Muddy Waters Capital LLC
info@muddywatersresearch.com
Director of Research: Carson C. Block, Esq.

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Muddy Waters Capital LLC ("Muddy Waters") is an investment advisor to private funds. Muddy Waters has analyzed the U.K.-listed company IQE plc ("IQE") and is hereby publishing the outcome and the conclusions of our analysis, which is based on publicly available information. Funds Muddy Waters manages are short shares of IQE and for this reason there might be a conflict of interest.

Report Date: February 8, 2018 **Company**: IQE plc **Ticker:** IQE (AIM: IQE)	**Industry**: Semiconductors **Stock Price: GBp 112.6** **Market Cap: £851.3 million** **Float**: 90.5% **Average Daily Volume (90-day)**: £15.1 million

Muddy Waters is Short IQE plc (AIM: IQE LN)

Muddy Waters Capital LLC is short IQE. IQE is, in our opinion, an egregious accounting manipulator.

In August 2015, IQE formed a 50/50 joint venture with Cardiff University called Compound Semiconductor Centre Limited ("CSC"). In our analysis, IQE received substantial, but unsustainable, accounting benefits from CSC, at the cost of millions of pounds to the university. We adjust downward the company's reported net income for 2015 and 2016, respectively, by 58.5% and 25.4%. We believe it is reasonable to adjust 1H 2017 net income down by approximately £5 million or 69% to account for likely aggressive capitalization of expenses.

On February 2nd, a firm called ShadowFall circulated a report criticizing IQE's accounting for two joint ventures. IQE responded on February 5th, calling the contents of the report "without merit" and "misleading". Our research has been independent of ShadowFall, and ShadowFall's report does not address the vast majority of the issues with IQE's accounts we have identified.

The 2015 and 2016 adjustments reflect our belief that IQE's transactions with CSC are not substantive, and the accounting is possibly designed to deceive investors. We estimate that when IQE booked gains on transferring PP&E to CSC, it transferred the PP&E at a valuation 4.6x carrying value. This markup strains credulity. We call upon IQE to release the purportedly independent valuation report in full, and we will publicly opine on it (even if it convincingly supports the valuation). IQE was CSC's only customer through 2016, and CSC generated an abysmal negative -105.9% gross margin! (It is almost amazing anyone would claim that it "holds itself to the highest standards of corporate governance, transparency, and integrity" with a straight face under these circumstances.[1])

[1] Quote is from IQE response to ShadowFall.

We identify five previously unknown issues with the accounting for transactions between IQE and CSC. Time and again, IQE seems to be employing "having one's cake and eating it too" accounting. We feel that IQE dominates CSC, and CSC is therefore likely an alter ego for IQE.

We believe IQE began aggressively capitalizing expenses in 1H 2017. CSC's funds were largely exhausted by the end of 2016, and we suspect IQE was desperate for some more earnings magic. We note that insiders, who presciently purchased a substantial number of shares just before the JVs' accounting benefits began flowing to IQE, sold millions of pounds of stock around the end of 1H 2017. These sales could be a sign that IQE's ability to generate profits has hit the wall as the result of the exhaustion of its financial engineering options.

Egregious Manipulation through CSC

Companies House filings state that "CSC's mission is to provide Europe's first prototyping facility dedicated to enabling businesses and academics to demonstrate new technologies based on compound semiconductor materials that will be production ready…" In addition, CSC is theoretically tasked to "facilitate a wide range of training and skills development to support a growing demand…" for technologies. Cardiff University has invested £23.8 million cash in CSC, including a £2.0 million loan and an additional £0.8 million investment in the first seven months of 2017. In contrast, IQE invested zero cash – it received its interest in exchange for contributing unspecified PP&E and intangible assets. We estimate the PP&E contribution was valued at 4.6x of its carrying value, which is one of several facts giving us concern that IQE might have taken advantage of Cardiff University.

<u>We adjust downward IQE's 2015 and 2016 net income by 58.5% and 25.4%, respectively, to exclude gains on transfers of assets to CSC, which we believe lack substance</u>

These adjustments also bring the gross margins in line with those of prior periods.

To neutralize the effect of disposal and license transactions with CSC on IQE's historical financials, we make the following adjustments:

GBPm	2015 As reported	2015 As adjusted	2015 Difference	2016 As reported	2016 As adjusted	2016 Difference
Revenue	**114.0**	**107.0**	**-6.2%**	**132.7**	**127.8**	**-3.7%**
Cost Of Goods Sold	(83.4)	(83.4)	0.0%	(98.0)	(98.0)	0.0%
Gross Profit	**30.7**	**23.6**	**-23.1%**	**34.7**	**29.8**	**-14.2%**
Operating expenses	(15.5)	(15.5)	0.0%	(16.4)	(16.4)	0.0%
Operating Profit	15.2	8.1	-46.5%	18.4	13.4	-26.8%
Gain (loss) on Sales of Assets	5.2	0.5	-90.9%	-	-	0.0%
Others	(1.0)	(1.0)	0.0%	0.7	0.7	0.0%
Profit before tax	19.4	7.6	-60.8%	19.0	14.1	-25.9%
Income tax	0.8	0.8	0.0%	0.4	0.4	0.0%
Net Income	**20.1**	**8.4**	**-58.5%**	**19.4**	**14.5**	**-25.4%**

- reverse IP licensing revenue of £7.07 million and £4.93 million in 2015 and 2016, respectively, which carried a 100% operating margin, and
- reverse the realized £4.714 million gain on disposal of PP&E in 2015

In 2015 and 2016, IQE booked gains from transferring PP&E and licensing IP to CSC. In our opinion, these gains are misleading as to the economic health of IQE, and we accordingly adjust IQE's financials to exclude them. We have identified issues with both the PP&E and IP transactions and accounting.

