Completed acquisition by Intercontinental Exchange of Trayport

Provisional findings report

Notified: 16 August 2016

The Competition and Markets Authority has excluded from this published version of the provisional findings report information which the Inquiry Group considers should be excluded having regard to the three considerations set out in section 244 of the Enterprise Act 2002 (specified information: considerations relevant to disclosure). The omissions are indicated by [✂]. Some numbers have been replaced by a range. These are shown in square brackets. Non-sensitive wording is also indicated in square brackets.

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Background

1. On 3 May 2016, the Competition and Markets Authority (CMA) referred the completed acquisition by Intercontinental Exchange, Inc. (ICE) of Trayport, Inc. and GFI TP Ltd., including their subsidiaries (together referred to as Trayport) (the Merger) for further investigation and report by a group of CMA panel members (the Group). ICE and Trayport are together referred to as the 'Parties' or the main parties. We are required to publish our report by 18 October 2016.

2. Both ICE and Trayport supply services to participants in wholesale energy trading. The energy industry encompasses a range of different commodities, including coal, oil, gas, power (electricity) and emissions (together, European utilities).

3. ICE is a global operator of derivatives exchanges and clearinghouses. It owns 11 exchanges and 6 clearinghouses serving a range of financial markets and offers its clients trade execution, central clearing, data services, instant messaging and listing services. ICE supplies its own proprietary 'front-end screen',[1] WebICE, which gives traders access to ICE's exchanges for price discovery and execution purposes, and it also has its own proprietary 'back-end'[2] software or central matching engine which matches trades on its exchanges. For European utilities, ICE operates an exchange and clearinghouse for derivatives with underlying commodities in European gas, power, coal, emissions and oil. ICE and its subsidiaries generated turnover of $3.3 billion in financial year 2015.

4. Trayport supplies software technology to traders, venues (brokers and exchanges) and clearinghouses. Its products include: (i) a front-end trading screen and aggregation engine supplied to traders (Joule/Trading Gateway), which aggregates prices from broker and exchange venues for price discovery and execution purposes; (ii) back-end matching engines for venues, which are supplied to brokers (BTS) and exchanges (ETS); and (iii) a straight-through-processing (STP) link (Clearing Link), which connects its broker venues' back-ends to clearinghouses allowing trades to be routed for clearing.

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[1] A front-end screen facilitates price discovery and enables a trader to enter quotes and initiate the execution of trades on electronic trading venues.
[2] A back-end is a dynamic IT database operated by a venue (broker or exchange) containing all active price quotations at a given time (product, maturity, quantity, price, trader name). The back-end system reorders in real time all these prices into an order book (the purchase prices ('bid') and the sales prices ('ask') are ordered from the highest to the lowest) and provides matching capabilities between the best available prices provided by the traders.

It also connects exchange venues, which are using an alternative back-end to its ETS software, into the Joule/Trading Gateway through its GlobalVision Portal (GV Portal) thereby enabling price discovery and execution for these venues on its front-end. Trayport generated revenues of approximately £50 million in 2015.

5. Trayport's software products communicate with each other through an access programming interface (API) and as a result of this inter-functionality together form a platform which supports the entire lifecycle of a trade: from price discovery through to execution and clearing (the Trayport platform). The Trayport platform is closed to other providers who can only connect with Trayport's permission. More specifically, Trayport operates a policy whereby it does not allow users of its back-end systems to connect via an API to an alternative front-end screen or STP clearing link without the permission of Trayport. Many third parties referred to this as Trayport's 'Closed API' policy.

6. All major brokers active in European utilities trading currently use Trayport's back-end BTS software. Each of the major exchanges active in European utilities trading either use their own back-end matching software and connect to Joule/Trading Gateway via GV Portal, or use Trayport's ETS back-end. For ICE, Trayport has developed a single software component to connect Trading Gateway to certain ICE exchanges for price listing purposes (also referred to as 'ICE Link'). Finally, all major clearinghouses are connected to broker venues using BTS for the purposes of clearing over-the-counter (OTC) transactions though Trayport's Clearing Link.[3]

7. Joule/Trading Gateway provides traders with a view of all the major European utilities trading venues via a single, aggregated front-end screen. Over 85% of European utilities derivative trades are underpinned by the Trayport platform[4] and it is the key conduit through which all participants (traders, venues and clearinghouses) in European utilities interact.

Jurisdiction

8. We first considered whether the acquisition of Trayport by ICE was a 'relevant merger situation' within the meaning of section 23 of the Enterprise Act 2002. We provisionally concluded that it met the share of supply test in the supply of energy trading front-end access services, for which, in 2015, the Parties held a combined share of supply of approximately [80–90]%, with an increment of

[3] In May 2016, ICE and Trayport agreed terms for the licensing of its Clearing Link. The implementation of this agreement is currently suspended.
[4] This includes all power, gas, coal, emissions and freight futures and forwards as reported on Trayport's website.

[70–80]% as a result of the acquisition. Therefore, we provisionally concluded that a 'relevant merger situation' had been created.

Market definition

9. We considered the relevant product and geographic market definitions. When assessing the vertical effects of a merger, it is necessary to consider the effects of foreclosure on relevant downstream markets. Therefore, we decided to assess the effects of the Merger in the following product markets supplied both by ICE and by Trayport's customers:

   (a) trade execution services to energy traders; and

   (b) trade clearing services to energy traders.

10. For the purposes of assessing the competitive effects of the Merger, we also considered market definition by reference to the goods and services supplied by Trayport to venues and clearinghouses. We used the following product markets:

   (a) back-end technology supplied to brokers and exchanges, respectively; and

   (b) access services supplied to clearinghouses for OTC executed trades.

11. Finally, we assessed the effects of the Merger under a product market for the supply of energy trading front-end access services to traders; a service supplied by both ICE and Trayport.

12. In defining our product markets, we noted that our competitive assessment would need to take into account the interdependence of the software products which make up the Trayport platform. The Trayport products, taken together, serve multiple sets of customers, whose reliance on each other is an important factor in the strength of the Trayport offering. More specifically, the value that trading venues realise from Trayport depends on the number of traders licensing the Joule/Trading Gateway front-end, and the value that traders realize from Trayport depends on them being able to access liquidity provided by venues using Trayport's back-end. Similarly, the success of Trayport's Clearing Link relies on the number of clearinghouses connected to it and on the volume of OTC cleared trades flowing through the Trayport front and back-ends. Accordingly, the number of traders, venues and clearinghouses licensing Trayport's software affects the profitability of each product, and the success of the Trayport platform as a whole. We considered these network effects in our competitive assessment.

13. On the geographic market, we provisionally concluded that the effects of the Merger should be assessed on an EEA-wide basis.

Counterfactual

14. We considered what would have been the competitive situation in the absence of the Merger (the counterfactual). We provisionally found that, absent the Merger, Trayport would most likely have been sold to an alternative purchaser that would have continued to run Trayport on the same basis at its previous owners.

15. We considered the agreement signed between ICE and Trayport, post-Merger, on new interface development and support relating to the display of additional ICE products on Joule/Trading Gateway, and setup of an ICE STP link to its clearinghouse. Taking into account the pre-Merger relationship between the two companies and the timing of the signed agreement, we provisionally concluded that it was not sufficiently certain that the agreement would have been reached on the same terms absent the Merger.

16. We therefore provisionally decided that the agreement should not form part of our counterfactual but that we should consider the relevance of any potential future agreement between ICE and Trayport in our competitive assessment.

17. Our provisional view therefore is that the counterfactual would have been broadly consistent with the pre-Merger conditions of competition.

Pre-Merger competition

18. Before considering the likely competitive effects of the Merger, we assessed the nature of competition between ICE and its rival trading venues and clearinghouses, and the role of Trayport in facilitating this competition.

19. We first assessed the factors which drive traders' choices during the lifecycle of a trade. We received consistent views from all parties that liquidity was the most important factor in deciding where to trade. This was because trading on highly liquid venues enabled traders to secure the best contract prices. Third parties told us that Trayport was the key price aggregator of this liquidity. The main and third parties agreed that that there were other secondary factors which affected traders' choices. These were: execution fees charged by venues; the extent to which the particular financial product being traded was standardised and therefore potentially available on different venues, ie broker and exchange venues; a trader's need for anonymity or disclosure of a counterparty's identity; and, for some trades, the different regulations governing trades on exchange or via a broker OTC.

20. We were told that the primary factor affecting traders' choice of clearinghouse was their margin and open interest with a particular clearinghouse. Secondary factors were clearing fees and the ease of registering trades with a particular clearinghouse, including whether Trayport's Clearing Link was available for routing OTC trades for clearing.

21. We assessed competition between different types of venues, and between clearinghouses. In doing so, we took into account assessments of competition between trading venues in previous cases and trading volumes in each relevant asset class over the last five years. We also took into account the views of the main and third parties, and relevant information from the Parties' internal documents about the nature of competition.

22. We found that ICE was the largest exchange operating in European utilities asset classes and that its closest competitors were other exchanges. ICE held a high volume share of exchange-based trades in a number of European utilities asset classes, particularly gas and emissions.[5] In these asset classes, it faced head-to-head competition with other exchanges, particularly EEX, which had liquidity in the same products. We observed examples of execution volumes shifting over time and exchanges competing aggressively over price and other discount schemes to win trader business.

23. We found that ICE also faced potential head-to-head competition from rival exchanges threatening to take liquidity in asset classes where ICE had a strong presence and in asset classes where ICE is currently absent (or small) and may enter. Lastly, we found that another important aspect of competition was dynamic competition where exchanges competed to introduce new products and services to capture liquidity in emerging markets and/or move liquidity from rival venues. We provisionally concluded that ICE faced a substantial competitive constraint from other exchanges.

24. We also found that ICE had large or significant shares in clearing volumes of OTC trades across a number of asset classes: gas, emissions and coal. The proportion of OTC trades being cleared had increased in the last five years across each asset class and we observed an overall increase in clearing volumes in this period. Our assessment focussed on OTC cleared trades because it is for these volumes that Trayport's Clearing Link is an input and which routes some volumes for clearing.

25. ICE faced head-to-head competition for clearing volumes where liquidity was shared between clearinghouses, for example, from CME in coal. Where

[5] ICE is active in the supply of exchange venue services for secondary emissions.

clearing was largely carried out on ICE's clearinghouse, ICE faced competition in the form of potential head-to-head competition from other clearinghouses threatening to take its liquidity. Similar to competition between exchanges, we also found that there was dynamic competition between clearinghouses for the introduction of new products and services. We observed examples of the share of clearing volumes changing over time and clearinghouses competing aggressively over price and ease of registration. We provisionally concluded that ICE competed with other clearinghouses to win clearing volumes of OTC trades.

26. We also carried out an assessment of competition between brokers and exchanges in European utilities trading. Our assessment of liquidity shares over the last five years showed an increase in the share of trades carried out on exchanges and a decrease in the share carried out OTC. Our provisional view is that this trend reflects two factors: (i) asset classes becoming more liquid and moving to electronic trading, thereby making exchange-traded products closer competitors to OTC traded products; and (ii) changes in regulation. We received mixed views on the likely effect of recent regulatory changes and the consequences of a carve-out from the regulation for certain OTC trades. Overall, we expect the increase in the share of exchange-based trades to continue but that OTC trading will remain traders' preferred method for certain types of European utilities trades.

27. In assessing the extent of competition between brokers and exchanges, we reviewed evidence submitted by the main and third parties, including ICE's internal documents, venue submissions, and responses from traders to our market questionnaire. This evidence indicated that there was competition between brokers and exchanges for execution volumes where markets were more liquid and financial products more standardised. Our provisional view is that while venues of the same type remain closest competitors, there is also ongoing competition for trades between exchanges and brokers.

28. Overall, we provisionally concluded that ICE competes strongly with rival exchanges and clearinghouses, and also to a degree with brokers. We found that such competition delivers a wide range of benefits to traders, including lower fees, price incentives such as fee holidays, rebate schemes and trader 'market maker' agreements aimed at generating liquidity on a venue, and also innovative trading solutions and new products that are quickly brought to the market.

29. We assessed the role of Trayport in facilitating this competition. For this purpose we analysed volume data, examined internal documents and we considered the views of the main and third parties. The Parties submitted that Trayport was essentially a software vendor and that there were a number of

alternative software products that traders, venues and clearinghouses could switch to as an alternative to Trayport's products.

30. As set out above, liquidity is the key factor in driving traders' choice of venue. We found that Joule/Trading Gateway is the primary front-end screen through which traders access venues' liquidity as part of an aggregated view, and it is through using Trayport's back-end software, or GV Portal, that venues are able to access traders in order to generate liquidity. The two are mutually dependent. Clearinghouses also rely on Trayport's Clearing Link to some extent to provide STP access to brokers using Trayport's BTS back-end, and this increases the ease by which OTC trades can be routed for clearing. The ease of clearing an OTC trade is an important parameter on which clearinghouses compete.

31. As set out above, the Trayport platform serves multiple sets of customers and as a result generates significant network effects. This, combined with Trayport's Closed API policy, means that having access to the Trayport platform is important for venues and clearinghouses in order to compete in generating, maintaining and/or shifting liquidity in the asset classes where ICE is active. These network effects and Trayport's Closed API make switching away from the Trayport platform very difficult, as it would require a coordinated shift in liquidity by traders and venues away from the Trayport platform. We provisionally found that whilst there is competing or equivalent software available for each of Trayport's front-end, back-end and Clearing Link software, separately, the interconnectivity of its software as part of the Trayport platform makes these alternatives weak in the absence of network effects.

32. Our analysis of the evidence showed that Trayport's services are used to some extent by almost all traders, venues and clearinghouses operating in these markets, and our analysis of volume data indicated that many third party venues were dependent on the Trayport platform for trading volumes. Moreover, all third party venues told us that Trayport was extremely important to their success. We also provisionally found that Trayport was more than a passive supplier of software: it facilitated new entrants and financial products supplied by venues seeking to challenge an incumbent's position, and it targeted expansion into new markets not currently traded electronically for OTC trades, eg oil.

33. We provisionally concluded that ICE's rival venues and clearinghouses were reliant on Trayport to compete effectively in European utilities trading. Trayport plays an important role in facilitating competition between trading venues and between clearinghouses, and the available alternatives are weak as a result of network effects and Trayport's Closed API. Having reached this

provisional conclusion, we therefore explored whether there existed any mechanisms through which Trayport could be used to lessen competition between ICE and its rivals in our assessment of the competitive effects of the Merger.

Competitive effects of the Merger

34. Taking into account our assessment of pre-Merger competition, we examined the competitive effects of the Merger. We assessed the likely effect on competition between ICE and rival venues and clearinghouses, which use Trayport software. As such, we primarily considered vertical theories of harm: we considered the merged entity's ability and incentives to foreclose ICE's rivals, and the potential effects on competition of a partial or total foreclosure strategy. We also considered whether the Merger would result in a loss of competition between the Parties' respective front-ends as part of a horizontal theory of harm.

35. Based on evidence from third parties, internal documents and analysis of volume data, we found that rival trading venues and clearinghouses licensing Trayport's software are largely dependent on Trayport to disseminate their prices and offering to traders. Our provisional view is that brokers and exchanges that currently use Trayport's back-end rely significantly on Trayport to win traders' business in competition with ICE. We also provisionally concluded that exchanges that currently have their own matching engine but are connected to Trayport's aggregation screen via GV Portal are also dependent on Trayport to compete in certain asset classes and products where they are present and/or to enter successfully in new asset classes and products. Lastly, we found that clearinghouses are also dependent on Trayport, but to a somewhat lesser degree, in order to compete for clearing business in certain asset classes and products where they are present and/or to enter successfully in new asset classes and products.

36. Our provisional view is that a total foreclosure strategy is less likely because of the risks to the underlying Trayport business model. However, we identified a number of mechanisms through which Trayport could weaken ICE's competitors and reduce competition as part of a partial foreclosure strategy. We consider this likely to involve a series of incremental changes over time, such as increasing the cost of Trayport's software to ICE's rivals, de-prioritising the development and improvement of its software so as to disadvantage ICE's rivals, and delaying and hampering the ability of rivals to enter new markets by delaying the listing of new products on the Trayport platform. Our provisional view is that the contractual arrangements in place between Trayport and its venue and clearinghouse customers are unlikely to

sufficiently protect ICE's rivals from all such strategies. We therefore concluded that the merged firm would possess the ability to partially foreclose ICE's rivals.

37. When considering the merged entity's incentives to carry out a partial foreclosure strategy we noted that, pre-Merger, ICE and Trayport had conflicting incentives. Trayport's objective was to support competition between multiple competing venues and clearinghouses, with liquidity fragmented between them. This meant that its aggregation software offered significant value to traders. ICE's aim was to concentrate as much liquidity as possible on its own exchange and clearinghouse.

38. Our provisional view is that the pre-Merger ownership of Trayport by a broker was not, as the Parties argued, informative of ICE's incentives post-Merger. This is because ICE additionally offers clearing services, and as a large exchange has a different position in the market for execution services, including a particularly strong incumbent position relative to other venues in a number of asset classes. Moreover, revenues from Trayport represent a significantly smaller proportion of ICE's overall revenues than they did for Trayport's previous owner and so any costs of a partial foreclosure strategy are likely to be less significant to ICE by comparison.

39. Our provisional view is that the merged entity would likely have a strong incentive to grow further its position in asset classes and products where it already has a substantial presence at the expense of its rivals. Further, weakening the effectiveness of ICE's rivals would prevent those rivals from threatening to take ICE's volumes in asset classes and products where it currently has a strong position. Also, where there are pre-existing industry trends, ICE would likely be able to use its control of Trayport to accelerate these and direct them in its favour.

40. Taking into account our assessment of the importance of dynamic competition in these markets, we provisionally found that ICE's control of Trayport would help it to gain control of new markets and segments. We considered this is likely to be highly significant because we found evidence of important first-mover advantages. For example, we identified strong incentives for ICE to seek to disrupt rivals in competing for new types of asset classes and geographies as they migrate from voice to electronic trading, and new types of offering that emerge in light of regulatory developments. Overall, we provisionally found significant gains for the merged firm which would likely result from a weakening of rivals.

41. On the basis that foreclosure was likely to take the form of incremental changes that would not fundamentally undermine the Trayport platform and

could be hard to detect, we provisionally identified likely low costs to the merged entity from lost revenues. Also, we were not persuaded by the Parties' arguments that traders would retaliate in other ways as we found little evidence that the threat of switching away from ICE to extract concessions would not have been fully reflected in pre-Merger conditions. We therefore provisionally concluded that the merged firm would likely experience only limited costs as a result of a partial foreclosure strategy.

42. As a cross-check, we quantitatively analysed the likely gains and losses to the merged firm of a partial foreclosure strategy. Taking into account the degree of uncertainty in the amount and timing of any switches in liquidity, we considered a number of scenarios. Our qualitative assessment of the likely incentives was supported by all of the scenarios we considered.

43. We provisionally concluded that the effect of any foreclosure strategy would be to harm ICE's main rivals and, as a result, have an impact on their ability to compete effectively with ICE for the execution and clearing of trades. In practice, we considered the effects of a partial foreclosure strategy would likely have a direct impact on the products and services offered to traders.

44. We provisionally concluded that there would likely be a loss of competition between ICE and other trading venues/clearinghouses to be the principal host of liquidity and/or clearing volumes. A partial foreclosure strategy would likely have the greatest impact on other exchanges, which are ICE's closest competitors, and then on rival broker venues which are close competitors in some asset classes. We also considered that a partial foreclosure strategy would likely adversely affect ICE's rival clearinghouses but that the impact on them would be less significant than on exchanges and brokers because clearinghouses' reliance on Trayport's Clearing Link was less pronounced.

45. We provisionally found that this weakening of competition between ICE and its rivals was likely to directly harm traders by allowing fees for execution and clearing to increase and/or the service offered to traders to be worsened. The loss of competition between ICE and its rivals would also relate to their efforts to launch new products and find innovative trading solutions in order to be the first to move into markets with new offerings. We placed particular weight on the loss of this dynamic competition which is likely to harm traders by offering them a more limited range of trading opportunities and tools.

46. We also considered the potential effect on competition resulting from the loss of rivalry between the Parties for front-end access services. We found the evidence on this to be mixed. There was some evidence that the Parties constrained each other pre-Merger. However, there was not significant evidence that customers would have switched between ICE and Trayport for

the supply of front-end access services in response to a price increase. We provisionally found that there would likely be a reduction in competition but on its own this was not sufficient to represent a substantial effect.

47. Based on an assessment in the round of all theories of harm, and taking into account the likely effects overall, we provisionally concluded that the Merger between ICE and Trayport may be expected to result in a substantial lessening of competition (SLC) in the supply of trade execution services to energy traders and trade clearing services to energy traders in the EEA, including to UK based customers, as a result of the merged entity implementing a partial foreclosure strategy.

Provisional findings

1. The reference

1.1 On 3 May 2016, the Competition and Markets Authority (CMA), in exercise of its duty under section 22(1) of the Enterprise Act 2002 (the Act), referred the completed acquisition by Intercontinental Exchange, Inc. (ICE) of Trayport, Inc. and GFI TP Ltd., including their subsidiaries (together referred to as Trayport) for further investigation and report by a group of CMA panel members (the Group) (the Merger). ICE and Trayport are together referred to as the Parties.

1.2 The CMA must decide:

(a) whether a relevant merger situation has been created; and

(b) if so, whether the creation of that situation has resulted, or may be expected to result, in an SLC within any market or markets in the UK for goods or services.

1.3 Our terms of reference can be found in Appendix A. We are required to publish our final report by 18 October 2016.

1.4 This document, together with its appendices, constitutes our provisional findings, published and notified to the Parties in line with the CMA's rules of procedure.[6] Further information relevant to this inquiry, including a non-confidential version of the submission received from the Parties, as well as summaries of evidence received in oral hearings, can be found on our webpages.

2. Industry background

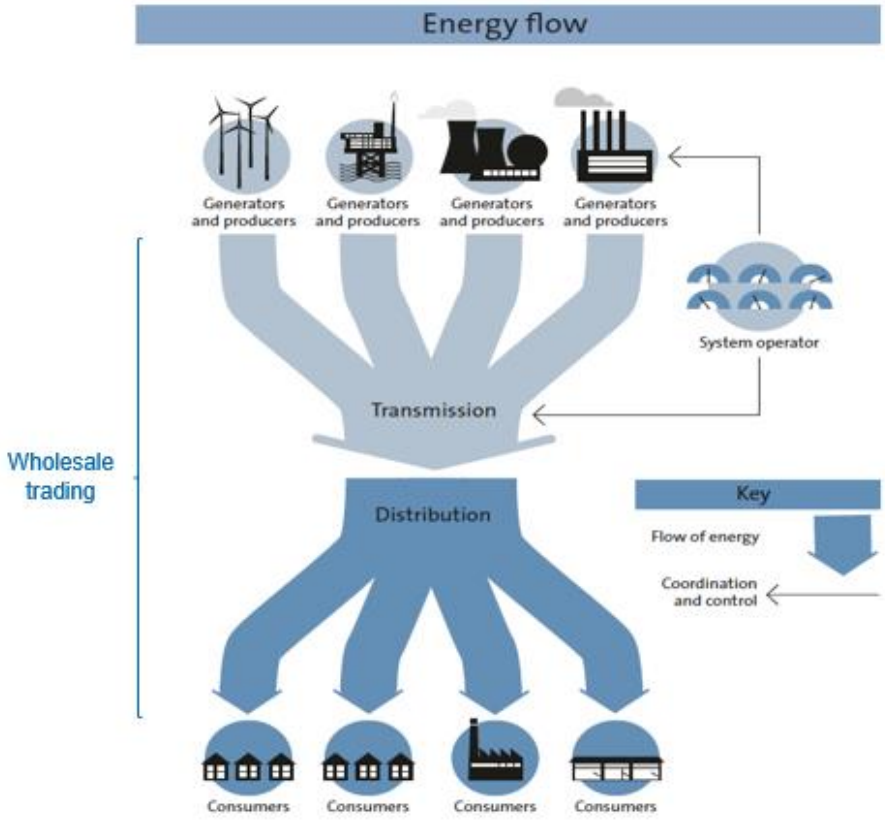
2.1 The Parties operate within wholesale energy trading. In this section, we provide by way of introduction a high-level overview of wholesale energy trading before describing in more detail the respective roles of the Parties and the services they provide. A number of the aspects of wholesale energy trading described in this section are considered in more detail, as relevant, in subsequent sections and our analysis of the effects of the Merger.

