SHEARMAN & STERLING LLP

ICE / Trayport

Response to Issues Statement

16 June 2016

Deal context is a strong indicator that the ToHs are speculative and unrealistic -- and that an actual SLC is highly unlikely

- ICE's rationale for acquiring Trayport and how Trayport was operated under GFI/BGC's ownership are strong indicators that an SLC can safely be discounted

- ICE is buying Trayport as part of its strategy to diversify into adjacent data related business lines -- not to strengthen its exchange/clearing business
  - Trayport's network of connectivity (desk real estate) is a valuable distribution channel that ICE can utilise to deliver and monetise enhanced data services in one of its core sectors (energy)
    - Using data provided/sourced by other ICE businesses – not data from Trayport's customers
  - ICE is on record with its investors that this is the rationale for the Trayport acquisition

- Trayport will operate as a distinct business within the ICE Group and Trayport will continue (and grow) its current business model -- which is dependent on aggregation and neutrality
  - [redacted]

- GFI/BGC's ownership of Trayport did not give rise to adverse competitive effects, rather it was business as usual for Trayport
  - There is no reason why the situation should be any different under ICE's ownership

ICE's commercial relationship with Trayport irrespective of the ownership position is inconsistent with the TOHs and an SLC

- ICE decided before the acquisition to make full use of Trayport's network of connectivity with traders and brokers -- i.e. to work with and take advantage of Trayport's (neutral) aggregation of trading venues

- The decision was prompted by the European regulatory position crystallising so that OTC brokered markets will remain an efficient option for trading European utilities – therefore:
  - The existing OTC/multi-venue market structure will remain – and with it the benefit to market participants of the aggregated view and connectivity to venues provided by Trayport
  - ICE's customers are better served if ICE's markets are (all) accessible via Trayport

- Accordingly, the substantive assessment of the acquisition should be based on the premise that ICE will collaborate with Trayport and support its business model whether or not ICE owns Trayport
  - This is confirmed by the new contract signed in [redacted] -- the culmination of dialogue which started in [redacted] and reflects Trayport's normal commercial terms for venue customers

- The other relevant factor for the CMA's counter-factual is that Trayport would almost certainly still have been sold if ICE had not acquired it -- and quite possibly to another exchange group [redacted]
  - ICE's understanding is that GFI/BGC's final choice of buyer was between [redacted]

ICE and Trayport are not competitors -- ICE competes with Trayport customers -- so a substantive horizontal concern is implausible

- ICE competes with trading venues who use Trayport software/connectivity, not with Trayport -- it is important not to conflate Trayport with the brokers and OTC trading[1]
  - This is a flaw with horizontal TOH 1 -- which actually concerns competition between brokers and ICE (as is evident from paras 26(a)(ii)-(iii) of the Issues Statement) -- see also the Oxera Note provided with this Response

- ICE makes a proprietary front end screen available to traders (WebICE) but this does not equate to competition between ICE (WebICE) and Trayport (Joule/TGW)[2]
  - Joule/TGW and WebICE are used for fundamentally different purposes – WebICE can only be used to trade on ICE's own exchanges whereas the essence of Joule/TGW is aggregation of multiple execution venues (see Annex 1 to this Response)

- [redacted]
  - [redacted]

- Some Trayport internal documents (and, based on Phase 1, no doubt some third parties) reference ICE as a competitive threat to Trayport but this does not make ICE a competitor to Trayport for CMA purposes -- it stems from the following business risks posed by ICE (which are no longer relevant in any event)
  - [redacted]
  - OTC trading migrating from brokers to exchanges incl ICE due to regulatory change and collateral damage for Trayport

1 The OFT's decision in GFI/Trayport confirms that "Trayport licenses third parties with trading system software which an IDB can use to establish an electronic trading platform (usually referred to as electronic broking"). As such "GlobalVision is an input into the trading process, a software tool facilitating electronic broking by IDBs". The OFT concluded that the relationship "is purely vertical in nature, because the GlobalVision software is an input to the provision of IDB services; it is not an IDB service or a substitute to it."

2 To find competition between ICE and Trayport would be akin to saying the businesses esure (an insurance provider with a website) and gocompare.com (a website using software to aggregate and compare prices offered by insurers) compete. Just because the latter may be described in colloquial shorthand as a "marketplace" does not mean it functions as one in the competitive sense – insurance cannot be purchased from Gocompare.com Holdings Limited because it is not authorised to sell insurance policies. Instead, gocompare.com acts as a facilitator to connect customers to a marketplace. This was a distinction made by the CMA in its clearance decision of the acquisition by esure Group plc of Gocompare.com Holdings Limited in which it found that there was no horizontal overlap between esure and gocompare.com

Commercially irrational for ICE to interfere in Trayport's operation in an attempt to foreclose competitors and unfairly divert trading and/or clearing to ICE

- CME, EEX and Nasdaq would all have to be foreclosed for an SLC to be feasible
  - EEX and CME are the incumbents for the ETD trading and ETD/OTC clearing that would be the logical target – German Power (EEX) and Coal (CME)
  - Unless EEX and CME are foreclosed, foreclosed OTC trading is more likely to divert to CME, EEX or Nasdaq than ICE

- ICE is unable to foreclose CME, EEX or Nasdaq
  - None of them are dependent on Trayport technology – they do not use Trayport's matching engine or front end software technology – their only use of Trayport software is connectivity via GV Portal and/or clearing links [redacted]

  - Given the drivers of traders' choice of exchange/clearing venue (e.g. liquidity / open interest), it is implausible that traders would allow themselves to be diverted to another exchange when trading on EEX etc can take place without use of Trayport's front end access/screen - i.e. via direct screens or other ISV screens
  - OTC trades can be and are routed for clearing from BTS brokers to CME etc without using Trayport's STP Link

- The major OTC brokers do use Trayport technology (BTS) but there is no prospect of ICE trying to use Trayport to foreclose brokers to divert OTC trading to ETD trading on an ICE exchange
  - [redacted]
  - Brokers are too important to ICE's wider business for ICE to risk attacking them in this way

Commercially irrational for ICE to interfere in Trayport's operation in an attempt to foreclose competitors and unfairly divert trading and/or clearing to ICE (cont)

- Foreclosing brokers / OTC trading to ICE's benefit is not feasible in any event [redacted] and the alternative ways to trade OTC (e.g. voice brokered) and ETD away from ICE's exchanges (i.e. on EEX etc)

- Fundamentally, the reputational and financial risks to ICE of upsetting market participants by restricting/degrading access to Trayport are enormous and unambiguously eliminate any prospect of ICE doing this to pursue speculative and uncertain financial gains from diverting trading and/or clearing volumes from rivals

- Reputation: ICE is highly regulated because it operates critical infrastructure for financial markets (exchanges and clearing houses) – attempting the TOHs would directly conflict with its operating principles and call into question ICE's reputation and standing as a fit and proper person to operate such infrastructure

- Financial: The theoretical financial gains are up to about [redacted] which are dwarfed by the [redacted] revenues that ICE would be putting at risk – any successful foreclosure strategy (including partial foreclosure) would destroy Trayport's business model – it would also seriously upset market participants including traders by forcing them to trade/clear against their preferences and thereby create a significant risk of retaliation (e.g. trading NBP on EEX)
  - Trayport alone accounts for [redacted] annual revenues – not to mention ICE's $650m investment to buy Trayport
    - Equivalent software is readily available from other ISVs if market participants decided they could no longer rely on Trayport
  - ICE's coal experience demonstrates the risk of retaliation by market participants (see Annex 2 to this Response)