We estimate that the valuation given to the PP&E IQE transferred was 4.6x its book value, which is suspicious on its face. However, we have identified five accounting issues that solidify our doubts about these gains, and which cause us to believe that IQE's accounting is egregiously manipulated through transactions with CSC. IQE insiders' significant sales in mid-2017 – just after CSC seemingly lost its ability to boost IQE's accounting profits – lend additional weight to our conviction that the transactions with CSC are manipulative and should be disregarded.

The five accounting issues that cast doubt on the substance of the gains from transacting with CSC are:

- CSC's accounting for the transactions is inconsistent with that of IQE, which is problematic given the overlapping managers and directors between the companies. The having one's cake and eating it too treatment suggests IQE is inappropriately accounting for these transactions.
- IQE has its cake and eats it too in yet another manner when accounting for transactions with CSC by selling to it at purportedly market (i.e., arms-length) prices, yet buying from it at cash cost (well below market / arms-length prices).
- IQE's recognition of certain of these gains from these transactions in 2015 and 2016 is wholly inconsistent, leading us to conclude that at best, there is a concerning amount of arbitrariness to IQE's accounting; and, at worst, its accounting is intended to deceive investors.
- CSC has lost prodigious amounts of money (and burned through substantially all the cash Cardiff University invested through 2016), yet IQE's income statement has been immunized against recognizing its share of these losses through accounting we believe is highly aggressive. Once again, IQE is having its cake and eating it too by booking (highly questionable) material gains from CSC without recognizing its losses. (Note that we do not adjust IQE's earnings downward for its share of CSC's losses, which would effectively be double counting.)
- Our diligence leads us to believe that CSC is likely non-substantive and effectively an alter ego of IQE, supporting our view that IQE's economic reality is more appropriately understood by adjusting for the transactions with CSC.

<u>We estimate IQE's PP&E contribution to CSC was valued at 4.6x its carrying value, straining credulity</u>

In H2 2015, IQE realized a £4.7 million gain on the disposal of the contributed PP&E, which was equivalent to 30.1% of its net income during the period. IQE showed carrying value of all PP&E of which it disposed during the period as £3.4 million, and disclosures specific to the PP&E contributed in exchange for the £12.0 million equity stake *imply IQE carried the PP&E at only £2.6 million*. (Note that under IAS 28, IQE may not recognize a gain on the portion equal to the percentage owned by the transferor, which in this case is 50%. If we subtract £9.4 million (2 x £4.7 million) from £12.0 million, it implies the carrying value of the PP&E valued at £12.0 million was only £2.6 million.)

IQE noted in its response to ShadowFall that it engaged an "independent" valuation firm to determine the "market value" of this PP&E. Unlike audits, such valuation reports are not generally governed by statutory duties to public companies or their shareholders. In our past work, we have found numerous third-party reports to be merely fig leaves to justify egregious accounting (e.g., Noble Group Ltd.). We generally take purportedly independent valuation reports with a grain of salt; therefore, *we call upon IQE to release the full valuation report used to support the £12.0 million figure. Should IQE release the report, we will publicly opine on it, even if we believe it convincingly supports the valuation (this is a serious offer)*.

IQE transferred intangible assets to CSC, which were valued at £20.0 million. In the ShadowFall response, IQE once again tells us that the valuation was supported by a third-party report. It would be far more difficult for us to sanity check this type of valuation report, but we certainly think that releasing it would serve the public interest, given the government money invested. Regardless, given the totality of accounting issues we observe, we believe it prudent to disregard these gains.

Accounting Issue 1 – CSC's accounts call into question IQE's revenue recognition and gross profit

IQE recognized IP licensing revenue from CSC of £7.7 million and £4.9 million, respectively, in 2015 and 2016. CSC's accounts do not appear to support this treatment because CSC capitalized these payments as investments in intangible assets, and amortizes them over seven years on a straight-line basis. This divergent accounting treatment benefitted IQE's 2015 and 2016 reported revenue and gross margins. It simultaneously benefitted CSC by decreasing its reported loss through less aggressive expensing (i.e., seven-year amortization). Had IQE's treatment reflected that of CSC, it would have instead recognized gains on sale, which would not have improved top-line revenue and gross margin. The fact that such closely-connected entities are engaging in having one's cake and eating it too accounting is one reason we believe the gains are non-substantive and should be disregarded.

CSC's capitalizes the IP transactions as purchases of intangible assets – see CSC's 2016 AR, p. 26:

9 Intangible assets

	Intellectual Property
	£'000
Cost	
At 1 January 2016	15,070
Additions	4,930
At 31 December 2016	**20,000**
Accumulated amortisation	
At 1 January 2016	-
Charge for the year	2,366
At 31 December 2016	**2,366**
Net Book Value	
At 31 December 2016	**17,634**
At 31 December 2015	15,070

CSC's financials expressly call the transactions **purchases** of intellectual property from IQE, rather than licenses. The below is from CSC's 2016 AR, p. 32:

Subsequent to the formation of the Joint venture the Company purchased £20,000,000 of Intellectual property from the IQE plc Group in return for 8,000,000 of A preference shares and £12,000,000 of cash.