[6] Rules of procedure for merger, market and special reference groups, (CMA17) Rule 11.

Overview of wholesale energy trading

2.2 The energy industry encompasses a range of different commodities, including coal, oil, gas, power (electricity) and emissions (together, European utilities). Each of these commodities passes through a number of stages in the supply chain, from creation or extraction – via mining, wind farms, drilling, fracking, etc – to transmission and distribution, to retail sales and consumption.

Figure 1: Illustrative example of the energy supply chain



Source: CMA energy market investigation, provisional findings.

2.3 Wholesale trading of European utilities occurs in the part of the energy supply chain between the initial energy generation and final energy consumption, where generators and suppliers of energy trade their goods and services with one another, and with retail companies. Financial institutions also speculate on wholesale energy trading markets. Companies that produce or import energy (eg electricity generators and gas producers) sell their energy in the wholesale markets. Companies that consume energy (eg large industrial companies) or have customers that consume energy (eg retail suppliers) buy the energy they need in the wholesale markets.

2.4 For gas and power, the specific system operator in each country (eg in the case of UK this is National Grid) will resolve any imbalances or residual issues that may arise in the energy supply chain. However, the wholesale

markets are based on the principle that market participants balance their own physical and financial positions.[7] Wholesale energy trading arose from the need for energy generators to find a constant source of buyers to match their level of production, and similarly the need for retail suppliers to secure a constant source of energy to match the precise needs of their customers.

2.5 Energy trading also allows energy firms to buy energy commodities in the most cost efficient manner, for example, by allowing them to smooth costs throughout the year by making large orders at a set price in the summer to cover periods of higher demand through the winter. By trading in advance of expected demand, companies are also able to de-risk the chance of price spikes during key periods of consumption – this is known as hedging.

2.6 For hedging to be most effective, the market has to be 'liquid', ie assets can be quickly bought and sold in the market without the price being affected. The more liquid a market is the more efficient hedging can be as companies can quickly match demand changes without causing peaks and troughs to pricing. Typically, the more liquid the market the lower the transaction costs.[8] Higher liquidity also encourages competition by giving smaller firms opportunities to trade and source supply lines, and provides price signals for investment decisions.

European utilities trading participants

2.7 The European utilities trading industry has a complicated structure, with a range of commodities and products, a large number of interested and affected parties, significant areas of liquidity inertia[9], and varying degrees of regulation involved with each step of the process. However, at a basic level, the European utilities trading chain can be considered to comprise three types of participants: traders; trading venues; and clearinghouses.

2.8 Figure 2 represents a simplified view of the structure of the industry, and gives examples of participants at each level and which software is used.

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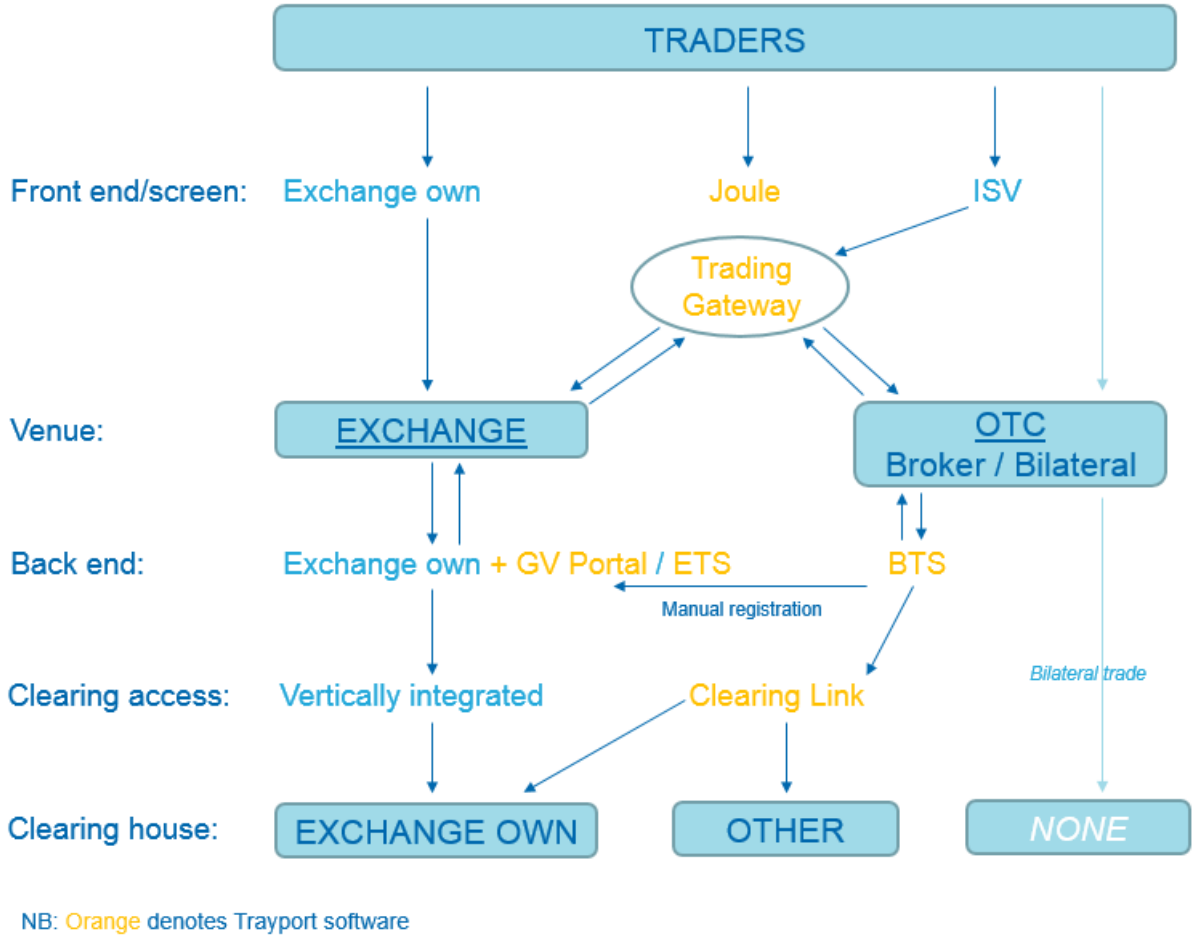
[7] The term 'market' is used to refer to the physical location where products and services are bought and sold by individuals or companies in real time, as well to the abstract place in which the products and services are theoretically traded with settlement occurring at a later date, often involving intermediaries. This merger under consideration is concerned with the participants and performance of the latter usage of the term.
[8] In a highly liquid market it costs less for traders to take and then unwind positions as prices are less likely to move significantly in a short time period.
[9] Liquidity inertia refers to the idea that once a liquidity pool – a place where assets can be bought and sold easily without price being affected – has formed in a given trading venue, it is difficult to shift this to another venue.

Figure 2: Simplified view of the wholesale trading market



Source: CMA.[10]
Note: For the avoidance of doubt, brokered traders are also conducted without being sent for clearing.

2.9 A description of each of these participant groups is set out below.

Traders[11]

2.10 The first stage of the cycle is trade initiation, this is performed by a trader.

2.11 European utilities traders are typically energy generating companies, large industrial or utility companies, or financial institutions (banks and trading houses). In each case, individual traders act on behalf of their institution, using the wholesale markets to optimise assets, manage risk, and speculate on market movements.

2.12 When trades are made by financial institutions, this is often for speculative purposes only; the motivation of the institution being to make financial gains

[10] Figure 2 is a simplified diagram and focuses on Trayport's software input. It is not intended to represent all possible trading and software options available to industry participants.
[11] Throughout our Provisional Findings the term 'trader' will be used to describe both the companies in the wholesale market and those trading on their behalf.

on the market movements and not to purchase the underlying assets themselves. In either case, the traders decide what and how to trade, when, with whom and (where necessary) through which clearinghouse. Traders are initially responsible for instructing that a trade be made.

2.13 The settlement type can be either physical or financial. A physical settlement will occur where the traded commodity is needed for actual use. Financial settlement can occur for a number of reasons, but is more likely where the trade has been made purely for financial gain as a price-hedging instrument or where the market has moved such that the contract is no longer beneficial and is consequently being closed-out (sold on) in advance of contract completion.

2.14 Traders buy and sell wholesale energy by the use of financial instruments or derivatives contracts.[12] The common derivatives used are:

(a) *Futures*: A standardised contract to buy or sell an asset in the future at a fixed price. Futures are exchange traded (see 'exchange trading' below) and are typically financially settled.

(b) *Forward*: A non-standardised or bespoke contract to buy or sell an asset in the future at a fixed price.[13] Forwards are broker or bilaterally traded (see 'broker trading' below) and are more often physically settled.

(c) *Spot*: A contract to buy or sell an asset for the current or 'spot' price.

(d) *Swap*: A non-standardised contract to swap cash-flows, or physical flows, based on the underlying asset. An example of this in the wholesale energy market is an exchange future for physical (EFP) contract, in which a party holding a physically-settled forward contract swaps the rights of that contract with someone holding a financially-settled future contract.[14]

(e) *Option*: A contract that gives the buyer the right to buy or sell an underlying asset at a fixed price at a future date. This is a particularly useful tool for price fluctuation hedging.

2.15 Trades can be made for one-off finite amounts as well as for longer-term supply/sale into the future. For example, a gas retailer can contract to buy a set amount of gas at regular intervals (daily/weekly/monthly) over a set period (month/quarter/six months) for the same price each period. This is known as

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[12] A derivative is a contract with no intrinsic value other than that determined by its terms. It 'derives' its value from the underlying assets, in this case energy commodities.
[13] There are some variations to this definition – eg index/floating forwards – but most are fixed price.
[14] See ICE, Exchange Futures for Physical (EFPs) for ICE WTI Crude Futures.

buying a ‘block future’. Block futures have the benefit of a regular supply at a fixed cost, but this fixed supply might not match the actual day-to-day amount used by customers in each period. Therefore, as each demand date approaches, the gas retailer will enter into further agreements to add to the regular supply in order that supply matches customer usage as closely as possible.

2.16 When the trader has determined its requirement – including the commodity, quantity, settlement type, and price - the trader will initiate the trade by inputting the order onto the relevant system (or by instructing a broker over the phone). The trader will then look to identify other orders available on the system that would fulfil or match its requirements. This is done via a ‘front-end screen’[15] (or multiple screens) in one of two ways:

(a) If trading on an exchange, the product information is displayed on the front-end screen linked to the relevant exchange. Exchange trading is fully automated and anonymous – there is no ability to negotiate. Further information on exchange execution is set out in the ‘Exchange trading’ and ‘Clearinghouse’ sections below.

(b) If inputting via a broker (see ‘Broker trading’ below), the trader will communicate the requirements either electronically via a linked front-end screen or over the phone. The broker will then enter the information into their ‘back-end’[16] or central matching engine system. The counterparties to the trade will decide whether they wish to take on any counterparty risk associated with the trade or remove this risk by clearing the transaction.[17]

2.17 Knowledge of where the highest liquidity resides in any market is an important factor in obtaining the best price for a trade. As such, the trader will need to know which trading venues are the most active in the relevant commodity and ensure that it has access to those trading venues’ front-end screens, or has access to an aggregated view of those screens. In other words, the commodity for which an individual trader performs the most trades will dictate which front-end screen(s) that trader will need.

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[15] A front-end screen facilitates price discovery and enables a trader to enter quotes and initiate the execution of trades on electronic trading venues.
[16] A back-end is a dynamic IT database operated by a venue (broker or exchange) containing all active price quotations at a given time (product, maturity, quantity, price, trader name). The back-end system reorders in real time all these prices into an order book (the purchase prices (‘bid’) and the sales prices (‘ask’) are ordered from the highest to the lowest) and provides matching capabilities between the best available prices provided by the traders.
[17] For compliance, the trader must provide credentials for the underlying buyer/seller, including verification of sufficient stocks or funds to support the trade. This information is to be provided to the relevant trading venue.

2.18 Regarding fees, in the case of a single front-end screen attached to a single venue, the software fee to allow the trader to see the exchange or broker's information is paid for by the exchange or broker.[18] However, traders typically need access to a number of screens to provide them with a wider range of potential trade matches and a better indication of where the highest liquidity in the market can be found.

2.19 Any additional services required by the trader will be paid directly from the trader to the software provider. Additional requirements might include: data services; automated trading tools; implied price generation; or an internal market.[19]

2.20 The timing of the trading decision ultimately relies on waiting for the right amount of the required commodity to become available at the right price. In the case of broker-cleared and exchange based trades, it will also depend on finding the right amount and price being offered by a counterparty which is a member of the same clearinghouse as the trader/trading party. This is discussed further in the section on 'Clearinghouses' below.

Venues

2.21 The term 'trading venue' or 'venue' is used to refer to the two types of intermediaries where trading can take place:

(a) exchanges; and

(b) brokers.

2.22 Trades can also take place without the use of an intermediary. This is known as a bilateral trade. These three types of trading – on exchange, broker, and bilateral - are discussed in more detail below.

Exchange trading

2.23 Exchange trading is where traders' requests to buy and sell commodities are listed and matched on public, regulated exchanges. The main exchange owners in European utilities energy trading are:

[18] This is typically a monthly fee, not volume related.
[19] Internal market software is used where traders within the same firm place trades for the same commodity with one another, but with only one elected trader making trades outside of the firm. To facilitate trades within the firm, a piece of software can be purchased with allows the traders to see each other's trade requirements, without the necessity of placing them on the wider public market.

(a) ICE;

(b) CME Group;[20]

(c) EEX Group;[21] and

(d) Nasdaq.[22]

2.24 Exchange trading is fully electronic and automated. All information is inputted directly into the exchange's proprietary system and matching takes place within the system; there is no negotiation involved. Trades made via an exchange are predominantly financially settled. Physical settlement can occur on some exchange-traded products but is normally associated with trades made via a broker (see section on 'Broker trading' below).

2.25 Exchange trading is standardised. That is, it uses standardised products – futures, spots, swaps – with standardised units and order sizes, and each contract comes with a standard set of terms and conditions.[23] The delivery periods of exchange trades are also standardised, being daily, weekly, quarterly, etc, depending on the commodity traded.

2.26 As described in the 'Traders' section above, to place an order or request a trade on an exchange, the trader must have access to the relevant exchange front-end screen. There are three types of front-end access software available to traders:

(a) exchanges' own direct screens (eg WebICE or CME direct);

(b) independent software vendors' (ISV) screens – an ISV can provide software to connect the trader with an exchange that does not have its own screen, or in some cases the ISV can be used instead of the exchange's own direct screen (if the exchange allows this); and

(c) aggregation screens making available prices from multiple venues (eg Trayport's Joule/Trading Gateway).

2.27 Once the trader has found a match and requested the trade via one of these screens, the exchange will use back-end software to match the order and

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[20] CME Group website.
[21] EEX Group website. Note also Deutsche Borse AG is the majority shareholder in the EEX Group. We understand that RWE, Uniper, EDF and other European utility companies and market participants were involved in the formation of EEX and retain minority shareholdings.
[22] See 'Options & futures trading at Nasdaq Nordic' on the Nasdaq website.
[23] Exchange trading also tends to occur within standard trading hours. Exchange trading can occur outside of these hours but might incur higher fees.

execute the trade.[24] Back-end software can be provided by an external software provider or can be run and maintained 'in house' by the exchange.

2.28 A trade confirmation will be prepared and sent to the trader for verification of the details and as a record of the trade. The back-end software will then send the trade to the stipulated clearinghouse.

2.29 Every trade made on an exchange will be processed through a clearinghouse, which will require the trade to be up to 100% collateralised (see the section on 'Clearinghouses' below).

2.30 The main exchanges listed in paragraph 2.23 above all have their own vertically-integrated clearinghouses, and so any trades made on one of those exchanges will be automatically sent to the related clearinghouse. Where an exchange is used that does not have its own clearinghouse, one will be selected by the exchange. A trader is not able to choose which clearinghouse is used for a specific exchange-traded product.

2.31 When trading on an exchange, neither party will at any point know who they are trading with, not even after the trade is completed. All trades are anonymised.

2.32 Exchange trading is highly regulated. The regulation provides guidance and clarity around the timing of trades, trade confirmation and reporting, use of information, disclosures, etc. Further information on regulation relevant to European utilities trading is set out in the section on 'Market trends and financial regulation' below and in Appendix C.

OTC trading

2.33 Trades entered into by two counterparties bilaterally or via a broker are known as over-the-counter (OTC) trades.

2.34 OTC trading is similar to exchange trading but can be carried out via voice (ie a broker matches bids and offers over the telephone) as well as electronically, or it can be performed as a hybrid of the two. Hybrid broking is where a broker and customer interact over the telephone but with some support from electronic tools such as electronic platforms and proprietary screens displaying historic data, analytics and real-time prices.

[24] 'Back end' software includes all software working to support the front end trade processing, and includes matching engines, data transfer, trade confirmation processing, breach warnings, etc.

2.35 OTC trades are typically standardised in the same manner as exchange-traded products, but can be less so.

- *Broker trading*

2.36 Brokers have the capability to match trades that are more bespoke in nature, or to intervene as a negotiator where two standardised trades are similar but not an exact match. For example, when a broker places a trade on the market, the broker will look for the closest match to the trade requested. In the case where the broker sees a potential match with the exception of the price, the broker can call the trader to negotiate. Accordingly, if the 'bid' price is 4.3 and the broker has found a match but with an 'ask' of 4.5, the broker might try to negotiate with the counterparties to agree on 4.4. Negotiation of this type does not and cannot take place on an exchange.

2.37 As with exchange trading, once the trader has requested a trade by inputting electronically through the front-end screen or over the phone, the broker will use back-end software to match the order and execute the trade. The back-end software can be provided by an ISV or can be run and maintained 'in house' by the brokerage firm. A trade confirmation will then be prepared and sent to the trader for verification of the details and as a record of the trade.

- *Broker cleared trades*

2.38 The process for clearing an OTC-executed trade is different to that of an exchange-executed trade. Where an OTC trade is to be cleared via a clearinghouse, it will first need to be registered on an exchange. Registration is achieved by choosing a similar on-exchange product to the off-exchange brokered product (or the same one if possible) so that it is a standardised version of the original trade. This can then be registered on the exchange and sent through to the chosen/dictated clearinghouse for clearing.

2.39 There are two ways for the OTC trade to be remitted for registration and clearing. It can be manually registered on the exchange by the broker, and then sent on from the exchange to the clearinghouse, or the broker can use a straight-through-processing (STP) link.

2.40 The STP link takes the trade from the point of matching by the broker and has it automatically registered on an exchange and sent through to the relevant clearinghouse for processing. In this way the transaction data flows through

the system with little or no human intervention, thereby reducing the risk of transposition error and shortening the processing time.[25]

2.41 An STP link setup is paid for by the clearinghouse, but the trader will have to pay various fees to the clearinghouse for services undertaken once the STP link has been used (see section on 'Clearinghouses' below). The choice of clearinghouse to be used is designated from the outset, with the clearinghouse named in the description of the trade. The preferred exchange and clearinghouse to be used is typically the choice of the trader.

2.42 As with exchange trading, the clearinghouse will require up to 100% collateral to insure against risk of default by either party to the trade, making it a more expensive option than clearing bilaterally (see sub-section 'Broker non-cleared' below).

2.43 Unlike exchange trading which is anonymised, once an OTC trade has been completed, the parties will then be able to see who they have traded with.

- *Broker non-cleared trades*

2.44 Broker non-cleared trades are agreed in the same manner as the broker trades described above. However, unlike the broker trade where the trade is sent to a clearinghouse for settlement, with a broker non-cleared trade the settlement is agreed and arranged between the two trading parties directly. In this case, the parties might not require collateral, although this will vary from trade to trade. Bilateral settlement of this kind is typically used for more bespoke trades, and because the collateral costs are lower than when using a clearinghouse.

2.45 Broker trades which are to be bilaterally settled show up in a separate column on the aggregated trading screen to OTC-cleared trades so it is clear to traders which method of settlement will be employed.

- *Bilateral trading*

2.46 Bilateral trading occurs between two parties directly. There is no intermediary involved in the agreement or settlement of the trade and the trade is not visible to the rest of the market. As such, these agreements can be less costly to arrange, but are considered potentially higher risk since there is no clearinghouse or other third-party involved to secure against default by either party.

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[25] See 'Energy Trading and Risk Management: It's Time for STP' on the DerivSource website.

2.47 Bilateral trades of this kind are typically reserved for highly bespoke, ad-hoc trades only. The main reason bilateral trades might be chosen is if a trader is looking for a non-standard product or term, eg a long-term gas supply contract.

Clearinghouses

2.48 With the exception of bilateral and broker non-cleared trades, where the settlement is arranged informally between the parties, once a trade has been executed it will be sent for clearing.

2.49 Clearing is the process of managing the actions between trade date and settlement date, and ensures that the terms of the contract entered into by the parties to the trade are fulfilled through to delivery. The clearinghouse (or central counter-party, 'CCP') interposes itself between the two trading parties, becoming the buyer to every seller and the seller to every buyer.

2.50 The counterparty risk is thus transferred from the trading parties to the clearinghouse, with the clearinghouse taking on the liability for settlement, be that physical or financial. Neither trading party needs to know who they bought from or sold to as the clearinghouse is now their counterparty.[26]

2.51 As consideration for taking on this risk, the clearinghouse will require each party to deposit up to 100% collateral, also known as margin, for the trade. These funds will be used in the event of a party being unable to meet its trade obligations. The amount of margin the clearinghouse requires will depend upon the risk associated with the party and the trade, but will also take into account any other positions held open with the clearinghouse such that amounts receivable and amounts payable can be netted.

2.52 The clearinghouse will typically charge the trader the following fees:

(a) flat per annum membership fee; and

(b) clearing fee based on the volume of each trade.

2.53 The clearinghouse will also require the following capital funds:

(a) contribution to a default fund, a base layer of capital available to the clearinghouse for use in extreme circumstances; and

[26] Association of Financial Markets Europe (AFME), February 2015 "Post trade explained", p3.

(b) collateral/margin (this is not a fee but must be put forward in advance of trading and is held by the clearinghouse).

2.54 For any trade to be cleared, both sides of the trade have to be members of the same clearinghouse. However, in some cases a broker or a bank can 'sponsor' a trader so that they can clear through a specified house without the trader being a member. In this case, the sponsor is the member.

2.55 The choice of clearinghouse to be used is stated from the outset, and will be part of the description of the trade listed with the exchange or broker. As explained in paragraph 2.30, where an exchange has its own vertically integrated clearinghouse all trades made on that exchange will be cleared through their own clearinghouse. Where the exchange does not have its own clearinghouse, one will be elected by the exchange. For OTC trades, the clearinghouse will be chosen by the trader or the trading company.

2.56 In the same manner as the venue used, the choice of clearinghouse is also driven by the location of the greatest liquidity. When a trader holds numerous 'open positions' with one clearinghouse, these positions can be netted and the margin requirement reduced. This will reduce the cost to the trader, so the same clearinghouse will be used for future trades, increasing the number of open positions and allowing for more netting. See Appendix E for information on clearing volumes by clearinghouse.

Liquidity and network effects

2.57 An important characteristic of European utilities trading is liquidity; that is, the availability of volumes or the opportunity to buy and sell in a large market. With more opportunities to trade, buyers and sellers are more likely to achieve the best possible deal or price on the buy and sell side, respectively. Trading venues hold liquidity by bringing together buyers and sellers of various size that need to trade with each other. Trayport's front-end screen aggregates a trader's view of liquidity across multiple venues – we discuss this further in Section 3.