Conclusion

- There are compelling indicators that an SLC is implausible -- this should inform the CMA's assessment
- The reality is that, regardless of the importance to market participants of Trayport's software/connectivity, ICE would never contemplate attempting the TOHs – it would be commercially irrational
- The accompanying Oxera Note provides more detail on the relevant market dynamics and identifies various of the foreclosure TOHs which can easily be discounted as a result without detailed analysis
- In particular, the Oxera Note sets out a compelling basis for removing the following TOHs from the Issues Statement at this stage: total foreclosure of other exchanges and clearing houses and likewise partial foreclosure via price increases
- This leaves various partial foreclosure theories relating to degradation of Trayport products – these warrant further analysis but, as section 2D of the Oxera Note indicates, this is mainly because such theories are difficult to articulate coherently for analysis rather than because they are any more likely to result in an SLC in practice
- Essentially, the Issues Statement outlines a series of hypothetical theories of harm which stem from Trayport being an important ISV in derivatives markets where ICE competes but do not stand up to scrutiny when tested against the drivers of ICE's competitive behaviour and interactions/inter-dependencies with market participants

Annex 1

Trayport TGW/Joule vs WebICE

Summary – Trayport TGW/Joule vs WebICE

1. Trayport TGW/Joule offers traders the ability to send messages to execute an order on a selected trade execution venue; messages are always routed to separate and distinct venues
2. Execution on those separate and distinct venues happens outside of TGW/Joule
3. Trayport's customers are regulated; Trayport's ISV activity is not, because orders are not held or matched on TGW/Joule, but rather on the selected venue
4. TGW/Joule customers must choose a single venue platform to post each order and book each trade
5. Markets are consistently identified on the TGW/Joule screen; a trader always knows exactly which regulated execution venue they are trading on
6. There are no multi-market orders available on TGW/Joule, i.e. trades do not cross markets (e.g. a best price offer on an ICE market cannot be matched with a sell order at that price on an ICAP market)
7. Trayport is a software vendor; it does not itself operate regulated trading venues

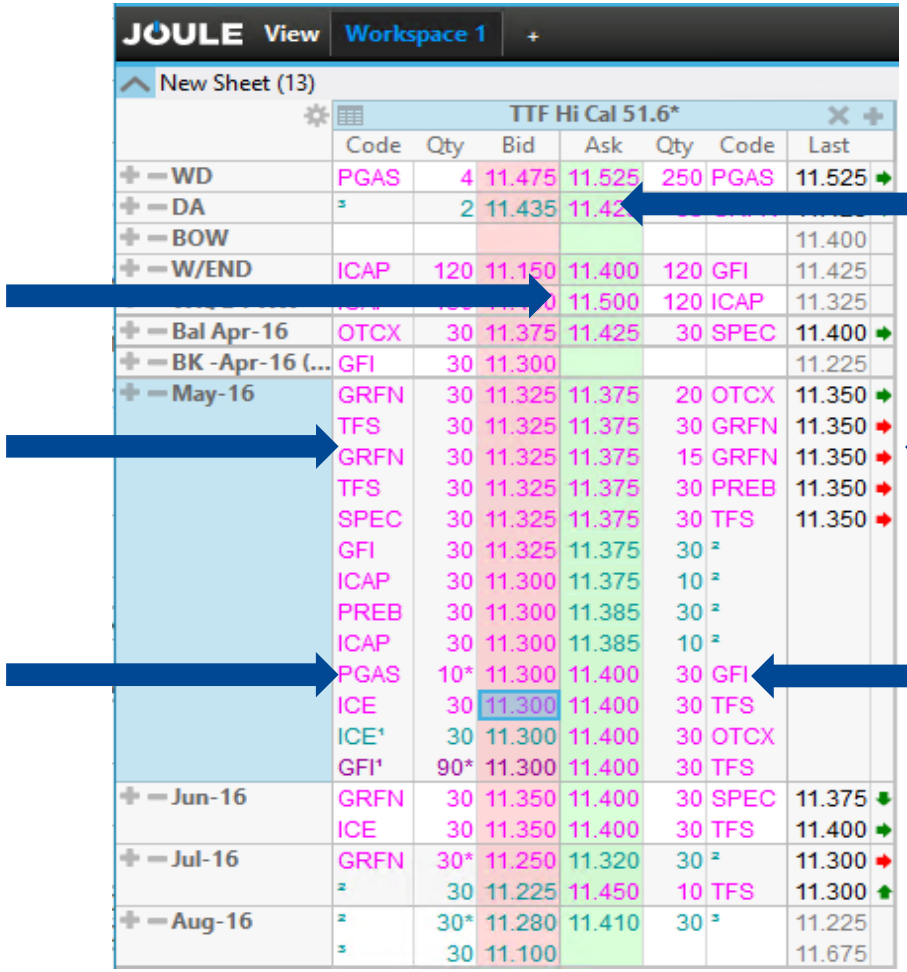
Trayport TGW/Joule screen – an order routing and aggregation software tool

Trayport Trading Gateway is a software product enabling the routing of orders to/from multiple regulated trade execution venues; designed to make traders' jobs and workflows easier and more efficient. No actual trading takes place within Trading Gateway and, as an ISV, Trayport is not a regulated business. Every trader has a different view of market liquidity and functionality available to them.

No auto-matching at the top of the stack between best bid/offer. Cross venue matching not possible.
Customizable layout of orders designed to maximise traders' effective view of the liquidity that they are interested in. In contrast to direct screen venue 'Prices Stacks' are designed to follow a designated methodology

Venue Code column shows traders the originating execution venues (e.g. Griffin, TFS, Spectron, etc) for each order. Cross venue matching not possible.

Traders can execute any price in the stack (rather than the best bid/offer only) where they have credit or clearing available. E.g. they can choose an exchange cleared order at a worse price vs other OTC orders (as in example here) if that makes sense for their trading needs.



	Code	Qty	Bid	Ask	Qty	Code	Last
WD	PGAS	4	11.475	11.525	250	PGAS	11.525
DA	³	2	11.435	11.42			
BOW							11.400
W/END	ICAP	120	11.150	11.400	120	GFI	11.425
				11.500	120	ICAP	11.325
Bal Apr-16	OTCX	30	11.375	11.425	30	SPEC	11.400
BK -Apr-16 (...	GFI	30	11.300				11.225
May-16	GRFN	30	11.325	11.375	20	OTCX	11.350
	TFS	30	11.325	11.375	30	GRFN	11.350
	GRFN	30	11.325	11.375	15	GRFN	11.350
	TFS	30	11.325	11.375	30	PREB	11.350
	SPEC	30	11.325	11.375	30	TFS	11.350
	GFI	30	11.325	11.375	30	²	
	ICAP	30	11.300	11.375	10	²	
	PREB	30	11.300	11.385	30	²	
	ICAP	30	11.300	11.385	10	²	
	PGAS	10*	11.300	11.400	30	GFI	
	ICE	30	11.300	11.400	30	TFS	
	ICE¹	30	11.300	11.400	30	OTCX	
	GFI¹	90*	11.300	11.400	30	TFS	
Jun-16	GRFN	30	11.350	11.400	30	SPEC	11.375
	ICE	30	11.350	11.400	30	TFS	11.400
Jul-16	GRFN	30*	11.250	11.320	30	²	11.300
	²	30	11.225	11.450	10	TFS	11.300
Aug-16	²	30*	11.280	11.410	30	³	11.225
	³	30	11.100				11.675

Different traders will see the trading stack very differently depending on:
- Credit
- Permissions
- Connected venues
- Chosen screen configuration

Last traded statistics column shows the last traded price across all venues as aggregated by the client – different clients may aggregate different venues

For OTC orders traders can execute by voice, by IM or by clicking on the screen. Execution always takes place on the venues' platforms not on TGW.
Even where credit is not available and orders are not tradable on screen traders can often execute via voice using credit sleeves