There are reasons to be skeptical of this divergent accounting treatment – particularly IQE's recognition of licensing revenue. We elaborate below on our view that IQE dominates CSC. Suffice to say that we expect that IQE's top management, which sit on CSC's board of directors, are aware of the divergent accounting.

Accounting Issue 2 – IQE has its cake and eats it too by selling to CSC at arms-length prices, but buying from it at cash cost, which is anything but arms-length

IQE's response states that its purchases from the joint ventures are "at *cash* cost" (emphasis added). This also makes IQE's financials misleading because cost is not reflective of an arms-length arrangement. Cash cost is even less reflective of an arms-length transaction, as depreciation and amortization are seemingly not included in cost. Were IQE to be transacting with arms-length parties, it would presumably pay more so that the counterparties could generate a profit (to say nothing of recovering depreciation & amortization). In this way, IQE seems to be claiming income that is based on arms-length sales, but expenses without the counterparty earning a profit margin. This increases our doubt about the substance of the transactions between IQE and CSC.

Accounting Issue 3 – IQE recognized licensing revenue in an internally inconsistent manner between 2015 and 2016, giving rise to concerns that IQE intended to deceive investors

Despite recording IP licensing revenue in 2015 on transactions with CSC, in our opinion, IQE's accounting was more consistent with a gain on disposal of assets than licensing revenue. The issue is that IQE booked an unrealized gain. IAS 28 prohibits recognition of gains on disposals to associates and joint ventures for the portion of the transferee owned by the transferor. In other words, if one owns 50% of a joint venture and disposes of assets to the JV at a £1 million gain, only £500,000 of the gain may be realized by the transferor. We believe that the unrealized gain in 2015 is consistent with a gain on disposal (again, not top-line income), and is therefore inconsistent with booking license revenue. Events the following year increase our concerns.

IQE's 2016 accounting, in our view, resolved this inconsistency in the least conservative manner available. In 2016, there were no unrealized gains on IP transactions with CSC. In contrast to the year before, in 2016, IQE recognized *all receipts* as licensing revenue (versus only ~50% the year before). IQE provided no justification in its AR for the change. Below is IQE's disclosure, without discussion, related to the changed policy (emphasis added):

> "The profit arising from license income sales to joint ventures in 2015 represents revenue of £15,310,000 offset by an elimination of unrealised profit of £7,286,000 relating to our retained interest in the Compound Semiconductor Centre Limited joint venture. *No such elimination has occurred in 2016*."

This unexplained change in accounting policy raises significant questions about IQE's accounting practices, and historical margins. Even if the transactions with CSC were properly booked as licensing revenue, this unexplained change brings us to another reason to be skeptical of IQE's accounting: The inconsistency between the two years allows 2015 unrealized gains on PP&E and intangibles to add exactly to £12.0 million. This is a sign that IQE's accounting might be intended to deceive investors.

£12.0 million is the precise amount needed to zero out IQE's equity investment in CSC. If IQE were to avoid recognizing its pro rata share of CSC's loss, it needed to zero out its equity investment in CSC. (We discuss this next.) We therefore see this inconsistency as evidence that, at best, IQE's accounting can be arbitrary with respect to material items; and, at worst, is designed to deceive investors.

Accounting Issue 4 – IQE's failure to recognize CSC losses is highly questionable

Despite CSC having lost many millions of pounds since inception, IQE recognized no share of the loss in its financials. We believe the accounting IQE used to avoid recognizing any loss, and the resulting non-recognition, are highly aggressive. IQE's equity investment account was debited (i.e., increased by) £12.0 million in exchange for the PP&E it contributed (at an estimated 4.6x premium to book value). In addition, IQE received preferred shares valued at £8.0 million as partial payment for the intangibles. IQE recognizes the preferred shares as a financial receivable.

Under the equity accounting method, a 50% shareholder in CSC would normally recognize its pro rata share of the loss at CSC. IQE appears to have avoided recognizing any loss by creating in 2015 contra-accounts to its £12.0 million equity investment account. The contra-accounts seem to have been the unrealized gain on the disposal of the PP&E (£4.7million) and the aforementioned unrealized gain on sale (or license as IQE states it) of intangible assets (£7.286 million). By having contra-accounts that netted the equity investment account down to zero, IQE avoided recognizing any CSC losses against its equity investment.

However, as we pointed out above, £7.286 million of the contra-account seems to have been unrealized gains from licensing revenue (or as we argue, sales of intangible assets), which we believe should not be a contra-account to an equity investment. In our opinion, the unrealized gain should net off the £8.0 million receivable that was booked when IQE received preferred shares in exchange for intangible assets.

However, even if we agreed that IQE could zero out its equity investment account, we believe IQE should still recognize CSC losses because of the preferred shares it owns. IQE's view apparently is that because it has classified the preferred shares as a financial receivable, it no longer has an account reflecting an equity investment in CSC. We disagree, and believe that this interpretation of accounting standards would be aggressive. Our view is that, given CSC's financial state, the receivable is unlikely to be collected in the foreseeable future. Thus, the substance of the receivable should be an investment.

