at various times. I use the dates shown as the *initial* maturity dates (the maturity of the conversion options in relation to the CLNs), and extend those dates as and when those dates were extended.

[3] Please refer to Annexe 1, tab "References" for the sources related to this section.

Source: Mouseinthecourt.co.uk

2.11 IOG concentrates on gas fields located in the southern North Sea region in waters off the coast of Norfolk and Lincolnshire. At the date of the first investment by LOG in IOG, the company held interests in several licences to explore for and extract hydrocarbons from fields in this region of the North Sea. It was not, however, producing any hydrocarbons from any of its licences.

2.12 The company held licences around two operating hubs known as Blythe and Skipper. IOG's annual report at 31 December 2015 contains its annual Statement of Reserves & Resources, which lists:

(i) in respect of the Blythe hub, proven reserves associated with the Blythe field, a range of contingent resources at five further fields and prospective resources at three other fields; and

(ii) in respect of the Skipper hub additional contingent and prospective resources.

2.13 Shortly after the FY2015 year end, the company postponed the development of the Skipper hub and elected to concentrate its resources on extracting value from the Blythe Hub. In the course of 2016, 2017 and 2018, the company acquired 100% ownership of licence P1736 pertaining to the Blythe field and expanded its interests in other exploration assets in the area. It also acquired the decommissioned Saturn Banks gas pipeline originally constructed by Thames Gas. IOG's intention was to land any gas extracted from its offshore licences in Norfolk at the Bacton terminal to which the Saturn Banks pipeline is connected.

2.14 At the date of LCF and LOG entering administration, IOG had yet to assemble the finance or operating capabilities to exploit its licences and other assets. In the course of 2019, however, the company concluded a farm-out agreement with CalEnergy Resources (**'CER'**), an upstream oil and gas exploration and production company ultimately owned by the Berkshire Hathaway group of companies. Under the terms of the farm-out agreement, described in more detail below, CER agreed to contribute cash and investment monies, together with its expertise in oil and gas development, in exchange for royalties and a share of any production from IOG's licences.

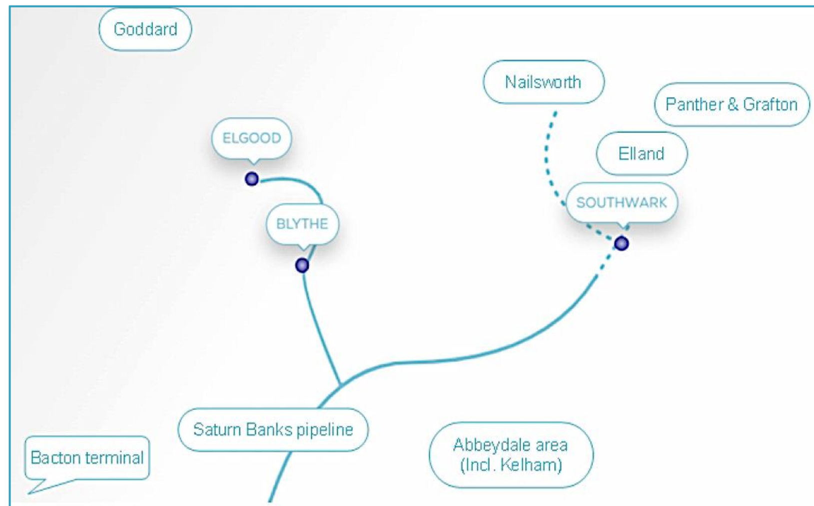
2.15 The farm-out agreement meant that, for the first time, IOG had secured the funding and expertise necessary to exploit the Blythe hub and associated resources. Following the Financial Investment Decision in October 2019, it was expected that the first gas would be produced in the third quarter of 2021.

2.16 In the course of 2019, IOG also acquired Thames Gas's gas reception facilities at the Bacton terminal, ensuring that it would be able to deliver gas into the UK gas network. Throughout 2020 and 2021, the company worked to ensure delivery of the first gas from the Blythe hub, which eventually occurred in March 2022.

2.17 As shown in the simplified diagram below, IOG's pipeline was connected to the Blythe, Elgood and Southwark fields. The development of other fields required the extension of the gas pipeline, the capital investment likely hinged upon the successful delivery of commercial quantities of gas from the Blythe and Southwark fields.

Source: Mouseinthecourt.co.uk

Figure 2.2 **Simplified map of IOG's oil and gas assets**



2.18 Subsequent to the delivery of the first gas from the Blythe hub, however, the company encountered a range of technical difficulties in the extraction of gas from its fields, leading to a substantial drop in its share price. At the time of writing, I understand that the company's future is uncertain given that its existing licences have not proved as valuable as hoped and, in consequence, IOG lacks the funds to make the necessary investments to develop its licences further.

2.19 Below, I set out certain of the key financial highlights in IOG's history since 2015.

Financial history [4]

2.20 In December 2015, around the date of LOG's first investment in IOG, IOG's share price was around £ 0.06, giving it a market capitalisation of £ 78.7 million. In addition, the company had debts of £ 2.0 million owned to GE Oil & Gas.

2.21 In December 2015, LOG and IOG agreed the first two lending facilities between them with a maximum value of £ 3.6 million. The purpose of the loans was the development of IOG's Skipper project located in block 9/21a of licence P1609.

2.22 Shortly afterwards, in February 2016, LOG and IOG concluded CLN 1, which provided up to £ 10.0 million to fund IOG's cash flows and to invest in projects at IOG's discretion. By 31 December 2016, IOG had drawn £ 2.8 million against its facilities with LOG; by 31 December 2017, the figure was £ 11.2 million.

2.23 In 2018, the pace of IOG's development of its North Sea assets increased, resulting in increased cash outflows. During the course of the year, LOG and IOG agreed two further facilities (CLN 2 and Warrant 3) for a total of £ 25.0 million.

2.24 CLN 2 was advanced to support IOG's outgoings of up to £ 10.0 million in respect of:

(i) *'investments into and payments of costs, expenses and other liabilities in connection with'* Licence P1706 (Blythe), Licence P2260 (Elgood, Tetley, Rebellion), Licence P2085 (Harvey), Licences P039, P130, P1915 and P2342 (Vulcan Satellites);

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[4] Please refer to the Annexe 1, tab "References" for the sources related to this section.

Source: Mouseinthecourt.co.uk

(ii) 'payment of the Parent or Operator's creditors, where such creditors are minor in terms of quantum and relate specifically to the Skipper Field (as referred to in the Skipper Agreements), provided always that the Parent has obtained the prior written approval of the Lender';

(iii) 'investments into, and payments of costs, expenses and other liabilities in connection with interests of the Thames Pipeline (PL370)'; and

(iv) 'payments made for general and administrative purposes of up to £ 250,000 in any calendar month'.

2.25 Warrant 3 was advanced to support IOG's outgoings of up to £ 15.0 million in respect of:

(i) 'investment in relation to the drilling of the Harvey appraisal well, in an aggregate amount up to £ 10,000,000 (or such greater amount as agreed by the Lender at any time)';

(ii) 'the repayment of any sums due under the Skipper Agreements… in a maximum aggregate amount up to £ 4,200,000 (or such greater amount as agreed by the Lender at any time)'; and

(iii) 'payment towards general and administrative expenses and project related costs, in a maximum aggregate amount up to £ 2,000,000 (or such greater amount as agreed by the Lender at any time)'.

2.26 Accordingly, by 31 December 2018, IOG's principal drawings on its facilities with LOG totalled £ 30.7 million, as shown in the table below, or £ 34.1 million including accrued interest.

Figure 2.3 **Drawn amounts as at 31 December each year and accrued interest as at 31 December 2018, £ m**

Drawn amounts	Warrant 1	Warrant 2	CLN 1	CLN 2	Warrant 3
2015	*No drawdowns during 2015*				
2016	2.0	0.8	N/A	-	-
2017	2.8	0.8	8.4	-	-
2018	2.8	0.8	10.0	10.0	7.2
Accrued interest	0.7	0.2	1.7	0.7	0.2
Total Balance	3.4	1.0	11.7	10.7	7.3

Source: Annexe 1

2.27 In April 2019, IOG issued 189.2 million new shares at £ 0.10 per share, raising proceeds of £ 18.9 million. In addition, IOG restructured its debt with LOG such that:

(i) the maturity of each of the loans maturing in 2019 (Warrant 1, Warrant 2 and CLN 1) was extended by 12 months;

(ii) £ 1.6 million of the outstanding balance of CLN 1 was converted to 20,497,204 shares at an effective price of £ 0.08 per share; and

Source: Mouseinthecourt.co.uk

(iii) CLN 2 was restructured into a £ 11.6 million zero coupon convertible loan note instrument. The conversion price was maintained at £ 0.19 per share (implying conversion into 60,872,361 shares) but the instrument became unsecured and subordinated to other IOG debts and had its maturity extended to 23 September 2024.

2.28 On 20 September 2019, IOG issued a secured bond, listed on the Oslo Børs (the **'Norwegian Bond'**) with a value up to EUR 130 million, of which EUR 100 million was initially drawn down to fund IOG's share of the Phase 1 development program with CER. After transaction fees and currency revaluation, the net amount received by IOG was recorded in the FY2019 accounts as £ 82.4 million. The bond carried a coupon of 3-month EURIBOR plus 9.5%, was callable after three years (initially, upon payment of a call premium of 50% of the coupon) and matured after five years.

2.29 On 28 October 2019, IOG announced that it had agreed the terms of its farm-out with CER. In summary:

(i) IOG and CER agreed to share the proceeds from production from IOG's licences equally (i.e., 50:50);

(ii) CER paid £ 40.0 million in initial cash consideration to IOG;

(iii) CER committed to pay up to £ 125.0 million of IOG's development costs, up to £ 60.0 million on Phase 1 (Blythe, Elgood and Southwark) and £ 65.0 million on Phase 2 (other assets), representing up to 80% of IOG's 50% investment in project costs. I understand from the language in IOG's FY2019 Annual Report that this implies that IOG was committed to spending up to £ 75.0 million of its own money (raised from the bond issued in September) on Phase 1 development;

(iv) IOG agreed to pay CER a royalty of 20.2% of net revenues from Phase 1 up to a cap of £ 91.0 million; and

(v) IOG would receive an effective royalty interest of £ 0.50/MCF on CER's 50% share in the Goddard field after 70 BCF of gas had been produced up to a maximum of £ 9.8 million.

2.30 Upon completion of the farm-out on 28 October 2019, IOG paid £ 17.1 million to LOG to pay off Warrants 1, 2 and 3, as set out in the table below.

Figure 2.4 **Reconciliation of payments received by LOG from IOG in October 2019, £ m**

Drawn amounts	Warrant 1	Warrant 2	Warrant 3
31/12/2018 balance	3.4	1.0	7.3
2019 drawdown	-	-	3.9
2019 interest	0.3	0.1	1.1
Total	3.7	1.1	12.3

Source: Annexe 1

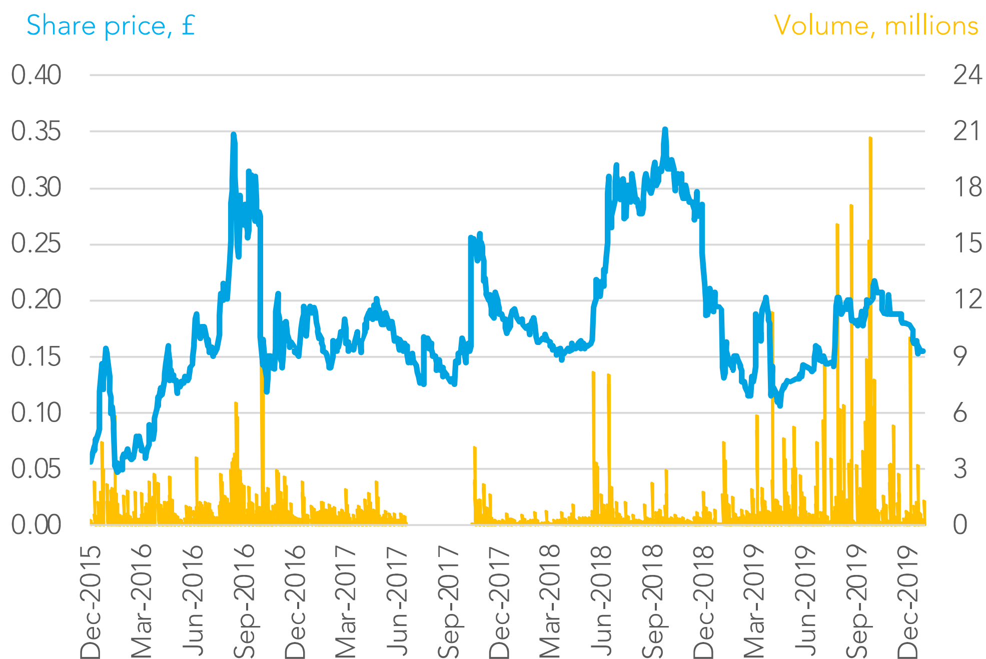
Source: Mouseinthecourt.co.uk

2.31 In addition, under the terms of the restructuring agreed in April 2019, LOG converted the remainder of CLN 1 into 135,464,155 new IOG shares at a price of £ 0.08 per share and received a cash settlement of £ 79,000. I understand that facilities agreements associated with Warrants 1, 2 and 3 were terminated under the terms of the restructuring but that the associated warrant instruments continued to be available for exercise. Accordingly, from 28 October 2019, the restructured zero-coupon subordinated CLN 2 was the only outstanding loan from LOG to IOG.

2.32 IOG recorded a gain of £ 5.0 million on the restructuring of CLN 2 from an interest-bearing convertible loan note maturing in September 2023 to a zero-coupon convertible loan note maturing in September 2024. It is apparent, therefore, that in exchange for the repayment of Warrants 1, 2 and 3, LOG agreed to reduce the value of CLN 2 both by waiving future interest and also extending the maturity of the loan.

2.33 During the period of LOG's investments up to the end of 2019, IOG's shares traded at values between £ 0.05 and £ 0.35 per share as shown in the chart below. As may be seen, the shares were much more actively traded from April 2019 once the farm-out transaction and debt restructuring proposals were announced by IOG.

Figure 2.5 **Adjusted share price (£, LHS) and volume (m, RHS), 1 December 2015 – 31 December 2019**



Source: Capital IQ

2.34 On account of the issuance of shares in April 2019 and October 2019 (including those arising out of the conversion of CLN 1) together with share price appreciation following the announcement of the farm-out transaction, IOG's market capitalisation increased markedly in the final nine months of 2019.

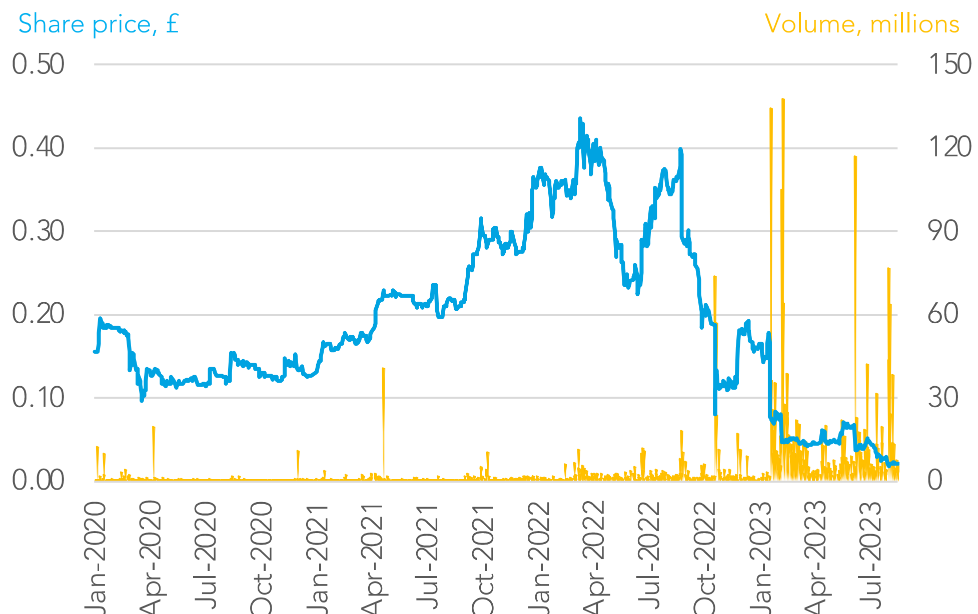
Source: Mouseinthecourt.co.uk

Figure 2.6 **IOG market capitalisation, £ m**

Source: Capital IQ

2.35 Since the end of 2019, the only significant share issuance by IOG has been of 33.8 million shares at £ 0.25 per share in September 2021, raising £ 8.5 million. As noted above, however, IOG's share price has declined steeply since January 2022 on account of technical difficulties and lower gas recoveries from the Blythe and Southwark licences. As at 1 September 2023, the company's share price was around £ 0.017 and the company had a market capitalisation of only £ 8.9 million.