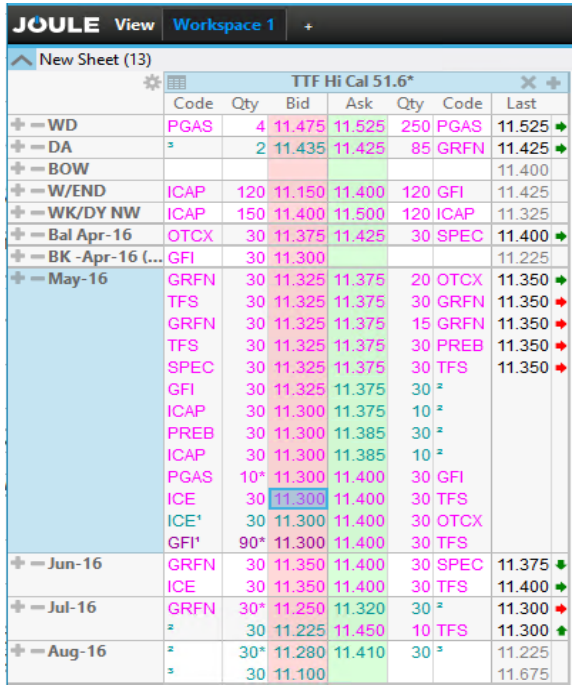
Trayport TGW/Joule screen vs WebICE – trading stacks comparison

Trayport Joule

- Charged [redacted]
- Unregulated software product routing orders to/from multiple regulated trade execution venues – making traders' jobs and workflows easier
- Supports transparency across venues enabling traders to achieve better market view and execution
- Orders can be traded via screen or voice for OTC broker platforms and electronically into the various exchanges' platforms – enables complex and hybrid workflows
- Designed to support trader workflows not regulated venue rules (e.g. allows trading 'through' the stack)

WebICE

- Free of charge for subscribers of ICE's proprietary real-time market data
- Provided to ICE's direct customers to view and trade ICE only liquidity on the ICE exchange only and clearing only at ICE's clearing houses
- Designed to support ICE only workflows and regulatory rules
- 100% anonymous central limit order book – prices that match on screen will trade
- Matching subject to best price execution exchange rules – this means that (unlike on TGW/Joule) trades can only be generated from matches between the best bid/offer in the market



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	ICAP	30	11.300	11.385	10	²	
	PGAS	10*	11.300	11.400	30	GFI	
	ICE	30	11.300	11.400	30	TFS	
	ICE¹	30	11.300	11.400	30	OTCX	
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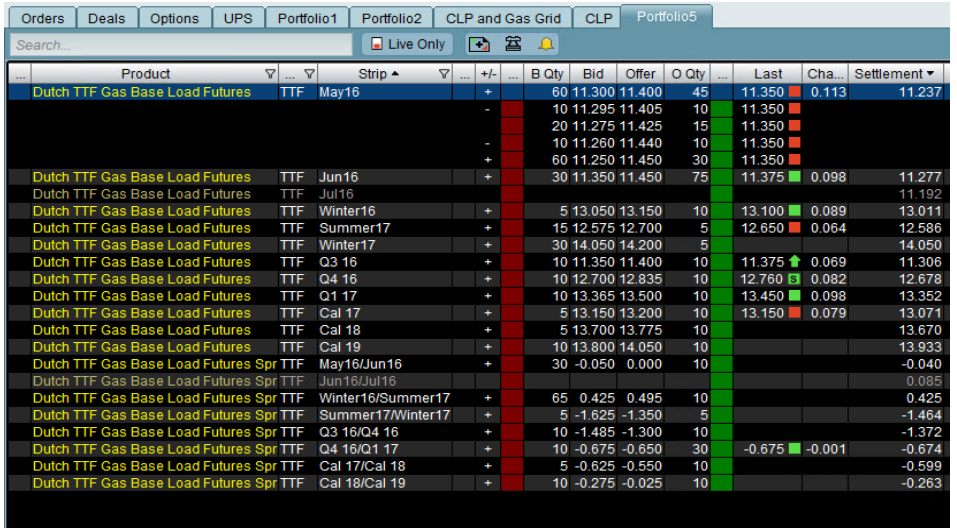


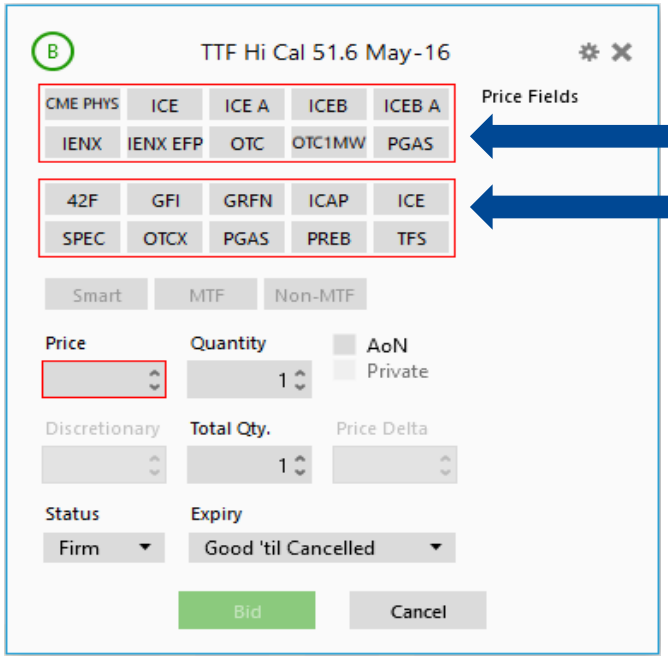
Product	Strip	+/-	B Qty	Bid	Offer	O Qty	Last	Cha...	Settlement
Dutch TTF Gas Base Load Futures	TTF May16	+	60	11.300	11.400	45	11.350	0.113	11.237
		-	10	11.295	11.405	10	11.350		
			20	11.275	11.425	15	11.350		
		-	10	11.260	11.440	10	11.350		
		+	60	11.250	11.450	30	11.350		
Dutch TTF Gas Base Load Futures	TTF Jun16	+	30	11.350	11.450	75	11.375	0.098	11.277
Dutch TTF Gas Base Load Futures	TTF Jul16								11.192
Dutch TTF Gas Base Load Futures	TTF Winter16	+	5	13.050	13.150	10	13.100	0.089	13.011
Dutch TTF Gas Base Load Futures	TTF Summer17	+	15	12.575	12.700	5	12.650	0.064	12.586
Dutch TTF Gas Base Load Futures	TTF Winter17	+	30	14.050	14.200	5			14.050
Dutch TTF Gas Base Load Futures	TTF Q3 16	+	10	11.350	11.400	10	11.375	0.069	11.306
Dutch TTF Gas Base Load Futures	TTF Q4 16	+	10	12.700	12.835	10	12.760 S	0.082	12.678
Dutch TTF Gas Base Load Futures	TTF Q1 17	+	10	13.365	13.500	10	13.450	0.098	13.352
Dutch TTF Gas Base Load Futures	TTF Cal 17	+	5	13.150	13.200	10	13.150	0.079	13.071
Dutch TTF Gas Base Load Futures	TTF Cal 18	+	5	13.700	13.775	10			13.670
Dutch TTF Gas Base Load Futures	TTF Cal 19	+	10	13.800	14.050	10			13.933
Dutch TTF Gas Base Load Futures Spr	TTF May16/Jun16	+	30	-0.050	0.000	10			-0.040
Dutch TTF Gas Base Load Futures Spr	TTF Jun16/Jul16								0.085
Dutch TTF Gas Base Load Futures Spr	TTF Winter16/Summer17	+	65	0.425	0.495	10			0.425
Dutch TTF Gas Base Load Futures Spr	TTF Summer17/Winter17	+	5	-1.625	-1.350	5			-1.464
Dutch TTF Gas Base Load Futures Spr	TTF Q3 16/Q4 16	+	10	-1.485	-1.300	10			-1.372
Dutch TTF Gas Base Load Futures Spr	TTF Q4 16/Q1 17	+	10	-0.675	-0.650	30	-0.675	-0.001	-0.674
Dutch TTF Gas Base Load Futures Spr	TTF Cal 17/Cal 18	+	5	-0.625	-0.550	10			-0.599
Dutch TTF Gas Base Load Futures Spr	TTF Cal 18/Cal 19	+	10	-0.275	-0.025	10			-0.263