We did not adjust IQE's results downward for its shares of CSC's losses because it would be double counting to a considerable extent. Much of CSC's losses are due to transactions for which we have already adjusted IQE's results.

Issue 5 – We see CSC as likely non-substantive and an alter ego of IQE

We assume that IQE has a valid technical argument to avoid consolidating CSC, but we see this as a triumph of form over substance. In its response to ShadowFall, IQE stated that although it has significant influence on its joint ventures, it "does not have control". "Control" under IFRS is a subjective concept, and in our view, is prone to abuse. As an example, we understand that a party might have absolute day-to-day direction of the operations, but if a joint venture party has a veto over certain high-level decisions, a company could likely convince its auditor to agree that consolidation is not required. Because we think that from a substantive perspective, IQE dominates CSC, we view the relationship and the resulting accounting benefits to IQE with substantial suspicion.

We believe IQE dominates CSC, supporting our view that the transactions between them lack substance largely because:

- IQE was CSC's only revenue source through 2016,
- IQE sells to CSC at purportedly arms-length / market valuations (e.g., PP&E transferred at 4.6x estimated carrying value), but IQE buys from CSC at non arms-length / market prices – at cash cost, with no profit margin or reimbursement for depreciation and amortization (note that CSC's 2016 gross margin was *negative -105.9%*!),[2]
- CSC employees appear to largely believe they are IQE employees, the companies appear to be advertising some of the same job openings, and CSC employee contracts are apparently "essentially the same contract as all other IQE employees"
- The companies share the same physical address, and in our experience, CSC's phone number is answered "IQE",
- IQE personnel appear to be exercising day-to-day control,

Through 2016, IQE was CSC's only revenue source:[3]

During the year the Company made sales of £3,955,000 (2015: £1,521,000), other recharges of £4,877,000 (2015: £nil) and sold plant and machinery of £898,000 (2015: £nil) to IQE plc group companies.

During the year the Company incurred recharges of costs of £6,218,000 (2015: £145,832) from IQE plc group companies.

The Compound Semiconductor Centre Limited has trade receivables of £4,093,000 (2015: £1,104,000) due from IQE plc group companies and £nil (2015: £nil) due from Cardiff University.

The Compound Semiconductor Centre Limited has trade payables of £2,054,000 (2015: £446,000) due to IQE plc group companies and £nil (2015: £nil) due to Cardiff University.

Compound Semiconductor Centre Limited **Registered number: 09210371**

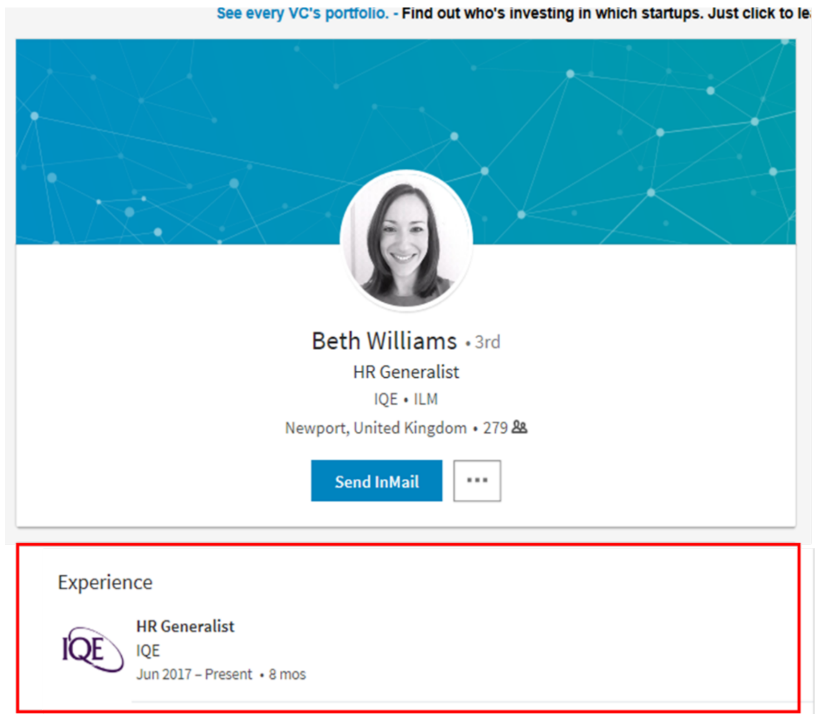
Statement of comprehensive income for the year ended 31 December 2016

	Note	2016 £'000	2015 £'000
Turnover	2	**3,955**	1,521
Cost of sales		**(8,143)**	(2,063)
Gross loss		**(4,188)**	(542)
Administrative expenses		**(442)**	(412)
Operating loss	3	**(4,630)**	(954)
Finance income	6	**37**	-
Finance costs	7	**(74)**	-
Loss on ordinary activities before taxation		**(4,667)**	(954)
Taxation	8	**(493)**	-
Loss for the financial year	17	**(5,160)**	(954)
Total comprehensive expense for the year		**(5,160)**	(954)

[2] In 2016, CSC's revenues were £3.955 million and COS were £8.143 million.
[3] CSC AR, pp. 32 and 13.