2.58 Liquidity pools tend to be self-reinforcing; that is, the more people that trade on a single venue the greater the liquidity and the more people who will come to that venue to trade. These network effects are an important feature of the wholesale energy trading markets.

2.59 As a result of network effects, the value of the services offered by trading venues increases with the number of market participants that use that venue. To some extent, this can make liquidity 'sticky' and it prevents traders from

easily switching between venues and/or clearinghouses because doing so will risk losing access to the highest liquidity and, therefore, best prices available.

2.60 For European utilities trading, the venue(s) with the highest liquidity varies depending on the commodity (or asset class), and each commodity has a different trading norm. These differences are due in part to the historical development of the markets but also the nature of the commodity itself. For example, emissions trading is more akin to financial trading so it is carried out predominantly on exchanges. In UK power, on the other hand, the participants are mostly large power generating companies, who are known to one another and have a history of trading with one another, so trading in this case is inclined to occur OTC via brokers because there is perceived to be lesser counterparty risk or the transactions are more bespoke in nature. See Appendix E for further information on trading volumes by asset class.

Market trends and financial regulation[27]

2.61 The key legislation which affects wholesale European utilities trading includes:

(a) the Regulation on OTC derivative transactions, central counterparties (CCPs) and trade repositories (Regulation 648/2012) (EMIR); and

(b) the Markets in Financial Instruments Directive (2004/39/EC) (MiFID), the Markets in Financial Instruments Directive (MiFID II)(Directive 2014/65/EU) and the Markets in Financial Instruments Regulation (Regulation 600/2014) (together, MiFID II).

2.62 The primary focus of EMIR is the reporting and clearing of OTC transactions; it was intended to bring transparency to OTC transactions. It imposes significant obligations, including a requirement for most OTC transactions to be cleared, and represented a considerable overhaul of how OTC trading operates.

2.63 MiFID has been in force since November 2007. It governs the provision of investment services in financial instruments by banks and investment firms and the operation of traditional stock exchanges and alternative trading venues. In October 2011, the European Commission tabled MiFID II with the aim of making financial markets more efficient, resilient and transparent, and

[27] Following the recent UK referendum on whether the UK should leave the European Union (EU) it is possible that there could be significant changes to the regulatory framework that applies to UK financial markets in the future. However, the CMA notes that the UK currently remains bound by its EU treaty obligations and that Article 50 of the Treaty on European Union contemplates a process under which, from the date the UK gives notice under that Article, the UK would remain a member of the EU for a period of at least two years. It also notes that many of the relevant European laws have been transposed into UK law and would not be automatically repealed on the UK leaving the EU.

to strengthen the protection of investors. MiFID II is intended to regulate the operation of markets and will come into force in 2018. It places compliance measures, certain obligations and behavioural limitations on market participants. It establishes where traders must trade and the regulatory standard and costs they must meet. MiFID II will not apply universally. Certain physically settled energy products are excluded (carved-out) from its scope and certain types of counterparty are excluded from most, but not all, of its requirements.

2.64 The carve-out of physically settled OTC traded gas and power contracts from MiFID II means that utilities companies and other market participants can continue to trade in physical gas and power products without subjecting themselves to the requirements and licensing costs of financial counterparties. Firms which are regulated and able to trade on exchange will continue to be able to switch between exchange and OTC venues to take advantage of trading opportunities.

2.65 The clearing exemption for wholesale energy products and an exemption for trading below set volumes means that OTC gas and power trading in the energy space can continue uncleared for the foreseeable future. Uncleared OTC trading remains an alternative to exchange trading for gas and power contracts. The situation is less clear for other commodities such as coal and emissions which, once transitional provisions expire, will not benefit from the same carve-out.

2.66 As a result of regulation and standardisation, there has been a longer term trend towards greater exchange based trading and a general decline in broker trading (this general increase in exchange based trading volumes is evident in data set out in Appendix E). The European utilities trading markets are dynamic and continue to evolve, and the effect of the carve-out for physically settled OTC traded gas and power contracts from MiFID II means that this trend towards exchange is likely to be less pronounced for these asset classes, although the extent of this is uncertain. We have discussed this issue further in paragraph 7.84 and in our competitive assessment.

2.67 Appendix C sets out in detail these regulatory requirements, including any exemptions and excluded counterparties.

Use of electronic platforms to match buyers and sellers

2.68 In its recent decision, *Tullett Prebon/ICAP,*[28] the CMA recognised that there has been some 'blurring' of the boundaries between exchange and broker different trading venues as a result of 'electronification', that is, the use of electronic platforms to match buyers and sellers.

2.69 Brokers have been able to run electronic trading platforms in order to increase the pool of liquidity within which buyers and sellers can be matched. This has increased competition between brokers and exchanges. Combined with regulatory reforms affecting OTC trading, venue-hosted electronic platforms are facing increasing regulation and new trading venues are to be introduced as Organised Trading Facilities (OTFs) with specific regulatory and reporting requirements. Aggregating software, such as that provided by Trayport, is not subject to these requirements which apply to the venues not the software providers.

2.70 Overall, the increase in electronic trading and the regulatory changes affecting OTC trading may be seen as contributing towards an evolution of trading patterns between OTC and exchange for some of the European utilities asset classes relevant to this Merger. We consider these issues in more detail in our assessment of the nature of competition and examine changes in trading patterns as part of our assessment of trading by asset class (see Appendix E).

3. The Parties

ICE

3.1 ICE is a global operator of derivatives exchanges and clearinghouses, including in respect of derivatives with European gas, power, coal and emissions underlying commodities. ICE owns 11 exchanges and 6 clearinghouses and offers its clients trade execution, central clearing, data services, instant messaging, and listing services. The ICE Group generated revenues of $3.3 billion in financial year 2015. ICE is the largest exchange active in European utilities trading. Further details on ICE's financials are available in Appendix B.

3.2 ICE also supplies 'WebICE', its own proprietary front-end screen which gives traders access to ICE's exchanges for price discovery and execution purposes. ICE's exchanges can also be accessed via 'conformed'

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[28] ME/6579/15, *Anticipated acquisition by Tullett Prebon plc of ICAP plc's voice and hybrid broking and information businesses*, dated 7 June 2016

independent software vendors (ISVs) and/or it allows ICE customers who have developed their own in-house software to view ICE's real time market data and execute trades on ICE's exchanges. ICE also has its own proprietary back-end software.

3.3 Trades executed on ICE's exchanges are cleared through ICE's clearinghouse: ICE Clear Europe. Trades executed OTC (ie generally via brokers) can also be cleared through ICE's clearinghouse, using 'ICE Block', a trade registration facility which allows trades that are matched off-screen to be registered with ICE.

3.4 Traders need to pay a membership fee, trade execution fees (per transaction) and clearing fees (per transaction) to execute and/or clear trades through ICE exchanges, and ICE's clearinghouse. WebICE is available to traders which subscribe to ICE's data services.

3.5 ICE was founded in 2000. Below is a brief history of ICE and its activities prior and up to the Merger:

Table 1: Brief history of ICE activities

Date	*Event*
2000	Intercontinental Exchange formed to develop transparent marketplace for OTC energy.
2001	ICE acquires International Petroleum Exchange.
2002	ICE introduces industry's first cleared OTC energy contracts.
2007	ICE acquires New York Board of Trade and Winnipeg Commodity Exchange.
2008	Launch of ICE Clear Europe, the UK's first new clearinghouse to be built in London for over a century.
2009	ICE launches two CDS clearinghouses.
2010	ICE acquires Climate Exchange
2013	Intercontinental Exchange acquires NYSE Euronext, and majority stake in APX Endex
	ICE launches ICE Endex, a continental European energy exchange.
2014	ICE acquires Singapore Mercantile Exchange and SuperDerivatives.
2015	ICE acquires Interactive data.
	ICE acquires Trayport from BGC.

Source: ICE website: ICE at a glance.

3.6 The ICE exchanges active in Europe relevant to our assessment of the Merger, are ICE Futures Europe (IFEU) and ICE Endex. ICE Clear Europe (ICEU) is the relevant clearinghouse for European utilities trades executed on IFEU and ICE Endex.

3.7 IFEU is a regulated exchange for trading futures and options contracts for European natural gas, power, coal, emissions, as well as crude and refined oil, interest rates, equity derivatives and soft commodities. IFEU is located in London and has permission to operate in 63 jurisdictions.

3.8 ICE Endex is a regulated futures and options trading platform for trading continental European gas and power, which is located in the Netherlands and has permission to operate in 32 jurisdictions.

3.9 ICEU provides central counterparty (CCP) clearing and risk management services for interest rate, equity index, agricultural and energy derivatives, as well as European credit default swaps. ICE Clear Europe is regulated by the Bank of England in the United Kingdom (UK) and by the Securities and Exchange Commission (SEC**)** and Commodities Futures Trading Commission (CFTC) in the United States.

3.10 Further information on the revenues of these ICE exchanges is available in Appendix B.

Trayport

3.11 The principal activity of Trayport is the provision of software designs and solutions for hybrid (electronic and voice executed) energy trading.[29] More specifically, Trayport licenses software products to participants (traders, brokers, exchanges and clearinghouses) in the wholesale trading markets for a number of European utilities. Trayport's software products communicate with each other through an API and as a result of this inter-functionality together form a platform which supports the entire lifecycle of a trade: from price discovery through to execution and clearing (the Trayport platform). Trayport generated revenues of approximately £50 million in financial year 2015. Further details on Trayport's financials is available in Appendix B.

3.12 Below is a brief history of Trayport and its ownership prior to the Merger:

[29] Trayport Limited Annual Accounts for the year ended 31 December 2014.

Table 2: Brief history of Trayport

Date	*Event*
1993	Trayport founded by Edmund Hor.
1994	Price Distribution System released, providing consolidated view of the market.
1997	Launch of GlobalVision
1999	Latest version of GlobalVision is capable of exchange trading, used as an automated exchange to trade electricity.
2001	Live trading of cleared and bilateral European electricity.
2002	Latest version of GlobalVision caters for clearing functionality
2005	Office opened in Hong Kong.
2006	New York office established.
2008	Trayport acquired by GFI Group Inc.
2010	Automated Trading Engine launched.
2011	Joule launched.
	Singapore office established.
2012	Energy Market Access Gateway launched, (a pre-trade risk and market access system).
2013	Trayport acquires Contigo.
2015	BGC acquires GFI, including Trayport.
2015	ICE acquires Trayport from GFI

Source: Trayport Company History Overview.

3.13 Trayport offers the following key products:

(a) Joule/GlobalVision Trading Gateway (Joule/Trading Gateway);

(b) GlobalVision Broker Trading System (BTS);

(c) GlobalVision Exchange Trading System (ETS);

(d) GlobalVision Portal (GV Portal); and

(e) Complete Clear (also known as, 'Clearing Link', or Trayport's STP link).

3.14 We set out below a description of each of these products and how, in combination, the Trayport platform brings together traders, venues and clearinghouses, and supports the entire lifecycle of a trade.

3.15 Customers pay a licence fee for each software piece independently, however, a key benefit each customer derives in licensing Trayport software is gaining access to the integrated Trayport platform. The positioning of each piece of Trayport software in the lifecycle of a trade is set out in Figure 2, and the functionality of each piece of software is explained below.

Joule/Trading Gateway

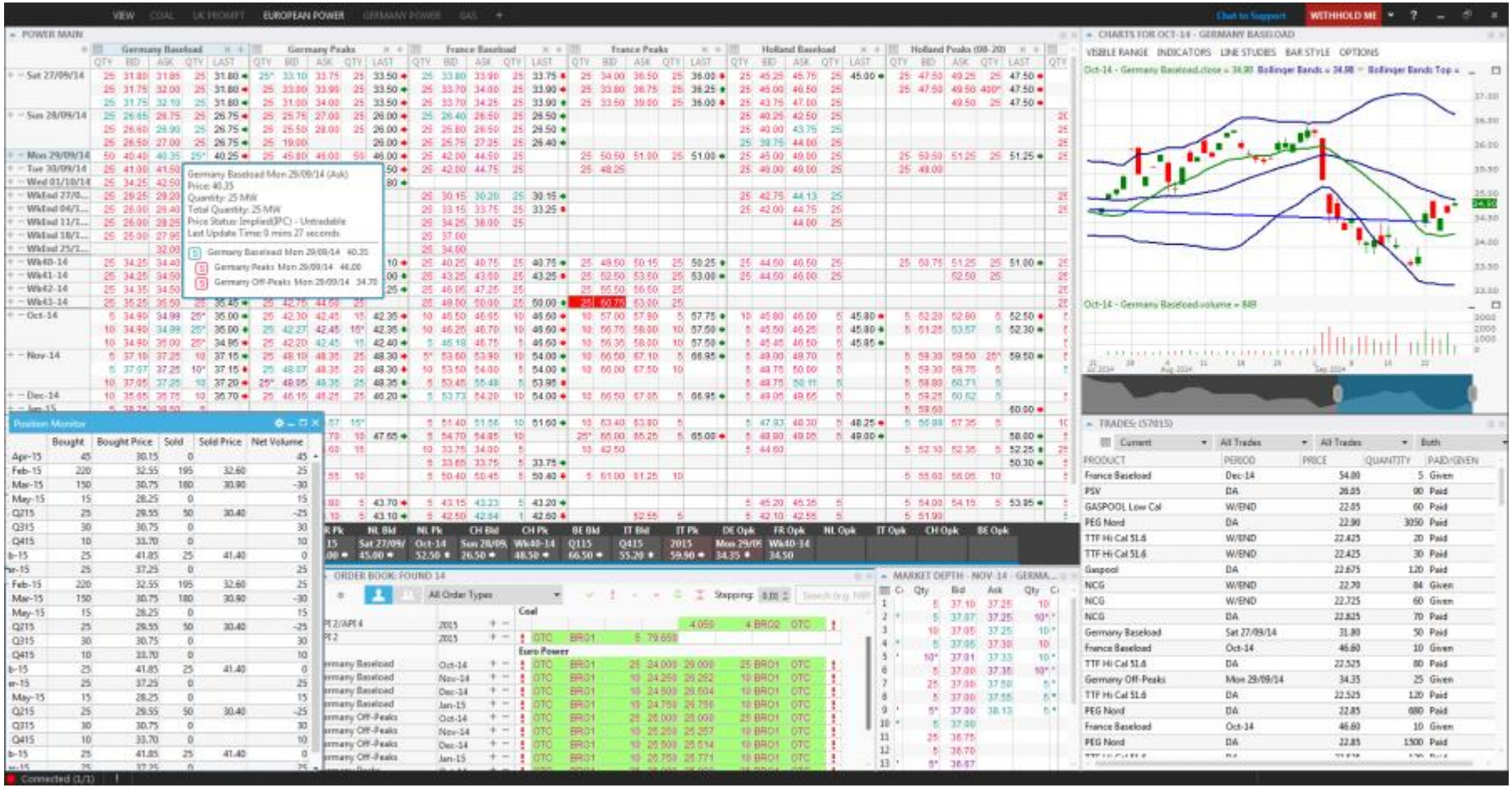
3.16 Historically, if a trader wanted to trade across multiple venues and monitor prices on those venues, it was necessary for that trader to have multiple screens – one for each venue.

3.17 This requirement to review multiple screens, across multiple venues, historically made trading and/or monitoring prices difficult for traders and, as a result, it meant that traders were not necessarily achieving the best price for their European utilities derivatives contracts because liquidity was fragmented. In 2003, Trayport launched a front-end screen which delivered an aggregated view of prices across all of the broker venues which used its back-end system eliminating the need for each broker to offer and maintain their own dedicated screen. This aggregated front-end solution is now called Joule/Trading Gateway.

3.18 Joule is the Trayport screen that each trader sees when it signs into the Trayport system and Trading Gateway is the software running behind the Trayport screen which aggregates market data from multiple venues to be displayed to the trader through Joule.[30] Trayport's Joule/Trading Gateway screen can be configured on a bespoke basis for each trader, with the result that every trader has a different view of market liquidity and functionality available to them. Trayport is in the process of transferring its front-end screen customers using Joule/Trading Gateway on a deployed basis (ie hosted at the customer's site) to software as a service (SaaS) under which Trayport will host the software.

[30] On Trayport's website Joule is described as its 'leading SaaS delivered electronic trading solution for energy markets. It provides an enhanced trading experience through an optimally configured desktop screen with mobile access and dedicated support'.

Figure 3: Example of a Joule/Trading Gateway screen



Source: Trayport products.

3.19 As discussed above, Joule/Trading Gateway provides aggregated, multi-venue front-end access and enables traders to view derivatives contracts and pricing in real-time. It also enables traders to initiate a trade on each of those venues, ie send a buy or sell order message to a connected trading venue which facilitates the matching of orders under the relevant rules of that trading venue.[31]

3.20 Today, as a result of its aggregation function and first-mover advantage, Joule/Trading Gateway is the primary front-end screen for traders active in European Utilities trading where it underpins over 85% of trading. It is currently Trayport's [✂] revenue driver and, in 2015, had [✂] trader customers and accounted for [✂]% of Trayport's annual revenue (see Appendix B for more information on Trayport's revenue split by product).

Broker software: BTS

3.21 Trayport describes its back-end software, BTS, as 'a matching engine and set of associated tools that offers the ability for an inter-dealer broker to launch, support and grow OTC trades.'[32] It is used by brokers, with connection to Joule/Trading Gateway, to operate OTC trading venues, and comprises a matching engine to arrange trades and a direct front-end screen providing access to only that broker's venue. All major brokers active in European utilities trading currently use Trayport's back-end, including: [✂]. These brokers currently using Trayport's back-end are dependent on Trayport's Joule/Trading Gateway for front-end access to traders. This is because of the interdependence of Trayport's front-end and back-end systems; more specifically, brokers are unable to connect their Trayport back-end via an API to an alternative front-end screen(s) (eg supplied by another ISV) in order to distribute prices on their venue without the permission of Trayport (Trayport's 'Closed API').

3.22 Figure 4 below illustrates the interaction between Trayport's front-end Joule/Trading Gateway and its BTS software. Each connecting line between Trading Gateway and each instance of BTS represents a read-write API connection, where market data flows in one direction and trader orders flow in the other. As Figure 4 shows, Trading Gateway is able to provide an aggregation of data from each instance of BTS to a trader's front-end access screen display (ie Joule), also known as a graphical user interface (GUI).

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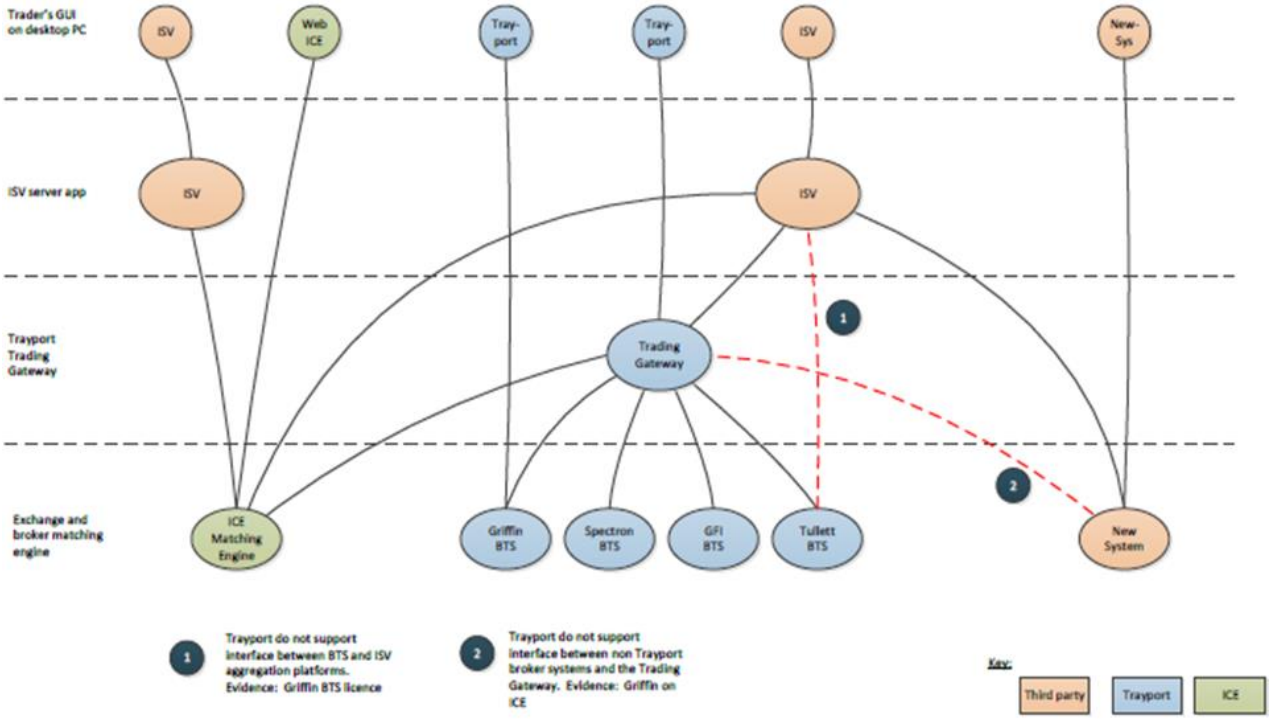
[31] Joule/Trading Gateway does not allow orders to be matched across trading venues; orders can only be matched within the same trading venue.
[32] See website for Trayport's products.

Figure 4: Closed API – interaction between Trayport's front-end and back-end technology



Source: Griffin Markets.

3.23 The Trayport front-end Joule screen sits on top of the Trading Gateway and is represented by the blue 'Trayport' bubble with a line linking it to the Trading Gateway. There is also a direct Trayport front-end screen for each individual venue using its back-end; an example of this is demonstrated by the blue Trayport bubble linked by a line to 'Griffin BTS'. However, as indicated by the red-dashed line numbered 1 in Figure 4, an alternative ISV does not have a direct link to each instance of BTS and in order for it to offer traders price aggregation for these venues, via its front-end screen, it must receive this information via Trading Gateway. Moreover, as indicated by the red-dashed line numbered 2, an alternative back-end system does not have a direct link into the Trading Gateway and, therefore, its prices will not be listed on the Trayport front-end.

Exchange software: ETS and GV Portal

3.24 Trayport describes ETS as 'a matching engine that enables cleared and bilateral trading, market operations and data distribution for exchanges.'[33] ETS is the equivalent software to BTS made available to exchanges. As with BTS, it assists venues to host a marketplace with bid-offer matching and execution functionality and has a direct (non-aggregated) front-end screen. It is also dependent on Joule/Trading Gateway for distribution of its prices

[33] See website for Trayport's products.

amongst traders and cannot connect to another front-end without Trayport's permission.

3.25 GV Portal provides exchange venues (but not brokers) that have their own back-end matching software, with the ability to connect to Trading Gateway. As a result of this connection, traders can view that exchange's market data and execute orders on those exchanges through their Joule/Trading Gateway screen. Exchange venues with their own proprietary front-end and back-end software pay a licence fee to Trayport in order to have their prices listed for viewing on the Trayport front-end, with a view to benefitting from the increased penetration of their venues' prices amongst traders.

3.26 All of the major exchanges active in European utilities trading[34] either use ETS or connect to Trading Gateway from their own back-end matching software via GV Portal.

Clearing Link

3.27 Trayport's Clearing Link connects its broker venues to clearinghouses for the purposes of clearing OTC transactions. Trayport states that its Clearing Link, 'delivers true STP with simple 'click and clear' functionality accessed from the same platform users are trading on, allowing the user to utilise Trayport's hosted architecture to deliver greater speed and reliability, and reduce cost and risk.'[35] Trayport's Clearing Link software is differentiated from other third party STP links as a result of its full end-to-end software integration. That is, it connects Trayport's front-end, back-end and Clearing Link technology, and allows information on clearing to flow up and down the chain in both directions. In practice, this means that the different identification numbers generated upon trade execution and clearing can be held together in the same database allowing the trade to be tracked more easily.