Trayport TGW/Joule screen vs WebICE – order initiation screens

Trayport

Trayport Joule

- Traders must pick a venue
- **Orders can only be nominated into a single discreet platform at a time and subsequently matched only with liquidity on that venue; therefore matching of orders across venues is impossible**
- As per choice on execution, traders must choose a single clearing house between multiple choices or between bilateral and cleared
- Enables traders to split/share their liquidity across multiple regulated trade execution venues
- The transactions resulting from TGW are identical to transactions that would have otherwise resulted from standalone direct screens

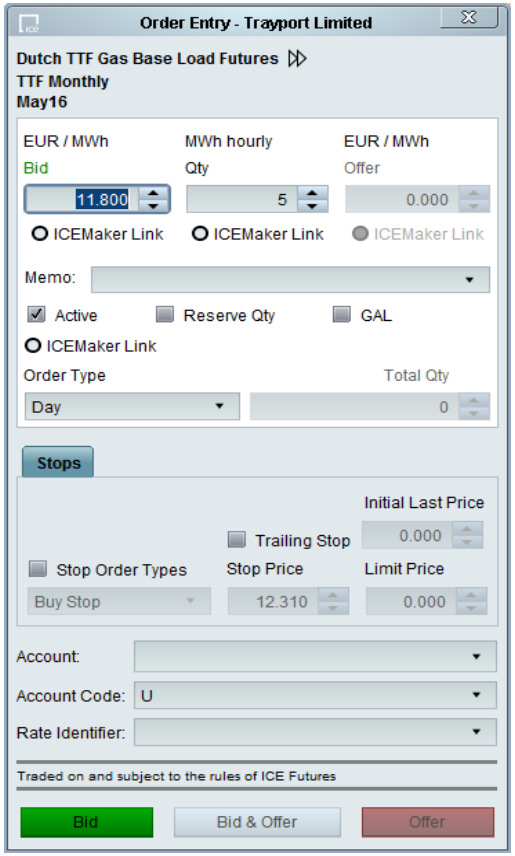


Choice of clearing/settlement mechanism per order

Choice of regulated trading venue to submit onto per order

WebICE

- No choice between venues; orders can only be nominated to the ICE exchange for ICE products, all cleared at one of ICE's clearing houses
- All orders will be tradable to all ICE users with trading permissions and will execute anonymously and electronically



Trayport competitors

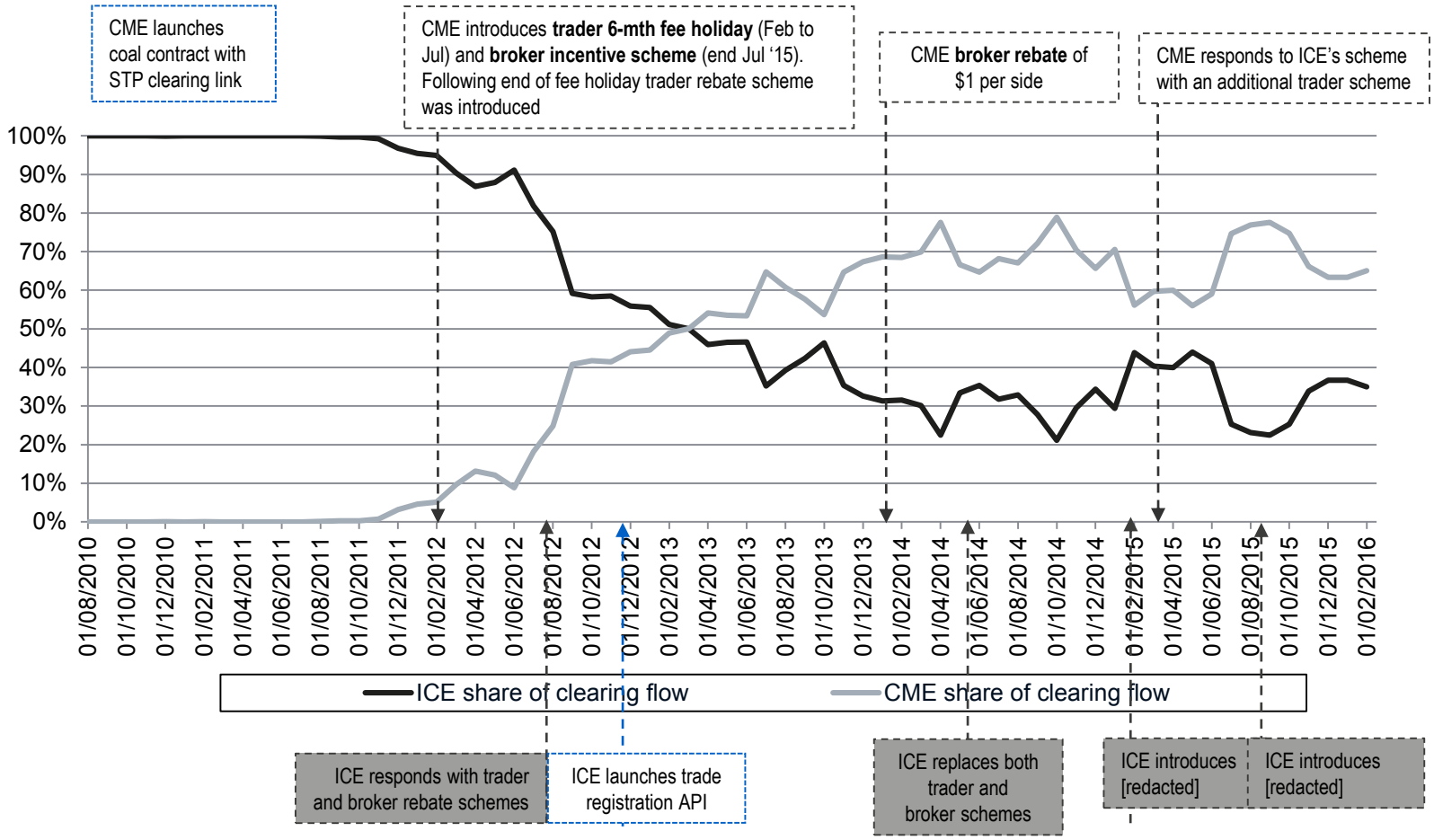
The only meaningful comparison is with the various ISV screens (e.g. Exxeta below)

[redacted]

Annex 2

Coal demonstrates constraint

Coal demonstrates constraint – lost coal OTC clearing costs ICE [redacted]



Note: estimate of forgone revenues assumes ICE keeps 100% share of clearing and net RPC is as in actual.

Framework for vertical effects analysis

16 June 2016

1 Summary and introduction

1.1 In its Issues Statement of 31 May 2016,[1] the Competition and Markets Authority (CMA) has set out the main issues it will consider in assessing the acquisition of Trayport by ICE.

1.2 A theme common to all the theories of potential harm that the CMA has identified (vertical and horizontal) is the potential for the Merged Entity to harm competition at one level of the supply chain through its behaviour at another level. The CMA has set out specific issues relating to input foreclosure and the possibility that, through altering the services that Trayport provides, competitors to ICE in trading and clearing could be harmed.