Indeed, although CSC claims a headcount of 74 people and reportedly spent £2.6 million on staff in 2016, outside of CSC's non-executive chairman, we can only find a single individual on LinkedIn who claims to work (or to have worked) for CSC while not simultaneously working for IQE. If we include people who claim to work or have worked simultaneously at CSC and IQE, we find one more person. However, IQE has 321 employee profiles on LinkedIn. If CSC is a high-tech research and development company, why are there not far more professional CSC employees who have LinkedIn profiles? The answer could be that CSC employees see themselves as working for IQE, supporting our alter ego theory.

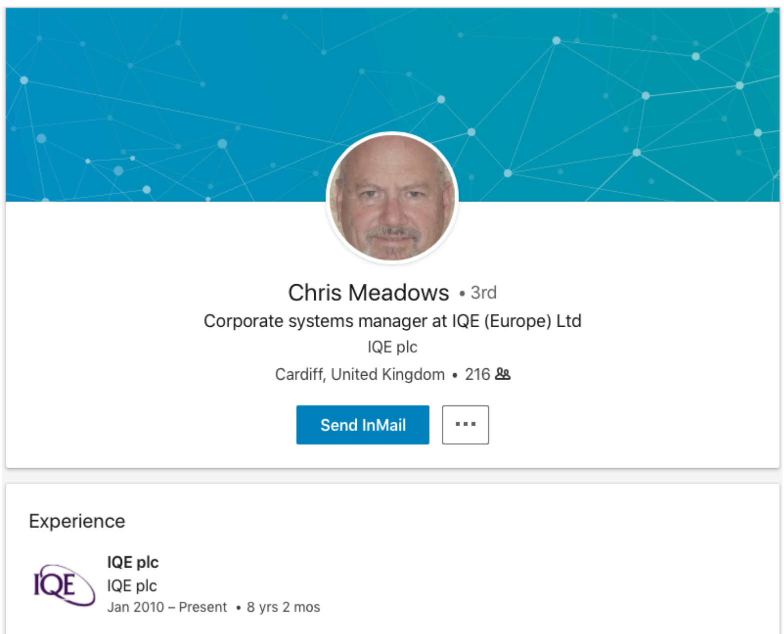
From our and our researcher's phone calls it appears that IQE employees serve as staff for CSC. Our researcher called the CSC contact number listed on CSC's website to see if an employee might be able to explain how CSC was separate/different from IQE. He was greeted with, "Hello, IQE." He asked whether he could apply for a technician role and was transferred to Beth Williams, a human resources employee at IQE.



Source: LinkedIn

Even CSC's About Us webpage includes a video with the face of Chris Meadows, Corporate Systems Manager at IQE Europe.

Source: CSC about us Website



Furthermore, the jobs advertised on CSC's jobs board appear to be at IQE (with the exception of jobs for PhD studentships, which appear to be university-focused). Applicants are directed by CSC's jobs website to email the human resources at IQE at personnel@iqep.com. Indeed, IQE posts some of the same job openings on its own website. When our researcher inquired about the technician role listed on CSC's website, we he was told that although the technician role is with CSC, it is "essentially the same contract as all other IQE employees."

> Q: I spoke to your colleague about a technician role at CSC. I was passed your details. Would it be possible to get a little more information about the role? Is it with CSC or IQE? Or is that effectively the same thing?
>
> IQE HR: The role is CSC, which is a joint venture with IQE and Cardiff University. Essentially though it is the same contract as all other IQE employees and is based at our site in Cardiff.

Manufacturing Technicians

St Mellons, Cardiff, U.K.

The Role

Primarily responsible for the loading & unloading or production material along with the test, measurement and characterisation of manufactured epiwafers in a cleanroom environment.

Key responsibilities of the role are as follows:

- Carry out production runs as required by the Daily Production Schedule/OSR targets and objectives
- To complete accurate records of all specified product characteristics
- To perform routine operations on all test and measurement (Characterisation) equipment, in a safe, accurate, reliable and consistent manner
- To perform scheduled calibration and/or monitoring as requested and to maintain all appropriate records, SPC data and charts
- To assist in modifications and process improvement programmes where required
- Provide back-up safety cover to standard operating procedures as required (e.g. bubbler, cylinder and P-Trap changes)
- Complete all run-related data and checks on ODS (Manufacturing IT System), pre-run checks, and assist in 1st stage problem solving where necessary
- Responsible for maintaining local bay area, reactor loading area and glovebox housekeeping to normal semiconductor standards
- Participate in any problem solving and continuous improvement programmes focused on achieving business objectives
- Adhering to all internal safety, HR, environmental and quality guidelines & procedures

Hours /Shifts;24/7 basis; 2 day shifts, 2 nights shifts, 4 rest days

Education;A good general standard of education

Previous Experience; In a production, technical or cleanroom environment is a distinct advantage