Table 3: Clearinghouses/exchanges currently available via Clearing Link

Clearinghouse/Exchange	*Markets*
CME	Coal, Freight, US Gas
ECC	Euro Power, Euro Gas, NBP
MEFF	Spanish Power
OMNICLEAR	Spanish Power
NOS	Wet & Dry Freight, Iron Ore
SGX	Wet & Dry Freight, Iron Ore
LCH	Wet & Dry Freight, Iron Ore

Source: Trayport.

[34] See Appendix E for an overview of European utilities trading by asset class.
[35] See website on Trayport's products.

Ancillary services

3.28 In addition to its core services, Trayport offers a number of ancillary services including: gold mapping; implied price calculator; automated trading; virtual markets; and Contigo, a risk management and compliance tool. These ancillary services are only available if you licence one of Trayport's core products. In 2015, Trayport generated approximately £[✂] from the provision of these ancillary services.

The Trayport platform

3.29 The Trayport products, taken together, form a platform which serves multiple sets of customers, and whose reliance on each other is an important factor in the strength of the Trayport offering. More specifically, the value that trading venues realise from Trayport depends on the number of traders licensing the Joule/Trading Gateway front-end, and the value that traders realize from Trayport depends on the being able to access liquidity provided by venues using Trayport's back-end. Similarly, the success of Trayport's Clearing Link relies on the number of clearinghouses connected to it and on the volume of OTC cleared trades flowing through the Trayport front and back-ends. Accordingly, the number of traders, venues and clearinghouses licensing Trayport's software affects the profitability of each product, and the success of the Trayport platform as a whole. We considered these network effects in our competitive assessment.

4. The merger and relevant merger situation

Outline of the transaction

4.1 On 11 December 2015, ICE completed its acquisition of the entire issued share capital of Trayport from BGC Partners and GFI, for approximately $650 million, in the form of common shares in ICE, and a cash adjustment amount. The transaction therefore brings under the common ownership of ICE enterprises which were previously separate.

The rationale for the merger

4.2 ICE said that the acquisition of Trayport was part of a strategic decision to diversify into new and complementary business areas involving software and data, to offset the volatility of transaction based revenue streams with

recurring licence fee based revenues.[36] ICE also said that ICE's internal papers support ICE's stated rationale and show a clear intention to continue to operate and grow Trayport as a distinct business within ICE.[37]

4.3 Trayport's network of screen access and connectivity with market participants in the European utilities asset classes (ie 'screen real estate' on desks) is viewed by ICE as an attractive distribution channel for delivering and monetising what ICE is developing both organically and by acquisition.[38]

4.4 ICE also submitted that public statements made by its CEO, Jeffrey Sprecher, demonstrate a clear intent to continue operating Trayport as a distinct business within the ICE Group and to grow its business in line with Trayport's pre-acquisition strategy.[39]

Jurisdiction

4.5 Under section 35 of the Act and our terms of reference (see Appendix A), we are required to decide on whether a relevant merger situation has been created.

4.6 Section 23 of the Act provides that a relevant merger situation is created if:

(a) two or more enterprises have ceased to be distinct within the statutory period for a reference;[40] and

(b) either the 'share of supply test' or the 'turnover test' (as specified in that section of the Act) is satisfied.[41]

Enterprises ceasing to be distinct

4.7 The Act defines an 'enterprise' as 'the activities, or part of the activities, of a business'. A 'business' is defined as including a 'professional practice and includes any other undertaking which is carried on for gain or reward or which is an undertaking in the course of which goods or services are supplied otherwise than free of charge'.[42]

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[36] ICE/Trayport initial submission, paragraph 3.1.
[37] ICE/Trayport initial submission, executive summary.
[38] ICE/Trayport initial submission, paragraph 3.2.
[39] ICE/Trayport initial submission, paragraphs 3.3–3.7.
[40] As set out in section 24 of the Act.
[41] Section 23 of the Act provides that the value of the turnover in the UK of the enterprise being taken over must exceed £70 million or, in relation to the supply of goods or services, as a result of two or more enterprises ceasing to be distinct, at least one quarter of all such goods or services which are supplied or acquired in the UK or a substantial part of the UK are supplied by or to one and the same person.
[42] Section 129(1) of the Act.

4.8 A company that owns a business operating as a going concern (in this case both ICE and Trayport) with the necessary assets, employees and customer contracts would clearly satisfy the definition of an enterprise for the purposes of the Act.

4.9 The Act provides that two enterprises 'cease to be distinct' if they are brought under common ownership or control.[43] The transaction, as described in paragraph 4.1, which involved ICE purchasing the entire issued share capital of Trayport, brings under the common ownership of ICE enterprises which were previously separate. We are therefore satisfied that two enterprises have ceased to be distinct as a result of the transaction.

Turnover test

4.10 The UK turnover of Trayport is less than £70 million and, accordingly, the turnover test in section 23(1)(b) of the Act is not satisfied.

Share of supply test

4.11 The share of supply test is satisfied if a merger creates or otherwise increases a share of at least one quarter in the supply or acquisition of goods or services of any description in the UK, or in a substantial part of the UK.[44] The concept of goods or services of 'any description' is broad. For the purpose of the jurisdictional test in section 23 of the Act, the CMA is able to apply such criterion or such combination of criteria as it considers appropriate. The share of supply used for the purpose of the jurisdictional test is different from a market share, and goods or services to which the share of supply test is applied need not correspond with the market defined for the economic analysis.[45] The relevant point in time for calculation of the share of supply is immediately before the reference is made.[46]

4.12 ICE supplies a front-end desktop screen called, WebICE, which provides traders with access to ICE's exchange venues. Trayport's front-end desktop screen, called Joule, connects to Trading Gateway and allows users to access the information compiled by Trading Gateway from a number of broker and exchange venues on a single front-end desktop screen (see paragraphs 3.13 to 3.20 for a detailed description).

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[43] Section 26 of the Act.
[44] Section 23(2)(b), section 23(3), and section 23(4) of the Act.
[45] Merger Assessment Guidelines (CC2), paragraph 3.3.5.
[46] Section 23(9) of the Act.

4.13 We therefore consider that the Parties overlap in the supply of front-end access services to enable energy trading in the UK.

4.14 In 2015, the Parties held a combined share of supply of approximately [80-90]% in the provision of front-end access services for the electronic trading of European utilities derivative contracts. This was an increment of [70-80]% as a result of the aquisition.[47] In this case, Europe is used as a proxy for trading activity in the UK because ICE was unable to provide UK specific data. However, ICE submitted that Europe-wide data represented a reasonable indication of the basic pattern of relative trading for UK-wide customer sets.

4.15 We therefore provisionally conclude that the share of supply test in section 23 of the Act is met.

Timing of the reference

4.16 Under section 24 of the Act, a reference of a completed merger may be made if two or more enterprises have ceased to be distinct no more than four months before the date of the reference. The four-month period starts to run from the date on which the enterprises cease to be distinct,[48] or the date on which notice of material facts about the completion of the transaction has been given to the CMA or made public. The Act allows for the extension of the four-month period in which a reference can be made, under certain circumstances.

4.17 The Merger completed on 11 December 2015 and this was first made public on the same date. On 11 January 2016, for the purposes of preventing pre-emptive action in accordance with section 72(2) of the Act, the CMA issued an order addressed to ICE (the Order).

4.18 The four month deadline for a reference under section 24 of the Act fell on 6 May 2016, following extensions under section 25(2) of the Act. Once the duty to make a reference arises, the Act further allows for extension of the four-month deadline where undertakings in lieu of a reference (UIL) are sought.[49] If the parties indicate that they do not intend to give UIL, the extension ends ten working days after receipt by the CMA of the parties' statement.[50] This means

[47] These figures are computed using overall (ie on-exchange and OTC) executed volumes. This is based on data from third parties (namely EEX, Nasdaq, Powernext and PXE) and the Parties (for all other known trading venues, excluding their estimates of voice-traded volumes) for 2015. When computing the volume traded through Trayport, other Trayport-dependent front-ends are included (eg Exxeta and TT).
[48] As defined in section 27 of the Act.
[49] See section 25(4) of the Act.
[50] See section 25(5)(b) of the Act.

the four-month clock starts running again, and the CMA must make the reference before the end of this period.

4.19 ICE confirmed that it did not intend to offer UIL and the reference was made on 3 May 2016, ie within the four month deadline.

4.20 We are therefore provisionally satisfied that the reference was made on time.

Provisional conclusions on relevant merger situation

4.21 We are therefore satisfied that a relevant merger situation has been created.

5. Market definition

5.1 The purpose of market definition is to provide a framework for the CMA's analysis of the competitive effects of the merger. The relevant market (or markets) is the market within which the merger may give rise to an SLC and contains the most significant competitive alternatives available to the customers of the merged companies. However, market definition is not an end in itself, and the boundaries of the market do not determine the outcome of the CMA's analysis of the competitive effects of the merger in a mechanistic way. The CMA may also take into account constraints outside the relevant market (or markets).[51]

5.2 In our assessment of the competitive effects of the Merger, we consider the following theories of harm:

(a) vertical foreclosure of European utilities energy trading venues (considering brokers and exchanges, separately);

(b) vertical foreclosure of clearinghouses; and

(c) horizontal unilateral effects in the supply of energy trading front-end access services.

5.3 As described above, Trayport supplies a number of important software products which are key inputs into the activities of traders, brokers, exchanges and clearinghouses. As such, we have considered market definition by reference to the operations of Trayport and the software products it supplies to its customers, and by reference to the downstream markets in which ICE and its rivals are active.

[51] CC2, paragraphs 5.2.1 & 5.2.2.

Product market definition

5.4 The Parties did not make any submissions on the appropriate product market definition for assessing the competitive effects of the Merger.

5.5 When assessing the vertical effects of a merger, it is necessary to consider the effects of foreclosure on relevant downstream markets. We therefore considered market definition for the purposes of assessing the Merger by reference to the following categories of goods and services supplied both by ICE and by the customers of Trayport (venues and clearinghouses):

(a) trade execution services to energy traders; and

(b) trade clearing services to energy traders.

5.6 We also considered market definition for the purposes of assessing the Merger by reference to the following categories of goods and services supplied by Trayport to venues and clearinghouses:

(a) back-end technology to brokers and exchanges, respectively; and

(b) access services to clearinghouses for OTC executed trades.

5.7 Finally, we considered market definition for the purposes of assessing the Merger by reference to the energy trading front-end access services to traders supplied by both ICE and Trayport.

5.8 We therefore gathered evidence on the appropriate product market definition in relation to these five categories of products and services, and have set this out below.

5.9 In carrying out our assessment, we have taken into account the interdependence between the supply of front-end services to traders, the supply of back-end technology to brokers and exchanges and the supply of access services to clearinghouses for OTC executed trades. More specifically, Trayport's services collectively form a platform that connects multiple sets of users: brokers, exchanges, clearinghouses and traders.

5.10 The value that each of these users realises from Trayport will depend on the number of customers from the other groups that also use it. For example, the value that brokers and exchanges obtain from Trayport depends on the number of traders licensing this product; the value that traders realize from Trayport depends on them being able to access liquidity provided by brokers and exchanges. Similarly, the success of Trayport's STP Link relies on the number of clearinghouses connected to it and on the volume of OTC cleared trades flowing through Trayport's front-end and back-end systems for

clearing. As a result, Trayport's platform displays what can be described as 'indirect network effects'.[52] We refer to these 'indirect' network effects simply as 'network effects' throughout our Provisional Findings.

5.11 As a result of these network effects, Trayport's offering to one group of customers will reflect its need to have some of these users on its platform in order for it to then be able to attract the other types of user. For the purposes of our competitive assessment we have therefore taken into account the fact that demand for the product categories set out above is interdependent and considered them in the round, not in isolation

5.12 We note that, in practice, our analysis of the competitive effects of the Merger and market definition will overlap. Our assessment of market definition below should therefore be read alongside our assessment of pre-merger competition in Section 7 and our competitive assessment in Section 8.

Supply of trade execution services to energy traders

5.13 Our detailed assessment on the nature (and closeness) of competition between trading venues is set out in Section 7. We provisionally found that brokers and exchanges, both separately and together, compete to supply execution services to traders.

5.14 The evidence we have gathered indicates that venues of the same type are likely to be each other's closest competitors; that is, brokers compete more closely with other brokers, and exchanges compete more closely with other exchanges.

5.15 However, we also reviewed evidence from the Parties, including their internal documents, and from third parties, which indicated that there is competition between brokers and exchanges. We also received evidence that closeness of competition between trading venues varies by asset class.

Supply of trade clearing services to energy traders

5.16 Clearinghouses confirmed that they competed with each other to win clearing volumes (or liquidity). The evidence we gathered on competition between clearinghouses is set out in Section 7. Relevant factors include clearing fees,

[52] In such circumstances, it may be difficult to conduct a hypothetical monopolist test because: (i) there is no single price to both sets of customers to which to apply a small but significant non-transitory increase in price (SSNIP) in order to assess switching behaviour; (ii) the effect of a SSNIP on the demand of one set of customers may be exacerbated by indirect network effects; and (iii) the constraints on the merger firms' products may come not only from other two-sided intermediaries but also from 'one-sided' firms serving one set of customers. CC2, paragraph 5.2.20 second bullet.

margin netting and correlation across asset classes/products (where traders may have more than one open interest).

5.17 As a result, we have assessed the effects of the Merger on competition between clearinghouses and how Trayport's software products may affect this competition. As part of our competitive assessment, we have considered the extent to which clearinghouses compete across asset classes.

Supply of back-end technology to brokers and exchanges

5.18 During our market testing, exchange and broker venues generally confirmed that back-end software, or central matching engine technology, fulfils an essential function in a venue's ability to pool liquidity, to transmit prices to traders via front-end screens and to execute trades. Some of these venues own their own proprietary technology.

5.19 As a result of the different available options, in practice we found that these services will constitute two markets:

(a) the supply of back-end technology to brokers, including Trayport's BTS and potentially other back-end software provided by ISVs; and

(b) the supply of back-end technology to exchanges, including Trayport's ETS and GV Portal (which enables exchange venues to use an alternative matching engine to transmit their liquidity to Trayport's front-end Trading Gateway), and potentially other back-end software provided by ISVs and venues' own proprietary software.

Supply of access services to clearinghouses for OTC executed trades

5.20 Clearinghouses confirmed that the supply of access services to enable OTC executed trades to be registered for clearing was a distinct and important service for them (see paragraphs 7.145 to 7.149 and Appendix D). Clearinghouses pay a licence fee to Trayport and/or proprietary owners of front-end and back-end software, and in some instances operate a revenue sharing model, in order to provide access to their clearinghouses from broker venues.

5.21 The evidence we have gathered indicates that 'access services' provided to clearinghouses consist of: (i) STP clearing links, including that of Trayport, independent ISVs, and brokers' own links; and (ii) product listing and dissemination services, through which these products are made available to traders.

5.22 As part of our competitive assessment, we have considered what alternatives to these access services exist (eg manual registration) and whether these are close substitutes. We also consider the interaction of Trayport's STP Link with its other software products.

Supply of energy trading front-end access services to traders

5.23 As described in Section 3, both ICE and Trayport provide front-end desktop screens to traders that provide access to trading venues: WebICE (which provides access to its venues) and Joule/Trading Gateway (which provides an aggregated view across a range of venues). Other providers also offer front-end access services to traders, including Nasdaq and EEX.

5.24 Overall, the evidence we gathered indicated that the relevant product market is not wider than all front-end access services provided to traders. Within this, products and services are varied, and the closeness of competition is likely to differ depending on the screens in question and the venues they allow access to. In our competitive assessment, we have considered further the level of competition between specific front-end access offerings.

5.25 The evidence we gathered during our investigation indicated that voice only trading is generally used for complex, large and/or bespoke trades and/or in illiquid markets. As such, we are currently not minded to consider voice broking as forming part of the market definition but will consider any constraint posed by voice broking as appropriate in our competitive assessment.

Geographic market definition

5.26 The Parties did not make any submissions on the appropriate geographic market definition.

5.27 The evidence we have gathered indicates that the trading and clearing of European utilities takes place across the European Economic Area (EEA), and that front-end, back-end and STP software services are also supplied to customers across the EEA.

5.28 We note that whilst physical trading hubs are located in specific members states (eg NBP gas in the UK) these physical products are traded and indexed on an EEA-wide basis.

5.29 We have provisionally concluded that the effects of the Merger should be assessed on an EEA-wide basis.

Provisional conclusions on the relevant markets

5.30 We therefore provisionally decided to assess the effect of the Merger in the following product markets on an EEA-wide basis:

(a) supply of trade execution services to energy traders;

(b) supply of trade clearing services to energy traders;

(c) supply of back-end technology to brokers and exchanges, respectively;

(d) supply of access services to clearinghouses for OTC executed trades; and

(e) supply of energy trading front-end access services to traders.

6. Counterfactual

6.1 Before we turn to the effects of the Merger, we need to assess what we expect would have been the competitive situation in the absence of the Merger. This is called the 'counterfactual'.[53] It provides a benchmark against which the expected effects of the merger can be assessed. The CMA will typically incorporate into the counterfactual only those aspects of scenarios that appear likely on the basis of the facts available to it and the extent of its ability to foresee future developments.[54] The counterfactual is an analytical tool used in answering the question of whether the merger gives rise to an SLC and, while based on evidence obtained by the CMA in its investigation, it is generally not comparable in detail to our analysis of the competitive effects of the merger.[55]

6.2 ICE told us that Trayport would almost certainly still have been sold if ICE had not acquired it, and quite possibly to another exchange group such as CME. It added that its understanding was that the vendor's final choice of buyer was between ICE and CME (CME having previously attempted to buy Trayport in 2014).[56]

6.3 ICE also submitted that 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. It submitted that ICE

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[53] CC2, paragraph 4.3.1.
[54] CC2, paragraph 4.3.6.
[55] CC2, paragraph 4.3.1.
[56] ICE Response to issues statement, slide 3.

had decided before the acquisition to make full use of Trayport's network of connectivity with traders and brokers.[57]

6.4 Taking into account ICE's submissions, our considerations on the relevant counterfactual are assessed under the following headings:

(a) The Trayport sales process; and

(b) ICE's collaboration with Trayport.

The Trayport sales process

6.5 On 29 April 2015, BGC announced that it had decided to sell Trayport. This decision came shortly after BGC's announcement on 27 February 2015 that its bid for GFI (Trayport's parent company)[58] had been accepted by the majority of GFI shareholders and that GFI was to become a division of BGC.[59]

6.6 BGC stated that it had pursued GFI on the expectation that the sale of Trayport would dramatically lower the price and risk involved with respect to purchasing the rest of the GFI business.[60] BGC told us that prior to the announcement of 29 April 2015, it had received numerous approaches from potential purchasers interested in acquiring Trayport (either on its own or with other GFI businesses), including an approach from ICE.

6.7 Based on this statement, we consider that the tender process would have taken place irrespective of whether ICE had taken part and, in such circumstances, it is highly likely Trayport would have been sold to the next highest bidder to ICE.

6.8 We understand that 48 potential bidders were contacted during the initial stages of the Trayport sale process, of which 27 entered into non-disclosure agreements with the vendor to receive additional information. 10 bidders submitted formal indications of interest. Four bidders submitted final round definitive bids.

6.9 In this case, we are aware that CME was an interested bidder for the Trayport business back in July 2014 until January 2015, and that it had also entered the Trayport sales process and progressed to the final round. We note that CME is an exchange venue and clearinghouse, which also offers a front-end

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[57] ICE Initial Submission, slide 3.
[58] GFI acquired Trayport in 2008.
[59] BGC announcement (27 February 2015).
[60] BGC announcement (16 November 2015).

access product called CME Direct.[61] In light of the fact that an acquisition by CME of Trayport raises *prima facie* competition concerns, of which we have not undertaken an assessment, we have not considered CME as a likely alternative purchaser for the purposes of the counterfactual.[62]

6.10 During the final round of the tender process a private equity firm made the second highest offer. On this basis, we considered it reasonable that absent the Merger, the eventual purchaser was unlikely to raise similar competition concerns to those considered as part of this investigation, and arising from the Merger.

6.11 In light of the above evidence, we provisionally conclude that absent the Merger Trayport would most likely have been sold to an alternative purchaser that would have continued to run Trayport on broadly the same basis at its previous owners. We are currently of the view that such a counterfactual would not be materially different from the pre-Merger conditions of competition.

ICE collaboration with Trayport

6.12 On 11 May 2016, post-merger, ICE and Trayport entered into a new interface development and support agreement relating to the display of additional IFEU and ICE Endex products to Trayport's Trading Gateway and Joule clients and the provision of the Clearing Link to ICE Clear Europe for broker intermediated transactions (the New Agreement).[63]

6.13 ICE told us that under the New Agreement, Trayport's services would be extended to all IFEU and ICE Endex European utilities markets.

Pre-Merger collaboration

6.14 Prior to entering into the New Agreement in May 2016, ICE told us that there was no commercial agreement between ICE and Trayport for distributing ICE products through Trading Gateway, and for routing orders between Trading Gateway and ICE matching engines. ICE told us that Trayport had to build connectivity to ICE products as an 'ICE approved ISV' instead and that it had developed a single software component to connect Trading Gateway to the

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[61] CME told us that CME Direct was a 'proprietary front-end distribution platform' which offered access to CME Group listed futures and the OTC sector. It added that for the trading of energy products, CME Direct was used almost exclusively in the USA, and further explained that for the trading of European utility products in Europe, CME used, and was dependent on, the Trayport platform.
[62] CC2, paragraphs 4.3.22–4.3.23.
[63] ICE first informed the CMA of this development on 16 May 2016 when it submitted its fortnightly compliance statement as required under its Initial Enforcement Order.

ICE matching engines (also referred to as 'ICE Link'), and that Trayport charged its Trading Gateway customers directly for this connectivity.

6.15 Prior to the signing of the New Agreement, there was connectivity available between Trayport Trading Gateway clients and the ICE central limit order book (CLOB) and subsequently to the ICE Endex CLOB. Many of the ICE link clients were deployed locally meaning that Trayport did not have a contractual right to access their systems. However, Trayport holds a contract with these customers in respect of licensing the customer's use of ICE Link. This connectivity dates back to 2005. [✂]. The arrangements between the trading company and ICE were not transparent to Trayport. [✂].

6.16 [✂]

6.17 [✂]

6.18 The evidence set out above briefly summarises a pre-Merger history of ICE and Trayport not cooperating in: (i) listing ICE's exchanges on Joule/Trading Gateway with full functionality for routing orders (not just read-only access for certain ICE exchanges and products via ICE Link); and (ii) connecting ICE's clearinghouse, ICE Clear, to broker venues using Trayport's back-end via its Clearing Link. We have reviewed a number of the Parties' internal documents, which set out a number of strategic reasons why the Parties have historically not cooperated (see paragraphs 7.158 to 7.161) and it is against this backdrop that we assess the Parties' evidence on their reasons for entering into the New Agreement in May 2016.

ICE's rationale for entering into the New Agreement

6.19 [✂]

(a) [✂]

(b) [✂]

(c) [✂]

6.20 ICE told us that these negotiations were halted in June 2015 at the instruction of BGC following ICE's involvement in the Trayport sales process, and resumed in January 2016 after ICE completed its acquisition of Trayport.

6.21 At the time of the acquisition, the negotiations had not advanced beyond discussions and email correspondence, and there was no draft agreement available reflecting the Parties' position at that point in time.

6.22 Trayport told us that ICE's change in its 'commercial stance' in early 2015 paved the way for negotiations to commence, with its first meeting about a new agreement with ICE held on 4 April 2015.

6.23 Trayport told us it [✂].

ICE's submission on the New Agreement

6.24 ICE told us that there had been connectivity between Trayport and ICE for several years for particular ICE markets, and that the discussions focused on making additional ICE markets accessible to traders on Joule/Trading Gateway via that connectivity, in addition to OTC clearing at ICE being made available via Trayport's Clearing Link. ICE also told us that:

(a) the negotiations were carried out on arm's length terms and that ICE had not secured 'preferential terms' from Trayport, with the terms being 'fair and consistent compared to other Trayport venue customers'; and

(b) the commercial arrangement was a long-standing commercial objective of Trayport which pre-dated ICE's acquisition, and was a contract that Trayport would have agreed to irrespective of its ownership; and the arrangement would strengthen Trayport as a standalone business.