1.3 The CMA has raised concerns in relation to both total foreclosure—whereby the Merged Entity stops supplying Trayport's software services; and partial foreclosure—whereby the Merged Entity increases prices and/or reduces the quality of Trayport's services.

1.4 In Phase 1, the conclusion that such foreclosing actions could lead to a realistic prospect of a substantial lessening of competition (SLC) were primarily based on third-party views; the CMA has not yet undertaken any detailed analysis.

1.5 This note sets out a framework to inform a thorough assessment of whether such foreclosure concerns will, more likely than not, lead to an SLC.

1.6 As set out at paragraph 31 of the Issues Statement, three necessary conditions need to be met for these vertical foreclosure theories of harm to be of concern:

(a) Ability: will the Merged Entity have the ability to harm competitors?

(b) Incentive: will the Merged Entity have the incentive to harm competitors?

[1] Competition and Markets Authority (2016), 'Completed merged between Intercontinental Exchange Inc. and Trayport. Issues Statement', 31 May.

(c) Effect: will harm to competitors result in harm to competition?[2]

1.7 These are complex questions in all mergers, but particularly in the context of the acquisition of Trayport by ICE, given the characteristics of the markets in which each competes. This note sets out a framework to help structure the CMA's assessment of vertical foreclosure in this complex market. It has two stages:

- first, we identify some additional high-level questions to help frame the three aspects of any foreclosure analysis (ability, incentive and effect), given the specific characteristics of the markets in which ICE and Trayport compete;
- second, we set out a list of testable propositions, based on market observations and Phase 1 evidence, to help focus the analysis. Should these propositions hold, we set out why a number of potential vertical theories of harm would be unlikely to lead to an SLC.

1.8 Table 1.1 summarises our preliminary findings, as set out in sections 2C and 2D in relation to the various potential concerns raised by the CMA. In terms of ability, this is limited to an economic assessment of Trayport's market position and does not take into account the legal constraints that Trayport's existing contracts impose.

Table 1.1 Overview of preliminary findings

	Full foreclosure	**Partial foreclosure through price**	**Partial foreclosure through quality**
ToH1: Foreclosure of OTC venues through TGW/Joule	No incentive: would destroy value of Trayport	Likely no ability: to verify whether Trayport's fees are sufficiently material relative to the total cost of trading for an increase to result in diversion to ICE	To verify whether such a foreclosure action is feasible and potential impact on broker competition
ToH2: Foreclosure of exchanges and brokers through BTS and ETS	On ETS: no ability, as alternatives exist On BTS: no incentive, as would destroy value of Trayport	No ability: Trayport's fees do not appear to be sufficiently material for an increase to be passed through to ICE's rivals' customers in such a way as to result in diversion to ICE	To verify whether such a foreclosure action is feasible and potential impact on trading competition
ToH3: Foreclosure of clearing	No ability: alternative clearing links exist and are in use	No ability: alternative clearing links exist and are in use	To verify whether such a foreclosure action is feasible and potential impact on clearing competition

Source: Oxera analysis.

[2] Competition and Markets Authority (2016), 'Completed merged between Intercontinental Exchange Inc. and Trayport. Issues Statement', 31 May, para. 31.

2 Framework for analysis

2A Important features of the energy trading value chain

2.1 There are a number of features of the markets in which ICE and Trayport compete that have important implications for an assessment of vertical foreclosure concerns. Three features that are important to take account of are:

- the network effects in trading and clearing (paragraphs 2.2 to 2.8);
- the subscriber-based charging model common in the software markets in which Trayport competes (paragraph 2.9);
- the interdependencies and complementarities between participants active across the energy derivatives value chain (paragraphs 2.10 to 2.13).

2.2 The management of counterparty risk is of particular importance in wholesale energy trading, given the diverse customer base and the need to trade some contracts with considerable maturity (several months).

2.3 Different market participants have different preferences over how to manage this risk. Certain market participants will have a strong preference to manage this risk at a CCP (e.g. some financial institutions), while others will have a strong preference to manage it through bilateral credit agreements (e.g. some energy companies for some trades, in part influenced by the current direction of travel in European financial regulation).

2.4 Given some underlying preferences to clear, as open interest begins to build up at one clearing house it becomes increasingly difficult for another clearing house to attract a share of the clearing business. Traders with open interest at one clearing house can benefit from netting and margin offsets by returning to the same clearing house to clear the same or related contracts.

2.5 To the extent that the open interest reflects contracts traded on a connected exchange (e.g. open interest at ECC that reflects trades at PEGAS or EEX), the network effects can spill over into trading. This is because other traders will recognise that traders with open interest at the clearing house will have an incentive to continue to trade at the related venue, providing reassurance about the sustainability of liquidity at the related venue.

2.6 The interaction between clearing and trading and the tendency for liquidity to aggregate at one exchange group was recognised by the Commission in the Deutsche Börse NYSE / Euronext case, which referred to the following statements from market participants in the final decision:

> "It seems impossible to create a credible competitor when the liquidity is concentrated on one exchange (Eurex Eurostoxx Futures competition history for example)"
>
> "Open interest is difficult to migrate once its (sic) embedded elsewhere".[3]

2.7 The challenges in shifting liquidity from an established venue, coupled with the sophistication and concentration of energy market participants, have important implications for the assessment of vertical concerns. They mean that ICE cannot expect to coerce a small fraction of the market away from its rivals. To

[3] Case No. Comp/.6166 - Deutsche Börse / NYSE Euronext, para. 517. First quote is from Credit Agricole and the second from BGC.

attract liquidity, ICE would need the support of a critical mass of trading firms, which would not be the case in the context of any anti-competitive behaviour.

2.8 The fact that liquidity and open interest is hard to tip, but when it does, there is the risk that virtually all will be lost, leads to another important constraint on venues. As well as being sophisticated, energy traders have considerable countervailing buyer power—it is ultimately their decision where to post a price and whether to support a venue. Trading is concentrated in a number of the energy commodities products and a sub-set of large traders working as a collective could have a strong influence on the location of liquidity. While a unilateral decision to shift large volumes of trading to a different venue would not make commercial sense, posting some prices would impose limited cost to a trader and would signal an interest in shifting trading away from ICE. Given that other traders would be likely to also wish to discipline ICE by shifting liquidity away from ICE, should ICE attempt to squeeze out one of its competitors, this would seriously threaten ICE's position, even in its incumbent markets.

2.9 In general, in a typical vertical foreclosure analysis, an increase in input price would be reflected, at least to some extent, in downstream prices in such a way as to alter their marginal sales. In this case, because most of Trayport's core services[4] are charged on a fixed cost/per subscriber basis, no clear mechanism has been identified by which any change in price would be passed through to traders in such a way as to affect their marginal trading and/or clearing decisions. This affects the ability of the Merged Entity to use Trayport's pricing to foreclose alternative trading venues.

2.10 The third important feature here is the interdependencies and complementarities between participants (and services) across the energy trading value chain. For example, as well as acting as competitors, brokers act as important stakeholders to exchange groups such as ICE. Brokers can influence where OTC trades are cleared and the success of new contract launches, thus brokers can affect ICE's long-term success in these markets. The same is true in relation to the interdependencies between Trayport and brokers. The value of Trayport's proposition crucially depends on it remaining attractive to OTC brokers and the success of OTC markets.

2.11 Furthermore, unlike standard markets, rivalry between brokers and exchanges does not necessarily mean that one wins at a cost to the other. Competition can drive growth in overall trading volumes; growth in OTC trading volumes can stimulate growth in on-exchange volumes, as well as providing exchanges/clearing houses with direct revenues from any of these additional OTC trades that are cleared.