Technical skills;A degree of computer literacy is essential

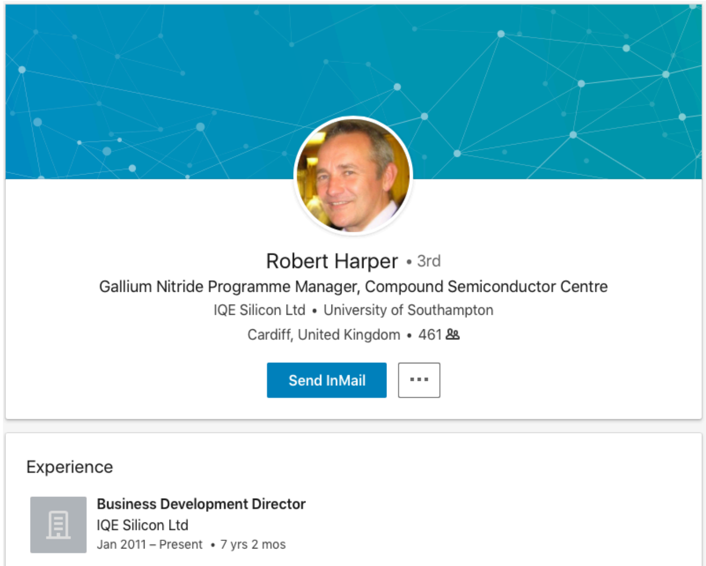
Other skills;Must have the ability to work closely, and communicate with, all levels of operations and engineering staff and be an effective team player

If you are interested in joining our team please send your CV with a covering letter to: Human Resources Team, IQE/CSC, Pascal Close, St Mellons, Cardiff, CF3 0LW or email personnel@iqep.com

Closing date for applications Friday 24th February.

Source: CSC jobs page

On February 5th, the first business day after the ShadowFall report was released, we called CSC. The phone again was answered as "IQE". We expressly stated that we wanted to speak with someone from CSC and not IQE, and we were connected to Robert Harper. While his LinkedIn profile shows him as a program director at CSC, it also shows that he is still employed by IQE (thus the one person with both companies simultaneously on his LinkedIn profile):



When we inquired with Mr. Harper about CSC, he suggested we call Wyn Meredith, who according to his LinkedIn profile has worked exclusively for CSC since leaving IQE in 2015 (the one employee we found on LinkedIn who lists CSC exclusive of IQE), or Chris Meadows (discussed above).

All of this begs the question: Who are the 74 employees who worked at CSC as of 2016 and earned £2.6 million?

5 Employees

The average monthly number of employees during the year/period was 74 (2015: 65), and was split as follows:

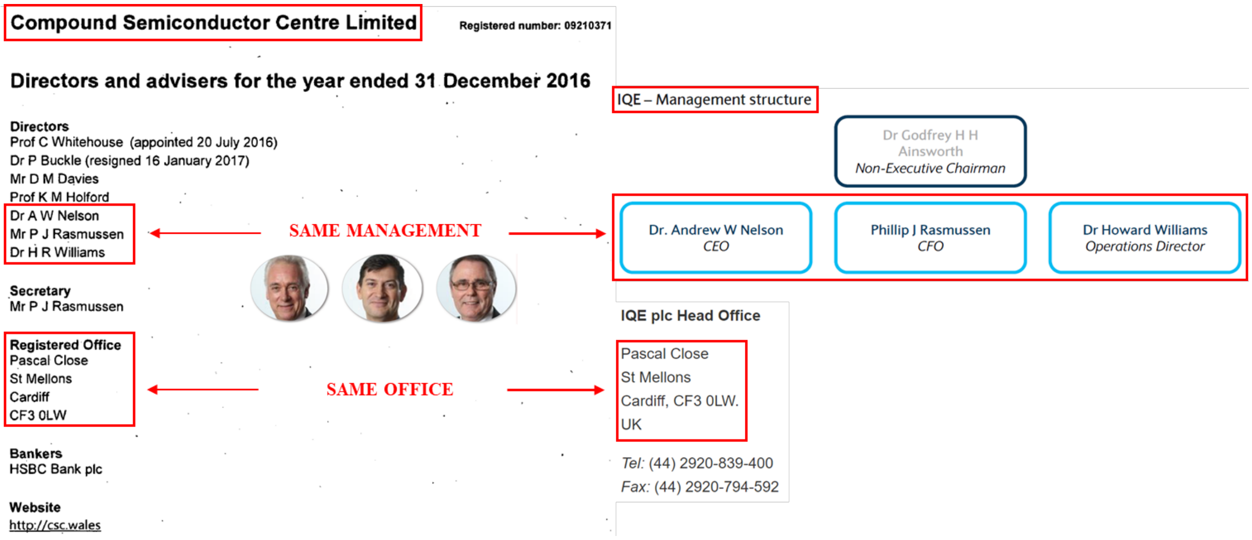
	2016 No.	2015 No.
Production	**68**	62
Selling and distribution	**4**	2
Administration	**2**	1
	74	65