6.25 ICE argued that the 'addition of ICE markets to the Trayport aggregation offer and the associated commercial terms' under this agreement represented a 'good deal' for Trayport, and that Trayport would have signed up to this agreement in May 2015 even if Trayport came under new different ownership.

6.26 In light of this evidence, ICE told us that 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.

Provisional conclusion on the New Agreement

6.27 We considered the above evidence carefully. We are provisionally of the view that while it is possible ICE and Trayport would have successfully entered into the New Agreement absent the Merger this is not sufficiently likely for the purposes of the counterfactual, particularly, in light of their previous reluctance to cooperate and on the basis of evidence in the Parties' internal documents which clearly demonstrate strategic reasons for their lack of cooperation (see paragraphs 7.158 to 7.161 below).

6.28 Importantly, we note that the New Agreement was concluded post-Merger, with Trayport already forming part of the ICE Group. As such, it is unclear that the negotiations would have been successfully concluded in circumstances

where funds were not being transferred intra-group and/or if Trayport were under alternative ownership, in the absence of the Merger. We note that even if these discussions had been successfully concluded, absent the Merger, it is uncertain whether the final terms would have been materially equivalent to the terms negotiated in the New Agreement.

6.29 Given that we did not consider it sufficiently certain that the New Agreement, in its current form, would likely have been entered into absent the Merger, we have provisionally decided not to include the New Agreement or an equivalent as forming part of the counterfactual.

6.30 We will, however, take account of the potential for future commercial agreements between the Parties as part of any efficiencies consideration, and to the extent that it is appropriate to do so.

Provisional conclusion on the counterfactual

6.31 We provisionally conclude that absent the merger Trayport would most likely have been sold to an alternative purchaser that would have continued to run Trayport on broadly the same basis at its previous owners. Our provisional view therefore is that the counterfactual would have been broadly consistent with the pre-Merger conditions of competition.

7. Pre-Merger competition

Introduction

7.1 As we describe in Section 3, the Parties largely provide different services within the European utilities trading market: ICE provides an exchange venue and clearing services; Trayport supports traders, venues and clearinghouses with integrated software that supports the lifecycle of a trade from price discovery through to execution and clearing.

7.2 The theories of harm set out in our issues statement, and considered in our assessment of the competitive effects of the Merger, include consideration of the potential vertical effects of the Merger; on competition between venues and between clearinghouses; and the role of the Parties in that competition. We therefore examine in this section the nature of pre-Merger competition between venues in wholesale European utilities before considering the potential effects of the Merger in Section 8.

7.3 As part of our competitive assessment, we also consider the extent of competition between the Parties' respective front-end access services and

whether a loss of this competition could result in higher prices or a worsened offering to traders as a result of horizontal unilateral effects.

7.4 In assessing pre-Merger competition, we first examine the factors which drive traders' choices during the lifecycle of a trade: from identifying the best price; choosing the type of venue through which to trade and between individual venues offering suitable products; and considering whether to clear the trade through a clearinghouse and, if so, which one.

7.5 We then assess how market participants compete for execution and clearing volumes. In assessing this, we take into account previous assessments of competition in wholesale trading by the Competition Commission and European Commission, the views of the main and third parties about how they compete and with whom, and relevant internal documents. We also draw on our historical analysis of execution and clearing volumes in each relevant European asset class, as set out in detail in Appendix E. Relevant to our consideration of the potential effects of the Merger is ICE's position relative to its rivals in these various asset classes and how liquidity may have moved over time between OTC and exchanges, and between individual venues.

7.6 Finally, in this section, we examine the evidence on the role of Trayport in European utilities trading. We assess its relative importance to venues and the extent of its role in facilitating competition between venues for execution and clearing.

7.7 To inform our assessment, we gathered evidence from traders, brokers, exchanges and clearinghouses, and other ISVs. Full details of our evidence gathering are set out in Appendix A on the 'Conduct of the Inquiry'. Appendix D sets out in detail the views of third parties on the role of Trayport and barriers to entry which is summarised in the relevant sections of this document.

Traders' choices when executing and clearing trades

7.8 The evidence we gathered showed that the factors influencing traders' choice of venue and trading type (ie bilateral, via a broker or on exchange) were liquidity; execution fees; and other factors including relationships with venues, preferences for physical or financial instruments, anonymity, and preferences for cleared or bilateral settlement. For clearing, the key factors affecting trader choices were where their open interest(s)/positions resided; clearing fees; and ease of clearing.

7.9 We also gathered evidence indicating that Trayport's services may impact traders' choice of execution and clearing venue. We have signposted where

Trayport's services may impact on these choices and considered this in detail in the 'Role of Trayport' section below and in the competitive assessment.

7.10 We set out the evidence on these factors and their relative importance below.

Liquidity

7.11 There was a broad consensus between the main and third parties that liquidity was the most important factor affecting traders' choice of trading venue.

7.12 ICE submitted that liquidity was the most important determinant in the choice of trading venue for a customer and that achieving the best price was the most important factor for traders. ICE also said that traders wishing to execute larger trades were more able to trade at a stable and suitable price where there was high liquidity, ie there was sufficient demand on both sides of the trade to generate a good price.

7.13 Third party views were broadly consistent with this. We were told that liquidity ensures competitive prices for highly traded products, and where equivalent contracts are available at different venues the best available trading price would guide choice of venue.[64] Traders confirmed this approach and indicated that they made choices primarily on the basis of liquidity and contract price (which was related to liquidity).[65]

7.14 Trayport's front-end screen, Joule/Trading Gateway, provides an aggregated view of liquidity across multiple venues and it is the primary method through which traders access liquidity for European Utilities Trading. We have discussed the importance of the Trayport platform to venues and clearinghouses in shifting, maintaining and/or generating liquidity in the 'Role of Trayport' section below.

Execution fees

7.15 Execution fees are charged by brokers and exchanges per transaction, and these are set by asset class/product or group of asset classes/products. Venues typically negotiate execution fees with individual customers, and offer discounts and rebates in order to attract liquidity to their venue.

7.16 ICE told us that execution fees were an important factor but were secondary to the underlying prices of contracts. Traders agreed that, while contract price

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[64] For example, see CME hearing summary, paragraphs 11 & 12.
[65] For example, see RWE hearing summary, paragraph 4.

was the key driver of demand, execution fees were an important factor. For example, RWE informed us that even the widest differences between fees would ordinarily be eclipsed by the differences in bid-offer spreads available, especially when comparing venues with differing levels of liquidity.[66]

7.17 ICAP, a broker, submitted that the overall fee charged for trading did affect choice. This was particularly the case for homogeneous markets where products were close substitutes and where liquidity was spread across multiple venues making contract price less determinative. It noted that some participants were more price sensitive than others, and quality and reliability were also selling points.[67] ICAP noted that in recent years venues had become more aggressive with new pricing practices increasing competition. ICAP suggested that major market making and rebate schemes were particularly common in liquid markets where there was wide choice and intense competition.[68]

Other factors affecting traders' choice of venues

7.18 We were told that there were other factors that affected traders' choices, particularly in relation to whether they opted to trade OTC through a broker or on exchange. The Parties told us that there were a range of broker activities from purely voice to hybrid to purely on-screen trading. They said that the more liquid markets were, the more hybrid and electronic the nature of brokers' offerings became. In these circumstances, exchanges emerged as alternative choices for traders.

7.19 For illiquid or less standardised markets, exchanges may not be a suitable venue, meaning that traders can only choose between different broker venues. In these types of markets, or where a trader has bespoke requirements, broker knowledge, mediation and negotiation was important. This was not replicable on exchange which is largely automatic. Indeed, only contracts that are standardised in all of their legal and economic parameters are suited to be traded on exchange.

7.20 Other factors determining the choice between OTC and exchange trading were anonymity and regulation. Traders might prefer anonymous exchange trading or want to know the identity of a counterparty trading OTC. For some traders, the regulatory burdens of trading on exchange meant that extensive futures trading on exchange was less of an option.

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[66] RWE hearing summary, paragraphs 5 & 6.
[67] ICAP hearing summary, paragraph 8.
[68] ICAP hearing summary, paragraphs 9 & 10.

7.21 We were also told that the type of contract was important. For example, physical instruments were particularly suited to brokers. In addition, we were told that the maturity date of a trade was a relevant factor. For example, certain short term day ahead or intra-day or specialist contracts were particularly suited to broker trading for technical reasons.

7.22 For some traders, historic and financial connections with particular venues could affect preferences. For example, several European utilities companies own minority shares in EEX and may be likely to take this into account when choosing venues. This is unlikely to be determinative for all trades but would be relevant to high level corporate trading decisions.

Traders' choice of clearing venue

7.23 We were told that there were a number of factors affecting traders' choice of clearinghouse: margin and open interest (capital efficiency); clearing fees; and ease of registering trades. We set out the evidence we received on the relative importance of these factors below.

Margin

7.24 The Parties submitted that the margin[69] required was the primary factor determining choice of clearinghouse. They said that clearing margin was at the forefront of a trader's mind as it determined its financial exposure. The ability to cross-margin a number of open positions at a clearinghouse would reduce a trader's capital exposure and the margin payment required. That is, products that correlate from a price perspective and result in offsetting risk, make the trader eligible for margin reductions.

7.25 The evidence received from third parties generally supported the Parties' assessment. For example, [✂] clearinghouse [✂] told us that: 'One of [✂] main selling points is the [✂]'.

Clearing fees

7.26 Evidence suggested that clearing fees were also important but often secondary to netting and margin requirements. In discussing the loss of clearing market share to CME in the coal asset class, ICE told us that [✂] about the competitiveness of their fees was a contributing factor to the

[69] Capital funds (or assets) put forward by a trader to the clearinghouse in respect of a trade to be cleared, and to be used in the event of default.

decision of those customers shifting clearing venue. This view of the relative importance of clearing fees was corroborated by third parties.

Ease of registering trades

7.27 We received a range of views on the relative importance of the ease of the clearing process in traders' decisions. Trayport told us that we should not emphasise the importance of the Clearing Link and the ease of automatic clearing of trades. It pointed to the fact that ICE had built a strong position without a Trayport Clearing Link. Additionally, it was possible to send trades for clearing without relying on Trayport and traders were aware of the alternatives. It said clearing venues were not reliant on Trayport.

7.28 ICE recognised that fees and technical ease mattered. It told us that the loss of market share to CME for coal clearing volumes demonstrated that a very 'clunky' clearing processes put traders off, although fees were also a factor.

7.29 We received mixed submissions from third parties. Clearinghouses, such as [✂] and CME, emphasised the ease and efficiency of using an STP link. Some traders, such as Engie, indicated the availability of an STP link is important, as it quickened and secured the clearing process. It said this has an impact on clearinghouse choice for OTC cleared deals. However, the way in which clearinghouses are presented on screen is less crucial, but there is an operational advantage to those who are in the first rows. Other traders, such as [✂] and [✂], indicated that they prefer the STP link over manual registration, and that there would be a large impact if Trayport were to change the way that clearinghouses are presented and selected on the Joule screen or change the STP link that it operates with certain clearinghouses, and such practice were to make it more difficult to clear with certain clearers.

7.30 We have considered the importance of Trayport's Clearing Link to clearinghouses in winning clearing volumes in the 'Role of Trayport' section.

Provisional conclusions on traders' choices

7.31 The evidence we considered in relation to the factors affecting traders' choices of trading venue was broadly consistent. Our provisional view is that the primary factors affecting traders' choice of execution venue are liquidity and contract price which are inextricably linked. The evidence also showed that execution fees (including discounts and rebates) were an important driver of competition between venues though these were secondary to liquidity and contract price. Venues competed on the price of execution fees and offered rebates to attract trades.

7.32 The evidence showed that the extent to which traders might choose between an exchange and a broker for an executed trade depends on a number of factors. Although there are differences between brokers and exchanges, where markets were more highly liquid and products were standardised, electronic trading increased and traders could generally choose between similar products offered by brokers and exchanges. Anonymity and the extent to which trades were bespoke were also factors.

7.33 For clearing, there was a consistent view from all parties that margin and open interest were the key drivers for traders' decisions about where to clear. The level of clearing fees was a secondary factor but competitors sought to attract clearing by lowering fees. The evidence we gathered on the importance of the ease of processing and the importance of an STP link was mixed. Our provisional view is that its importance is secondary to margin offsetting and clearing fees but that STP availability and ease of clearing can be a factor in winning OTC cleared volumes from incumbent clearinghouses.

Assessment of competition by segment for European utilities

7.34 Having assessed the factors which determine traders' choices, we assessed the nature of pre-Merger competition between venues active in European utilities trading to inform our analysis of our theories of harm. In particular, we examined:

(a) competition between exchanges to execute and clear trades;

(b) competition between clearinghouses to clear trades executed OTC; and

(c) competition between exchanges and brokers to execute trades that are subsequently cleared.

7.35 Understanding the nature of competition between ICE and its rivals is important for our assessment of our vertical theories of harm because, as set out in our 'Market definition' section above, it is the downstream markets in the supply of trade execution services to energy traders and trade clearing services to energy traders which would be adversely affected by a successful foreclosure strategy.

7.36 We considered competition between exchanges and brokers for trades that are currently executed OTC bilaterally, ie without being cleared. We recognised that if traders were to switch from executing these trades bilaterally to doing so on an exchange then this would require them to become cleared. This would have a number of implications, most notably the trader would incur the additional cost of clearing, including membership fees and/or the need to be sponsored by a financial institution. However, we noted that

this would allow a trader to reduce its exposure to counterparty credit risk, which may mean that some traders with existing clearinghouse membership or access to sponsorship would switch between them in response to changes in the relative cost of clearing and the size of this credit risk.

7.37 In examining ICE's internal documents, we found a mixed picture on the extent to which ICE is seeking to win volumes from the OTC bilateral segment. Overall, based on the evidence we have gathered, our provisional view is that whilst there is a degree of competitive interaction between these two market segments, especially over the longer term, the extent of this will be less than that between exchanges and the OTC cleared segment. As such, we have not considered competition in this segment in detail for the purposes of our assessment by segment.

7.38 In assessing the nature of competition between venues, we have taken into account the importance of liquidity in both execution and clearing. As such there are likely to be important links between competition in each of these segments. For example, an exchange that wins volumes of a particular product from a rival exchange may then be in a better position to also move trading of that product from brokers onto its exchange, and to win business clearing OTC trades of that product. Our view is therefore that, while these segments provide a useful framework for analysing competition between exchanges, brokers and clearinghouses, our ultimate assessment of the impact of the proposed transaction will need to go beyond a focus on each of these in isolation and consider the overall impact in the round.

7.39 In examining each segment, we consider the closeness of competition between different types of venues and different ways in which venues compete. We consider the extent of head-to-head competition for individual trades; potential head-to-head competition represented by the threat of entry from a rival into an asset class/product where an incumbent venue has a strong position; and dynamic competition represented by the launch of new products and innovative trading solutions.

Competition between exchanges

7.40 As venues of the same type and offering the same products, exchanges compete most closely with other exchanges. We considered the nature of this competition in European utilities asset classes and ICE's current position relative to its rivals and, where relevant, how this has changed over the last five years.

Head-to-head competition

7.41 What we mean by head-to-head competition for execution of trades is competition which takes place when there is more than one trading venue hosting the liquidity of a particular product, or closely correlated product, simultaneously. In such circumstances, traders will have a choice of execution venue. Trayport plays a role in this competition by providing access to this liquidity and we have examined this in the 'Role of Trayport' section.

7.42 We observed that ICE has a particularly strong position across a number of European energy products (see Appendix E). For example, in 2015 it accounted for over [90-100]% of exchange-based trades in gas. The only other exchange holding liquidity in gas was Powernext which appears to compete head-to-head with ICE and represents its closest competitor in this asset class. In the secondary emissions market, ICE accounted for around [80-90]% of exchange traded volumes in 2015 and competed with EEX and Nasdaq which also held some liquidity in this asset class.

7.43 Third party exchanges, including [✂] and Nasdaq, confirmed that they competed head-to-head with ICE in the supply of exchange execution services and the level of competition varied by asset class.

Potential head-to-head competition

7.44 We considered the extent to which exchanges with little or no liquidity acted as a constraint on an incumbent because of the potential competition they provided. In *Deutsche Börse AG/Euronext NV/London Stock Exchange,* the Competition Commission recognised that competition between trading venues manifests itself not only through direct head-to-head competition but also through the threat of such head-to-head competition via liquidity shifts.[70] It concluded that this threat of a rival exchange taking the liquidity from the incumbent provider was in fact the key constraint that exchanges imposed on one another, as this forced incumbent exchanges to pre-empt the risk of a loss of liquidity by keeping their customers content.

7.45 We also note that the threat of liquidity shifting and potential competition was recognised as an important and active competitive constraint by the European Commission in *Deutsche Börse/NYSE Euronext*.[71] The European Commission identified a substantial degree of potential competition between

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[70] Competition Commission decision on *Deutsche Börse AG/Euronext NV/London Stock Exchange*, 2005, in particular paragraphs 4.57 & 5.37.
[71] European Commission, Case No COMP/.6166 – Deutsche Borse/NYSE Euronext, in particular paragraphs 518, 551 & 555.

the parties based on two key factors: first, evidence of the parties actually imposing a competitive constraint on each other in practice by actively seeking to shift liquidity away from one another;[72] second, the extent of the parties' existing open interest in other asset classes, and their ability to leverage this to offer attractive cross-margining opportunities to traders of any new products they may seek to launch, which meant that they were particularly effective potential challengers for each other's key products.[73]

7.46 Consistent with the approach in *Deutsche Börse/NYSE Euronext*, we assessed the extent of the constraint from potential competition by considering the characteristics of the commodities in question. Specifically, we considered the extent of exchanges' existing open interest in European energy trading assets, and their ability to leverage this to offer attractive cross-margining opportunities to traders of any new products they may seek to launch.

7.47 We observed that a number of exchanges have existing volumes in several asset classes (see Appendix E). These existing volumes would only help them win liquidity in additional products where they have few volumes if the prices of these products are correlated with one another. This is because a high price correlation would enable clearinghouses to offer traders an ability to offset their margin (or collateral) requirements on these additional products against their existing volumes with these exchanges/clearinghouses, ie cross-margining, essentially making trades in these additional products cheaper to undertake. We therefore examined the degree of price correlation and margin offsetting offered by clearinghouses. This is presented in Figure 5 and 6 below for ICE and [✂].

Figure 5: ICE margin offsets

[✂]

Source: ICE.

Figure 6: [✂] margin offsets

[✂]

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[72] In *Deutsche Börse/NYSE Euronext* the Commission identified various attempts of the parties to enter each other's markets, and the analysis of internal documents showed the strong competitive constraint exerted by the parties on each other. In contrast, in *NYSE Euronext/ InterContinental Exchange* the Commission found that the analysis of the parties' past behaviour and strategic internal documents did not reveal many attempts to enter each other's markets, nor that they considered each other as a potential competitive threat able to shift liquidity to a greater extent than other exchanges.

[73] In *Deutsche Börse/NYSE Euronext* the Commission emphasised that the two parties both possessed a large pool of existing contracts in assets that were correlated with one another. This means they were both particularly well placed to enter each other's markets, as in seeking to convince traders to clear with them they could offer reduced collateral requirements because of cross-margining opportunities with these other assets. In contrast, in *NYSE Euronext/ InterContinental Exchange* the Commission found that there was very little or no correlation in prices between the asset classes in question (eg coffee, cocoa and corn), or even between different products within the same asset class (eg different types of coffee).

Source: [✂]

7.48 The percentages in each cell indicate the degree of correlation between products and asset classes in rows and columns. For example, Figure 6 shows that [✂] are correlated between [✂]% and [✂]% with contracts in [✂]. [✂] contracts have a similar degree of correlation with products in other asset classes: [✂] - [✂]% with Emissions and [✂] - [✂]% with title transfer facility (TTF) (Dutch gas). This means that a trader that has an existing position with [✂] will be able to offset its collateral payments across contracts traded with [✂] in other asset classes such as [✂].

7.49 We considered that these illustrated a fairly high degree of margin offsetting available across European utilities asset classes, implying that exchanges would be able to leverage their existing positions to enter new product categories. We noted that this is consistent with the comments of [✂] that one of its main selling points when it seeks to gain sales in a relatively new product is the [✂] it is able to offer with other commodities.

7.50 We also examined ICE's and third parties' internal documents to assess the extent to which potential head-to-head competition was reflected in the strategies of the relevant exchanges to enter new asset classes and products and actively seek to take liquidity from one another. For example, we noted evidence from ICE's internal documents that it appears to have broad ambitions to gain additional liquidity:

'[✂]'

7.51 More specifically, we observed evidence in ICE's internal documents that it [✂]. It has recently launched a full suite of power products, including German and Nordic power, [✂].

7.52 Our assessment of EEX's activities demonstrated a similar picture. We observed that in recent years EEX has expanded its presence in TTF, where ICE is an incumbent, and has been able to maintain a share of over 10% of exchange executed volumes of this product for a number of years.

7.53 We also noted that [✂] internal documents made clear that it was seeking to obtain a substantial share of emissions trading, where ICE has a very strong position, with its '[✂]' stating:

'[✂]'

'[✂]'

7.54 Based on this evidence of exchanges actively seeking to challenge and take liquidity from one another, our provisional view is that this demonstrates that exchanges impose an important competitive constraint on one another through potential head-to-head competition even where one exchange may currently hold most or all of the liquidity in a particular asset class.

Dynamic competition

7.55 We considered the extent to which exchanges compete with one another by launching new products and innovative trading solutions in an attempt to gain a first-mover advantage and consolidate liquidity on their venues.

7.56 An example of this dynamic competition, is the pending introduction of a new venue type by EEX. It is intended to maintain the level playing field for exchanges for those physical products where brokers benefit from regulatory exemptions. EEX has invested in this venue type out of a recognition that some market participants prefer not to trade on exchange, and as such innovation is required to compete with OTC venues. Although, the value and eventual popularity of these new non-multilateral trading facilities or 'non-MTF' venues is unclear, due to the pending implementation of the underlying regulatory changes, the evidence indicates that dynamic choice and crossover between venue types does occur.

7.57 Some of the Parties' internal documents also suggested that there is dynamic competition to launch new products, and in particular to be the first to launch new products. For example, in one internal document ICE highlighted as a key objective: [✂]'.

7.58 The importance of such dynamic competition was also recognised by the Parties and third parties. The Parties told us that markets evolve and operate dynamically. They said commodities markets were at different stages on the development curve from fragmented, illiquid voice-brokered, at one end, to liquid exchange traded at the other end. They said that exchange trading was significant in a limited number of products and asset classes, such as NBP and TTF, but that over time other products and asset classes will mature to a stage where exchange-based trading will become more relevant. The Parties said that brokers will remain relevant in these markets.

7.59 EEX's view was consistent with the Parties' submission that even where venues did not currently compete with one another, whether for historic or first mover reasons or where expansion plans differed, venues were always

considering where to enter and how to attract market shares, even where an incumbent had a strong position.[74]

7.60 We consider that this evidence indicates that there is dynamic competition between exchanges that compete with one another over time by launching new products and developing innovative trading solutions to beat the competition and gain a first mover advantage in new markets.

Provisional conclusions on competition between exchanges

7.61 In our assessment of the extent of competition between exchanges in European utilities we considered statements from ICE and third parties, an assessment of the characteristics of these asset classes and evidence from ICE's and third parties' internal documents.

7.62 Our provisional view is that there are a number of asset classes where ICE hosts substantial liquidity and where there is overlapping liquidity with other exchanges. In these circumstances, we provisionally found that these exchanges provide a constraint on one another through direct head-to-head competition.

7.63 We are also of the provisional view that exchanges impose an important competitive constraint on one another through potential head-to-head competition. In particular, ICE and the EEX group impose a substantial competitive constraint on one another through the threat of potential head-to-head competition even where one exchange may currently hold most or all of the liquidity in a particular asset class, and this is as a result of the close correlation of their existing offerings making the threat of entry and/or expansion credible.