2.12 As noted in paragraph 2.8, another interdependency arises between energy traders and exchange groups. ICE's main trading customers have countervailing power through the underlying threat to shift liquidity if the quality of a venue's offering slips. Furthermore, several energy traders, particularly those active in continental power, have vested interests in the success of EEX (through being shareholders), one of ICE's main rivals.

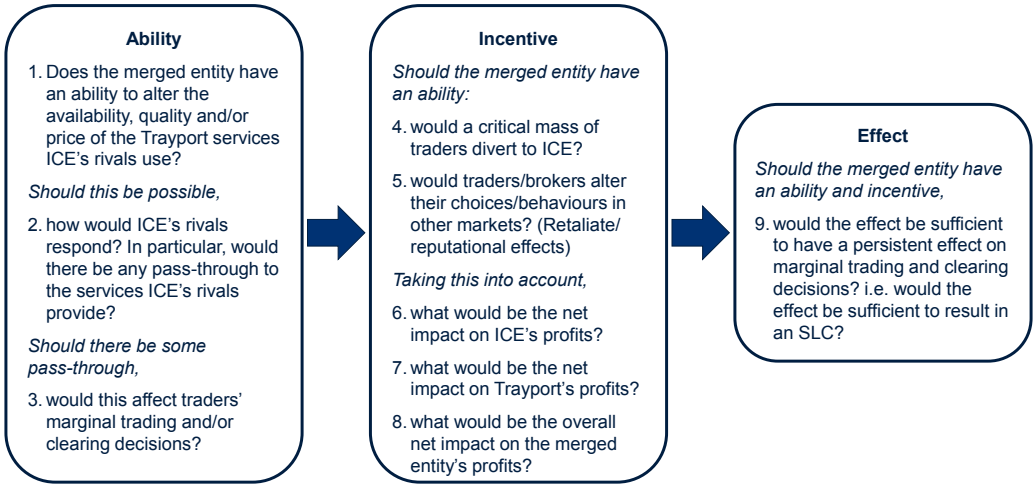
2.13 Some energy traders (e.g. banks, commodity trading houses and oil companies) may also be important customers across other key products traded on ICE. Where any foreclosing practice casts doubt on ICE's performance as

[4] Specifically, TGW/Joule, BTS, ETS and GV Portal.

an operator of fair and open venues, it raises a risk that traders will respond by shifting other business (e.g. oil) away from ICE. Even if this risk is small, the consequences of such a response to concerns about ICE's reputation are extremely large. This threat of liquidity shifting is a central driver of rivalry across venues.

2.14 Reflecting on these market characteristics, the following figure annotates the standard topics of any vertical analysis with some high-level questions. As highlighted in the CMA's guidance on assessing vertical theories of harm, these questions cannot always be answered in sequence or separately from one another. This is particularly the case in this merger assessment where, for the reasons noted above, the analysis of ability and effects closely overlap.

Figure 2.1 Framework for analysis



Source: Oxera.

2B Testable propositions

2.15 The Phase 1 analysis and evidence submitted to date can be summarised into a number of propositions about the markets in which ICE and Trayport compete. These propositions are intended to help focus the vertical analysis by identifying the critical tests that, according to the results, may mean certain theories of harm can be dismissed without more detailed analysis, on the basis that they are unlikely to lead to an SLC.

2B.1 Propositions about Trayport's services

1. There are many alternative matching engine (back-end) software products available.[5]

2. Trayport's value proposition depends on remaining attractive to OTC brokers and the success of OTC markets. Providing a venue-agnostic aggregation of multiple trading venues is central to its business model.[6]

3. None of the exchanges that are rivals to ICE in the European utility space are dependent on ETS software.[7]

[5] As set out in the response to questions 38 and 39 of the CMA Market Questionnaire.
[6] Presentation by Kevin Heffron, Trayport CEO, at site visit by CMA on 7 June.
[7] As set out in 7.1 of ICE Trayport Initial Submission to the CMA on 16 May 2016: 'None of EEX, CME or Nasdaq use Trayport's exchange trading solution (ETS) to operate their exchanges. The one exception is the

4. None of the clearing houses that are competitors to ICE in the European utility space are dependent on the Trayport STP clearing link.[8]

5. Trayport's standard charging model for ETS, BTS, GV Portal and TGW/Joule is on a subscription basis, with any (material) variable fee elements limited to the number of user screens and, specifically for TGW/Joule, whether the service covers ICE Futures Europe, ICE Endex, and EPEX Spot.[9]

6. Delaying the updating of broker or exchange prices on TGW/Joule would undermine the TGW/Joule service offering. It would no longer offer a timely price aggregation service.

2B.2 Propositions about ICE's services

7. Liquidity varies across European utility products. Only five energy products are sufficiently liquid for exchanges to compete effectively with brokers for electronic execution: NBP, German power, TTF, EUAs and (potentially) API2 coal.

8. To attract liquidity, a venue would require the support of trading firms, some of which would need to act as market makers and/or liquidity providers, typically incentivised through rebate programmes or lower headline fees.

9. In energy, on-exchange transactions are cleared at the clearing house designated by the exchange, creating a link between the location of open interest and trading liquidity.

10. For OTC transactions, a trader can choose whether and where to clear.

11. Both sides of the OTC transaction need to agree on whether to clear and, if so, at which clearing house.

12. A trader's choice of clearing will be influenced by: open interest; capital efficiency (this involves consideration of the availability of any margining efficiencies); fees; levels of service.

13. As open interest builds up at one clearing house, it becomes more difficult for another exchange group to attract clearing in the same product.[10] Each trader with open interest at a clearing house has a direct incentive to return to that clearing house and benefit from netting and margin offsets. To the extent that the open interest reflects exchange-traded transactions, other traders will be attracted to trade and clear at the same exchange group, as they will expect the traders with open interest to continue to trade at the exchange to manage these positions.

14. OTC-cleared energy derivative contracts are generally close substitutes for ETD.

Powernext exchange which currently uses Trayport's ETS trading solution. Powernext is part of the EEX Group, however, and could switch to using EEX technology'.

[8] As set out in the response to question 43 of the market questionnaire: [redacted].

[9] As set out in Trayport's pricing schedule, which was submitted in response to question 28 of the CMA 109 RfI of 5 January 2015.

[10] European Commission decision of 1.2.2012 addressed to Deutsche Börse AG and NYSE Euronext, para. 516.

15. ICE receives at least as much revenue for OTC-cleared trades as on-exchange trades.[11]

16. Liquidity can shift if a critical mass of traders move which may be triggered by a substantial change in market conditions (e.g. regulatory change) and/or industry co-ordination (e.g. coal). [12]

2C Impact on the CMA's theories of harm

2.16 The CMA has raised one horizontal and two vertical theories of harm. The horizontal concern that the CMA has raised is about rivalry between ICE and other exchanges or brokers being affected by availability through Trayport.[13] This is effectively a concern relating to foreclosure of alternative venues through GV Portal or TGW/Joule and is implicitly a further vertical concern. The table below summarises the vertical issues that the CMA has highlighted in its theories, including this 'horizontal' issue.[14]

Table 2.1 Types of potential vertical concerns

ToH1 and ToH2: vertical effects arising through input foreclosure of competing trading venues	
a. exchanges	Total foreclosure: i) ceasing supply of ETS or GV Portal Partial foreclosure: i) increasing ETS, GV Portal and/or TGW/Joule fees ii) degrading the quality of ETS, GV Portal and/or TGW/Joule
b. OTC brokers	Total foreclosure: i) ceasing supply of BTS Partial foreclosure: i) increasing BTS and/or TGW/Joule fees ii) degrading the quality of BTS and/or TGW/Joule
ToH3: vertical effects arising through input foreclosure of competing clearing houses	
	Total foreclosure: i) ceasing supply of Trayport's STP clearing link Partial foreclosure: ii) increasing fees associated with the clearing link iii) degrading the quality of the clearing link

Source: Oxera.