3 Operating loss

Operating loss is stated after charging

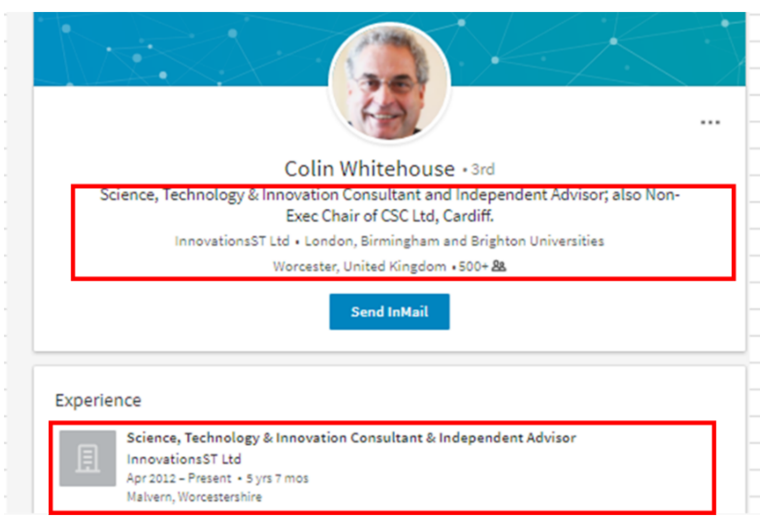
	2016 £'000	2015 £'000
Wages and salaries	**2,235**	806
Social security costs	**220**	78
Other pension costs	**162**	54
Staff Costs	**2,617**	938
Auditor remuneration	**8**	7
Amortisation	**2,366**	-
Depreciation	**1,612**	639
Operating lease charges	**232**	93

IQE's key managers all sit on CSC's board.



Source: Company House Filings CSC 2016, IQE Website, Barclays Research 2018

Colin Whitehouse is listed as the Chairman of CSC. However, Mr. Whitehouse's LinkedIn page indicates that Mr. Whitehouse is a non-executive chairman of CSC and that he apparently does not even work at the joint venture full-time. Rather, Mr. Whitehouse lists his primary occupation is a "Science, Technology & Innovation Consultant and Independent Advisor" in Worcester, England, over 100 KM from CSC's supposed center in Cardiff.



Source: LinkedIn

We are curious as to what exactly CSC sells IQE. CSC is supposed to be a R&D company, but our worldwide search for patent applications using the European Patent Office applicant database revealed zero results for CSC.

0 results found in the Worldwide database for:
Compound Semiconductor Centre as the applicant

Source: European Patent Office

We are skeptical that CSC is operating at arm's length from IQE. There is ample evidence suggesting IQE dominates it, which conceptually could make it an alter ego of IQE. Therefore, these facts and opinions reinforce our view that the transactions between IQE and CSC lack substance, and results should be adjusted to exclude their impacts.

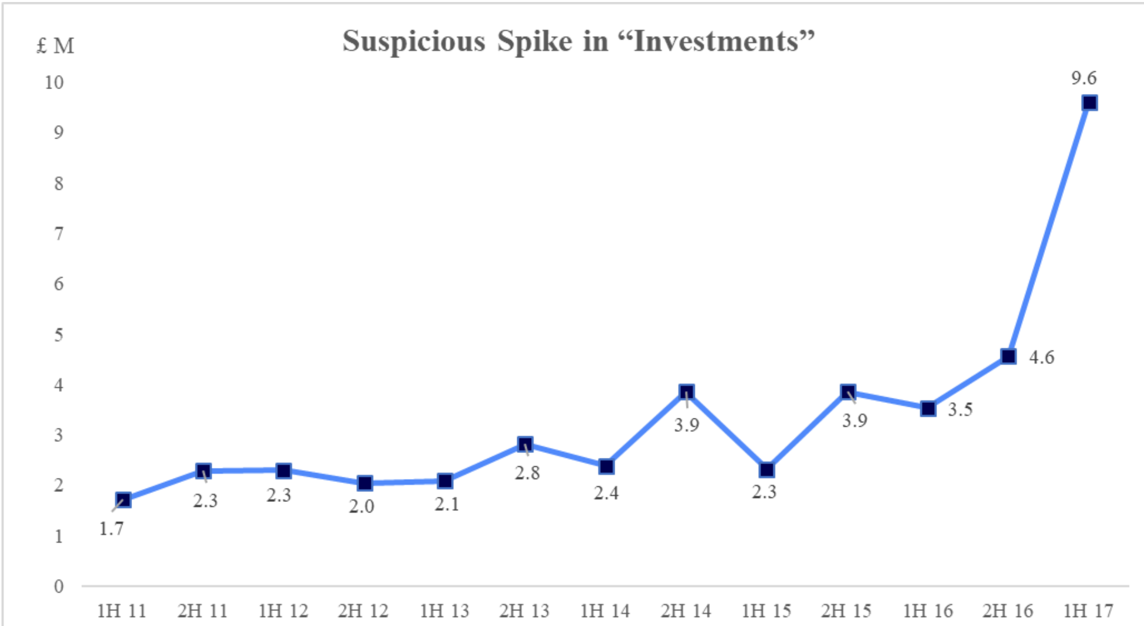
IQE's 1H 2017 Capitalized Intangible Investments Blew Out, just as CSC's Earnings Contributions Collapsed

We believe it is reasonable to adjust 1H 2017 net income down by approximately £5 million or 69% to account for likely aggressive capitalization of expenses:

	1H 2017		
GBPm	As reported	As adjusted	Difference
Revenue	**70.4**	**70.4**	**0.0%**
Cost Of Goods Sold	(53.7)	(53.7)	0.0%
Gross Profit	**16.7**	**16.7**	**0.0%**
Operating expenses	(8.9)	(13.9)	56.4%
Operating Profit	7.8	2.8	-64.4%
Gain (loss) on Sales of Assets	(0.2)	(0.2)	0.0%
Others	(0.8)	(0.8)	0.0%
Profit before tax	6.8	1.7	-74.4%
Income tax	0.6	0.6	0.0%
Net Income	**7.3**	**2.3**	**-68.6%**