7.64 Finally, we provisionally found that there is dynamic competition between exchanges that compete with one another over time by launching new products and developing innovative trading solutions to beat the competition and gain a first mover advantage in new markets.

7.65 Based on the above, our view is that exchanges impose a substantial competitive constraint on one another.

[74] EEX Group hearing summary, paragraph 8.

Competition between clearinghouses for OTC trades

7.66 We next considered the extent to which, and how, clearinghouses compete with one another to clear trades that are executed OTC in the European utilities space.

Head-to-head competition

7.67 We first considered the extent of any head-to-head competition between clearinghouses. In doing so, we recognised that clearinghouses possess an open interest in a product not only as a result of clearing trades executed OTC but also as a result of trades being executed directly on their respective exchanges, which they subsequently clear. An example of such head-to-head competition taking place is the clearing of TTF, where ICE has a very strong position and ECC and CME also have some clearing volumes.

7.68 A switch in exchange also requires a switch in clearinghouse. As discussed above, where there is an overlapping open interest between clearinghouses in a specific asset class and offering an equivalent product, these clearinghouses directly compete with each other.

7.69 We therefore provisionally concluded that, where they had existing volumes in the same products, clearinghouses impose a competitive constraint on one another through head-to-head competition. ICE's main rivals for clearing in European utilities are ECC and CME.

Potential head-to-head competition

7.70 We then considered the extent to which there is potential head-to-head competition between clearinghouses in products where they do not currently have overlapping clearing volumes.

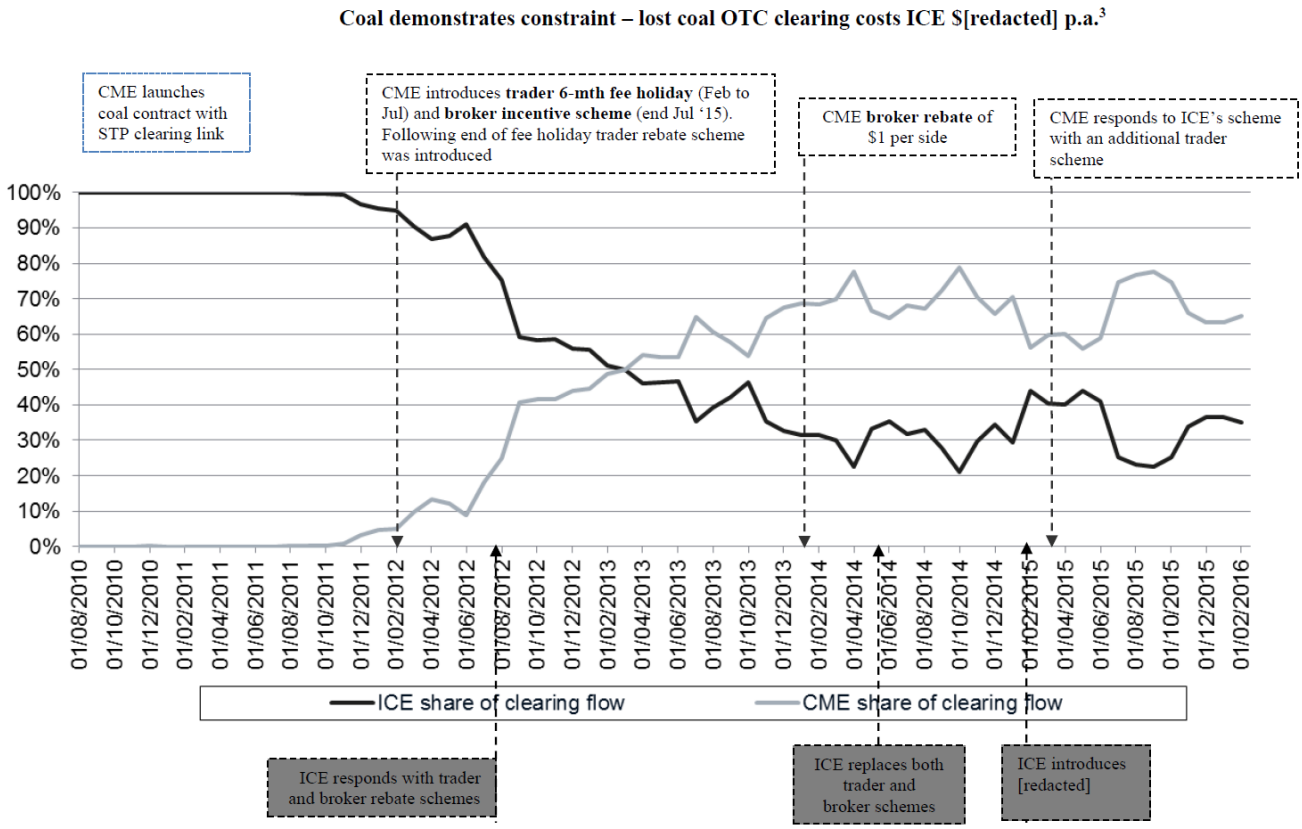
7.71 As discussed in our assessment of competition between exchanges above, we noted that ICE and EEX, in particular possess, substantial open interest in several asset classes, and the correlation in prices between these mean that they are well placed to impose a substantial competitive constraint on one another through the threat of potential head-to-head competition in products where they have no existing volumes.

7.72 Beyond ICE and EEX, we considered whether there were any examples of clearinghouses challenging one another in product categories where they previously had little or no volumes. A major case study of this is in the clearing of OTC executed coal trades. Historically, ICE had 100% of this business, but CME entered this product in 2011 and over the course of the following 2 years

increased its share from nothing to around 70%, which it has maintained since. We note that ICE's and CME's coal products are not entirely fungible and that the growth of CME's market share was in part achieved as a result of market growth and attracting new volumes, as opposed to direct switching between them.

7.73 The Parties provided the following diagram which illustrated this case study.

Figure 7: ICE's explanation of CME's entry in the clearing of coal



Source: ICE/Trayport initial submission, p14.

7.74 The Parties submitted that CME achieved this successful entry and substantial growth as a result of aggressive pricing, with trader fee holidays and broker incentive schemes, and because it had Trayport's STP clearing link, which ICE did not.[75] The Parties told us that ICE responded to this competition by offering trader and broker rebate schemes and [✂].

7.75 In addition to this example in coal, we also noted that the Parties provided an example from the USA of entry by Nasdaq Futures into the clearing of Henry Hub options.

[75] ICE/Trayport initial submission, p15.

7.76 We consider that these are clear examples that clearinghouses can and do successfully enter into new product categories and successfully challenge incumbent providers.

Dynamic competition

7.77 We also considered evidence on the extent to which potential competition was reflected in strategies of the relevant clearinghouses to launch new products or innovative trading solutions actively seeking to beat the competition.

7.78 An example of this dynamic competition is represented by the past strategic partnership between ICE and ICAP in the oil asset class. [✂].

Provisional conclusion on competition between clearinghouses for OTC trades

7.79 We provisionally concluded that where clearinghouses hold existing volumes in the same asset classes with equivalent products, these clearinghouses impose a competitive constraint on one another through head-to-head competition. ICE's main rivals for clearing in European utilities are ECC and CME.

7.80 We provisionally concluded that clearinghouses active in European utilities trading also compete through potential head-to-head competition, by threatening to take clearing volumes where they do not currently have any. ICE is active in clearing gas (over 95%), emissions (over 95%) and oil, and it faces potential competition from rival clearinghouses to win this business. Further, we would expect ICE to continue to compete head-to-head with CME for clearing volumes in coal.

7.81 Finally, we also found that ICE and its rivals will seek innovative solutions as part of a dynamic form of competition in order to generate clearing volumes.

Competition between exchanges and brokers for OTC cleared trades

7.82 We next considered the extent to which exchanges compete with brokers for OTC cleared trades. As set out in Appendix E, in the European utilities asset classes where ICE is active, there is an OTC presence in all asset classes. In light of this, we have focussed our assessment in this section on head-to-head competition. We have also taken into account potential head-to-head competition in the form of, for example, expansion by exchanges into the execution of trades that are currently substantially executed OTC. We have also considered that any competitive constraint may be asymmetric such that exchanges represent a stronger constraint on brokers than vice versa.

7.83 As discussed in paragraph 7.18 above, ICE submitted that there is competition between brokers and exchanges where OTC markets are more highly liquid. This competition between brokers and exchanges is further confirmed by their reference in one submission to '[✂]'.

7.84 The Parties also submitted that the implementation of MiFID II, in January 2018, could have a dynamic impact on certain venue choices and competition between exchanges and brokers. Under MiFID II the ancillary services exemption exempts traders from regulatory requirements, such as capital requirements and position limits, so long as such trading is ancillary to their own commercial activities and does not exceed a certain share of the market. This is currently set at 3% for gas and 6% for power. The Parties' submission indicated that several of the largest European traders in gas markets came close to or exceeded a 3% market share of the overall cleared market and therefore may be expected to react to MiFID II's implementation by halting any further shift to on exchange trading or even reducing on exchange trading and moving it back to brokers. For certain traders, the effect of financial regulation would be to ensure the continued relevance of OTC trading and dampen competition by reducing the viability of exchange trading.

7.85 We considered the Parties' submissions on the role of regulation and the ancillary services exemption and recognised that for trading in gas products, this may to some extent constrain the level of competition and the amount of trading which would shift from OTC to exchanges. We nevertheless provisionally concluded that there is scope for trading volumes to move to ICE within the regulatory constraints for gas products. Not all participants would seek to avoid financial regulation and many participants are currently short of the 3% limit and, therefore, could potentially shift further trading on exchange. Moreover, the possibility of further changes to the ancillary services exemption cannot be excluded. Finally, we noted that the constraint did not apply to other asset classes in the same way.

7.86 Appendix C to these provisional findings contains a more detailed assessment of financial regulation.

7.87 Brokers and exchanges generally told us that for trade execution an individual broker may compete most closely with other brokers, and an individual exchange with other exchanges. However, there was also a strong consensus amongst these third party venues that exchanges and brokers also compete with one another.

7.88 We tested this by comparing the characteristics of exchanges and brokers as execution venues for cleared trades. As set out in paragraphs 7.18 to 7.21 above, we found that there are a number of differences between the two types

of venue that may to some degree limit switching by traders, who may in the first instance seek to switch from one broker to another, or from one exchange to another. However, fundamentally these two types of venue offer reasonably similar services, and are likely to be seen as broadly substitutable by a large number of traders for some asset classes.

7.89 We also examined ICE's internal documents, which in addition to discussing competition with other exchanges placed some significant emphasis on competition with brokers. For example, a 2014 ICE strategy document contained a number of slides entitled '[✂]'.

7.90 ICE submitted that these documents could not be relied on as they are old and were produced under a different regulatory regime. At that time the regulatory environment was fast changing and has changed materially since those documents were created. In 2014, there was uncertainty as to whether regulatory reform in the EU would follow the USA leading to a shift from OTC to exchange and ICE was considering plans to adapt to this. Subsequently, the regulatory changes crystallised with the carve-out for gas and power resulting in the gravitational pull from OTC to exchange not materialising. Our provisional view is that, whilst some care must be taken in interpreting internal documents in their appropriate context, these nevertheless do shed useful light on the extent to which ICE views itself as competing with brokers. In particular, these documents often include little or no discussion of regulation as a key driver of the views they express, and as discussed above our view is that recent regulatory changes are important but their impact should not be overstated.

7.91 Moreover, we noted that some of these documents were relatively recent. For example, a strategy document, dated September 2015, contained the following diagram [✂].

Figure 8: Extract from ICE strategy document dated September 2015

[✂]

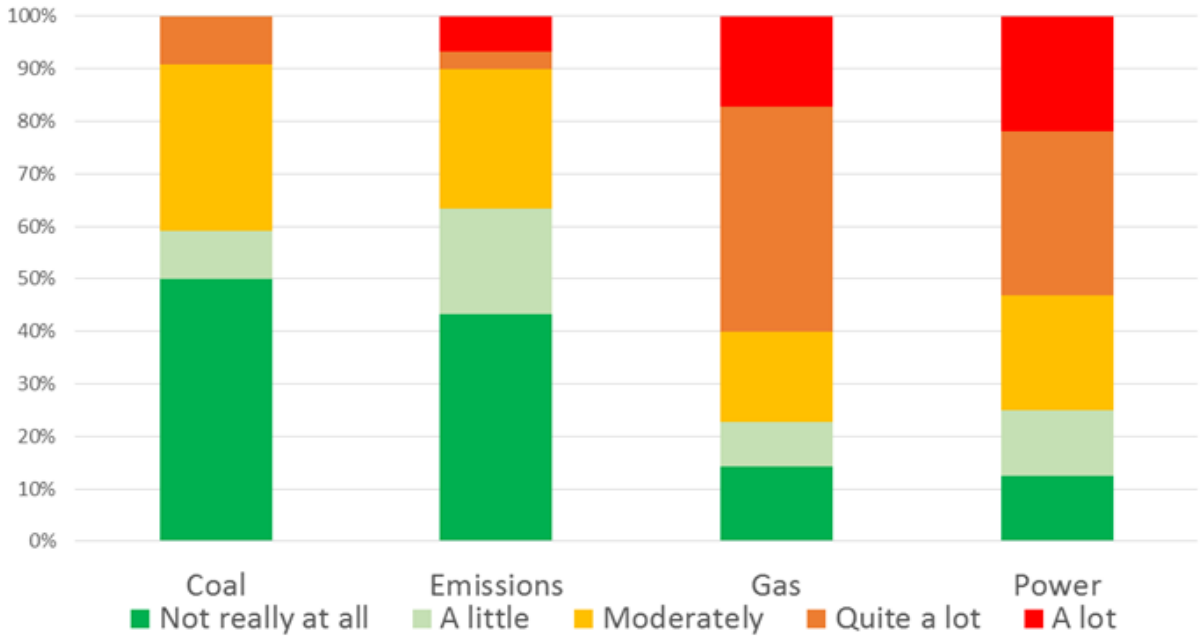
Source: ICE.

7.92 We also noted that the commentary alongside this diagram contains a number of statements relating to OTC trading, including '[✂]'. Our provisional view is that these documents make clear that ICE does see itself as competing with or potentially competing with brokers for OTC cleared volumes.

7.93 We then sought evidence on the extent to which exchanges and brokers compete for cleared trades through a questionnaire to all of the largest trader customers of the Parties. In addition to various other questions, we asked them to what extent brokers and exchanges compete to win their trade

execution business. The results of this analysis are presented in Figure 9 below.

Figure 9: Views of traders on the extent to which brokers and exchanges compete



Source: CMA trader questionnaire. Traders were asked 'Thinking back over your firm's 2015 energy trading execution activities, to what extent did brokers and exchanges compete with each other to win your trade execution business? Please select from the drop-down list.' Of the total of 39 responses we received from traders to the questionnaire, to this question on coal/emissions/gas/power we received 22/30/35/32 responses respectively.

7.94 We interpreted these results as showing that traders consider there to be a fairly high degree of competition between brokers and exchanges, particularly in those asset classes where large volumes are currently executed both on exchange and OTC. For example, over 50% of traders reported that brokers and exchanges competed 'quite a lot' or 'a lot' for gas and power, with that figure rising to over 75% if those who responded 'moderately' are also included.

7.95 We received 39 responses overall[76] and we considered that the absolute number of respondents was sufficiently large for the relatively broad conclusions that we were drawing from the questionnaire to be robust. Moreover, our provisional conclusions were broadly in line with evidence we received from the Parties.

7.96 We also investigated this issue in more detail by using the trader questionnaire to understand traders' switching behaviour. We first asked them how they would have reacted if ICE's prices had been 10% higher. Respondents reported that this would have resulted in a 13% reduction in

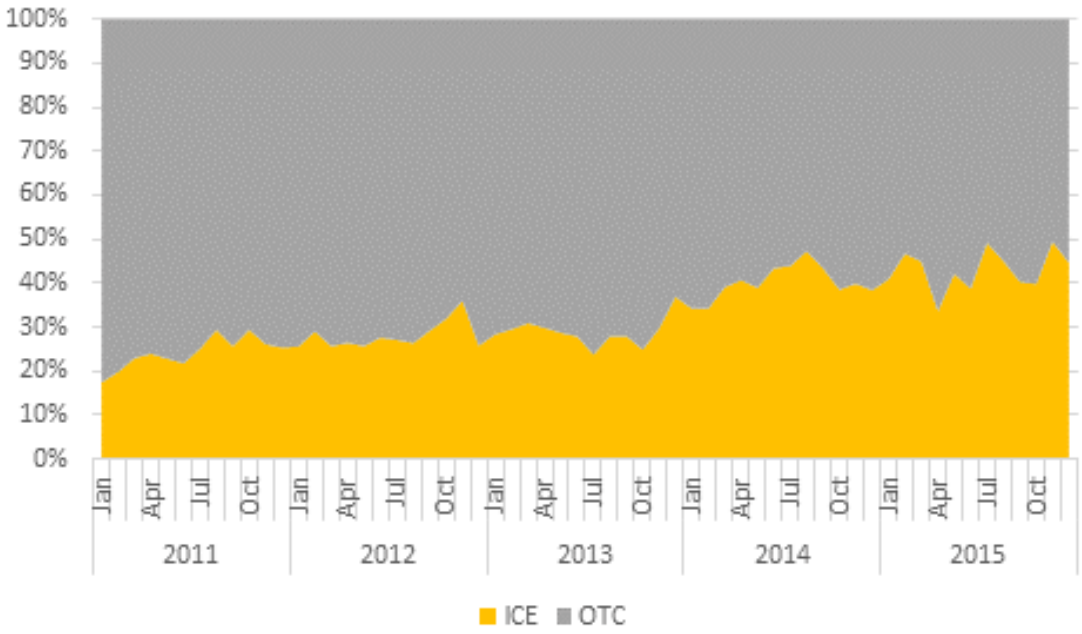
[76] Not every responding trader responded to each question.

emissions volumes executed at ICE, of which 12% would have switched to being executed at brokers, and a 20% reduction in gas volumes at ICE, of which 67% would have switched to the brokers.

7.97 We also asked traders what they would have done if ICE's exchange had not been available and they would have been forced to execute at another venue. In response to this question responding traders reported that 45% of their emissions volumes would have switched to brokers, and 32% of their gas volumes. Again, we noted the limitations of the trader questionnaire, and did not seek to place emphasis on the specific diversion figures. We also recognised that these questions concerned traders switching from executing on an exchange to executing OTC, and as a result of any asymmetry traders' willingness to switch from OTC to exchange trading may have been different. However, we interpreted the trader questionnaire as providing further evidence that in general exchanges and brokers do compete for the execution of cleared trades.

7.98 Finally, we also examined trading volume data to see if there was any evidence of traders switching between executing OTC and on exchange. We found that it was not always possible to be entirely clear if actual switching between venues had taken place on the basis of this data, as observed trends were also driven by changes in aggregate trading volumes. However, we identified what appears to be an example of such switching in the case of NBP, where ICE was able to increase its share at the expense of brokers – presented in Figure 10 below – as well as EEX taking share from the brokers in Italian power. Overall, our analysis of asset class liquidity showed that during the period 2011 to 2015, there was a general increase in the share of volumes traded exchange and a reduction in the share traded OTC. Where this occurs, the strong incumbent exchange appears to have been well placed to capture additional volumes.

Figure 10: Shares of execution of NBP



Source: CMA analysis.

Provisional conclusion on competition between exchanges and brokers for OTC cleared trades

7.99 We provisionally conclude that the closest competition is likely to be between execution venues of the same type, ie broker-to-broker and exchange-to-exchange. But evidence from the Parties, brokers, exchanges, an assessment of the characteristics of these venues, a review of ICE's internal documents, our trader questionnaire responses and an analysis of volume data all show that there is competition between exchanges and brokers.

7.100 We considered the Parties' submissions on the role of regulation and the ancillary services exemption. We recognised that for trading in gas products, this may to some extent constrain the level of competition and the amount of trading which would shift from OTC to exchanges. We nevertheless provisionally concluded that there is likely significant scope for trading volumes to move to ICE within the regulatory constraints for gas products, and that the exemption would not affect competition between exchanges and brokers for other asset classes.

The role of Trayport

7.101 Our assessment of the nature of competition and rivalry between venues and clearinghouses in European utilities, indicates that ICE competes head-to-head to with rival exchanges, clearinghouses and brokers in a number of asset classes. There is also potential head-to-head competition between

exchanges and between clearinghouses in asset classes where their products are more closely correlated as well as dynamic competition, through the introduction of new products and innovative trading solutions. This competition between venues and between clearinghouses delivers a number of benefits to traders, including price incentives, such as fee holidays and trader incentive schemes (market maker agreements and rebates), new products and innovative trading solutions.

7.102 Having established that there is competition between ICE and its rivals in the downstream supply of execution and clearing services, we next examined the role of Trayport in facilitating this competition.

The Parties' view

7.103 The Parties told us that Trayport was an ISV which provides software and connectivity for market participants.[77] Its core products are described in more detail in Section 3.

7.104 The Parties noted that the majority of European utilities trading was initiated by traders using a Trayport front-end screen that sends messages to the regulated execution venues to execute trades. They said that Trayport had instigated the development of hybrid/screen-based OTC trading in European utilities markets around 15 years ago. It had developed its products in response to customer demand and provided traders with aggregated front-end access to the various broker venues. This aggregation had subsequently been extended to exchanges.[78]

7.105 As a result of the initiation and development of its products, the Parties noted that Trayport had 'established an important network of customer relationships and connectivity with market participants active in European utilities markets'.[79]

7.106 However, the Parties said that there was nothing unique about Trayport's software in terms of functionality and equivalent software was available from a wide range of other ISVs.[80] These included Exxeta, Trading Technologies, and SunGard, among others. They also noted that the exchange groups EEX, LSE, Nasdaq and CME supplied their own technology on a standalone ISV basis.

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[77] ICE/Trayport initial submission, paragraph 2.5.
[78] ICE/Trayport initial submission, paragraph 2.7.
[79] ICE/Trayport initial submission, paragraph 2.8.
[80] ICE/Trayport initial submission, paragraph 2.6.

7.107 The Parties also said that software with equivalent functionality to Trayport could be developed internally by rivals at a reasonable cost and within a relatively short time-frame (within 12 months). Brokers and exchanges are typically highly sophisticated and well-resourced market participants with a track record of investment in technology innovation and they could easily adjust software they have already developed in different asset classes and geographies if they chose to. They also added that large functional components of Trayport's offerings are now highly commoditised, and multiple components can be purchased individually and put together to create new competing offerings that replicate the full Trayport offering. Additionally bespoke software development firms such as Scott Logic or TradeLogic exist who can put these components together or build new components.

7.108 The Parties also said that customers exert considerable buyer power and that they can and do sponsor entry. For example, they said that the major German utility firms RWE and E.ON have sponsored Exxeta's development of its trading software for European utilities since 2007 and that Exxeta now provides aggregated access to the same marketplaces as those available via Trading Gateway.

7.109 The Parties said that the challenge for rivals was not in obtaining the relevant software, but rather in building momentum in the areas where Trayport has an incumbent position as supplier of software to traders, brokers and exchanges. This is more likely to require the support of market participants, but if participants are motivated to switch away from using Trayport's software to an alternative solution, they are more than capable of doing so within a relative short space of time.

7.110 The Parties said that the relevant exchange groups were not dependent on Trayport software.[81] They noted that EEX, CME and Nasdaq used Trayport connectivity via the GV Portal and/or its Clearing Link. However, none of these three exchanges used Trayport's ETS to operate their exchanges and their use of GV portal and/or Clearing Link was protected by their contracts with Trayport. Powernext did use ETS but, as part of the EEX group, the Parties argued it could switch to using EEX technology within the application notice period for its ETS license.