Figure 2.7 **Adjusted share price (£, LHS) and volume (m, RHS), 1 January 2020 – 1 September 2023**



Source: Mouseinthecourt.co.uk

Source: Capital IQ

Conduct of the administration [5]

2.36 As noted above, I understand that LCF was placed into administration on 20 January 2019 and LOG from 18 March 2019. The Administrators' first report dated 14 May 2019 noted that £ 34.6 million had been lent to IOG by LOG and that accrued interest stood at £ 2.9 million at 24 April 2019. On account of the partial conversion of CLN 1, LOG also held 20,497,204 shares in IOG as at the date of the Administrators' report.

2.37 By September 2019, the Administrators reported that accrued interest had risen to £ 4.2 million. In addition, the Administrators realised £ 2.1 million through the sale of 12.4 million of the 20.5 million shares converted in April. The Administrators also reported the terms of the farm-out transaction and the associated repayment, conversion or restructuring of LOG's loans.

2.38 In June 2020, the Administrators reported the conversion of the loan into shares and that on account of the conversion, LOG held 29.78% of LOG's shares. By December 2020, LOG had realised a further £ 0.6 million from the sale of a further 5 million shares at a price of £ 0.129 per share. The Administrators used the proceeds from the share sale to exercise 7,877,310 share warrants prior to their expiry at an average price of £ 0.082 per share. The combined transaction yielded a gain (pre-tax) to LOG of £ 0.5 million at the then-current share price of £ 0.16.

2.39 In January 2022, the Administrators sold a further 1.2 million shares for between £ 0.36 and £ 0.37 per share, realising a further £ 0.44 million. An additional £ 1.26 million was realised from the sale of 3.3 million IOG shares for between £ 0.36 and £ 0.42 later in the first half of 2022, and £ 2.27 million from the sale of 6 million shares in the second half. The sales brought the Administrators' total realisations from the LOG investments in IOG to £ 24.5 million, in addition to the IOG shares and CLN 2 that LOG continued to hold.

2.40 I have summarised, in the chart below, the value of LOG's portfolio of investments in IOG *as disclosed by the administrators* – the amounts include cash realised – from October 2019 to June 2023. As may be seen, the total value of the investments peaked at around £ 84.8 million in early 2022, when IOG first started selling gas into the UK network.

2.41 Their value has since declined to around £ 40.0 million in mid-2023. This latter figure, however, assumes that CLN 2 is repaid in full upon maturity in 2024 (which is unlikely, as explained in Section 5). I also note that the market capitalisation of IOG has declined from £ 25.3 million on 30 June 2023 to £ 8.9 million on 1 September 2023, suggesting that LOG's IOG shares currently have a value of less than £ 2.5 million.

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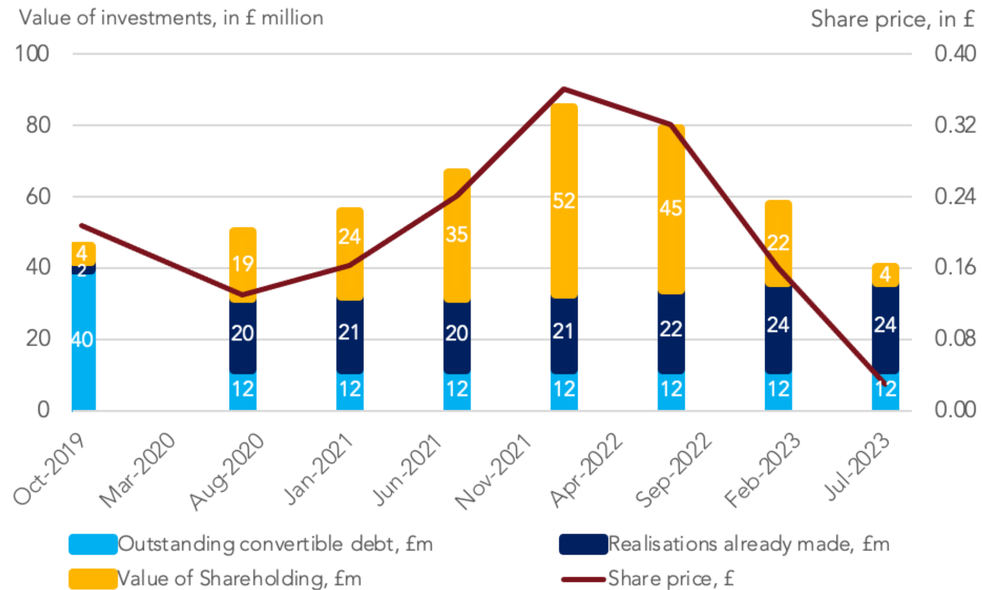
5 Please refer to the Annexe 1, tab "References" for the sources related to this section.

Source: Mouseinthecourt.co.uk

Figure 2.8 **Value of LOG's investments in IOG, 2019 – 2023, £ m**



Source: Annexe

Effective cap on LOG's shareholding in IOG

2.42 In principle, the warrants and conversion rights issued by IOG to LOG permitted LOG to subscribe for 239.6 million new shares in IOG on 18 March 2019. Given that there were only 126.9 million IOG shares issued in total on or around 18 March 2019, the exercise of all of the warrants and conversion rights would have made LOG the majority owner of IOG's share capital.

2.43 The UK Takeover Code requires that any shareholder that gains control of a target firm – defined as a single shareholder controlling more than 30% of the voting rights in a company – is obliged to extend a cash offer to all shareholders for their shares. Had LOG exercised its warrants and conversion rights in full, therefore, the UK Takeover Code would have obliged it to make an offer for the remaining outstanding shares. [6] This would, at times, have been expensive: in March 2022, for example, when the share price was £0.43 the cost of acquiring the remaining 524 million shares would have been of the order of £230 million.[7]

2.44 By the time of its entering administration, and perhaps for some period prior to then, LOG lacked the financial resources to make an offer for the outstanding share capital of IOG. Further, it is my understanding that LOG did not wish to own IOG outright.[8] In practice, therefore, there was a cap of 29.9% of IOG's shares that LOG would be able to own at any one time without triggering the provisions of the Takeover Code.

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[6] CO-1 - The Panel on Takeovers and Mergers, The Takeover Code, Rule 9, 22 May 2023 **(MDR00226948)**

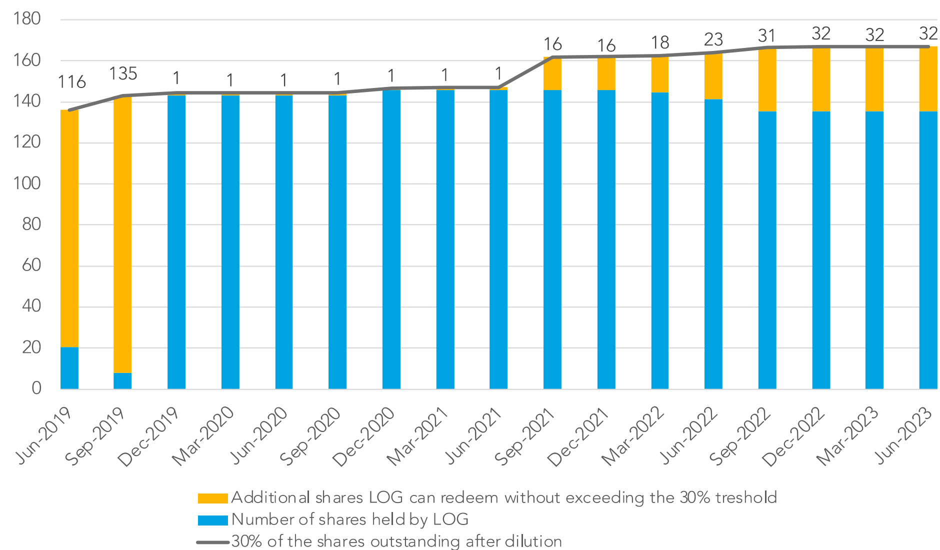
[7] See the calculation in Annexe 1

[8] CO-2 – Administrator's Progress Report, June 2020, page 6

Source: Mouseinthecourt.co.uk

2.45 The chart below shows the number of IOG shares held by LOG, the number of shares equivalent to a 30% holding in IOG and, therefore, the number of warrants or conversion rights that LOG could actually exercise at any given date between 1 June 2019 and 1 June 2023. The 30% cap is influenced by IOG's share issuance, while the number of conversion rights that LOG could exercise is influenced both by its existing holdings of shares and the availability of in the money warrants or conversion rights that it could exercise.

Figure 2.9 **Maximum number of shares LOG can redeem until the 30% threshold, in millions of shares**



Source: Annexe 1

2.46 As may be seen, following the restructuring of October 2019, LOG was unable to exercise any further warrants without triggering an obligation to make an offer to IOG's shareholders. Following IOG's issuance of 33.8 million further shares in September 2021, LOG could have exercised between 16 million and 32 million further warrants of conversion rights, to the extent that it would have been valuable to do so.

Offers received for LOG's interests in IOG

2.47 I understand that the Administrators have received offers from three parties purportedly interested in purchasing LOG's interests in IOG.

2.48 First, between 12 March 2019 and 31 March 2019, I understand that the Administrators were approached on behalf of RockRose regarding a potential sale of LOG's interests in IOG.[9] On 28 March 2019, the Administrators offered to sell LOG's portfolio of interests in IOG to RockRose Energy (**'RockRose'**) for £ 120.0 million plus taxes. RockRose's advisors responded with an unconditional offer of £ 52.5 million.

2.49 On 1 April 2019, the Administrators responded that they would be willing to sell LOG's investments in IOG for £ 140.0 million plus taxes. The Administrators' revised offer expired without receiving a response from RockRose. I consider the implications of the RockRose offer for the value of the Assets in more detail in Section 5.

9 MDR_POST_00000319 - Email correspondence regarding RockRose's offer for LOG's interest in IOG

Source: Mouseinthecourt.co.uk

2.50 In 2022, Kroll sought on behalf of the administrators of London Power Corporation Limited – a company to which LOG had also advanced funds – to attract bids for LOG's interests in IOG. I understand that Hannam and Partners (**'Hannam'**) was engaged to conduct a search for a strategic buyer for the entire portfolio of shares, warrants and convertible loans. As set out in a document prepared by Hannam entitled 'Project Acropolis – Process Update' dated May 2022 (the **'Hannam Report'**) I understand that Hannam approached 20 potential investors. [10]

2.51 The Hannam Report states that 3 non-binding offers were received by the bid deadline of (I understand) early May 2022. [11] Following initial enquiries and clarifications, RockRose rescinded its offer of £ 84.7 million on account what were described by Hannam as *'negative due diligence findings'*. A further five potential investors issued with NDAs declined to bid or did not respond to Hannam.

2.52 Investors that declined to proceed with the process cited factors such as an unwillingness to participate in a public process, concerns about IOG's transparency and operational challenges, negative perceptions about the Administrators' desire to sell LOG's holdings and the cash-only nature of the deal.

2.53 The two remaining offers were from Waldorf, headquartered in Aberdeen, and Petrogas, a company based in Oman. Petrogas's offer is shown in the Hannam report as being £ 61.2 million for LOG's investments. In contrast, Waldorf apparently offered £ 40.0 million. Both companies declined to raise their bids despite being asked to do so by those instructing Hannam.

2.54 Hannam recommended taking the Petrogas offer forward. I understand, however, that the Administrators declined both offers without proceeding to the next step of the process. Waldorf wished to undertake further legal and technical due diligence and sought access to IOG's board minutes. Petrogas also sought considerable additional details about IOG's operations that, I understand, the administrators were unable to provide.

[10] CO-3 - Project Acropolis, May 2022 **(MDR_POST_00002361)**

[11] The Hannam Report is undated and no date is provided in the report as to when the offers were received.

Source: Mouseinthecourt.co.uk

3. Approach to valuation

Introduction

3.1 In this section, I set out my general approach to assessing the valuation of the various investments made by LOG in IOG. Those investments comprise:

(i) interest-bearing loans that have had call warrants issued alongside them in separate warrant instruments at the same date (Warrant 1, Warrant 2 and, prior to its restructuring, Warrant 3); and

(ii) interest-bearing loans containing embedded options (in effect call warrants) to convert the loans into shares for which LOG was able to subscribe at a known price (CLN 1, CLN 2 and, after its restructuring, Warrant 3).

3.2 I have first considered the general approach to valuing loans before considering, in general, the approaches taken to value options such as warrants and convertible loans. I then consider certain aspects as to how warrants and convertible debt are priced and the options for their exercise facing a holder.

3.3 The approaches set out in this section are what I have elsewhere termed 'theoretical'. I use that term because they assume, *inter alia*, liquid markets in which it is possible to transact large volumes of securities with no price impact or transaction costs. They therefore underpin the analysis set out in Section 4, which considers their implications for the theoretical value of LOG's investments in IOG.

3.4 In practice, those conditions do not apply to shares in or loans to IOG, in general, or to the investments made by LOG, in particular. For that reason, I have adjusted for certain of the assumptions inherent in these approaches in Section 5, where I conclude on the market value of LOG's investments at the dates I have been instructed to consider. I discuss the standard of value I have used in my instructed valuations at the end of this section.

Loan valuations

3.5 The general assumption when valuing a loan is that the loan is worth its face value. That result is based on the assumption that the rate of interest charged on the loan fully reflects the relevant risks associated with the loan. The rate of interest charged should therefore reflect:

(i) the risk-free rate of interest that could be obtained from lending funds to a highly rated government for a similar term to the term of the loan;

(ii) expected inflation over the term of the loan. Investors require compensation for the expected erosion of the value of their money caused by ordinary price inflation;

(iii) default risk, the probability that the loan might not be repaid either on time or in full. Default risk negatively correlated with a borrower's credit rating: the lower the credit rating, the higher the default risk of lending to that borrower;

Source: Mouseinthecourt.co.uk

(iv) a liquidity premium to reflect the expected ease or difficulty of converting the loan to cash. The more illiquid is the loan, the higher will be the maturity premium; and

(v) a maturity premium to reflect the duration of the loan. All else equal, loans for a longer period of time will have a higher interest rate than those for a shorter period of time on account of longer-term loans having a higher maturity premium.

3.6 If the rate of interest appropriately reflects these risk factors at the date of lending, then the appropriate discount rate to apply to future cash payments made under the terms of the loan is equal to the rate of interest. Accordingly, the sum of the present value of future payments expected under the loan will be equal to its face value.

3.7 Subsequent to the creation of the loan, perceptions of those factors may change. Risk-free rates or expected inflation rates may rise or fall or the borrower may become more or less credit worthy. Accordingly, the value of the loan may rise (or fall) such that it will be worth more (or less) than its face value.

3.8 It is for these reasons that the price of bonds (i.e., loans) traded on public markets rise and fall with changes in financial market expectations, economic expectations or credit conditions.

3.9 In considering the value of the loans made by LOG to IOG, I have not sought to take account of changes in these factors between the date when the loan was made and the valuation date. That is because, in my opinion:

(i) as the interest rate on the loan was reset periodically to reflect changes in LIBOR, I assume that changes in risk-free rates and expected inflation were incorporated into the rate of the interest charged at any given point in time and, implicitly therefore, in the discount rate to be applied to the loan; and

(ii) it would be speculative to seek to adjust the discount rate, *ex-post*, to reflect possible changes in assessments of the default risk and liquidity premium associated with the loan; and

(iii) the maturity of the loans was unchanged, at least prior to the restructuring that took place in October 2019.