By December 31, 2016, CSC had just £13,000 in cash left, meaning its utility to boost IQE's earnings was limited. (In 2017, Cardiff University seems to have extended CSC another loan of £800,000, which pales in comparison to the £23.0 million the university had previously invested.) In 1H 2017, IQE's capitalized intangible investments exploded. At the same time, IQE suddenly stopped disclosing detail that would be helpful in understanding this spike. Maybe this blowout is great news for the future – investment in highly productive assets that will drive growing returns for years. Or maybe IQE aggressively sought ways to keep expenses off its income statement. We personally lean toward the latter explanation given the previously discussed accounting issues. Therefore, an IQE sceptic might want to adjust 1H 2017 income downward by approximately £5 million, which is the difference between 1H 2017 and 2H 2016 investment levels.

IQE's investments in intangibles spiked in 1H 2017:



IQE simultaneously became more opaque in its disclosures about these investments, strongly implying that the increase is difficult to justify. In the 1H 2016 interim report, and in every previous interim report, IQE broke out two categories on its cash flow statement under investing activities. The first was "capitalised development expenditure" (£2,784k in 1H 2016), and the second was "investment in other intangible fixed assets" (£755k in 1H 2016). Yet in its 1H 2017 interim report, IQE combined these two categories into an item labelled "investment in intangible fixed assets." These "investments" exceeded £9.6 million pounds in 1H 2017, vs. only £3.5 million in 1H 2016.

By comparing 2016 figures, it is clear that "investment in intangible fixed assets" is a catch all that includes capitalized development costs.

CONSOLIDATED CASH FLOW STATEMENT	**6 months to 30 Jun 2017**	**6 months to 30 Jun 2016**
(All figures £'000s)	**Unaudited**	**Unaudited**
Cash flows from investing activities :		
Acquisition deferred consideration for Kopin Wireless	-	(10,650)
Investment in intangible fixed assets	(9,604)	(3,539
Purchase of property, plant and equipment	(5,763)	(4,065)
Net cash used in investing activities	**(15,367)**	**(18,254) (**

CONSOLIDATED CASH FLOW STATEMENT	6 months to 30 Jun 2016
(All figures £'000s)	Unaudited
Cash flows from investing activities :	
Acquisition deferred consideration for Kopin Wireless	(10,650)
Capitalised development expenditure	(2,784)
Investment in other intangible fixed assets	(755)
Purchase of property, plant and equipment	(4,323)
Proceeds from disposal of property, plant and equipment	258
Net cash used in investing activities	(18,254)

Source: IQE Company Filings

We think this accounting treatment is problematic. By removing a separate line item labelled "capitalized development expenditure" in its 1H 2017 interim report, IQE has made it impossible for investors to determine the amount of costs capitalized in that period. Compare this with previous periods, in which IQE broke out the figures.

	H1 14	H2 14	H1 15	H2 15	H1 16	H2 16	H1 17
Development Costs	(1.7)	(3.2)	(2.1)	(2.9)	(2.8)	(3.5)	
Investment in 'other' intangibles	(0.7)	(0.6)	(0.2)	(1.0)	(0.8)	(1.0)	
Total intangible 'investments'	(2.4)	(3.9)	(2.3)	(3.9)	(3.5)	(4.6)	(9.6)
Dev't Costs/Total Intangibles	***72.6%***	***83.5%***	***90.7%***	***74.5%***	***78.7%***	***77.2%***	

Source: IQE Company Filings

We note that while cash outflows for capitalized investments in intangible assets increased by 108.7% from 2H 2016 to 1H 2017, amortization of intangible only increased 12.5% from £2.4 million to £2.7 million.

Insider Share Transactions Bookend JV Earnings Magic[4]

From October through December 2014, IQE insiders Messrs. Nelson, Rasmussen, Williams, and Ainsworth acquired a total of 20.5 million shares at a weighted average price of £0.13 (total £2.6 million). This was soon before IQE's joint ventures started transacting with IQE. Between May 2017 through July 2017, these insiders sold £7.8 million of shares (7.18 million shares at an average price of £1.08).

A sceptic might view the purchases not so much as prescient, but rather as insiders understanding of the type of accounting gains IQE stood to make from the joint ventures. A sceptic might also view the monetization around the close of 1H 2017 – a period in which we suspect IQE could have been unsustainably aggressive in its accounting – as signalling the company is unlikely to be able to continue to produce such gains with CSC's funding largely spent. On the other hand, maybe this is all a coincidence.

Conclusion

We understand that Cardiff University, Wales, and the UK government see IQE as an important part of the noble enterprise of creating highly skilled jobs in the region. We genuinely wish them all the best in this endeavour and hope it will be extremely successful. None of those feelings, however, can alleviate our concern that Cardiff University has not been shrewd enough in its dealings with IQE.

IQE received significant accounting benefits from CSC. These benefits came at a cost of millions of pounds to the university. IQE insiders have financially benefitted from recent sales of shares at prices significantly higher than prior to CSC's commencement. The university should ask whether the benefits it is receiving are worth the cost. In the meantime, shareholders should ask whether IQE's financial performance since 2015 can be sustained.

[4] All share transaction data sourced from Bloomberg.