7.111 The Parties also told us that traders could trade on EEX and CME via these exchanges' own direct screens and, therefore, without using Trayport. They pointed to EEX's multi-front end connectivity strategy as set out on EEX's

[81] ICE/Trayport initial submission, paragraphs 7.1–7.3.

website. The Parties noted that 'EEX's multi-front end connectivity strategy is particularly noteworthy' resulting in 'the majority of EEX trades seemingly already bypass the Trayport network/Trading Gateway.'[82]

7.112 The Parties did not appear to challenge the view that brokers were reliant on Trayport for electronic trading under current market conditions. However, they argued that voice broking was the most likely alternative and that the existing technology that some brokers already have available (such as GFI's Energy Match and ICAP's Fusion proprietary technology) could be used should BTS become unfit for purpose.[83].Also, they said that the concentration of trading on certain instruments meant that the benefits of price aggregation are weakened. For example, they said that in coal, given GFI is the largest coal broker, it is plausible that traders would switch to GFI's proprietary technology should BTS be withdrawn.

7.113 The Parties also said that brokers were contractually protected [✂].

7.114 The Parties said that, in relation to clearing, brokers had alternatives to Trayport's Clearing Link. They noted that direct STP clearing links to a clearinghouse could be established from the Trayport BTS back end and that such a link could bypass Trayport and use the exchange group's proprietary API. They pointed to a number of examples of BTS brokers using alternatives to Trayport's Clearing Link to clear at ICE's competitors.[84]

7.115 The Parties stressed that Trayport's role in the market was simply to provide software solutions to facilitate trading and in doing so it acted in a neutral way between the venues it had as clients. Referring to its public statements and some internal documents, ICE said it was planning to continue to run Trayport on this basis and its future success was dependent on aggregation and neutrality.[85] The Parties highlighted what they saw as the risks to this business model of favouring particular venues over others or seeking to influence competition to the benefits of particular venues or types of venues.[86]

Third party views

Traders

7.116 Traders were consistent on the importance of Trayport's Joule/Trading Gateway citing aggregation and access to multiple venues as its key strength.

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[82] ICE/Trayport initial submission, paragraph 8.3.
[83] ICE/Trayport initial submission, paragraph 10.4.
[84] ICE/Trayport initial submission, paragraph 9.7.
[85] ICE/Trayport initial submission, paragraphs 3.2–3.5.
[86] ICE/Trayport initial submission, paragraph 2.10.

For example, Engie told us that in principle, traders could use whatever screen and trading venue offered the lowest transaction fee for the same quality of services and provided it had the necessary liquidity. However, Engie said that it did not consider that there were front-end screens available as viable alternatives to Trayport's Joule/Trading Gateway screen for the energy markets. Engie said that Exxeta and Trading Technology provided screens with price aggregation but that they were dependent on, and paid a fee to, Trayport. The only other alternative was CME Direct and this was very small. Engie told us that voice dealing was also processed via Trayport.[87]

7.117 RWE told us that Trayport has an effective monopoly over access to the brokered OTC markets. The contractual framework surrounding the back-end broker trading systems and the Joule/Trading Gateway means that any market participant needs to purchase the Joule/Trading Gateway to trade energy in Europe and any broker or exchange has to be available via Trayport. It stated that the barriers to entering on either side of this 'monopolistic nexus' are extremely high. It said that in some markets there were other front-end screen choices, for example, in oil RWE said that it could use X-Trader, TT or EXXETA. However, RWE emphasised that these front-ends still needed to use Trayport's Trading Gateway to access the UK power market.[88]

Venues

7.118 Venues were broadly consistent in their views about the importance of Trayport in European Utility trading. They emphasised that Trayport's technologies were an essential input into trading on the European energy space. They highlighted the importance of aggregation of multiple venues on one screen and the Closed API, which requires Trayport's clients to use its front-end services if it has Trayport's back-end structure, as key determinants of Trayport's strength and the lack of viable alternatives for market participants (see paragraphs 3.21 to 3.23 for more information on the Closed API).

7.119 For example, of the exchanges CME told us that Trayport's main value was in providing aggregation and access to the entire lifecycle of a trade, ie price discovery, trade agreement, and trade submission. It stated that the value for market participants is in having access to the entire life cycle of a trade in one place. If there is no price discovery, there will likely be no trade agreement and trade submission, including for clearing to CME.[89] Similarly, [an

[87] Engie hearing summary, paragraph 11.
[88] RWE hearing summary, paragraph 3.
[89] CME Group hearing summary, paragraph 23.

exchange] told us that Trayport has a virtual monopoly on the OTC markets in power and gas trading as this is the trading system used by all major brokers. Furthermore, it told us that all trading members active in power and gas trading have to connect to Trayport to access best execution prices.

7.120 Nasdaq also told us that it considered Trayport was essential to compete in the European utilities markets as a very high number of the trades went through Trayport. However, it noted that it used Trayport less than some other exchanges. This was because Nasdaq has many traders also using other systems due to its history where it mainly focuses on Nordic power and for which it has been active for many years.[90] We note that ICE recently launched new German and Nordic power contracts, [✂].

7.121 All the main brokers said they were very reliant on Trayport. For example, Broker A stated that it used the Trayport technology primarily for price dissemination, ie to get its prices out in front of all of the clients who were connected to Trayport. The Trayport system also provided Broker A with a reference point for its own internal voice-brokers.[91]

7.122 Griffin told us that one of the primary reasons for the failure of its joint venture with ICE was the lack of aggregation available on the ICE platform. Griffin explained that it terminated its long term service agreement with ICE in 2014 and switched to Trayport. Since that point Griffin's broker operation had conducted significantly higher levels of business as a result of being on Trayport with the same fee structure and business model.[92]

7.123 Griffin also stated that the power of Trayport was demonstrated by the fact that it took 12 months to launch its offering with ICE, whereas it took less than a month to launch its offering with Trayport. In evidencing this, it stated that it was the number one broker in the trading of TTF front month derivatives on its first day on Trayport. Griffin, as a broker, had not got close to this volume of activity when it was on ICE.

7.124 ICAP told us that to compete effectively an exchange needed its liquidity to be aggregated into the front end trader 'stack'. It said that due to the closed nature of the Trayport API this meant that any trading venue wanting to compete effectively for execution and clearing would need to connect to trader front-end systems via an agreement with Trayport rather than directly with traders as they can do in the majority of other markets.[93]

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[90] Nasdaq hearing summary, paragraph 9.
[91] Broker A hearing summary, paragraph 4.
[92] Griffin Markets hearing summary, paragraph 5.
[93] ICAP hearing summary, paragraph 15.

7.125 ICAP told us that Trayport's Closed API strategy made it an unattractive proposition for ICAP to choose Trayport as a software provider for new product or asset class launches. ICAP said doing so would only compound the current issues markets face regarding lack of access and control over their systems, connectivity and data. ICAP said that where it does use Trayport for new products or asset class launches, it is typically where Trayport already has some traction and connectivity and to use a system other than Trayport would require overcoming all the barriers to entry that exist and which have been discussed extensively elsewhere. For example, this was the case in the Wet FFA market.

7.126 Some venues told us that Trayport played an important role in helping them to develop and launch new products. For example, [✂] considered Trayport's input as key to the early success of its [✂] product. [✂] won significant volumes from ICE while [✂] had been unable to do this previously without the use of Trayport. It was only when switching to Trayport, in [✂], that the [✂] volumes began to increase in [✂] at the expense of ICE. [✂] also told us that where attempts have been made to enter new products or markets, the presence of bid ask prices on Trayport had been crucial and a necessary requirement to entering. For example, in the [✂] and [✂] the main determining factor for gaining volumes was the ability to put [✂] prices on the Trayport system to strengthen screen trading.

Clearing

7.127 Third parties also provided evidence of Trayport's role in the clearing of trades: (i) directly through its provision of its Clearing Link; and (ii) indirectly through its product dissemination function to traders. We consider each of these in turn, including alternatives to Trayport's Clearing Link.

7.128 Of the exchanges, EEX said that Trayport's Clearing Link was a key part of its clearing service infrastructure as it was used in around half of EEX's exchange volume. It told us that Trayport's Clearing Link was a vital instrument for the multiple parties involved in clearing operations. It said that there was no viable alternative on the market, and stressed that it was critical that it functioned correctly.[94]

7.129 CME is connected to Trayport's Clearing Link. CME told us that, as part of a [✂], CME Group pays Trayport [✂]. CME Group also said that their agreement was [✂]. CME Group said that normally it [✂].

[94] EEX hearing summary, paragraph 18.

7.130 CME told us that there are alternative ways that a broker can submit a trade for clearing. For example, a broker could submit a trade to CME for clearing by fax, by email, or could call it in using CME's facilitation desk. However, it said brokers are more likely to use an electronic platform which is written directly to the interface, such as Trayport's Clearing Link. The broker could submit the trade via the Trayport Clearing Link, or do the same via a similar clearing link on CME Direct. It is the broker's choice how to submit it on behalf of the trader.[95]

7.131 However, CME told us there were risks associated with these alternative routes. For example, traders need to have clearing confirmations for block futures trades within a certain window following execution because of block trade price reporting requirements.[96] CME said that even if trades are not submitted through the Trayport Clearing Link, almost 100% of the OTC trades in relation to European utilities products cleared by CME Group are trades where price discovery and trade agreement occur on Trayport.[97]

7.132 [An exchange] told us that in addition to manual registration, there were other alternatives to Trayport's Clearing Link such as [✂]. It said while these could potentially offer comparable functionality to Trayport they were weak alternatives. This was because Trayport's network effects mean that using another one would be inconvenient for a trader and the incremental costs would be very high. Further, Trayport's Closed API meant alternatives were always dependent on Trayport. [✂] also highlighted switching costs. It said a switch to EFET.net eXRP would involve an investment by each broker of approximately €120,000 (based on 60 person days of estimated effort). At [✂], there would be an additional 10 person days for each broker that switches. Manual entry was no alternative due to the volumes registered, the additional operational burden on traders, and the risk of human error which was considerably higher.

7.133 Some brokers told us they used alternatives to Trayport's Clearing Link. Griffin stated that it preferred not to use Trayport's hosted clearing link because it had more control over trades coming through its back-office system. Instead, Griffin preferred to use its own direct links to clearinghouses.[98] Similarly, Broker A stated that EFETnet provided a platform with similar functionality to the hosted clearing link provided by Trayport,

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[95] CME Group hearing summary, paragraph 7.
[96] Regulatory requirements applying to the registration of block trades on exchange require reporting of registered and cleared trades within a short period following execution – typically five to fifteen minutes. This requirement is set out in CME and ICE publications - ICE and CME Group.
[97] CME Group hearing summary, paragraph 28.
[98] Griffin hearing summary, paragraph 25.

although there may be differences in features such as the range of clearinghouses that each had access to. However, it believes that the connectivity of the EFET platform occurs post-trade which is too late in the trade process and trade work flow. Broker A's futures trades are required to be with the exchange within a 5 – 15 minute timescale from execution, and in its view the current functionality available from EFET would be unable to meet this deadline.[99] Tradition told us that it was possible to build its own alternative to Trayport's Clearing Link; however it would lack the technical functionality and efficiency expected by traders.

7.134 On product dissemination, CME told us that CME's only service on Trayport is clearing trades through its Clearing Link but that in order for a trade to be agreed the traders will first need to have seen the bids and offers on that price for a CME block.[100] Nasdaq similarly said that a key component of competition is an exchange's level of distribution and Trayport can be very important for exchanges to increase the level of their distribution towards brokers for OTC clearing.

Our assessment

7.135 We have considered two issues relevant to our competitive assessment and highlighted by the views of third parties. First, we assessed the extent to which, as they have told us, market participants – traders, venues and clearinghouses - were dependent on Trayport or whether they used other alternatives or could switch to them easily. Secondly, we assessed whether Trayport's position in the market was different from other ISVs in terms of the extent to which it could facilitate competition between trading venues and between clearinghouses, and how it might do so.

7.136 As we set out above, third parties were broadly consistent in their views that Trayport was very important for all market participants and it was difficult or impossible to trade effectively without licensing its products and thereby gaining access to the Trayport platform. We therefore assessed the extent to which venues appeared to be dependent on the Trayport platform to disseminate their prices and offerings to traders; and how much traders relied on the Trayport platform to view prices and execute trades. In doing so, we analysed volume data and responses to our trader questionnaires. We have also considered carefully the Parties' arguments on this evidence and examined their internal documents pre-Merger which discuss the relative importance of Trayport.

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[99] Broker A hearing summary, paragraph 9.
[100] CME hearing summary, paragraph 23.

Market participants' dependency on Trayport

Venues and clearinghouses' use of Trayport

7.137 We first took the total volume of trades executed by all of the brokers collectively, and examined for each asset class the front-end access service used by traders to reach these venues. Specifically, we analysed whether they used a Trayport front-end, another ISV, or voice trading. In doing this we counted instances where alternative ISVs such as Exxeta were used by traders on top of Trading Gateway, and therefore required a licence from Trayport, as part of the 'Joule/Trading Gateway' category, as in these cases these ISVs did not represent independent alternatives that were used instead of Trading Gateway.[101]

Table 4: Brokers' use of Trayport

				%
	Coal	*Emissions*	*Gas*	*Power*
Joule/Trading Gateway	[45-55]	[55-65]	[60-70]	[40-50]
Other ISVs	[0-5]	[0-5]	[0-5]	[0-5]
Voice	[45-55]	[35-45]	[30-40]	[50-60]

Source: CMA analysis of parties' data.
Note: Shares of OTC executed volumes in 2015. Refer to Appendix E for an explanation of the underlying data.

7.138 The analysis indicated that, although the exact proportion varied by asset class, in all cases a substantial proportion of OTC executed trades were initiated through Joule/Trading Gateway. We also found that the only other channel used by traders to execute trades via brokers was voice, and that no other ISV's software products were used independently of Trayport by brokers in any of the asset classes where Trayport is active.

7.139 In relation to the role of voice trading, we noted that detailed data on this was not available, and that these figures were based on high level assumptions made the Parties. We therefore investigated the role of voice trading in more detail. Traders told us that a number of trades in the European Utility markets may involve some interaction by voice, but also that the vast majority of these also involved some use of Trayport too, for example to review prices on screen, and to execute and/or capture trades by keying them electronically into Trayport. We have seen little evidence of significant voice-only trading and we are not aware of examples where highly liquid markets traded electronically have switched back to a voice-only trading. We therefore consider that the results of this analysis are likely to substantially overstate

[101] The results of this analysis are presented in Table 4 below.

the effectiveness of voice as an alternative to Trayport, and our provisional view is that it is not a strong alternative to electronic trading.

7.140 We examined volume data for [an exchange] and its use of Trayport, taking into account our analysis that showed [✂] to be the main alternative exchange to ICE in executing trades in certain asset classes (see Appendix E). We analysed, for all of the trades executed on [✂] exchanges, which front-end access services were used by traders to reach its venues and undertake these trades. We undertook this analysis by asset class, though noted that in the case of emissions these figures were calculated based on only a limited number of trades. The results of this analysis are presented in Table 5 below.

Table 5: [✂] use of Trayport

%

	Emissions	*Gas*	*Power*
Trading Gateway	[20–30]	[90–100]	[50–60]
Other ISVs	[70–80]	[0–5]	[40–50]
Voice	[0–5]	[0–5]	[0–5]

Source: CMA analysis.
Note: Share of aggregated executed volumes on [✂]. Power volumes include [✂]. Emissions volumes [✂]. Gas volumes [✂]. Trading Gateway includes direct access through Trayport.

7.141 This analysis showed that between [20–30]% and [90–100]% of trades executed by [✂] were initiated on Joule/Trading Gateway. [✂] use of Trayport varied significantly by asset class. However, whilst [✂] of executed trades in emissions came through Trayport, with the remainder being initiated via other ISVs, we note that [✂] has only a small share in emissions [90-100]% of executed trades in gas and more than half of executed trades in power were initiated on Trading Gateway. This evidence shows that very significant amounts of [✂] volumes flow through the Trayport platform.

7.142 We have also examined volume data for [✂] and its use of Trayport. The results of our analysis of [✂] volume data is presented in Table 6 below.

Table 6: [✂] use of Trayport

%

	Power	
	German Power	*Nordic Power*
Trading Gateway	[50–60]	[0–10]
Other ISVs	[40–50]	[90–100]
Voice	[0–5]	[0–5]

Source: CMA analysis.
Note: [✂] executes a very small proportion of trades executed in the emission market ([✂])

7.143 This analysis showed that [✂] is not dependent on Trayport for the execution of Nordic Power trades. We understand that this is related to [✂] legacy position in this product, where it has historically enjoyed a strong position. However, the analysis also showed that in German power, which [✂] has [✂], more than half of its execution business was initiated on Joule/Trading Gateway.

7.144 In summary, our analysis of exchanges' execution volumes has found that they have alternative routes to traders aside from Trayport, and that as a result their reliance on it varies by asset class. However, beyond specific cases where they have historically held substantial liquidity, in general exchanges are heavily reliant on Trayport to reach traders.

Clearinghouses' use of Trayport

7.145 We also analysed volume data for clearinghouses. This showed that a significant proportion of trades executed OTC and subsequently sent for clearing were sent to ICE's main rival clearinghouses through Trayport's Clearing Link.

7.146 In relation to [✂] we found both were reliant on Trayport for significant amounts of trading volumes:

(a) [✂]:

Across all products [80–90]% of STP volumes for [✂] as a whole were through Trayport's Clearing Link.[102]

In particular, we noted that in power [✂], Trayport's STP Link accounted for the great majority of [✂] STP clearing volumes, namely [70–80]% and [80–90]% of German Power and Italian Power, respectively. We also noted that in gas, Trayport's Clearing Link accounted for up to [90–100]% of [✂] STP clearing volumes.

(b) [✂]:

[✂] is also a heavy user of the Trayport platform: the majority [50-60]% of OTC futures volumes cleared in [✂] came through Trayport's Clearing Link.[103] The other trades were sent to the clearinghouse via [an alternative front-end] [20 -30]% and manual registration [20-30]%. [✂]

[102] The remaining volumes are through eXRP STP Link. Manual registration accounts for a minimal amount of volumes: less than [0–5]% across all products and markets.
[103] Data provided by [✂] is for 2015.

said that even if trades are not submitted through Trayport's Clearing Link, almost 100% of the OTC trades in relation to European utilities products cleared by [✂] are trades where price discovery and trade agreement occur on Trayport.[104]

7.147 We assessed the extent to which other solutions could be viable alternatives to Trayport for rival clearinghouses.

7.148 In relation to Trayport's Clearing Link, we noted that third parties indicated a number of alternative solutions that are used or could be used to connect clearinghouses to brokers' back-ends. However, we also noted that third party evidence suggested that these are weaker alternatives compared to Trayport's. This was because alternative STP links were not effective competitors in isolation because they do not benefit from the network effects generated by the Trayport platform's inter-functionality (see paragraph 3.29 and the 'Market definition' section above).

7.149 In relation to Trayport's product dissemination function, we noted that some third parties highlighted that Trayport's importance lies in its ability to increase rival clearinghouses' level of distribution towards brokers for OTC clearing.

7.150 Our provisional view is that the assessment of volume data is consistent with third party views that the main venues in European utilities trading are heavy users of Trayport products. Brokers appear to be particularly dependent on Trayport as all the main brokers use Trayport for nearly all their electronic transactions. Exchanges appear to be less dependent though exchanges which have tried to enter and compete for liquidity in asset classes where they did not have a presence or introduce new products, have generally done so through Trayport. Clearinghouses appear to be less dependent on Trayport for the use of its Clearing Link, given the availability of alternatives, although these are of inferior quality compared to Trayport's offering. However, clearinghouses seem to rely to some extent on Trayport to reach a significant level of distribution for their clearing products in the European utility market.

Traders' use of Trayport

7.151 Responses to our trader questionnaire, summarised in Table 5 below, showed that a large proportion of traders have a Trading Gateway screen.

[104] [✂]

Table 7: Screen penetration onto traders' desks

		%
	Number	*Penetration rate*
Screens that require a Trayport licence:		
Trading Gateway screens	[✂]	61
Trayport direct screens	[✂]	13
Other screens that require a Trayport licence	[✂]	13
CME screens	[✂]	6
EEX screens	[✂]	7
ICE screens	[✂]	44
Nasdaq screens	[✂]	6
Other screens	[✂]	23

Source: CMA analysis.
Note: The total number of energy traders accounted for is [✂]. Penetration rates are computed as the ratio between the number of screens and the total number of traders. For this reason these rates are not to be interpreted as shares and the percentages do not need to add up to 100.

7.152 The table above also shows that the only other screen with significant presence on traders' desks is the ICE screen (WebICE).

7.153 We also considered third parties' views and past examples of attempted entry to assess the extent to which alternative screens could expand to attract greater liquidity and, in doing so, increase their penetration on traders' desks. No third parties considered that a large-scale migration or shift in liquidity away from Trayport was realistic. For example:

(a) Griffin told us that switching to a new technology would involve a huge amount of investment and analysis on behalf of each counterparty, even following the pitch to convince them of the move. It told us that there would be a big challenge to persuade each of its major counterparties to shift to a new system all at the same time.[105]

(b) RWE told us that switching the entire pool of liquidity would be a 'complex, costly and risky undertaking', and that there would inevitably be a period of 'double running' and duplicated costs associated with the winding down of existing trades and open interest held on the existing platforms during the period of transition. It added that there was also no guarantee that liquidity would migrate sufficiently to a new, open and competitive platform to justify the cost incurred in building or procuring an alternative platform. In addition, Griffin believed that the introduction of completely new software would require a significant amount of additional work which most market participants would be unwilling to carry out.

7.154 Third parties frequently cited Griffin as an example of a past attempt by a competitor to establish a competing platform to Trayport. Many third parties agreed that Griffin's failure to migrate liquidity away from the Trayport

[105] Griffin hearing summary, paragraph 8.

platform, and the lack of aggregation of Griffin's prices with those of other venues, were the main reasons why this attempt had failed. Griffin told us that with limited aggregation, it found it extremely difficult to attract liquidity to its venue, and that it had no choice but to shift to using Trayport's back-end BTS product to benefit from aggregation. Further third party evidence on the importance of aggregation and the difficulty of shifting liquidity, in the context of Trayport's Closed API, is set out in Appendix C.

7.155 We also noted that in 2009, a consortium of major brokers was formed to discuss the potential courses of action for brokers and traders to move away from the Trayport platform (this was also known as Project Trafalgar). We considered it noteworthy that since that time, seven years' later, there had been very few concrete steps taken to proceed with any such shift away from Trayport even though market rumours persist.

7.156 As part of our assessment, we have carefully considered the Parties' argument that a high use of Joule/Trading Gateway by traders and a high flow of rivals' volumes going through Trayport do not prove that rival exchanges are dependent on Trayport.

7.157 Our provisional view is that third party evidence, and the analysis of volume data and the traders' questionnaire, indicate that Joule/Trading Gateway and other Trayport-dependent screens are the main screens used by traders to discover prices and products, execute trades on trading venues and subsequently 'give up' OTC executed trades to clearinghouses. We found that other screens have very limited penetration on traders' desks and that, consequently, only a limited proportion of ICE's rivals' business came through these alternative channels. Traders were consistent in their views that they were heavily dependent on Trayport to trade in energy asset classes and ensure they could identify the best prices and find the highest liquidity across multiple venues. Our analysis is consistent with these views. We have also provisionally concluded that for an alternative front-end access provider to offer traders a level of aggregation comparable to Trayport's, would require a significant proportion of brokers to migrate to a new back-end system together with traders switching at the front-end. This would require a significant collaboration, a market wide shift and entail significant risks for all stakeholders. More details on barriers to entry and expansion are set out in Section 9.

Evidence from Parties' internal documents

7.158 We found that the Parties' internal documents are consistent with the view that Trayport has a very strong position in the market and that venues, clearinghouses and traders are dependent on it. For example, ICE noted in a

strategy document, under a heading '[✂]', that Trayport '[✂]'. It went on to say that Trayport made '[✂]' and involved a '[✂]'.