2.17 In this section, we examine several of the vertical foreclosure theories in the table above, which the propositions set out in section 2B indicate are unlikely to be an issue. On this basis, these can be discounted as being of limited concern such that the investigation can focus on the remaining issues (for which the key questions are identified in section 2.D).

2C.1 Full foreclosure through withdrawal of ETS: no ability

2.18 The lack of ability to foreclose through this action follows from proposition 3. No exchange group is dependent on ETS technology.

[11] As set out in ICE pricing documents, provided in response to question 28 of the CMA 109 RfI of 5 January 2015.
[12] As set out in section 11 of the ICE Trayport initial submission to the CMA on 16 May 2016.
[13] Competition and Markets Authority (2016), 'Completed merged between Intercontinental Exchange Inc. and Trayport. Issues Statement', 31 May, paras 26(a)(ii) and (iii).
[14] The CMA has also raised potential concerns about inappropriate use of commercially sensitive information that ICE may have access to regarding its exchange and broker rivals. As set out at the site visit, ICE would not have access to such information.

2.19 The theory of harm is that, by withdrawing ETS, certain exchanges active in the energy trading market would cease to be able to operate central limit order books in these markets and the volumes currently traded on these exchanges would move to ICE.

2.20 This theory of harm can be dismissed.

2.21 There is only one ICE competitor exchange in the European utility space that uses ETS technology—Powernext. Powernext is part of the EEX Group and could easily switch to EEX proprietary matching engine technology if ETS were withdrawn. Other exchanges have moved away from ETS (e.g. APX Endex), illustrating that switching is not difficult and many exchanges use proprietary technology (e.g. in addition to ICE and EEX, Nasdaq OMX). Thus, withdrawing ETS would not mean that Powernext (or any other exchange) would cease to be a viable competitor, as there are many alternative sources of matching engine technology that could be substituted for ETS.

2C.2 Full foreclosure of BTS: no incentive

2.22 The lack of incentive follows from propositions 2, 7, 12, 13, 15 and 16.

2.23 If the Merged Entity were to cease to supply BTS to the main OTC brokers, this would undermine Trayport's business model and destroy its value proposition in the market. The brokers' use of BTS provides the core information aggregated through TGW/Joule. Thus, it would lose not only the BTS revenue, but also TGW/Joule revenue. As a consequence, any value in ETS and GV Portal would be eroded. Thus, full foreclosure of BTS would have a substantial negative impact on Trayport's revenues, virtually closing it down over a short period of time.

2.24 The cost to ICE would be significant, given that it has paid $650m for Trayport which would need to be written down, were Trayport to be damaged in this way. It would forgo the annual revenues of US$75m and any expected growth. Furthermore, contractual protections with the main brokers would ensure that this action would be likely to result in protracted litigation, with the probable consequence of the award of damages.

2.25 There is not likely to be any compensating benefit with respect to increasing ICE's business from such an extreme action and certainly not of this order of magnitude. The bulk of OTC trading currently conducted would be unlikely to switch to ICE venues. Furthermore, any misuse of Trayport ownership in this way would risk retaliation by the affected brokers and traders, which have influence across ICE's business.

2.26 Material OTC uncleared volumes would be unlikely to divert to ICE, given the following:

- a proportion of OTC bilateral trading could not migrate to exchange, because the underlying services provided by brokers (e.g. with respect to large trades, options, EFPs, non-standard deal structures) cannot be completed on exchange;[15]
- traders would immediately be able to continue to access brokers to complete bilateral trades through voice brokering—a prevalent way of trading in energy derivatives. Brokers could be expected to quickly develop an alternative

[15] See description in MQ1, submitted 25 May 2016.

platform to Trayport, if it no longer existed. Brokers have explored the option of developing an alternative to Trayport (Project Trafalgar) and Tradition, Tullet Prebon and Spectron have launched a similar platform for oil with CME. There are many alternative sources of matching engine and front-end solution software;

- such an act by ICE would cause major market disruption and seriously upset market participants, and would therefore be likely to trigger retaliation. Traders control where trading occurs and it is very unlikely they would choose to use ICE in this scenario if they did wish to move on exchange. Traders could co-ordinate a shift to EEX or CME, to discipline ICE for misusing their ownership of Trayport in this way. Thus, the probability that ICE would successfully attract trading volumes is low.

2.27 There is also limited advantage to ICE from seeking to foreclose cleared OTC trades. In product markets where ICE is the incumbent clearer of OTC trades, it would have limited/no gain from diverting OTC on-exchange given the comparability of its revenues from OTC cleared trades and on-exchange trades. In product markets where ICE has limited open interest—such as many power and gas products—ICE would have to foreclose the incumbent exchange as well as the brokers. The closure of Trayport does not provide ICE with an ability to foreclose exchanges.

2.28 Under GFI/BGC ownership, any incentive to initiate such a foreclosing action would be stronger than for ICE, given the strong competitive tensions between the different brokers. The fact that Trayport was operated in a 'business as usual' manner while under the control of a broker supports the conclusion that such an action would be highly detrimental to the ICE–Trayport combined business.

2.29 Overall, full foreclosure of BTS would result in significant losses for ICE through the destruction of Trayport and the loss of OTC clearing revenues, with no clear expectation of benefits through diverted trading and clearing. This is before taking into account the potentially serious negative implications of trader and broker retaliation in other markets and areas. If ICE loses the trust of its core customers for trading and clearing energy derivatives, this will significantly harm its long-term prospects. Combined with the destruction of the Trayport business model, there is no reasonable prospect that ICE has an incentive to remove broker access to BTS.

2C.3 Full foreclosure through TGW/Joule: no incentive

2.30 In this theory of harm, the Merged Entity would cease to support the aggregation of broker and exchange screens through TGW/Joule for traders, and would only display ICE venues to try to divert trading to those ICE venues. The lack of incentive follows from propositions 2, 12, 13 and 16.

2.31 As with the foreclosure of BTS, such a foreclosure strategy would fundamentally undermine the value of Trayport. Trayport's value proposition depends on being a reliable multi-venue front-end solution. If the prices traded on broker and/or exchange venues were no longer available on Trayport, it would no longer meet this purpose and the rationale for using TGW/Joule would be undermined.

2.32 Traders' choice of where to trade and clear is determined by the nature of the trade, liquidity and open interest—access route is much less important. Thus, traders would use alternative access routes to continue to trade at their

preferred venues, such as where their current positions are held, rather than shift trading to ICE if access to TGW were to be foreclosed.

2.33 Furthermore, as set out above, traders control where trading occurs. ICE cannot attract liquidity without the support of trading firms, and this support would be unlikely to be forthcoming should ICE stop TGW/Joule from offering a reliable aggregation service. Traders would be able to ensure that ICE did not benefit from this activity by coordinating to move liquidity to a different venue. In addition, as with the foreclosure of BTS, brokers and traders would have a strong incentive to develop an alternative multi-venue solution, if Trayport ceased to offer this aggregation service.

2.34 As with full foreclosure of BTS, foreclosing TGW/Joule would not make sense for ICE. The cost would be substantial, effectively undermining Trayport and the probability that ICE would benefit through increased trading and clearing in the short term is very low and the risk of retaliation is very high. The strategy does not make sense in the longer term either. The aggregation of broker venues on one electronic screen is generally considered to have been an important factor contributing to the growth and development of trading across the European utility markets. This development has been to the benefit of all trading venues, in particular exchanges, such as ICE. The contract that ICE and Trayport have agreed demonstrates the benefit that ICE sees in supporting Trayport, now that the regulatory position has settled with respect to the treatment of commodity derivative trading.