3.10 Accordingly, I have generally assumed that the interest rate on the loan at any given date reflected market expectations in respect of the risk factors pertaining to it and, therefore, that the value of the loans is equal to their face value.

Approaches to pricing options

3.11 LOG was issued call warrants alongside three of the loans made to IOG. In addition, the convertible loan notes issued by IOG in favour of LOG contain embedded call warrants. A call warrant is the right, but not the obligation, to purchase an asset (in this case IOG shares) for a known price on or prior to a certain date. In financial markets, a financial option that may only be exercised on a given date is known as a 'European' option, whereas one that may be exercised on any date prior to expiry is known as an 'American' option. In the case of the call warrants (embedded or otherwise) issued to LOG, the exercise of the option could occur at any date prior to their expiry.

Source: Mouseinthecourt.co.uk

3.12 Intuitively, the value of an option such as a call warrant at a given date depends, in part, on the characteristics of the security or securities underlying the option, in part, on prevailing financial conditions and, in part, on the specific features of the option.

3.13 The first approach to pricing derivatives, securities (such as options) that are based on the characteristics of other, underlying assets, was put forward in the Black Scholes model. The model estimates the value of an option using five inputs, namely:[12]

(i) the 'strike' price at which the option may be exercised;

(ii) the current price of the underlying asset;

(iii) the time to expiry of the option. All else equal, an option with a longer period to expiry will have a greater value because it has a greater probability of being valuable between the date of valuation and the expiry date;

(iv) the risk-free rate. The risk-free rate is used in the model as a limiting condition as it is assumed that somebody could borrow to purchase the asset or sell the asset and lend the funds during the period of the option; and

(v) the expected volatility of the underlying asset. All else equal, the more volatile is the price of the underlying asset, the more valuable will be the option.

3.14 All else equal, an increase in any of these factors – with the exception of the strike price – will tend to increase the value of the option.

3.15 The BSM model embodies a number of assumptions, namely that:[13]

(i) no dividends will be paid during the life of the option;

(ii) changes in market prices are random, so market movements cannot be predicted;

(iii) there are no transaction costs in buying or exercising the option;

(iv) the risk-free rate and volatility of the option are both known and constant throughout the life of the option;

(v) the returns of the underlying asset are normally distributed; and

(vi) the option can only be exercised on the date of its expiry. Such options are known as 'European' and are contrasted with 'American' options, which can be exercised at any time prior to their expiry.

3.16 In practice, certain of these conditions are unlikely to hold. For example, the is some evidence that markets experience periods in which they have 'momentum' i.e. that a day on which share prices rise is more likely to be followed by another day on which they rise, and vice-versa. Such momentum effects, however, are themselves difficult to predict and, therefore, to incorporate into the model.

[12] CO-4 - Medium, Black Scholes Model, First Steps, 15 June 2020 **(MDR00226954)**

[13] CO-5 - Macroption, Black Scholes Model Assumptions **(MDR00226955)**

Source: Mouseinthecourt.co.uk

3.17 In addition, it is clear that many shares (or other securities) do pay dividends or (in the case of commodities, for example) incur holding costs, while transaction costs are a universal feature of trading any asset. These issues, however, are less problematic for the model as they can simply be built into expectations about the future: transaction costs, in particular, are often relatively predictable and foreseeable, while dividends or holding costs can be estimated in advance and converted to a present value. The resulting present value of any expenses can then simply be added or deducted from the option value for any given holding period.

3.18 More problematic issues are represented by the last three points in the list above because:

(i) the volatility of shares and other financial instruments is not constant but rises during periods of market stress or in response to changes in financial or economic expectations and falls during periods when expectations are relatively unchanging and markets more stable. Similarly, risk-free rates are not constant and their future level and path is usually difficult to predict;

(ii) there is evidence [14], particularly from financial crises, that extreme returns (particularly extreme falls) occur more regularly than is consistent with the normal distribution. The phenomenon of 'fat tails' in the normal distribution, technically known as 'kurtosis', means that the normal distribution cannot be held to apply to financial markets without modification; and

(iii) the right to exercise an option at any date adds a layer of complexity to option pricing that the BSM framework is unable to reflect. In the present context, I note that the warrants and conversion options associated with the five loans were all 'American' options in that they could be exercised at any date prior to their expiry. All else equal, the right to exercise an option at any date renders that option more valuable than a 'European' option only capable of exercise at the date of expiry.[15]

3.19 In essence, all three of these points relate to a central issue, namely that future financial market conditions may not be the same as those at the date when the option is first priced. One response to these issues has been the development of a range of models that enhance the original BSM framework, albeit at the price of reducing what is perhaps its most appealing feature, namely its simplicity.

3.20 The importance of these issues to estimating the value of options, together with the rapid expansion in options trading and the ever-decreasing cost of computing power has led to the development of so-called 'binomial option pricing' models that permit the valuer to vary the inputs to the model dynamically with the passage of (future) time.

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14 CO-6 - Nasdaq, Fat Tail Risk, What it means and why you should be aware of it **(MDR00227046)**

15 I note, however, that CLN 1 and CLN 2 were likely to be exercised towards or on their maturity date. The accrual of interest on the loans means that the conversion right became more valuable over time, suggesting that a prudent owner would generally seek to assess the value of the conversion option as the loan neared maturity and, only at that time, to elect either to convert or to receive repayment of the loan and accrued interest. This makes them similar, if not almost identical, to a European option in practice.

Source: Mouseinthecourt.co.uk

3.21 A binomial option pricing model is an iterative approach that uses multiple periods to project the value of an asset into the future. In each period, it is assumed that the value of the asset will either rise or fall. At the end of the period, another projection is made in which the value of the asset may rise or fall. The projections continue – whether daily, weekly or monthly – until the expiry of the option. By assessing the range of potential outcomes and the probability of each outcome, it is possible to form a more precise view of the value, and potential range of values, of the option at a given moment in time.[16]

3.22 The advantages of binomial option pricing models are that:

(i) by running thousands (even hundreds of thousands) of multi-period simulations, it is possible to build up a detailed picture of the range and probability of different outcomes, leading to a more detailed understanding of the potential behaviour of the underlying asset and therefore the value of the derivatives based upon it;

(ii) such models can be used to price 'American' options because they provide information about the maximum potential prices that can arise and the probability that an asset will exceed or fall below the strike price (or any other desired price) at any time prior to its expiry; and

(iii) the model can take account of real world decision-making and its consequences. For example, when valuing an oil well, a key determinant of whether a well can be exploited or not is the price of oil. Using a binomial option pricing approach, one can take account of the probability that the oil well will be developed and, if so, the costs of doing so can be factored into the resulting valuation only in those scenarios where it would be economic for the exploitation of the well to occur.

3.23 Like a BSM framework, however, the results yielded by binomial option pricing models critically depend on the accuracy of the inputs to them and it is usual for those inputs to reflect recent experience that will usually not embody the possibility of extreme events whose probability and effects can be difficult to assess *ex ante*.

3.24 For the purposes of my valuation, I have agreed with Mr Wright to use a BSM framework to value the options because:

(i) a BSM model is simpler to construct as it contains fewer inputs;

(ii) the inputs to a BSM model, with the exception of the volatility estimate, are generally able to be objectively assessed; and

(iii) it would in our shared opinion be unduly onerous to seek to agree and, separately, to implement a binomial option pricing model at all of the dates we have agreed to assess or may be asked to assess in future.

3.25 The version of the BSM model I have used does not include any adjustment for the dilution effect arising on conversion of the warrants or loans into equity. In effect, my assumption is that any potential dilutive effects are 'priced in' within the market price of the shares on any given date. This assumption is conservative, in the sense that any adjustment for potential dilutive effects would produce lower valuations than those that I have derived.

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16 CO-7 - Optionstrading, The Binomial Model **(MDR00227053)**

Source: Mouseinthecourt.co.uk

Warrants

3.26 The warrant instruments signed on the same days as Warrant 1, Warrant 2 and Warrant 3 are all call warrants. A call warrant features:

(i) a strike price, the share price at which the warrants to subscribe to shares may be exercised; and

(ii) a maturity date or expiration date before which the warrant must be exercised and beyond which the warrant ceases to be exercisable.

3.27 In principle, a borrower may be willing to issue call warrants alongside its loan agreements because the potential for additional returns to the lender if the share price rises above the strike price, over and above the interest rate payable on the borrowings, allows the borrower to reduce the interest rate negotiated on the loan.

3.28 The disadvantages of warrants to the firm are that, once exercised, they dilute the holdings of existing shareholders because they trigger the issuance of new shares in favour of the lender. In principle, a warrant should only be exercised once the share price exceeds the strike price plus a margin to account for any transaction costs. The likelihood of warrants being exercised can thus tend to depress a company's share price even prior to the warrants actually being exercised.

3.29 When a warrant's strike price exceeds the share price, the warrant is 'out of the money' and has no intrinsic value. The warrant has a positive value nonetheless so long as there is a non-zero probability that the share price in the underlying company will exceed the strike price on (or prior to) the maturity date. This value can be assessed using the option pricing methods discussed above.

3.30 Once the share price exceeds the strike price, the warrant is valuable to the extent of that excess: a warrant with a strike price of (say) £ 1.00 has a value of £ 0.10 when the diluted share price following its exercise is £ 1.10. Clearly, the greater the amount by which the share price exceeds the strike price, all else equal, the more valuable to the warrant is. An in-the-money warrant requires no special valuation technique: its value is simply the price of the underlying instrument less the strike price, which represents the cost of exercising the warrant.

3.31 In principle, a warrant should be exercised at a price when the warrant holder would wish to sell the underlying shares (i.e. when the share price exceeds the strike price) or, so long as it is 'in the money', as the maturity date approaches. The usual assumption is that once a warrant becomes valuable it will be exercised because by converting the warrant to shares one realises an instant profit while being exposed to the same factors (i.e. changes in the share price) that drive the value of the warrant. There is no additional value associated with the potential for the share price to increase because the underlying shares embody the same risk and return characteristics as the warrant, once exercised.

3.32 All else equal, however, the intrinsic value of an 'in the money' warrant is lower than the underlying share price, because:

(i) it carries no entitlement to dividends; and

(ii) it requires the investment of cash to realise its value.

Source: Mouseinthecourt.co.uk

3.33 Exercising the warrant, aside from yielding an instant profit, also brings the benefit of any potential future dividends that might be paid on the shares. It is common, however, for warrant holders to sell some or all of the shares to which they subscribe so that the exercise has a low net cash cost. That phenomenon is a function of the facts that the cost of holding a warrant is nil but the cash used to exercise the warrant has an opportunity cost. In principle, one would only continue to hold the shares to the extent that their expected returns exceeded the opportunity cost of the cash required to exercise the warrants.

3.34 To the extent that there are surplus shares over and above the amount needed to repay the cash invested, the decision to hold or sell the asset depends on the investor's general objectives and the extent to which the shares held meet those objectives in conjunction with the other assets in the investor's portfolio.

Convertible loans

3.35 A convertible loan is one that offers the lender the right to convert some or all of the loan into equity at a known strike price. In principle, once the diluted value of the equity exceeds the conversion price, the holder of the loan would be expected to convert the loan to equity, yielding an instant profit.

3.36 When the conversion option is significantly 'out of the money', it has a very low, possibly nil, value. The value of the asset is therefore close to or equal to the value of the loan and the discount rate to be applied in valuing the asset is one that takes account of the factors outlined earlier in this section in relation to loans. Accordingly, the value of the asset is potentially quite close to the face value of the loan.

3.37 In contrast, once the conversion option is significantly 'in the money', the natural assumption is that the option ought to be exercised and, therefore, that the value of the asset is equal to the value of the equity for which it could be converted. In those circumstances, conversion is considered a certainty and, therefore, the appropriate discount rate to apply to the converted value is the risk-free rate.

3.38 In between those two situations, the value of the asset is equal to the value of the loan plus the value of the option to convert the loan. This conversion right, in principle is similar to the value of a call warrant that can be exercised once the underlying share price exceeds the strike price. Instead of paying cash to exercise the warrant, however, the holder of the convertible loan simply surrenders all or part of the value of the loan. The opportunity cost of exercising the warrant, in principle, is the forgone interest on the loan surrendered.

3.39 I earlier considered the relevant factors applying to the value of warrants and loans and I consider that these factors apply equally in respect of the value of the convertible loan notes that form part of the assets I have been instructed to value.

Standard of value

3.40 The standard of value (sometimes referred to as a basis of value) used to value an asset may have a material bearing on the resulting assessment of value. Common standards of value, as defined by the International Valuations Standards Council, include:[17]

[17] CO-8 - International Valuation Standards Council, International Valuation Standards extract, Glossary, 31 January 2022 **(MDR00227050)**

Source: Mouseinthecourt.co.uk

(i) Market value – the estimated amount for which an asset or liability should exchange between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had acted knowledgeably, prudently and without compulsion;

(ii) Fair value – defined by the International Financial Reporting Standards as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date;

(iii) Equitable value – the estimated price for the transfer of an asset or liability between identified knowledgeable and willing parties that reflects the respective interest of those parties; and

(iv) Investment value – the value of an asset to a particular owner or prospective owner for individual investment or operational objectives.

3.41 The valuation standard applied in any given valuation seeks to take into account the context in which the valuation is being conducted. In the present case, I consider that the appropriate valuation standard to apply is market value. I draw that conclusion because:

(i) market value explicitly takes into account market factors, the discounts or premiums that a willing buyer and seller would take into account when considering the price at which they would be willing to transact;

(ii) fair value, in contrast, is usually assessed without consideration of market factors. Because fair value is usually applied in the context of financial reporting, it is commonly the case that the assets being valued are not being held for sale. Accordingly, it is not generally considered appropriate to take into account market factors at the date of valuation because it is not known at the date of valuation, or necessarily relevant to the valuation, what market factors might be taken into account were the asset or liability ever to be disposed of; and

(iii) equitable value and investment value require the identification of specific parties to transactions. In the present case, it is usually not known who might have been willing to transact in the assets being valued at the valuation dates I have been instructed to consider and, therefore, to take into account the respective interests or objectives of those parties. To the extent that third parties have expressed an interest in acquiring the assets, I consider their incentives and position may be appropriately taken into account in the context of an appraisal based on market value.

3.42 Accordingly, I have valued the assets by reference to my assessment of their market value. In effect, I am concerned to identify the value that willing, knowledgeable, prudent, market participants would have been willing to pay for the assets at the valuation dates I have been instructed to consider.

3.43 In my opinion, the approaches described in this section represent only a starting point for assessing the value of LOG's investments in IOG. For the reasons set out in Section 5, I consider that the assumptions inherent in the approaches set out here would not apply to LOG's investment in IOG because:

Source: Mouseinthecourt.co.uk

(i) in respect of the loans, there was no active market in loans to IOG[18], suggesting that if LOG had tried to sell the loans it would have faced a discount for lack of marketability of those loans;

(ii) in respect of the embedded options, in addition to there being no active market in call options on IOG shares, the underlying asset (shares in IOG) was relatively illiquid. In other words, had one sought to cover the positions in the options to close them out, it would not have been possible readily to obtain or borrow the shares needed to do so. Accordingly, the options would also have sustained a discount relative to their theoretical value calculated using the BSM model on account of the lack of liquidity and, separately, a discount for lack of marketability because there was an insufficient pool of willing but not anxious buyers for the assets; and

(iii) the IOG shares held by LOG represented a sizeable holding of around 30% of the total equity of IOG, which would have been difficult to dispose of either at all and, particularly, without any discount.

3.44 I discuss these effects on the market value of LOG's investments more fully in Section 5.

18 CO-9 - Refinitiv, IOG Warrant Overview **(MDR00227048)**

Source: Mouseinthecourt.co.uk

4. Theoretical value of LOG's interest in IOG

Introduction

4.1 The purpose of this section is to consider the theoretical value of LOG's investments in IOG over time. By 'theoretical value', I am referring to the value calculated by reference to the approaches to assessing the value of the loans and options described in Section 3 above. In so doing, I have deliberately not sought to take account of market-related factors that might affect their value.

4.2 In principle, therefore, the valuations set out in this section represent a starting point for the conclusions expressed in Section 5.

Nature of the investments

4.3 Collectively, LOG's investments in IOG may be viewed as a composite asset with several key characteristics – of which the first is a concentration of risk. It is axiomatic in finance that diversification yields a superior trade-off between risk and return in any given market conditions. To the extent that LOG elected to concentrate its investments in IOG, it was electing to bear a greater risk than if it had invested in, say, a diversified range of North Sea oil and gas companies or a globally diversified range of oil and gas companies that included some with licences in the North Sea.

4.4 Second, the investment was a leveraged bet whose upside was critically dependent on IOG being able to sell commercially viable volumes of hydrocarbons from its licences. To the extent that such an event became more likely, or perhaps materialised, the value of LOG's investments in IOG would be expected to rise sharply. To the extent that such an event became less likely, the value of the investments would be confined to the value of the loans.

4.5 Third, the leveraged bet was one that embodied considerable downside risk in the event that the upside did not materialise. In other words, if IOG failed to find commercially recoverable hydrocarbon deposits from within its licences, it might fail to repay LOG either on time or, perhaps, at all.

4.6 In my experience, it is unusual for a responsible investor to place such a concentrated bet on the prospects of a single junior resources company finding commercially recoverable deposits of natural resources. The RockRose letter to the Administrators dated 21 March 2019 characterised shares in IOG as *'high risk equity securities in a small cap company with little liquidity'*.[19] The description is accurate, in my view.

Build-up approach to valuation

4.7 At each of the dates on which I have valued LOG's interest in IOG, the value of each of Warrants 1, 2 and 3 is the sum of:

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[19] MDR_POST_00000284 - RockRose letter to Administrators, 21 March 2019, 2nd paragraph on page 2.

Source: Mouseinthecourt.co.uk

(i) the principal amount of the loan drawn by IOG; plus

(ii) accrued interest on the loan; and

(iii) the value of the call warrants associated with each of the agreements.

4.8 In contrast, the value of CLN 1 and CLN 2 at any given date is the greater of:

(i) the principal amount of the loan drawn by IOG, plus accrued interest plus the value of the conversion option; or

(ii) the diluted value of the common equity into which the loan could be converted.

4.9 The valuations below follow this general approach for each of the valuation dates I have considered.

Valuation dates

4.10 My instructions are to value LOG's interest in IOG between December 2015 and the present day. These instructions cover a period approaching eight years in length, with almost 2,000 days on which a valuation might be relevant.

4.11 Mr Wright and I have agreed to present conclusions as to valuations at the following dates. We will of course be happy to consider other dates as well, if that would be of help.

(i) 22 December 2015, 5 February 2016, 20 February 2018 and 13 September 2018, being the dates on which LOG agreed additional facilities agreements with IOG;

(ii) 27 July 2018, the date of a Share Purchase Agreement between London Power & Technology Limited and the Second and Third Defendants;

(iii) 18 March 2019, the date from which LOG entered administration;

(iv) 1 April 2019, the date on which RockRose's initial offer of £ 52.5 million for LOG's interest in IOG lapsed;

(v) 24 April 2019, the date on which LOG agreed to restructure its investments in IOG and of the partial conversion of CLN 1 to equity;

(vi) 28 October 2019, the date on which the restructuring of LOG's investments in IOG was executed; and

(vii) 3 May 2022, around the date on which Hannam & Partners finalised the two bids for LOG's interest in IOG from Waldorf and Petrogas.

Warrant 1: £ 2.75 million, 4 December 2015

4.12 IOG's first drawdown against Warrant 1 occurred on 29 January 2016. IOG then drew down on the loan a further 30 times up to 2 May 2017. The cumulative amounts drawn down are shown in the table below.

Source: Mouseinthecourt.co.uk

Figure 4.1 **Drawdown schedule, Warrant 1, (£)**

Drawdown date	Principal	Cumulative
29-Jan-16	40,000	40,000
5-Feb-16	40,000	80,000
9-Feb-16	28,000	108,000
16-Feb-16	15,000	123,000
19-Feb-16	43,000	166,000
26-Feb-16	43,000	209,000
10-Mar-16	-9,000	200,000
21-Mar-16	50,000	250,000
22-Mar-16	50,000	300,000
15-Apr-16	100,000	400,000
27-Apr-16	65,000	465,000
13-May-16	100,000	565,000
27-May-16	35,000	600,000
17-Jun-16	181,000	781,000
27-Jun-16	85,000	866,000
4-Jul-16	56,000	922,000
22-Jul-16	85,000	1,007,000
5-Aug-16	183,475	1,190,475
25-Aug-16	189,305	1,379,780
30-Aug-16	85,000	1,464,780
13-Sep-16	17,550	1,482,330
21-Sep-16	22,020	1,504,350
21-Oct-16	85,000	1,589,350
17-Nov-16	200,000	1,789,350
6-Dec-16	125,000	1,914,350
22-Dec-16	100,000	2,014,350
30-Jan-17	100,000	2,114,350
15-Feb-17	100,000	2,214,350
16-Mar-17	250,000	2,464,350
13-Apr-17	250,000	2,714,350
2-May-17	35,650	2,750,000

Source: Annexe 1

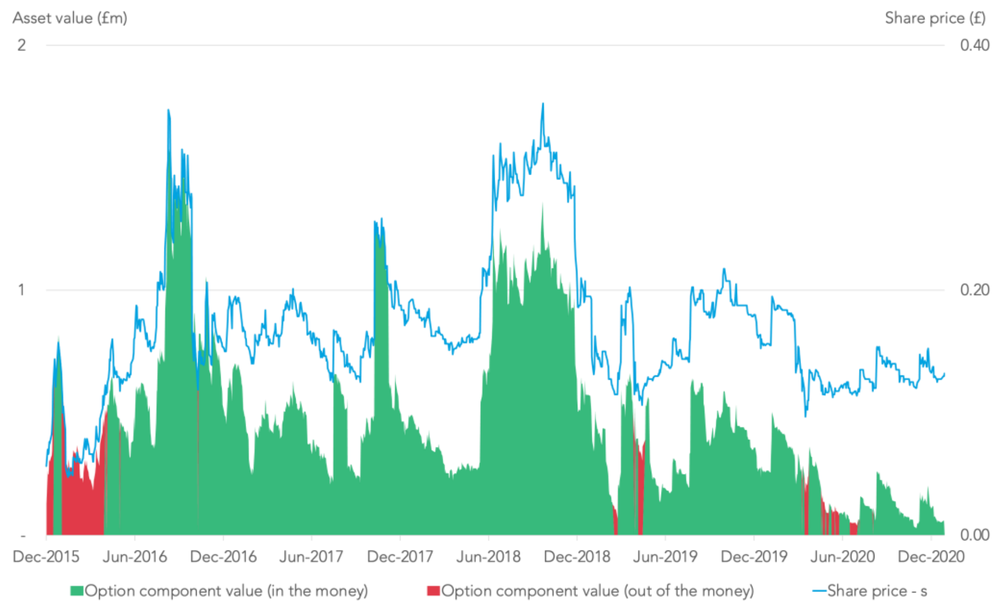
4.13 Interest began to accrue on each tranche of the debt from the date on which it was drawn down. In total, I understand that LOG earned interest of £ 0.9 million from Warrant 1 over the life of the loan prior to its repayment on 28 October 2019. At any given date on which I have assessed the value of the loan extended to IOG under Warrant 1, I have included the value of accrued interest alongside the value of principal drawn down at that date.

Source: Mouseinthecourt.co.uk

4.14 In relation to the value of the call warrants, I have followed the approach described in Section 3 above – that is: following the Black Scholes approach and therefore valuing the warrant as though it were a European option. [20] The warrant instrument, signed on 4 December 2015, offered LOG the right to acquire up to 5.8 million IOG shares at a price of £ 0.12 per share prior to 5 February 2019. I understand that the maturity of the warrants was subsequently extended to 31 December 2020[21] in the context of IOG's 2019 farm-out and balance sheet restructuring.

4.15 The results, alongside IOG's share price, are shown in the chart below.

Figure 4.2 **Warrant 1 call warrants (£ m) vs share price (£)**



Source: Annexe 1

4.16 I understand that the Administrators exercised 377,310 of the warrants on 4 December 2020 but that the remaining 5.4 million warrants expired unexercised in 2021. In late 2020, LOG held 29.99% of the outstanding equity in IOG. Had the additional 5.4 million warrants been exercised, it would have caused LOG's shareholding to exceed 30%, the level at which LOG might have been obliged to make an offer for IOG's entire equity under the UK Takeover Code. [22]

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[20] As noted in Section 3, the BSM framework can only be used to assess the value of a European option.

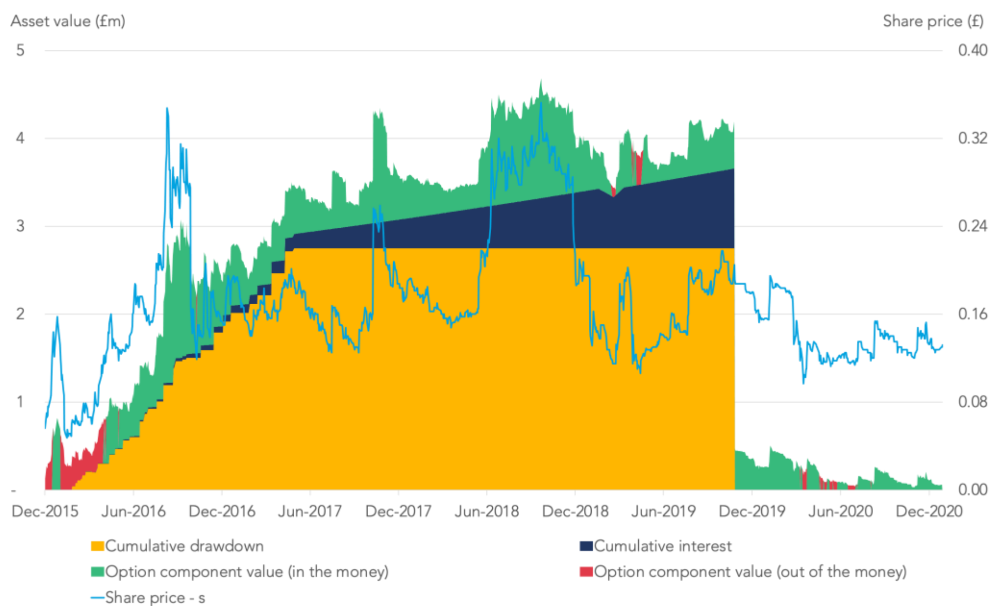
[21] MDR_POST_00000309, Debt Repayment and Discharge Agreement, clause 5

[22] CO-1-The Panel on Takeovers and Mergers, The Takeover Code, Rule 9, 22 May 2023 **(MDR00226948)**

Source: Mouseinthecourt.co.uk

4.17 The chart below shows the combined value of the instrument - including both the loan (with accrued interest) and the associated warrants. The yellow portion of the chart – the loan principal – may be seen to increase in value as IOG drew down on the facility. Once the facility was fully drawn, the value of the loan increases solely as a function of interest accrual, shown in dark blue. The red and green portions of the chart on top show the incremental value of the warrants discussed above. Red sections indicate where the warrants were out of the money; green portions indicate where the warrants were in the money. The maximum total theoretical value of Warrant 1 was some £ 4.7 million, in late September 2018.

Figure 4.3 **Warrant 1 total theoretical value, £ m**



Source: Annexe 1

4.18 On the specific dates agreed between Mr Wright and myself, the theoretical value of Warrant 1 was as set out in the table below.

Figure 4.4 **Warrant 1, theoretical valuation at selected dates, £ mi**

Date	Principal	Accrued interest	Call warrants	Total
22-Dec-15	-	-	0.7	0.7
5-Feb-16	0.1	-	0.4	0.4
20-Feb-18	2.8	0.4	0.4	3.5
27-Jul-18	2.8	0.5	1.1	4.4
13-Sep-18	2.8	0.6	1.1	4.4
18-Mar-19	2.8	0.7	0.6	4.1
1-Apr-19	2.8	0.7	0.4	3.8
24-Apr-19	2.8	0.7	0.5	4.0
28-Oct-19	-	-	0.5	0.5
3-May-22	-	-	-	-
1-Sep-23	-	-	-	-

Source: Annexe 1

Source: Mouseinthecourt.co.uk

Warrant 2: £800,000, 22 December 2015

4.19 IOG drew down the £ 0.8 million available to it under the Warrant 2 facilities agreement in a single tranche on 16 September 2016. Interest accrued from that date up to 28 October 2019, when the loan was repaid in full.

4.20 The warrant instrument offered LOG the right to acquire up to 7,500,000 IOG shares at a price of £ 0.08 per share prior to 31 December 2016[23]. I understand that the maturity date of the warrants was extended to 31 December 2020 in the context of IOG's 2019 farm-out and balance sheet restructuring.[24]

4.21 I have valued the instrument as before, with results as shown in the chart below. The value of the warrants associated with Warrant 2 was subject to similar influences to those applicable to the warrants associated with Warrant 1, but they were more valuable (on account of their higher number and lower strike price). I understand that the Administrators exercised all 7.5 million warrants on 4 December 2020.[25]

Figure 4.5 **Warrant 2 call warrants (£ m) vs share price (£)**

Source: Annexe 1

4.22 The combined value is shown in the chart below, using the same format as before, where red indicates that the warrants were out of the money and green indicates that they were in the money. Prior to the repayment of the loan on 28 October 2019, the maximum theoretical value of Warrant 2 was some £ 3.0 million – again, in late September 2018.

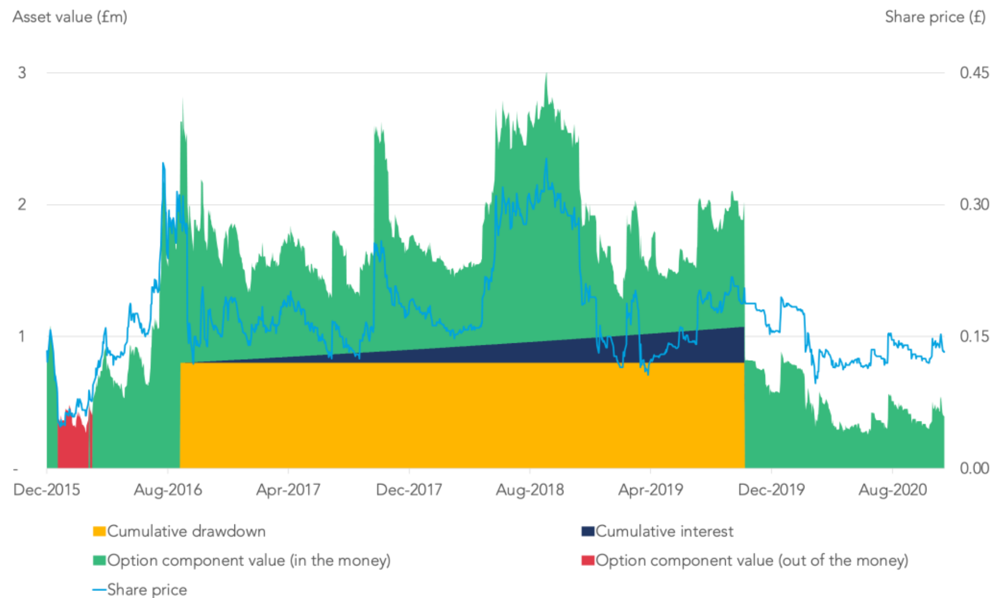
23 MDR00128457- 2015.12.22 - Warrant Instrument

24 MDR_POST_00000309, Debt Repayment and Discharge Agreement, clause 5

25 CO-11 - IOG, Notice of exercise of warrants, 4 December 2020 **(MDR00227054)**

Source: Mouseinthecourt.co.uk

Figure 4.6 **Warrant 2 total theoretical value, £ m**



Source: Annexe 1

4.23 On the specific dates agreed between Mr Wright and myself, the theoretical value of Warrant 2 was as set out in the table below.