2C.4 Partial foreclosure through increasing ETS or BTS subscription fees: no ability

2.35 In this partial foreclosure theory of harm, the assumption is that exchanges and brokers pay the increased subscription fees. If the increase is so high such that they no longer purchase the software, it is equivalent to the full foreclosure theories of harm. Therefore a key issue for the partial foreclosure theory is whether Trayport is already pricing to this threshold, given it can be assumed to be profit-maximising. We note in this regard that some of the feedback from brokers indicated by the CMA during the site visit would be consistent with this (i.e. broker concerns about price increases that pre-date the acquisition).

2.36 In any event, even if there is headroom in principle to increase Trayport's fees short of full foreclosure, a lack of ability to partially foreclose follows from propositions 5, 12, 13 and 16 supported by analysis of the materiality of Trayport fees.

2.37 The standard theory of partial foreclosure goes as follows:

1. upstream input provider raises unit price of input to Merged Entity's rival;
2. rival is forced to increase its unit downstream price;
3. customers of downstream rival divert to Merged Entity in response to the relative price rise.

2.38 In the case of ICE and Trayport, the standard mechanism for diverting business from a rival to the Merged Entity through a price increase does not hold. This is because there is no obvious mechanism through which changing the price of Trayport's software affects the relative price of trading.

2.39 The fees that brokers and exchanges pay to Trayport for ETS and BTS are a fixed cost of providing trading services. Standard theory would suggest that a change in fixed costs would be passed through in a change in fixed access

charges (e.g. data fees or membership fees) rather than in transaction fees. Therefore, a change in Trayport's fees would not be expected to affect the effective[16] unit price a broker/exchange charged for trading. Without a change in the relative cost of trading between ICE and its rivals, there would be no reason for traders to alter their choice of trading venue.

2.40 To mitigate the commercial impact of any increase in fixed charges, the exchange or brokerage firm could pass through the cost increase through the fixed fees they charge to traders to access their platform. A trader could respond to such a fee increase by ceasing to use that exchange or broker, but would then have to forsake using that exchange or broker for all products. If the trader continues to pay the additional charge, it would have access to the same venues, as currently and there would be no reason to divert its execution or clearing choices.

2.41 Thus, for an increase in Trayport's fees to brokers and/or exchanges to have any effect on traders' decisions over where to trade, the increase in Trayport's fees would need to be sufficient that brokers and exchanges pass the increase on and that traders respond to the fee increase by ceasing to utilise that venue.

2.42 There is no evidence to suggest that this would be the case.

2.43 First, Trayport's fees are small compared with the revenues of exchanges and brokers. Thus any pass-through is likely to be small. Even a 10% increase in Trayport's subscription charges would not materially affect the relevant venues (the larger exchanges and/or brokers). For example, for the EEX Group, the total fees paid to Trayport account for [redacted] of fixed fee revenues for the group.[17]

2.44 Second, the potential increase in access fees that ICE's rivals charge is unlikely to be sufficient to influence traders' membership decisions. As explained above, brokers and exchanges typically charge a common access fee for all products they offer trading services in and therefore the trading firm would have to give up access to multiple markets should it choose not to pay the higher membership fee.

2.45 Finally, even if a trading firm ceased to access a given venue, there is no reason to expect the trading firm to switch to trading on ICE instead. There are many brokers and exchanges competing for liquidity in the European utility space; ICE would be very unlikely to be the alternative chosen, particularly for products where ICE has little existing liquidity and, as would be likely to be the case, if it was identified that ICE was behind the fee increase.

2.46 Furthermore, the direct costs of trading (of which Trayport's fees are only one component) are generally much smaller than the implicit costs (bid–ask spreads) of trading and the clearing benefits. Hence, it is very unlikely that trading choices would be affected by these costs, even if the total cost rather than the marginal cost of trading drives behaviour.

2.47 Table 2.2 presents a worked example based on NBP showing that, under conservative assumptions, explicit fees are only 2.5% of the implicit costs of trading. The estimate of implicit costs is based on the minimum trade size and assumes the spread incurred is in line with the typical bid-offer spread on ICE.

[16] In the case of brokers, the effective unit price of trading services may be in the form of a spread as opposed to explicit trading fee as commonly charged by exchanges.
[17] EEX Group revenues to Trayport in 2015 were [redacted]. Oxera estimates EEX Group fixed fee revenues from European energy derivatives in 2015 to be €20.7m, based on analysis of EEX Group's annual report.

The implicit costs would be larger should the spread be wider and/or the trade size increase. This example also shows that in this case, each tick increment costs the trader £15, hence the incentive to trade on the venue with the tightest bid-offer spread.

Table 2.2 Stylised example of implicit and explicit trading fees

	Metric		Source / calculation
A	Trade size (lots)	5	Minimum trade size on ICE
B	Trade size (therms)	150,000	Each lot is for 1,000 therms a day, 30 days a month
C	Theoretical spread (tick size: p/therm)	0.01	Minimum price fluctuation on ICE for NBP
D	Practical spread (p/therm)	0.05	Typical bid offer spread on ICE
E	Trading and Clearing fee (£ per lot)	0.38	IFEU fee schedule
F	**Theoretical implicit cost per tick**	£15	[B] x [C]
G	**Implicit cost**	£75	[B] x [D]
H	**Explicit cost**	£1.90	[A] x [E]

Source: Oxera analysis

2D Suggested next steps

2.48 The assessment above assists in framing remaining areas where focus is needed to conclude there are no concerns regarding foreclosure.

2.49 To confirm that potential concerns should be limited relating to the withdrawal and/or increase in price of ETS, BTS, GV Portal or TGW are of limited concern, the following should be verified.

- The ability of PEGAS, as part of the EEX Group, to switch to using EEX technology. It is understood there are no constraints on PEGAS's ability to switch to using EEX Group's technology.
- The nature of Trayport's pricing of ETS, BTS, GV Portal and TGW, and the materiality of such fees to ICE's rivals and customers. ETS and BTS are understood to be charged on a fixed per user basis and hence not related to trading volumes. Based on a comparison of Trayport revenues paid by various rivals of ICE and these rivals' European energy sales revenues as reported in their annual reports, Trayport fees do not appear material (less than 10%).
- Verify that the attractiveness of Trayport's TGW/Joule solution to European energy traders would be undermined should TGW/Joule not provide the quality aggregated access currently provided for traders to broker and exchange venues.

2.50 The CMA has indicated a potential concern relating to a degradation of the quality of ETS or BTS. To assess this, a necessary condition is that there is a plausible route through which action by Trayport can significantly affect the quality of the trader's experience so that it changes its choice to trade on ICE rather than an alternative venue. Such an issue has not yet been articulated. If such a quality issue is significant, it may be likely to trigger the same sort of response as full foreclosure because Trayport is no longer fulfilling its function. If it is not significant, it is not clear how it would affect trader choices.

- Articulate how quality degradation of BTS, ETS, GV Portal or TGW/Joule could result in diversion to ICE.

2.51 There is also a realistic working hypothesis that Trayport would have no ability to foreclose rival clearing houses through removing its STP link from brokers. There is evidence that certain brokers do not currently use Trayport's links to clear, choosing to use alternative third-party links (such as those provided by the EFETnet and Ateo) and/or proprietary links instead. Furthermore, where alternative links do not already exist, it would take little time or cost to create them.

2.52 Moreover, choice of clearing is not determined by the presence of an STP link, but by the open positions that a trader is managing.

2.53 The priority areas for analysis to assess this potential concern would appear to be:

- the extent and importance of straight-through processing in determining a trader's choice of clearing house;
- the current availability and use of alternative STP links to that provided by Trayport;
- the potential for alternative STP clearing links (e.g. as provided by EFETnet and propriety broker links) to expand and replace Trayport.