Figure 4.7 **Warrant 2, valuation at specific dates, £ m**

Date	Principal	Accrued interest	Call warrants	Total
22-Dec-15	-	-	0.9	0.9
5-Feb-16	-	-	0.5	0.5
20-Feb-18	0.8	0.1	0.7	1.6
27-Jul-18	0.8	0.2	1.7	2.7
13-Sep-18	0.8	0.2	1.8	2.7
18-Mar-19	0.8	0.2	0.9	2.0
1-Apr-19	0.8	0.2	0.6	1.6
24-Apr -19	0.8	0.2	0.7	1.8
28-Oct-19	-	-	0.9	0.9
3-May-22	-	-	-	-
1-Sep-23	-	-	-	-

Source: Annexe 1

CLN 1: £10 million, 5 February 2016

4.24 IOG's first drawdown against CLN 1 occurred on 17 June 2016. IOG then drew down on the loan a further 26 times up to 13 April 2018, when the full £ 10.0 million available under the facility was fully drawn. The drawdown schedule is set out within Annexe 1, and not reproduced here in the interests of brevity.

4.25 I understand that CLN 1 was converted to common equity in IOG in two tranches, as set out in the table below.

Source: Mouseinthecourt.co.uk

Figure 4.8 **CLN 1 conversion dates and amounts, £ m**

Date	Loan Value	Accrued Interest	Total	No of Shares
24-Apr-2019	1.6	N/A	1.6	20,497,204
28-Oct-2019	8.4	2.6	10.9	135,464,155
Total	10.0	2.6	12.6	155,961,359

Source: Annexe 1

4.26 I noted above that the value of the convertible loan notes on any given date was the greater of:

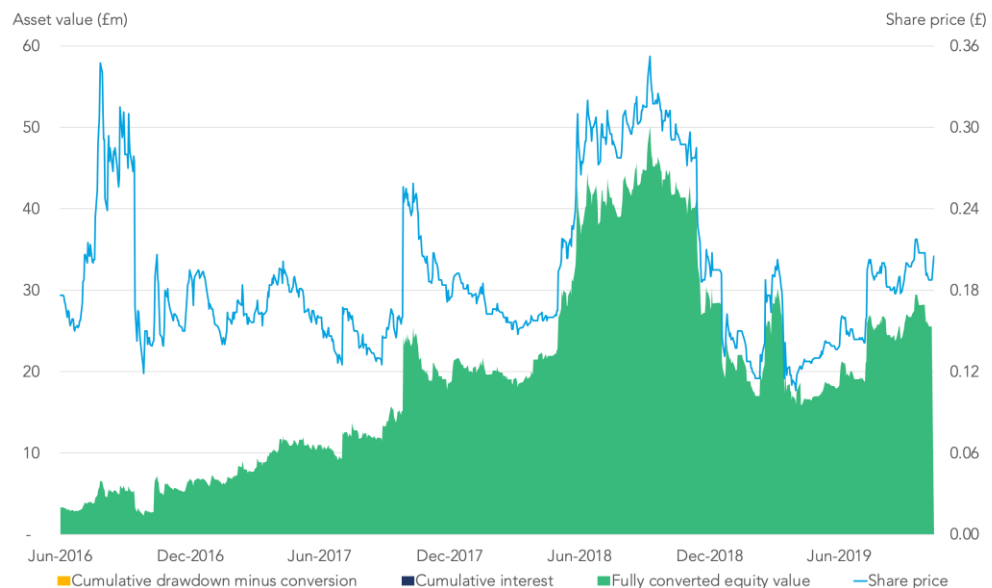
(i) the principal amount of the loan drawn by IOG, plus accrued interest plus the value of the conversion option; or

(ii) the diluted value of the common equity into which the loan could be converted.

4.27 For much of the period, it was the latter quantity that was the greater – the conversion rights were more valuable than the underlying loan. Conversion might, notwithstanding, be delayed (as it was) if the right to an ongoing coupon were seen as more valuable than the increased liquidity that would come with conversion into equity. As before, I have used the Black Scholes model to calculate the value of the conversion rights.

4.28 The chart below shows the total value of CLN 1 including both the loan value and the conversion rights and the associated warrants. The short periods where the loan is the more valuable are shown in yellow (principal) and dark blue (accrued interest), while the periods when the converted equity would be more valuable are shown in green. The maximum value of the CLN was some £ 50.1 million – again, in late September 2018.

Figure 4.9 **CLN 1 total theoretical value, £ m**



Source: Annexe 1

Source: Mouseinthecourt.co.uk

4.29 On the specific dates agreed between Mr Wright and myself, the theoretical value of CLN 1 was as set out in the table below. As may be seen, given that the conversion option was generally in the money, the value of CLN 1 is generally equal to its fully converted equity value.

Figure 4.10 **CLN 1, theoretical valuation at selected dates, £ m**

Date	Principal	Accrued interest	Loan balance	Equity value	Valuation
22-Dec-15	-	-	-	-	-
5-Feb-16	-	-	-	-	-
20-Feb-18	8.9	0.8	9.7	20.0	20.0
27-Jul-18	10.0	1.2	11.2	42.7	42.7
13-Sep-18	10.0	1.3	11.3	44.3	44.3
18-Mar-19	10.0	1.9	11.9	28.3	28.3
1-Apr-19	10.0	2.0	12.0	17.2	17.2
24-Apr-19	8.4	2.0	10.4	15.9	15.9
28-Oct-19	-	-	-	-	-
3-May-22	-	-		-	-
1-Sep-23	-	-		-	-

Source: Annexe 1

CLN 2: £10 million, 20 February 2018

4.30 CLN 2 permitted IOG to borrow up to £ 10.0 million at an interest rate of 6-month LIBOR plus a coupon of 9%. The initial maturity date of CLN 2 was 36 months from the date of each drawdown, extendable up to 48 months at LOG's option up to 25 February 2022. I understand that the maturity of CLN 2 was extended to 23 September 2024.[26] The loan, including accrued interest, was convertible into IOG shares at a price of £ 0.19 per share prior to the maturity date.

4.31 CLN 2 was first drawn upon on 2 March 2018; but then drawn down in multiple tranches, often on a weekly basis, until the facility was exhausted at the beginning of June 2018. As before, I have omitted the drawdown schedule from the body of this report in the interests of brevity, although it is set out in Annexe 1.

4.32 On 28 October 2019, CLN 2 was converted to a zero-coupon loan at its face value of some £ 11.6 million; convertible at a price of £ 0.19 per share with an extended maturity date of 23 September 2024. It was the only facility remaining in place following the conclusion of the farm-out arrangements agreed between IOG and CER.

4.33 The extended maturity and the switch to a zero-coupon basis was, for obvious reasons, beneficial to IOG and CER. Upon the restructuring of CLN 2, IOG recorded a gain of £ 5.0 million on account of the removal of the LIBOR plus 9% coupon and the extension of the maturity date to 23 September 2024.[27]

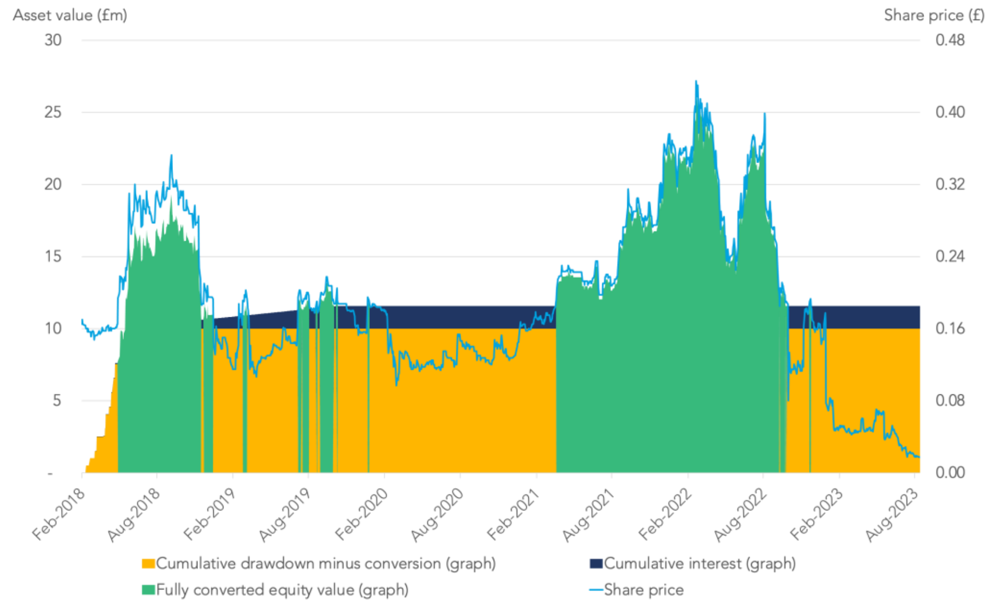
4.34 I have, as before, calculated the option value associated with the conversion rights embedded in CLN 2. As before, the value of the CLN is a function of its value as a loan instrument, or as converted into equity. In the chart below, as before, the periods where the loan is the more valuable are shown in yellow and dark blue, while the periods when the converted equity would be more valuable are shown in green.

[26] CO-12- IOG 2019 Annual Report, Note 17 on page 78. **(MDR00226939)**

[27] CO-12- IOG 2019 Annual Report, Note 7 on page 66 and Note 12 on page 71. **(MDR00226939)**

Source: Mouseinthecourt.co.uk

Figure 4.11 **CLN 2 total theoretical value, £ m**



Source: Annexe 1

4.35 On the specific dates agreed between Mr Wright and myself, the theoretical value of CLN 2 was as set out in the table below.

Figure 4.12 **CLN 2, theoretical valuation at selected dates , £ m**

Date	Principal	Accrued interest	Loan balance	Equity value	Valuation
22-Dec-15	-	-	-	-	-
5-Feb-16	-	-	-	-	-
20-Feb-18	-	-	-	-	-
27-Jul-18	10.0	0.2	10.2	16.4	16.4
13-Sep-18	10.0	0.4	10.4	17.1	17.1
18-Mar-19	10.0	0.9	10.9	10.9	10.9
1-Apr-19	10.0	0.9	10.9	6.6	10.9
24-Apr -19	10.0	1.0	11.0	7.1	11.0
28-Oct-19	10.0	1.6	11.6	12.5	12.5
3-May-22	10.0	1.6	11.6	19.9	19.9
1-Sep-23	10.0	1.6	11.6	1.0	11.6

Source: Annexe 1

Warrant 3: £15 million, 13 September 2018

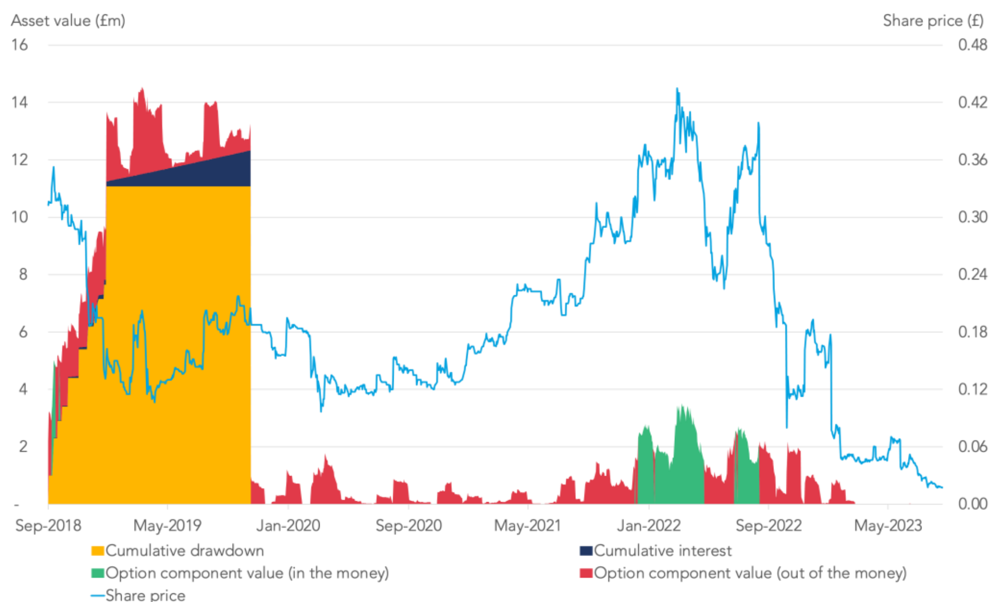
4.36 Warrant 3 was the last of the facilities made available, by LOG, to IOG prior to the farm out agreement with CER. IOG's first drawdown against Warrant 3 occurred on 14 September 2018, with subsequent drawdowns taking place over the next several months until January 2019. Under the facilities agreement dated 13 September 2018, IOG was entitled to draw up to £ 15.0 million against the facility.

Source: Mouseinthecourt.co.uk

4.37 My understanding is that the rights under the warrant instrument attached to Warrant 3 - to acquire up to 20,000,000 IOG shares at a price of £ 0.3218 per share - lapsed on 31 August 2023; and that those rights have not been exercised. The rights have been out of the money since September 2022, and in those circumstances their exercise would have offered no benefit to LOG.

4.38 As before, I have calculated the value associated with the warrant instrument using the Black Scholes method. My understanding is that the warrants granted in connection with the loan facility survived the repayment of the loan itself. The chart below, which follows the same format as those set out above in relation the loan facilities associated with grants of warrants, has – as a result - an unusual shape.

Figure 4.13 **Warrant 3 total theoretical value, £ m**



Source: Annexe 1

4.39 On the specific dates agreed between Mr Wright and myself, the theoretical value of Warrant 3 was as set out in the table below.

Figure 4.14 **Warrant 3, theoretical valuation at selected dates, £ m**

Date	Principal	Accrued interest	Call warrants	Total
22-Dec-15	-	-	-	-
5-Feb-16	-	-	-	-
20-Feb-18	-	-	-	-
27-Jul-18	-	-	-	-
13-Sep-18	-	-	2.2	2.2
18-Mar-19	11.1	0.4	2.9	14.4
1-Apr-19	11.1	0.5	2.1	13.6
24-Apr-19	11.1	0.5	2.2	13.8
28-Oct-19	-	-	0.9	0.9
3-May-22	-	-	1.6	1.6
1-Sep-23	-	-	-	-

Source: Annexe 1

Source: Mouseinthecourt.co.uk

Total theoretical value of LOG investments in IOG

4.40 The table below shows the total theoretical value of LOG's investments in IOG pursuant to the Facilities Agreements. As may be seen, the maximum value of LOG's investments at the dates I have considered, and prior to the repayment of any loans or the conversion of loans to shares, was around £ 70.7 million in September 2018.

Figure 4.15 **Summary of theoretical valuations of Facilities Agreements, £ m**

Date	Warrant 1	Warrant 2	Warrant 3	CLN 1	CLN 2	Total value
22-Dec-2015	0.7	0.9	-	-	-	1.5
05-Feb-2016	0.4	0.5	-	-	-	0.9
20-Feb-2018	3.5	1.6	-	20.0	-	25.1
27-Jul-2018	4.4	2.7	-	42.7	16.4	66.2
13-Sep-2018	4.4	2.7	2.2	44.3	17.1	70.7
18-Mar-2019	4.1	2.0	14.4	28.3	10.9	59.5
01-Apr-2019	3.8	1.6	13.6	17.2	10.9	47.2
24-Apr--2019	4.0	1.8	13.8	15.9	11.0	46.5
28-Oct-2019	0.5	0.9	0.9	-	12.5	14.9
03-May-2022	-	-	1.6	-	19.9	21.5
01-Sep-2023	-	-	-	-	11.6	11.6

Source: Annexe 1

4.41 As CLN 1 was converted in 2019 and Warrants 1, 2 and 3 were repaid in October 2019, LOG's portfolio came to include shares and cash as well as loans and options. Subsequently, the Administrators also exercised warrants and, from time to time, sold some of their share portfolio. The table below shows how the value of the portfolio as a whole evolved from April 2019 in response to the transactions undertaken during the period of LOG's administration. It also shows cash as a separate item.

Figure 4.16 **Theoretical valuations of LOG portfolio, £ m**

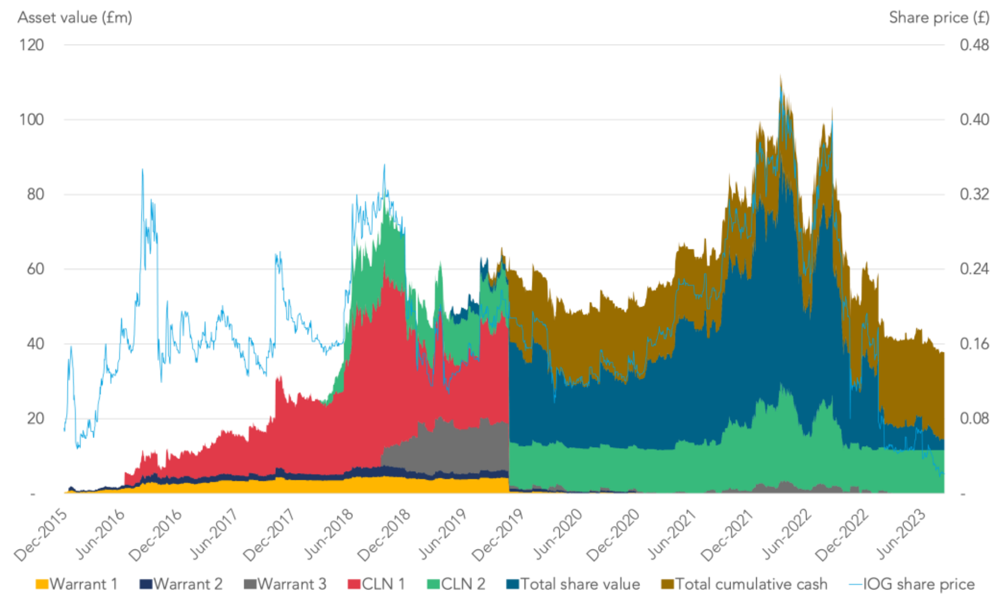
Date	Facilities	Shares	Total ex. Cash	Cash	Total value
22-Dec-2015	1.5	-	1.5	-	1.5
05-Feb-2016	0.9	-	0.9	-	0.9
20-Feb-2018	25.1	-	25.1	-	25.1
27-Jul-2018	66.2	-	66.2	-	66.2
13-Sep-2018	70.7	-	70.7	-	70.7
18-Mar-2019	59.5	-	59.5	-	59.5
01-Apr-2019	47.2	-	47.2	-	47.2
24-Apr-2019	46.5	2.5	49.0	-	49.0
28-Oct-2019	14.9	29.3	44.2	19.3	63.5
03-May-2022	21.5	46.2	67.7	21.0	88.8
01-Sep-2023	11.6	2.3	13.9	23.3	37.2

Source: Annexe 1

4.42 At the dates that I have considered, I assess the maximum value of the portfolio to have been in the region of £ 70.7 million. Later, in May 2022, and including cash of £ 21.0 million, the value was higher, at £ 88.8 million. The chart below shows the total portfolio value through time. Note that the peak value was reached in March 2022 (when IOG's share price was £ 0.44).

Source: Mouseinthecourt.co.uk

Figure 4.17 **Total portfolio value, (including cash realisations£ m**



Source: Annexe 1

4.43 I have described the valuations shown above as theoretical, in that they are calculated on the assumption that the portfolio could be quickly converted to cash without any significant loss of value.

4.44 In practice, I consider that there were considerable obstacles to be overcome in the event that LOG sought to realise the value of its investments in IOG. In Section 5, I describe those barriers in more detail and consider their implications for the potential value that LOG's management, or the Administrators, might have been able to realise for the portfolio at the valuation dates I have considered.

Source: Mouseinthecourt.co.uk

5. Market value of LOG's interest in IOG at selected dates

Introduction

5.1 The purpose of this section is to consider how market-related factors would have influenced the value of LOG's investments in IOG at the dates on which I have valued those investments. In principle, the value realised for LOG's investments in IOG might differ from their theoretical, or face value because:

(i) there was no active, let alone liquid market in privately-made loans to IOG or similar junior oil and gas companies. Further, it is apparent that IOG's €100 million Norwegian Bond has traded below par value for much of the period since it was issued in September 2019;

(ii) LOG's shareholding in IOG was, and is, large in relation to both the daily trading volumes of IOG shares (at least prior to 2023) and also IOG's total equity. While there are a number of potential strategies for disposing of such a stake, they all imply the acceptance of a discount to the trading value of small parcels of shares on the AIM market; and

(iii) there was no active market in derivative securities based on IOG's shares. Accordingly, the discounts and transaction costs implicit in disposing of those securities were likely to represent a significant proportion of their value; and

(iv) as at today, there must be significant doubts as to IOG's ability to repay the EUR 100 million Norwegian bond. Those doubt must be even greater in respect of CLN 2, which is subordinated to IOG's Norwegian bond in the priority of repayments due from IOG to its lenders.

5.2 Below, I first discuss each of these factors in more detail. I then consider, in the round, the potential range of discounts that LOG might have had to accept at any given date on its various investments in the event that it sought to realise their value.

5.3 Towards the end of the section, I consider the implications of other evidence relating to the value of LOG's investments in IOG, principally the various offers received for them.

Source: Mouseinthecourt.co.uk

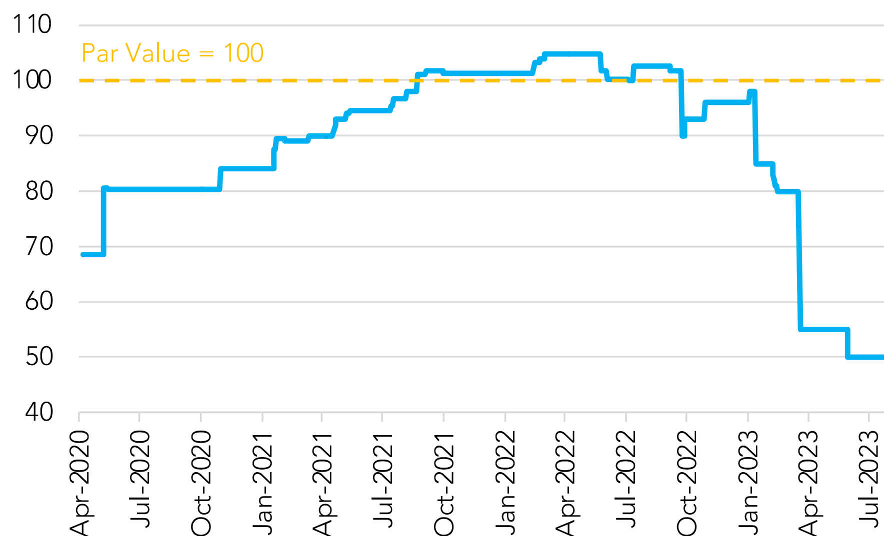
Effects of liquidity / marketability on the value of LOG's investments in IOG

LOG's loan(s) to IOG

5.4 There was no active public market in privately-made loans to IOG.[28] That said, I consider that for most of the period from February 2016, when the first loan was drawn down, up to April 2019 when the farm-out agreement ensured their repayment, LOG's loans to IOG could likely have been sold at quite close to their face value. Such a sale, however, would likely have taken some time to complete and would have entailed higher than usual transaction costs of perhaps 5% of the face value of the loan being sold.

5.5 Since December 2019[29], IOG's 2019 €100 million Norwegian Bond has traded on the Oslo Børs and its price is publicly available, as shown in the chart below. As may be seen, from the second quarter of 2020 to the third quarter of 2021, the bond traded at below its par value. Once the prospects of IOG producing gas in the near term increased, from early 2021 onwards,[30] the Norwegian Bond's price also increased such that it traded close to, and for a period in excess of, its par value.

Figure 5.1 **Trading value of IOG Norwegian bond, compared to par value**



Source: Annexe 1

5.6 Since the third quarter of 2022, however, the price of the bond has fallen by about half, reflecting IOG's difficulties in extracting commercial quantities of gas from its North Sea licences and, therefore, an elevated risk that the bond will not be repaid in full at maturity.[31] As at the end of August 2023, the bond was trading at about half of its par value.

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28 CO-13 - IOG plc (AIM_IOG), Fixed Income, Securities Summary, all history **(MDR00227047)**

29 CO-12 - IOG 2019 Annual Report, page 18 **(MDR00226939)**

30 CO-14 - FinnCap, IOG Entering the final straight, 26 Aug 2021 **(MDR00226943)**

31 CO-15 - FinnCapLtd, IOG-FY2021 results overshadowed by reserves update, 18 March 2022 **(MDR_POST_00002238)**

Source: Mouseinthecourt.co.uk

5.7 I understand from online sources[32] that IOG postponed the initial repayment initially set for 20 June 2023 to 31 July 2023. Subsequently, the initial repayment was further deferred to September 2023. I understand that IOG alleges that it requires additional time to repay the bond on account of its production difficulties and the resulting balance sheet stress and threat to its financial stability.

5.8 In August 2023, IOG announced its intention to offer bondholders the option to waive the bond, with the repayment price for the bond being raised to 105% of their par value. I further understand that the call option and early redemption prices have also been increased by 5 percentage points.

5.9 In my opinion, the value of CLN 2, the only remaining loan from LOG to IOG, would be lower in relation to its par value – all else equal – than IOG's Norwegian loan. I hold that view because, as I understand it, CLN 2 is subordinated to the Norwegian loan in its payment priority. Accordingly, I consider that the discounts to par value shown above represent a floor and not a ceiling to the discounts that LOG would have had to accept had it sought to sell its loan interest in IOG to a third party in the period since the Norwegian bond was issued and CLN 2 was restructured.

LOG's shares in IOG

5.10 A liquid asset is one which can be bought or sold quickly without affecting the market price for the asset. The shares of large companies on major exchanges such as those in New York, London or Hong Kong are generally considered to be liquid assets. Similarly, bonds issued by the governments of major economies such as the US, Germany or the UK are generally considered liquid provided that the bonds are of a market-relevant duration. [33]

5.11 At the other extreme, there are many assets for which there is no active market at all at a given date. For example, shipping charterparties may not have an active market at a given time for a cargo of a certain size and nature between destinations that are not major ports. To give another example, it would be difficult to sell a house on the same day that a decision was made to sell it.

5.12 The fact that a market does not exist at a given date, however, does not mean that assets are unsaleable. In some cases, the asset must be offered to potential purchasers for a time, such that a potential acquirer becomes aware of it. In some cases, a market must be made for an asset. For example, real estate assets are almost never bought and sold instantly but are instead marketed over a period of time, supported by publicity, without which no market would likely exist.

5.13 In between the two extremes outlined above, assets have varying degrees of liquidity. Generally, however, less liquid assets (such as a large block of shares) are more difficult to dispose of quickly and any holder of illiquid assets is likely to need to accept a discount to the market price to do so.

5.14 For publicly traded shares issued by relatively small companies, such as IOG, while a market likely exists for a limited number of shares on any given day, disposal of a larger number of shares is likely to take time or to imply the acceptance of a substantial discount. That will be especially true for a shareholding, like LOG's interest in IOG, that is a multiple of the daily trading volume of the shares on the market.

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[32] CO-16 - Morningstar, IOG proposes EUR100 million bond waiver, 2 August 2023 **(MDR00226953)**

[33] CO-17 - Liquidity in Core Government Bond Markets - Financial Stability Board **(MDR00227051)**

Source: Mouseinthecourt.co.uk

5.15 There are generally three ways of disposing of a substantial holding in a small company, such as the one held by LOG in IOG, namely:

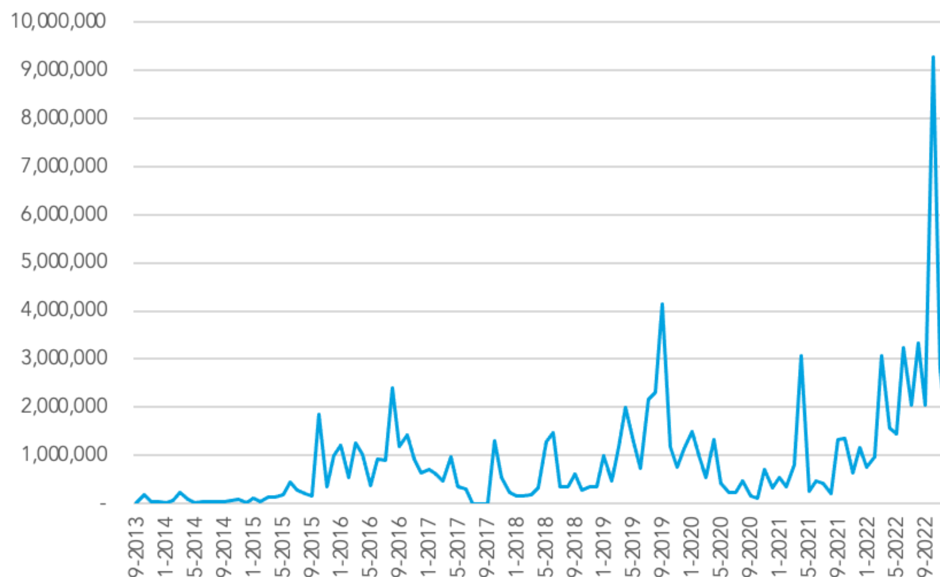
(i) releasing the shares out into the market over time. While such a strategy is likely to eventually result in the disposal of the assets, it may take a considerable period of time before the shares can all be sold. The seller therefore bears the risk that the prices eventually realised for the holding are both unknown and may be lower than at the inception of the process. Other market participants are also likely to become aware of the seller's intention and may use that knowledge to bid down the seller's shares below the market price at any given time;

(ii) sale of the shares in a block through one or more investment banks, known as a 'block trade'. While investment banks may be willing to purchase a large block of shares, even one in a smaller company, they will only do so at a discount to the prevailing market price because the risks associated with the subsequent resale of the shares are transferred to the bank;[34] or

(iii) sale of the shares to a strategic acquirer. If an acquirer for the entire firm, or for a sizeable stake in the firm, can be found, this may allow the seller to negotiate favourably for the disposal of the block. The presence of a strategic acquirer, however, cannot be taken for granted.

5.16 The chart below shows the monthly average trading volume of IOG shares on the AIM market.

Figure 5.2 **Monthly average daily trading volumes, December 2015 to December 2022, IOG shares**



Source: Annexe 1

[34] CO-10 - Financial Times, Morgan Stanley discloses twin probes into big stock transactions **(MDR00227052)**

Source: Mouseinthecourt.co.uk

5.17 In the present case, I understand that:

(i) as may be seen from the chart, until the final quarter of 2022, the average daily volume of IOG shares sold in the market was generally less than 3 million. For most of the period from 2014 to 2022, the average volume was less than 1.5 million shares. I understand that it is generally difficult for a single seller to dispose of more than, perhaps, 20% of the total daily volume of shares trading in the market without the price moving adversely against the seller. That understanding reflects the basic principles of supply and demand: all else equal, for the actual level of demand for IOG shares on a given day, an increase in the supply of shares for sale would tend to depress the price. LOG's actual and/or potential holdings of shares in IOG, from around 20 million to in excess of 100 million shares, would have taken a considerable period (perhaps of the order of a year) to sell in the market at prices close to the prevailing market price on any given day up to at least the second half of 2022;

(ii) in 2023, the volume has increased markedly, such that the average daily volume in the first quarter was 17.3 million, in the second quarter 10.0 million and in the third quarter 15.6 million shares. Even during 2023, however, it would have taken (on the same basis as described above) perhaps two months to sell down LOG's holding of shares. I also note that the average volumes cited above are strongly influenced by shorter periods in which larger volumes of shares were traded. If other sellers in the market were also seeking to dispose of large volumes of shares, it might affect LOG's ability simultaneously to dispose of its own shares;

(iii) I do not know whether an investment bank would have agreed to accept IOG shares in a block trade (although I think it unlikely). Even if they would have done so, I consider it unlikely that they would have agreed to accept all of LOG's shares, suggesting several block trades would have been required over the period since 2019 when LOG converted CLN 1 into 155 million IOG shares. Even if such block trades had been possible, I consider it likely that a bank seeking to protect its own interests would have negotiated a discount in excess of perhaps 15% of the prevailing share price at the time of the block trade; and

(iv) apart from RockRose in March 2019, no strategic acquirer for IOG has emerged during the period of LOG's investment in IOG.

5.18 In my opinion, therefore, to the extent that a market exists in IOG shares, it is illiquid in relation to the size of LOG's holding, implying that LOG's holding could not be sold either in its entirety or even in significant volumes (in relation to the whole) at the prevailing market price. I am unable to specify with any precision the discount that LOG would have needed to accept to dispose of its holding of IOG shares, but I consider it would likely have lain in a region of between 20% and 30% at any given date. That opinion rests on a qualification, namely that LOG could have sold its holdings down in a structured and measured way over time.

Source: Mouseinthecourt.co.uk

5.19 This year, there have been two occasions when more than 100 million IOG shares were sold in the market. The first occurred on 6 February 2023, when 105.1 million shares were sold and on 7 February 2023, when 137.6 million shares were sold. On 6 February 2023, the share price declined from £ 0.08 per share to £ 0.05 per share, a decline of almost 40%. For the remainder of the month, elevated volumes of shares continued to trade but the price did not recover.[35]

5.20 In the second sale event, on 7 June 2023, 116.8 million shares were sold into the market, causing the price to decline from £ 0.07 to £ 0.04. Once again, it can be inferred that a sale of this size caused a decline of around 40% in the share price.

5.21 Had LOG sought to dispose of its IOG shares quickly, I consider that it would have experienced a discount of closer to 40% rather than the 20% to 30% that I concluded above.

LOG's call warrants

5.22 It is usually the case that publicly traded options – such as call or put options – are only available on the most liquid underlying financial instruments. For example, shares in large publicly traded companies, commodity contracts and (liquid) government bond issues often have active markets in derivative securities based on them. For a relatively illiquid share such as IOG, however, my understanding is that no such market exists.

5.23 At times when the call warrants were 'in the money', LOG would first have had to exercise the warrants and receive the associated shares before it could trade in them. Accordingly, from October 2019, I consider that the same discount would have applied to them as to IOG's other call warrants. Prior to that date, when LOG held around 33.3 million warrants (ignoring CLN 1 and CLN 2), I consider that a counterparty would only have been willing to purchase those shares for a discount of between 20% and 30%, the same discount that I have applied to LOG's IOG shares above.

5.24 Prior to October 2019, the average daily trading volume of IOG's shares was below 1 million shares per day.[36] Accordingly, if (say) 200,000 shares could have been sold each day, it would have taken more than 6 months to sell down LOG's shares and, therefore, a similar discount would have applied.

5.25 At times when LOG's call warrants were 'out of the money', it seems unlikely to me that any financial institution – such as an investment bank – would have been willing to purchase those warrants. Given that the options could not be exercised, a bank would have been unable (on account of the illiquidity of IOG's shares) to offset the risks associated with holding the call warrants by trading in other instruments. In effect, a bank would have needed to speculate and, in my opinion, would have been unwilling to do so.

5.26 Nonetheless, it seems probable that a purchaser for the call warrants could have been found given sufficient time and marketing effort by LOG's advisers. In my opinion, however, a counterparty willing to take a leveraged bet on illiquid 'out of the money' call warrants would have sought to negotiate a relatively large discount to their theoretical value. It seems probable that any such discount would have been larger than the discount applicable to 'in the money' call warrants. I have therefore used a discount of between 30% and 40% to their theoretical value.

[35] See Annexe 1, Tab: IOG share data daily

[36] See Annexe 1, Tab: IOG share data daily

Source: Mouseinthecourt.co.uk

5.27 The discussion above ignores for the moment the point that, at various times (prior to February 2022) the process of realising value from the instruments held by LOG would have risked triggering a mandatory takeover offer (because the realisation process would have resulted in LOG owning more than 30% of IOG). Any potential buyer of LOG's interests during this period would have needed to have been a strategic purchaser – interested in acquiring IOG in its entirety. My view is that the limited number of such purchasers would have led to discounts closer to the maximum than the minimum.

5.28 The assumptions that I have used are that:

(i) when they were 'out of the money', LOG's call warrants could have been sold for their theoretical value less a discount of between 30% and 40%; and

(ii) when they were 'in the money', the warrants likely had a value that was between 20% and 30% below the prevailing market price.

Adjusted value of LOG's investments in IOG

5.29 In the table below, I have restated my conclusions from Section 4 such that:

(i) prior to May 2020, I have assumed that LOG's loans to IOG could have been sold at their par value less a discount of 5% in transaction costs;

(ii) From May 2020, I have applied the prevailing discount on the Norwegian bond to the value of LOG's loan to IOG and an additional discount of 5% to reflect transaction costs;[37]

(iii) at all times, I have applied a discount of 20% to 30% to the value of LOG's shareholding in IOG; and

(iv) when the call warrants are 'out of the money', I have applied a discount of 30% to 40% to their theoretical value according to the BSM framework set out in Section 4; and

(v) when the call warrants are 'in the money', I have applied a discount of between 20% and 30% to their theoretical value.

[37] I have not been able to secure data on the pricing of the Norwegian bond on dates prior to 4 May 2020.

Source: Mouseinthecourt.co.uk

Figure 5.3 **Adjusted valuations of LOG portfolio, Low Values £ m**

Date	Facilities	Shares	Total ex. cash	Cash	Total value
22-Dec-2015	1.1	-	1.1	-	1.1
05-Feb-2016	0.6	-	0.6	-	0.6
20-Feb-2018	13.8	-	13.8	-	13.8
27-Jul-2018	26.4	-	26.4	-	26.4
13-Sep-2018	28.0	-	28.0	-	28.0
18-Mar-2019	36.9	-	36.9	-	36.9
01-Apr-2019	33.1	-	33.1	-	33.1
24-Apr-2019	32.4	1.8	34.1	-	34.1
28-Oct-2019	10.3	20.5	30.8	19.3	50.2
03-May-2022	14.2	32.4	46.5	21.0	67.6
01-Sep-2023	0.7	1.6	2.3	23.3	25.6

Source: Annexe 1

Figure 5.4 **Adjusted valuations of LOG portfolio, High Values £m**

Date	Facilities	Shares	Total ex. cash	Cash	Total value
22-Dec-2015	1.2	-	1.2	-	1.2
05-Feb-2016	0.7	-	0.7	-	0.7
20-Feb-2018	20.7	-	20.7	-	20.7
27-Jul-2018	53.6	-	53.6	-	53.6
13-Sep-2018	57.0	-	57.0	-	57.0
18-Mar-2019	51.4	-	51.4	-	51.4
01-Apr-2019	41.5	-	41.5	-	41.5
24-Apr-2019	41.0	2.0	43.0	-	43.0
28-Oct-2019	12.8	23.5	36.3	19.3	55.6
03-May-2022	17.2	37.0	54.2	21.0	75.2
01-Sep-2023	6.2	1.8	8.1	23.3	31.4

Source: Annexe 1[38]

[38] The ranges for the facilities are calculated as follows. The Warrants have an upper and lower bound that come from the range of the warrant component valuation. The upper and lower bounds of Convertible Loan Note valuations come from taking respectively the maximum and minimum of: the outstanding loan balance; and the upper and lower bounds of the share conversion valuation.

Source: Mouseinthecourt.co.uk

Figure 5.5 **Adjusted valuations of LOG portfolio ex. Cash vs Theoretical Value, £m**

Date	Theoretical Value	Low Value	Discount	High Value	Discount
22-Dec-15	1.5	1.1	30%	1.2	20%
05-Feb-16	0.9	0.6	37%	0.7	28%
20-Feb-18	25.1	13.8	45%	20.7	18%
27-Jul-18	66.2	26.4	60%	53.6	19%
13-Sep-18	70.7	28.0	60%	57.0	19%
18-Mar-19	59.5	36.9	38%	51.4	14%
01-Apr-19	47.2	33.1	30%	41.5	12%
24-Apr-19	49.0	34.1	30%	43.0	12%
28-Oct-19	44.2	30.8	30%	36.3	18%
03-May-22	67.7	46.5	31%	54.2	20%
01-Sep-23	13.9	2.3	83%	8.1	42%

Source: Annexe 1[39]

5.30 As may be seen, the range of discounts represented by my assessed market value is between 30% and 83% at the low end and between 12% and 42% at the high end. The extent of the discount was lowest in 2019. More recently, the discount has increased as the probability that IOG will not repay CLN 2 in full has fallen at the same time as the conversion value of CLN 2 has similarly fallen.

5.31 The range of discounts that I have applied is necessarily a matter of judgement. The range of discounts shown, however, is likely in my view to encompass the range of views that a market participant might hold in assessing the value of the individual elements of LOG's investments in IOG and, therefore, their value as a whole.

Other indications of value

2019 RockRose offer

5.32 I have also considered the implications of the March 2019 RockRose offer for the potential value of LOG's investments in IOG.

5.33 On 1 March 2019, RockRose wrote to the Board of IOG proposing a takeover offer and requesting the Board's support for the offer. RockRose's offer of £ 0.20 per IOG share valued the company at £ 26.6 million. At that date, the company had 126,868,156 shares in issue, which would have had a value of £ 25.4 million at £ 0.20 per share. The remaining £ 1.2 million was for the options and warrants outstanding at the time.[40]

39 The ranges for the facilities are calculated as follows. The Warrants have an upper and lower bound that come from the range of the warrant component valuation. The upper and lower bounds of Convertible Loan Note valuations come from taking respectively the maximum and minimum of: the outstanding loan balance; and the upper and lower bounds of the share conversion valuation.

40 Annexe 1, tab: Portfolio value

Source: Mouseinthecourt.co.uk

5.34 On 12 March 2019, RockRose wrote to the Administrators of LOG and offered to purchase all of LOG's outstanding loans to IOG for £ 29.4 million. At that date, IOG had drawn down £ 34.6 million of the potential maximum £ 38.5 million of loans provided under the Facilities Agreements. In effect, RockRose was offering a 15% discount to the face value of the loans, £ nil for the accrued interest on the loans and £ nil for all of the warrants attached to the LOG loans to IOG. [41]

5.35 On 21 March 2019, RockRose wrote again to the Administrators with an improved offer of £ 40.0 million. The letter states that this was full repayment of the £ 34.6 million drawings on the Facilities Agreements plus an amount of £ 5.4 million for accrued interest and the convertible instruments. [42]

5.36 On 27 March 2019, RockRose sent a final letter to the Administrators offering £ 52.5 million for LOG's investments in IOG. The terms of this offer were characterised as being divided between £ 38.7 million for the loans and accrued interest and a sum of £ 13.8 million for the convertible instruments.[43]

5.37 As at 18 March 2019, I assess the value of LOG's investments to have been £ 59.5 million on a theoretical basis and between £36.9 million and £51.4 million on an adjusted basis.[44] RockRose's final offer is therefore just beyond the top of the range that I have identified; while their initial offer is below the bottom of that range. My valuations as at 1 April 2019 are lower, reflecting the fall in the share price on that day.

5.38 Had RockRose acquired LOG's portfolio of assets in relation to IOG, they would have been in a position to convert CLN 1 into 149.5 million IOG shares; and thereby to trigger a full acquisition of the company. The potential value to Rockrose (including the value of full control) might therefore in principle have been higher than is suggested by the discount factors that I have used.

2019 restructuring

5.39 As explained above, the 2019 restructuring of IOG's balance sheet in the context of the farm-out transaction had three relevant features from LOG's perspective, namely:

(i) repayment in full of the loan components of Warrant 1, Warrant 2 and Warrant 3;

(ii) an obligation to convert CLN 1 to equity, subject to the issuance of new equity by IOG that would permit LOG's converted equity to remain below 30% of the total; and

(iii) an agreement to convert CLN 2 to a zero-coupon loan with an extended maturity date.

5.40 Implicit in the third element of the restructuring – the conversion of CLN 2 to a zero-coupon loan – was a reduction in its present value of some £ 5.0 million. That reduction in value might sensibly be compared to my assessment of the market-based discount to the value that LOG would have been obliged to accept on its portfolio.

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[41] MDR_POST_00000194 – Letter from Hannam to Administrators dated 12/03/2019, page 2

[42] MDR_POST_00000284 - Letter from Hannam to Administrators dated 21/03/2019, page 2

[43] MDR_POST_00000304 - Letter from Hannam to Administrators dated 27/03/2019, page 2

[44] The midpoint of this range is £ 44.1 million.

Source: Mouseinthecourt.co.uk

5.41 As at 24 April 2019, on or around the date at which I understand the restructuring was agreed, the value of LOG's investments in IOG was as shown in the table below.

Figure 5.6 **Value of LOG's loan portfolio (excluding warrants) 24 April 2019, £ m**

As of 24 April 2019	£
Warrants 1, 2 and 3 (Loans only)	16.1
Shares	2.5
CLN 1	10.4
CLN 2	11.0
Value excluding warrants	40.0
Discount	(5.0)
Net value	35.0
Discount %	*12.5%*

Source: Annexe 1

5.42 As may be seen the concluded discount implied in the restructuring of LOG's investments was just over 12%, at the lower end of my concluded range of potential market-based discounts at that date of between 12% and 30% (as shown in Figure 5.5 above).

May 2022 offers

5.43 As discussed above, in early May 2022, Hannam & Partners identified two potential bidders for LOG's investments in IOG.[45] By that point in time, most of LOG's investments were in the form of IOG shares, CLN 1 having been converted in April and October 2019.

5.44 In early May 2022, I assess the value of LOG's investments to have been £ 67.7 million on a theoretical basis and between £ 46.5 million and £ 54.2 million on an adjusted basis.[46] It is apparent, therefore, that:

(i) the Petrogas offer, at £61.2 million, represented a discount of 10% to the theoretical value of the investments and a premium of more than 13% to my assessment of their market value (on an adjusted basis); while

(ii) the Waldorf offer, at £40.0 million, represented a discount of over 40% to the theoretical value of the investments and a discount of over 14% to my assessment of their market value (again, on an adjusted basis).

5.45 Petrogas's (non-binding) offer is higher than my adjusted value range as of that date, and much higher than Waldorf's offer. It appears, however, that both offers were subject to further due diligence before either party might submit a binding offer for LOG's investments. It seems probable that, to the extent that Petrogas might have proceeded to a binding offer for LOG's investments, that offer would probably have been lower than the non-binding offer submitted through Hannam in early May 2022. Conversely, the Waldorf offer might perhaps have increased.

45 CO-03 - Project Acropolis, May 2022 **(MDR_POST_00002361)**

46 The midpoint of this range is £ 50.4 million.

Source: Mouseinthecourt.co.uk

Conclusions

5.46 On balance, I regard the evidence of other indicators of value, discussed in the subsection immediately above, as being compatible with the range of values that I have identified as representing the likely market values of LOG's portfolio of investments in IOG. In summary, therefore, the appropriate range of market valuations, together with the midpoint of that range, at each of the dates that I have been asked to consider, are in my view as shown in the table below.

Figure 5.7 **Adjusted valuations of the LOG portfolio (excluding cash), £ m**

Date	Low value	Midpoint	High value
22-Dec-15	1.08	1.16	1.23
05-Feb-16	0.59	0.63	0.67
20-Feb-18	13.8	17.2	20.7
27-Jul-18	26.4	40.0	53.6
13-Sep-18	28.0	42.5	57.0
18-Mar-19	36.9	44.1	51.4
01-Apr-19	33.1	37.3	41.5
24-Apr-19	34.1	38.6	43.0
28-Oct-19	30.8	33.6	36.3
03-May-22	46.5	50.4	54.2
01-Sep-23	2.3	5.2	8.1

Source: Annexe 1

Source: Mouseinthecourt.co.uk

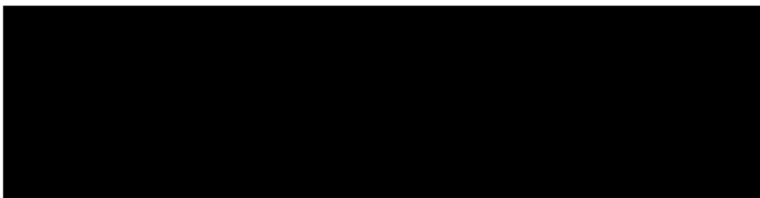
6. Expert Declaration

6.1 I declare that:

(i) I understand my duty as an expert witness is to the Court. I have complied with that duty and will continue to comply with it. This report includes all matters relevant to the issues on which my expert evidence is given. I have given details in this report of any matters which might affect the validity of this report. I have addressed this report to the Court. I further understand that my duty to the Court overrides any obligation to the party from whom I received instructions.

(ii) I confirm that I have complied and will continue to comply with Part 35 of the Civil Procedure Rules, the associated Practice Direction, and the Civil Justice Council's Guidance for the Instruction of Experts in Civil Claims 2014 at all stages of my involvement in this case.

(iii) I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.



Christopher Osborne
Managing Director
29 Throgmorton Street, London EC2N 2AT
29 September 2023

Source: Mouseinthecourt.co.uk

Appendix 1 Curriculum Vitae of Chris Osborne

Prior to founding Osborne Partners, Chris was the global head of FTI Consulting's Economic Consulting segment. Before joining FTI Consulting, Chris was the European Managing Director of LECG LLP and before that the global head of Arthur Andersen's Economic and Financial Consulting Group. Chris has more than 35 years' experience in bringing economic and financial analysis to complex commercial and regulatory disputes.

During the course of his career Chris has been involved in more than 200 cases of litigation and arbitration, across multiple industry sectors. He has also worked on regulatory issues in the electricity, gas, media, post, rail, telecoms, and water sectors, working for regulators, incumbents and new market entrants, in the UK and more widely in Europe. He has a BSc in Civil Engineering and an MSc in Economics; and is also a Chartered Accountant.

He has given oral evidence on over 50 occasions – in the UK's domestic courts, as well as in London, Paris, Stockholm, Geneva, Singapore and Melbourne in ICC, UNCITRAL and ICSID arbitrations. He has also given evidence in the US Tax Courts, in the Iran-US Claims Tribunal, before the Competition Appeals Tribunal, in the then Restrictive Trades Practices Court and in front of the then Monopolies and Mergers Commission.

He has been consistently named as one of the "Thought Leaders" in Europe in Who's Who Legal's "Arbitration Expert Witness Analysis"; and has been consistently identified as a leading expert witness in the Who's Who listings since their inception in 2011.

Investor-State Arbitrations

Appointed as expert on 19 occasions in the context of Investor-State arbitrations – twelve times on the Claimant side, and six times on the Respondent side. Of these, testified in relation to twelve, with two settled and four ongoing.

Expert reports served and evidence given in an UNCITRAL arbitration concerning the value of a long-term build/operate/transfer contract relating to the provision of urban mass-transit. Instructed on behalf of the Respondent.

Source: Mouseinthecourt.co.uk

Expert reports served in an ICSID arbitration in relation to the valuation of an aluminium plant and alumina producer in an eastern European country. The work involved modelling the profitability of the plant against a number of scenarios. Instructed on behalf of the Claimant.

Expert reports served and evidence given in an ICSID arbitration in relation to the commercial arrangements between a Central Asian aluminium plant and its trading partners. Instructed on behalf of the Claimant.

Expert reports served and evidence given in an ICSID arbitration in relation to a construction project in Pakistan, terminated prior to completion. Instructed on behalf of the Respondent.

Expert reports served and evidence given in connection with an ICSID arbitration relating to a Central European group in the food and drinks sector. The group operated an integrated facility producing and distributing spirits, alcoholic beverages, soft drinks and food. Their operations had been adversely affected by the withdrawal of incentives designed to stimulate investments in disadvantaged areas. Instructed on behalf of the Claimant.

Expert reports served in an ICSID arbitration in relation to a private sector healthcare insurer/provider who had entered the market in an Eastern European country, but been subjected to changes in the regulatory regime that allegedly constituted a form of expropriation. Instructed on behalf of the Respondent.

Expert reports served and evidence given in an ICSID arbitration in relation to the value of a mobile telecommunications licence in a West African country, and the financial consequences of various actions taken by the Government that had allegedly reduced the value of the investment. Instructed on behalf of the Respondent.

Expert reports served and evidence given in an ICSID arbitration in relation to the loss of value on Greek Government Bonds, and the consequent impact on a third-party bank that subsequently went into liquidation, following the economic crisis in Greece post 2009. Instructed on behalf of the Claimant.

Expert reports served and evidence given on two separate occasions in relation to loss and damages suffered by construction companies engaged in projects in Libya, terminated following the onset of hostilities there. Instructed on both occasions on behalf of the Claimants.

Expert reports served and evidence given in an ICC arbitration concerning a dispute between shareholders (one of which was a government agency) of a petrochemicals plant. Instructed on behalf of the Respondent.

Four cases ongoing – three on behalf of the Claimant; covering the Telecoms and Construction industries; and one on behalf of the Respondent; concerning long-term gas supply contracts.

Three further UNCITRAL arbitrations involving claims brought against sovereign states – one in the telecoms sector, one in the banking sector, one in heavy industry (steel production). In two, expert reports were submitted and evidence given; one was settled. On all occasions instructed on behalf of the Claimant.

Commercial arbitrations

Appointed as expert multiple times in relation to commercial arbitrations. Key examples are included below.

Source: Mouseinthecourt.co.uk

Expert reports served and evidence given in an ICC arbitration in relation to a dispute between commercial parties following a failed joint venture of petrochemical assets valued at some $15 billion.

Expert reports served and evidence given in a Swiss ICC arbitration relating to a long-term contract for the import and regasification of LNG into the United States of America. The work required an assessment of the impact of US shale gas on global trade patterns, as well as a valuation of the terms embedded in the contract.

Expert reports served and evidence given in a Stockholm arbitration in relation to the value of a gas supply contract into Hungary. The work required an assessment of the end-user market in Hungary, the role of interconnection with Austria, and the impact of increasing liquidity at the trading hub in Vienna.

Expert reports served and evidence given on behalf of an importer of natural gas into a Western European market in relation to a claim for termination based on adverse economic effects, brought on the basis of falling prices for spot gas and the consequent reductions in end-user prices.

Expert report served and evidence given in an ICC arbitration relating to the value of natural gas held in storage within the Ukraine. The work required an assessment of Western European markets downstream of the storage facility.

Expert reports served and evidence given in an ICC arbitration relating to a valuation dispute between minority and majority shareholders of a Turkish mobile telecoms company.

Expert reports served and evidence given in an ICC arbitration relating to an unsuccessful venture in relation to the importation of motor vehicles into the US.

Expert reports served and evidence given in relation to a commercial arbitration between a Japanese electronics supplier and an Indian retailer/distributer. Extensive analysis carried out on the retail/distribution business.

Valuation disputes

Expert reports served and evidence given in an ICSID arbitration in relation to the value of a mobile telecommunications licence in a West African country, and the financial consequences of various actions taken by the Government that had allegedly reduced the value of the investment. Instructed on behalf of the Respondent.

Expert reports served and evidence given in a Stockholm arbitration in relation to the value of a gas supply contract into Hungary. The work required an assessment of the end-user market in Hungary, the role of interconnection with Austria, and the impact of increasing liquidity at the trading hub in Vienna.

Expert reports served in an ICSID arbitration in relation to the valuation of an aluminium plant and alumina producer in an eastern European country. The work involved modelling the profitability of the plant against a number of scenarios. Instructed on behalf of the Claimant.

Expert reports served and evidence given in an ICC arbitration relating to a valuation dispute between minority and majority shareholders of a Turkish mobile telecoms company.

Expert reports served and evidence given in a UK High Court action brought in relation to the value of a minority shareholding in a UK Premier League football club, in the context of a shareholder dispute.

Source: Mouseinthecourt.co.uk

Expert reports served and evidence pending in a UK High Court action brought in relation to the value of a minority shareholding in a software engineering company in the Pay-TV sector, in the context of a shareholder dispute.

Other commercial disputes

Appointed as expert several times by investors in US-listed companies with operations in China, in the context of a dissent under s238 of the Cayman Islands Companies Law to a proposed take-private transaction.

Competition-related disputes

On two occasions, preparation of a series of expert reports in connection with a private action for damages following an EC finding of the existence of a cartel. Appointed on behalf of the Defendants.

Preparation of expert reports into the level of damages suffered by a new entrant into a series of mobile telephony markets as a result of alleged anti-competitive practices by the incumbent. Appointed on behalf of the Plaintiffs.

Expert reports prepared, and evidence given, before the Competition Appeals Tribunal in relation to an appeal brought by telecoms infrastructure providers to regulatory proposals as to the access to be granted, and charges to be permitted for the access, to dark fibre. Appointed on behalf of the infrastructure providers.

Regulatory disputes

Gas

Worked extensively over a period of about three years as adviser to OFGAS on a range of issues covering both the introduction of competition into the domestic gas supply business and the regulation of Transco – the gas pipeline monopoly operator – including tariff structures and levels for the use of the pipeline network.

Worked extensively with Bord Gais, the Irish gas company, on issues relating to the price regulation and the introduction of competition into the gas industry in Ireland, including the derivation of third-party access charges, requirements for separation into network and customer businesses, and price rebalancing.

Electricity

Advice on regulatory matters generally to various companies in the UK and abroad, including five UK regional electricity companies.

Produced an expert report on cost allocation between Supply, Distribution and Generation businesses on behalf of Hydro-Electric in connection with price control issues appealed before the UK competition authorities.

Source: Mouseinthecourt.co.uk

Expert report produced on behalf of a UK transmission system operator in connection with disputed interconnection charges.

Expert report produced in connection with a dispute relating to forecast power purchase prices in the UK.

Consortium member – covering regulatory and pricing issues – on two significant projects funded by DFID relating to partial privatization of the state owned vertically integrated electricity companies in the Indian states of Haryana and Andhra Pradesh.

Telecoms/Media

Extensive work with British Telecom on three separate commercial disputes and two regulatory disputes with Oftel relating to the pricing of access to the telecoms network.

Three separate assignments for Telecom Italia on interconnection and product pricing in the regulatory context, in advance of and in preparation for market liberalization within Italy.

Two separate assignments with a broadcasting company relating to their agreement with the operators of the UK broadcasting network in respect of both analogue and digital TV transmission.

Preparation of an expert report in connection with an ICC arbitration into the valuation of particular components of a mobile phone network in the Far East.

Preparation of expert reports in connection with an UNCITRAL arbitration relating to a dispute between shareholders in a Middle Eastern mobile telecoms operator.

Advisor to Comreg, the Irish telecoms regulator, on the proposals put by eircom for vertical separation accompanied by specific modifications to the regulatory regime in Ireland.

Adviser to a North African government in respect of the value of a mobile phone operator that is the subject of dispute between the owners and the Government.

Financial Services

Expert reports served and evidence given in a UK High Court case in relation to allegations of LIBOR manipulation. Instructed on behalf of one of the banks accused of that manipulation.

Advice to the Policy Holder Advocate in connection with a proposed reattribution of the inherited estate built up within certain with-profits funds.

Expert reports served in an international arbitration on behalf of a leading investment bank in relation to the valuation of a portfolio of synthetic financial products incorporating sovereign debt in the circumstances of sovereign default.

Development of financial projections for a start-up operation based on the acquisition of a series of closed defined benefit pension schemes.

Consultancy advice to a major UK financial services institution dealing with the profitability of particular credit card offerings, the interaction with user characteristics, and the implications for the way in which particular offerings needed to be targeted to particular potential customers.

Production of an independent report for the Financial Services Authority on the potential impact of the introduction of Basel II capital requirements, including extensive primary research across financial institutions.

Source: Mouseinthecourt.co.uk

Expert advice to a leading credit card company in connection with an OFT inquiry into the level of charges for late payments.

Expert reports produced on the financial consequences of restrictions placed on quoted shares in connection with a shareholder dispute.

Expert reports on three separate cases in relation to commercial losses suffered by broking firms.

Post

From 2001, advice to Postcomm on a number of regulatory issues, including the introduction of competition into the postal sector, assessments of the impact on Consignia of a variety of forms of competitive entry; an efficiency study into Royal Mail for price setting purposes; an assessment of Royal Mail's regulatory asset base and cost of capital; and advice generally on regulatory matters.

Report produced for Comreg, the regulator of postal operations in Ireland, in connection with financial and operational reporting requirements.

Expert report and consulting advice produced on behalf of a courier delivery company on their costs and cost structures and the implications for a potential renegotiation of franchise agreement terms.

Initial advice to a market entrant on pricing strategies.

Rail

Worked extensively for a period of some 18 months as economic adviser to the ORR from the period immediately prior to the regulator's formal appointment through to the approval of initial access agreements and operator licences. Provided advice and input on a variety of economic and financial matters, including the level and structure of Railtrack's charges to train operators and the establishment of on-rail competition between operators. Was the primary author of the ORR's consultation documents on track access charges and the policy statements on charges and competition.

Worked briefly with a railways leasing company on anti-trust issues relating to contractual terms for lease agreements, lease extensions and equipment upgrades.

Preparation of an expert report on damages on behalf of a train operator facing delays to the introduction of new high speed trains as a result of relevant data being provided late by the network operator.

Advice over several months to a consortium contemplating the acquisition of Railtrack on regulatory issues generally, and particularly in relation to forthcoming price controls, mechanisms for dealing with continuing losses and the level and structure of track access charges.

Appointed as an expert by the High Court of Tallinn in connection with a dispute over rail access charges in Estonia for freight operators.

Advised Network Rail on the proposed level of rail access charges for a previous price control period.

Sport

Source: Mouseinthecourt.co.uk

Preparation of a series of expert reports on behalf of the Premier League in connection with the action brought by the OFT to the Restrictive Trades Practices Court and subsequent investigations by the European Commission. Evidence covered the commercial position of each of the clubs and the impact on the nature of competition between them that would arise if the resources from the sale of TV rights were generated individually rather than collectively. Oral evidence given in the Restrictive Trades Practices Court.

Preparation of an expert report in relation to the valuation of a minority holding in a Premier League club. Oral evidence given in the High Court.

Advice on financial and corporate governance issues to a major shareholder in a Premier League club.

Water

Regulatory advice on price control issues to one of the UK's water and sewerage companies, and to one water only company.

Advice over several months on regulatory issues to a consortium contemplating the acquisition and financial restructuring of one of the UK's water and sewerage companies.

Consulting advice on price and tariff rebalancing to the state-owned water company in a Mediterranean country.

Consulting advice to the regulator of the Scottish water companies on regulatory matters generally.

Source: Mouseinthecourt.co.uk

Appendix 2 Sources of information

List of CO Exhibits

Exhibit	Document
CO-1	The Panel on Takeovers and Mergers, The Takeover Code, Rule 9, 22 May 2023 **(MDR00226948)**
CO-2	Administrator's Progress Report, June 2020
CO-3	Project Acropolis, May 2022 **(MDR_POST_00002361)**
CO-4	Medium, Black-Scholes Model, First Steps, 15 June 2020 **(MDR00226954)**
CO-5	Macroption, Black-Scholes Model Assumptions **(MDR00226955)**
CO-6	Nasdaq, Fat Tail Risk, What it means and why you should be aware of it **(MDR00227046)**
CO-7	Optionstrading, The Binomial Model **(MDR00227053)**
CO-8	International Valuation Standards Council, International Valuation Standards extract, Glossary, 31 January 2022 **(MDR00227050)**
CO-9	Refinitiv, IOG Warrant Overview **(MDR00227048)**
CO-10	Financial Times, Morgan Stanley discloses twin probes into big stock transactions, 24/02/2022 **(MDR00227052)**
CO-11	IOG, Notice of exercise of warrants **(MDR00227054)**
CO-12	IOG 2019 Annual Report **(MDR00226939)**
CO-13	IOG plc (AIM_IOG), Fixed Income, Securities Summary, all history.pdf **(MDR00227047)**
CO-14	FinnCap, IOG Entering the final straight, 26 Aug 2021 **(MDR00226943)**
CO-15	FinnCapLtd, IOG-FY2021 results overshadowed by reserves update, 18 March 2022 **(MDR_POST_00002238)**
CO-16	Morningstar, IOG proposes EUR100 million bond waiver, 2 August 2023 **(MDR00226953)**
CO-17	Liquidity in Core Government Bond Markets - Financial Stability Board, October 2022 **(MDR00227051)**

Source: Mouseinthecourt.co.uk