7.159 The ICE strategy document also highlighted a longer-term objective to '[✂]', and a further annex notes that '[✂].' We consider it relevant that ICE's assessment of the importance of Trayport in launching a new product was made from a position in the market in which it relied less on Trayport to disseminate its products to the market than many of its rivals. For example, ICE did not use Trayport's ETS and it provided access only to a limited number of its energy products through Trayport's Trading Gateway. This suggests that those venues which do rely significantly on Trayport would find it even more difficult to launch a new product or try to compete in an asset class in which it held little or no liquidity.

7.160 A Trayport document, from May 2014, also suggests that [✂]. It describes itself as '[✂]'. [✂].

7.161 Further, a Trayport presentation to ICE management post-Merger [✂].

Provisional conclusion on dependency on Trayport

7.162 Based on the evidence set out above, our provisional view is that all of ICE's rival trading venues and clearinghouses in the European utilities trading markets are dependent, to some extent, on Trayport to disseminate their prices and offerings to traders. In certain asset classes nearly all electronic trading appears to involve both traders and venues using Trayport products.

7.163 This dependency is a result of the ubiquitous use of the Trayport platform by traders, venues and clearinghouses, which generates network effects and deeply embeds the value of the Trayport platform when compared to other alternative front-end, back-end and STP link solutions which are typically available in isolation and are, therefore, weak alternatives.

The role of Trayport in facilitating competition

7.164 We considered the Parties' internal documents, third parties' views and past examples of collaborations between Trayport and brokers to assess if, and the extent to which, Trayport can influence competition between trading venues and between clearinghouses.

7.165 We found that the Parties' internal documents are consistent with many third party views that Trayport plays an important role in facilitating competition between venues and clearinghouses, and that it was not a passive software provider. For example, a Trayport [✂].

'[✂].'

7.166 Trayport's Asset Class Vision and Action Plan 2013 sets out how it sees its role in European energy markets: '[✂]'. It goes on:

'[✂].'

7.167 On specific asset classes, the action plan states of Trayport's position in coal: '[✂].' This growth in volumes for CME was at the expense of ICE and Trayport noted the importance of an STP link: '[✂]'.

7.168 The same action plan states:

'[✂].'

7.169 [✂]

Figure 11: Potential Trayport expansion

[✂]

Source: Trayport.

7.170 In another action plan from 2011, Trayport discusses its potential role in facilitating broker trading in oil. This document notes that Trayport's '[✂].' It goes on:

- '[✂]
- [✂]
- [✂].
- [✂].'

7.171 Along the same lines, in a presentation to investors from 2014 Trayport notes that '[✂]' and that there is a [✂].

7.172 We also found that a collaboration between Trayport and a broker shows how Trayport supports venues in entering and expanding their trading solutions into new markets. The Parties told us that in recent years [✂].

7.173 We examined the internal documents relating to the long-running disagreement between ICE and Trayport over whether ICE [✂] for a Trayport Clearing Link for clearing of coal, gas, power and emissions trades. We considered this episode informative of Trayport's role in facilitating competition between venues and the mechanisms at its disposal to influence venues' relative competitiveness.

7.174 A Trayport document from January 2013 notes [✂]:

- [✂]
- [✂]
- [✂]

7.175 Ahead of the Merger, internal documents show there was some discussion within Trayport of the relevance of its role in facilitating competition between venues in relation to ICE's potential ownership. [✂]:

- '[✂]'
- '[✂]'
- '[✂]'

7.176 We also considered the Parties' views on some of these documents, namely that the documents were variously old, and that positions had changed and/or that they had been written by staff who were relatively junior and did not represent the views of senior management. We note that while any individual document could in isolation be read out of context, the competitive dynamic between ICE and Trayport is a consistent theme expressed in such documents over a number of years. Furthermore, the Parties provided around 200 documents of over 1000 documents which its advisers told us were potentially within scope of our request for internal documents. We were told that this selection was broadly representative of the totality of documents and therefore consider it reasonable to attach weight to them.

7.177 Our provisional view is that these internal documents are consistent with third party evidence which shows that Trayport has an important role in facilitating competition between trading venues and between clearinghouses. Further it shows that Trayport's strength, and the reliance of traders, venues and clearinghouses on it, enabled it to influence competition for execution and clearing and potentially the movement of volumes between market participants. The evidence also shows that Trayport evaluated and used various strategies to defend and support its customers' businesses and influence competition between them. We assess the specific mechanisms that Trayport could use to foreclose ICE's rivals and, in doing so, affect competition between venues and between clearinghouses in Section 8.

Provisional conclusions on the role of Trayport in facilitating competition

7.178 We provisionally concluded that ICE's rival trading venues and clearinghouses in the European utilities trading markets are, to a varying extent, dependent on Trayport to disseminate their prices and offerings to traders. We also found that Trayport was not a passive software provider but that it was active in its efforts to influence the dynamics of competition between trading venues and between clearinghouses in order to ensure that volumes flow through the Trayport platform. By supporting and defending its customers' businesses, it builds and protects its own business and, in doing so, affects competition between venues and clearinghouses.

Summary of our assessment on pre-Merger competition

7.179 Third parties' views indicated that traders' decisions about where to execute and clear a trade are primarily driven by liquidity, which is a key factor in finding the best executing price, and margin and open interest (margin efficiency). We also found that traders' choices are influenced by a number of other secondary factors on which venues compete including execution and clearing fees, and ease of registration of OTC trades.

7.180 Having assessed the factors which determine traders' choices, we assessed the nature of pre-Merger competition between venues and between clearinghouses to inform our analysis of our theories of harm. Our assessment is consistent with traders' views that liquidity and margin efficiency are the primary determinants of venues' and clearinghouses' competitive strengths. Although we found that once liquidity and open interests have settled with a particular venue/clearinghouse it is difficult to shift, we found evidence of head-to-head competition between exchanges and between clearinghouses to win liquidity/open interests where these were on multiple venues/clearinghouses in a particular asset class.

7.181 We also found that exchanges and clearinghouses impose a substantial competitive constraint on one another through potential head-to-head competition, through the threat of taking liquidity where they do not currently have it, and dynamic competition, through the introduction of new products and innovative service offerings. In particular, we noted the key role played by dynamic competition in this industry, driven by the importance of liquidity/open interests to traders and the difficulty in shifting it once settled in a venue/clearinghouse. For this reason, we found that venues and clearinghouses were always considering where to enter and how to attract market shares, even in asset classes where an incumbent had a strong position.

7.182 We provisionally found that, although the greatest rivalry is likely to be between execution venues of the same type, there is likely also a substantial degree of competition between exchanges and brokers.

7.183 In this context, we found that ICE has a strong position in execution and clearing of OTC trades in a number of asset classes and products. In particular, large volumes of gas and secondary emissions trades are executed on ICE, where it faces both head-to-head and potential head-to-head competition from Powernext, EEX and Nasdaq. We found that in power EEX and Nasdaq are the main exchanges and ICE has no or limited volumes. However, ICE is the main exchange present in UK power, although exchange-based execution represents a very small share of total European trading in this asset class (see Appendix E). We found a similar picture in clearing of OTC trades in European utilities, where ICE is strong in gas and emissions, and has very little presence in power. However, we also found that ICE has significant clearing volumes in coal where it faces strong head-to-head competition from CME.

7.184 Having established that there is competition between ICE and its rivals in the downstream supply of execution and clearing services to traders in a number of asset classes, we next examined the role of Trayport in facilitating this competition.

7.185 We carefully considered the Parties' arguments, but found that volume data, responses to trader's questionnaires and third parties' views show that all main venues in European utilities trading are heavy users of the Trayport platform. Brokers appear to be particularly dependent on Trayport as all the main brokers active in energy trading use Trayport for nearly all their electronic transactions. Exchanges appear to be less dependent, though exchanges which have tried to enter and compete for liquidity in asset classes where they did not have a presence have generally done so through Trayport. Clearinghouses appear to be less dependent on Trayport for the use of Clearing Link, given the availability of alternatives, although of inferior quality compared to Trayport's offering. However, clearinghouses seem to rely to some extent on Trayport to reach a significant level of distribution for their clearing products in the European utility market.

7.186 We also found that traders were heavily dependent on Trayport to trade in energy asset classes and ensure they could identify the best prices and find the highest liquidity across multiple venues. Joule/Trading Gateway and other Trayport-dependent screens are the main screens used by traders whereas other screens have very limited penetration on traders' desks. As a result we found that only a limited proportion of ICE's rivals' business came through

these alternative screens. We have also found that that entry and expansion of alternative front-ends was very difficult.

7.187 Having established that traders, venues and clearinghouses are dependent on Trayport, we considered the role played by Trayport in facilitating competition between venues and between clearinghouses. We have carefully considered the Parties' views but found that the Parties' internal documents and third parties' views were consistent in showing that Trayport has an important role in facilitating such competition and it was actively supporting its customers. Specifically, we reviewed evidence indicating that Trayport's strength, and the reliance of traders, venues and clearinghouses on it, which enabled it to pick certain venues to support in competition with ICE and potentially influenced the movement of volumes between.

7.188 We also found that some of Trayport's internal documents evaluated and indicated various strategies that Trayport used or could use to defend and support its customers' businesses and influence competition between them.

8. Competitive assessment

8.1 In this section we have considered the competitive effects of the Merger through vertical theories of harm and a horizontal theory of harm. We consider our horizontal theory of harm following our assessment of the vertical issues arising from the Merger.

8.2 As explained in our issues statement, the concern under a vertical theory of harm is that bringing together the merging parties creates or increases the ability and/or incentive of the merged entity to harm competition at one level of the supply chain through its behaviour at another level of the supply chain.

8.3 The theories of harm raised by such mergers typically involve the merged firm harming the ability of its rivals to compete post-merger through foreclosure, for example by raising effective prices to its rivals, or by refusing to supply them completely. Such actions may harm the ability of the merged firm's rivals to provide a competitive constraint into the future.[106]

8.4 ICE provides execution and clearing services which are facilitated by its own vertically linked chain of services, including its front-end screen, WebICE, and its own back-end system which links directly into its clearinghouse. Trayport's front-end, back-end and Clearing Link software also form part of a vertically linked chain of services which facilitate European utilities trading for a number of ICE's rival venues and clearinghouses. In our competitive assessment, we

[106] CC2, paragraph 5.6.5.

assess the extent to which ICE through its ownership of Trayport will have the ability and incentive to adversely affect the competitive offering of its rivals by preventing or worsening their rivals' access to this chain of services.

8.5 Consistent with the approach in our Merger Assessment Guidelines we assessed the effects of the Merger by reference to the following framework:[107]

(a) Ability: Would the merged firm have the ability to harm rivals, for example through raising prices or refusing to supply them?

(b) Incentive: Would the merged firm find it profitable to do so?

(c) Effect: Would the effect of any action by the merged firm be sufficient to reduce competition in the affected market to the extent that, in the context of the market in question, it gives rise to an SLC?

8.6 The Merger Assessment Guidelines consider both partial foreclosure, whereby a merged firm could increase the price it charges for the input to rivals, and total foreclosure, whereby the merged entity may stop supplying its rivals all together.[108] Partial foreclosure can also include reductions in quality of service.

8.7 In the context of this Merger, we consider that partial foreclosure can be wider than a simple price increase. More specifically, we considered whether Trayport post-Merger could increase the price of its software to ICE's rival venues and clearinghouses and also whether it could de-prioritise the development and improvement of their software, or reduce the level of investments to their disadvantage. We also considered whether Trayport would have the ability and incentive to stop supplying its software to ICE's rivals or to new entrants in the European utilities space (total foreclosure).

8.8 In the remainder of this section, we then examine the extent of competition between the Parties' respective front-end access services and whether a loss of this competition could result in higher prices or a worsened offering to traders as a result of horizontal unilateral effects.

8.9 Finally, we consider how these theories of harm interact and provisionally conclude on the effect of the Merger in the round.

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[107] CC2, paragraph 5.6.6.
[108] CC2, paragraphs 5.6.9 & 5.6.13.

Vertical effects

Ability

8.10 In assessing whether the merged firm would have the ability to foreclose rival trading venues and clearinghouses, we considered three key questions:

(a) Are ICE's rivals dependent on Trayport to compete effectively?

(b) Are there mechanisms though which Trayport could be used to weaken competition and adversely affect its rivals?

(c) Do Trayport's current contracts with customers provide a countervailing constraint on the merged firm's ability to adversely affect rivals?

8.11 We first set out a summary of the Parties' and third parties' submissions, and then carry out our assessment of the evidence.

Parties' views

8.12 ICE said that Trayport does not provide ICE with the ability to foreclose rival trading venues and clearinghouses.

8.13 In relation to exchanges, ICE said that:

(a) Of ICE's key rivals in European utilities trading, [✂].

(b) ICE would not have the ability to foreclose exchanges that are using non-ETS matching because traders can access these exchanges outside the Trayport's network via their direct screens or via other ISV connectivity. In particular, the Parties stated that this is the case for EEX (the incumbent German power exchange) that has a multi front-end connectivity strategy.

(c) [✂] is [✂]% owned by the major German utility traders (eg [✂]) who are its main users, and it is implausible that Trayport could in any way force traders to switch to ICE.

8.14 In relation to brokers, the Parties also said that foreclosure of brokers would undermine Trayport's aggregation business model and would have a major effect on traders. As a consequence, traders would collectively have the ability to shift ICE markets to other venues, and this might happen if they lost trust in ICE. We considered this argument in our analysis of incentives below.

8.15 In relation to clearinghouses, the Parties submitted that:

(a) Trayport software cannot be used to dictate traders' clearing choices and that there is no opportunity for default settings to play a role. The Parties also told us that for a foreclosure strategy to be effective, changes to Trayport software would need to contradict traders' express choices. This would be immediately detected and punished by traders.

(b) Clearinghouses interact directly with traders about their services and traders make a conscious decision where to clear and know which products can be cleared at which clearinghouse regardless of whether and how this is displayed on Trading Gateway. The Parties stated that traders do not choose a clearinghouse via Trading Gateway screen when trading in coal or NBP (UK gas).

(c) It is not necessary to use Trayport's Clearing Link and that there are alternative links that can and are currently used instead of Trayport's (eg eXRP, Ateo, etc).

8.16 ICE also said that if Trayport were to degrade the quality of the software and services offered to exchanges, traders would become aware of this and of the reasons why trading decisions and venue choices were altered. For example, traders would immediately detect if their price were displayed with a delay on a competing venue and would quickly inform other traders, in order to limit the potential impact it would have on the profitability of their trades. Therefore, it is not plausible that, in response to a sub-standard Trayport offering, traders would switch trading from the incumbent exchange to ICE.

8.17 The Parties submitted that venues' Trayport costs are fixed rather than proportionate to trading volumes, reducing the Parties' ability to use price increases to raise rivals' input costs and trader execution fees, and thereby make their services less attractive. This means that venues would likely not pass on cost increases. The Parties also submitted that fees were a relatively low factor in venue choice because these were a smaller component of the costs of trading than the implicit costs of bid offers spreads. Overall, raising Trayport costs would not be an effective means of foreclosing competing venues.

8.18 Furthermore, ICE submitted that contractual protections afforded to Trayport's customers constrained the ability of the merged entity to foreclose rivals post-Merger. Specifically, ICE stated that:[109]

(a) [✂]

[109] ICE/Trayport initial submission, paragraph 10.6.

(b) [✂]

(c) [✂]

(d) For deployed software used for most exchanges, sensitive transactional data is not accessible by Trayport without permission.

(e) As an operator of exchanges, ICE is heavily regulated, particularly in the USA, and any confidentiality breaches would threaten its regulated status and ability to conduct its operations. Similarly, ICE's reputation as a fair business that its customers can trust with sensitive information would be damaged by any breach of confidentiality. A loss of this selling point would compromise its business model and would not be in the interests of ICE.

8.19 The Parties also highlighted procedures at Trayport regarding data protection.

Third parties' views

8.20 One third party supported the Parties' view that increasing the price or otherwise reducing the quality of the Trayport offering would diminish the value of Trayport. Therefore, the idea of increasing the pricing and/or favouring ICE products over others, would intrinsically diminish the value of Trayport as the instrument for assessing the market.[110]

8.21 By contrast, a few respondents cited concerns that they would be completely foreclosed from the market following the Merger. For example, Nasdaq said that an extreme example of how ICE could shift volumes to its exchanges post-merger would be to terminate or instruct Trayport to terminate the arrangements it has with other clearinghouses and exchanges.

8.22 However, most third party concerns were about partial foreclosure strategies centred on raising rivals' costs, lowering service levels and hindering new product development, and inappropriate use of confidential data. We set out this evidence below.

Raising rivals' costs

8.23 Engie said that Trayport's dominant position in the market meant it could leverage higher fees from new brokers in order to shift liquidity from OTC to an exchange.[111] ICAP also raised concerns about the potential for ICE to

[110] Financial institution A hearing summary, paragraphs 2 & 6.
[111] Engie hearing summary, paragraph 20.

increase the licensing fee of Trayport paid by brokers and other exchanges, so as to raise the cost of trading on Trayport compared to trading directly on WebICE. It said this would make executing via ICE relatively cheaper, thereby promoting ICE at the expense of brokers and traders reliant on Trayport.[112] [an exchange] also said that ICE could raise prices to disadvantage its competitors.

Lowering the service level and hindering new product development

8.24 Exchanges highlighted concerns about the worsening of Trayport's service level. [An exchange] said that it feared ICE would diminish [the exchange's] ability to compete or meet regulatory requirements by delaying or withholding new software features. Similarly, Nasdaq said that the merged entity could provide ICE with a better technical solution, or, a first-mover advantage in adaptation of systems. For example, if Trayport were to make significant changes in the way exchanges connected or how trades would be reported or orders were routed, it would be very easy for Trayport to create barriers for competitors.[113]

8.25 Brokers were also concerned about service level post-Merger. ICAP said that there was potential for ICE to mothball technology development of Trayport while continuing to develop WebICE, effectively forcing traders to use WebICE.[114] Griffin stated [✂].

8.26 Some venues were also concerned about the merged entity's ability to influence the way new products were brought to market in ways that would provide an advantage to ICE compared with rivals. For example, [✂]. Griffin also stated that a key future development was a credit API, a way of electronically importing credit onto platforms. This would be a particularly useful feature, which would make the underlying data for the bilateral trading process more accurate by removing manually keyed errors. Griffin said that it was concerned that such developments currently being considered by Trayport would be halted by ICE because improving the efficiency of the OTC market could damage liquidity on ICE's futures exchanges.

8.27 Some clearinghouses also expressed concerns about service levels post-Merger. [An exchange] said that if the Clearing Link to a particular clearinghouse was disrupted, traders would not switch away from using Clearing Link. Instead, traders would maintain the Clearing Link but switch clearinghouse. The Trayport Clearing Link is therefore critical and, in its view,

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[112] ICAP hearing summary, paragraph 35.
[113] Nasdaq hearing summary, paragraph 31.
[114] ICAP hearing summary, paragraph 34

any disruption to the Clearing Link to a particular clearinghouse has the potential to significantly reduce the volumes of a clearinghouse. While the merged entity may be technically to blame for the disruption, traders would only notice the reduced quality in the competitor´s offering and switch away from the competitor, particularly given the lack of alternatives to Trayport (both the Clearing Link and Trading Gateway). [An exchange] added that a disruption to the Trayport Clearing Link could take the form of blocking or disrupting the connection for brokers to register at exchanges or it could involve slowing down the feedback from clearing, which is also very important. CME similarly told us that poor service, such as the clearing links going down much more frequently than they used to, would lead to a drop in the volume of business that would be put through CME products.

8.28 Exchange A that it was possible for a service provider, such as Trayport, to bias the choice of clearing venue towards ICE by just tweaking the user interface or workflow on its platform.[115]

8.29 Some clearinghouses were also concerned about the merged entity's ability to influence the way new products were brought to market in ways that would provide an advantage to ICE clearinghouse compared with rivals.

Use of confidential data

8.30 This was a concern raised by a number of third parties and ranged from concerns about ICE having access to detailed transaction data to access to 'soft' disclosure of information about rivals' products and strategies.

8.31 In respect of this form of information sharing, the Parties told us that venues communicated actively with traders before finalising agreements with Trayport and launching developments. Venues had to make sure that the products would have sufficient demand and so upcoming innovations were widely known within the industry. Ownership of Trayport would not give ICE an advantage over other venues.

8.32 Engie said that ICE owning Trayport would give it access to the data Trayport collected, giving it a potential advantage in the market. Engie gave an example that ICE might use data to develop a unique view of the overall market and that therefore it would hold commercial data on its main competitors which may unduly advantage the merged entity.[116] CME made a similar point saying that the nature of information going through Trayport would provide ICE with the ability and incentive, that was not there pre-

[115] Exchange A hearing summary, paragraph 10.
[116] Engie hearing summary, paragraph 21.

Merger, [✂], or act in some other way that could be damaging for CME's plans. [Another exchange] also had similar concerns.

8.33 Third parties also considered that the contracts provided insufficient protection and that their reliance on Trayport as an aggregator reduced their bargaining power and ensured that contracts were based on Trayport's terms.

8.34 For example, [an exchange] told us that despite its very good relationship with Trayport, Trayport's dominant market position had given it significant bargaining power over [the exchange] in negotiating new contracts. Griffin told us that it was not confident its contract would prevent Trayport from deteriorating its service and that any contractual remedies arising from breach are also of limited value in the absence of an alternative to Trayport. [An exchange] told us that existing contractual protections do not cover the foreclosure strategies it envisaged and in any event are not defined in sufficient detail to adequately protect it against such strategies. Trayport's terms and conditions give the Parties sufficient flexibility to disrupt supply on the basis of technical issues. Further, irrespective of the interpretation of contracts, contractual remedies are insufficient to protect against the relevant harm.

8.35 Third parties indicated that they did not consider service level obligations in the agreements to offer sufficient protection. Tradition told us that their licence agreement only includes obligations on support services for defects/faults and Trayport's obligation to rectify any critical issues. Any changes requested to the software by Tradition is at the sole discretion of Trayport. Powernext told us that their contract would not protect them from quality issues nor entitle them to a suitable remedy because liability was limited and would in any event be insufficient if Trayport's actions cause liquidity to permanently shift to ICE.[117]

8.36 Third parties also commented that the contractual provisions in respect of confidentiality might not prevent disclosure of sensitive information, particularly where it would be difficult for the affected party to detect a breach.[118]

8.37 Third parties expressed concern that advance knowledge of new products or innovative initiatives would damage their ability to compete and considered that this would be harder to prevent on a practical level post-Merger. For example, Powernext said that it was common for it to discuss product plans with Trayport a year in advance. It said this arrangement would not be

[117] Powernext hearing summary, paragraphs 13 and 26.
[118] Griffin hearing summary, paragraph 30. RWE hearing summary, paragraph 29.

feasible with ICE owning Trayport as the discussions might leak back to ICE, giving it the ability to foresee market changes and launch projects before its competitors.[119] EEX said that bringing new products to market, or entering new markets, would require telling Trayport months in advance – it suggested there was not sufficient contractual protection for parties to be confident that ICE and Trayport would not share this and other critical information.[120]

Provisional assessment

8.38 In carrying out our assessment, we considered each of the questions set out in paragraph 8.10 in turn.

Are ICE's rivals dependent on Trayport?

8.39 We considered whether trading venues and clearinghouses are dependent on Trayport, separately. In doing so, we examined the structure and interdependence of Trayport's software, volume data, responses to our traders' questionnaire, third parties' and Parties' evidence.

Trading venues

8.40 We considered that the evidence presented in the 'Role of Trayport' section shows that exchanges and brokers using Trayport's back-end technology are dependent on Trayport. For example, Table 5 above shows that the [90-100] of Powernext's business in gas flows through Trading Gateway. In a similar way, Table 4 shows that more than half of brokers' trading activity across all asset classes is initiated on Trading Gateway, with the remainder being voice trading which may still be executed via Trading Gateway.

8.41 We also considered that the evidence shows that exchanges currently using their own matching engine generally rely on Trayport for the dissemination of their prices to traders. We noted that, for example, more than half of EEX's trading in power and of Nasdaq's trading in German power is currently initiated on Trading Gateway. Further, responses to our trader questionnaires show that a large proportion of traders have a Trading Gateway screen as opposed to rival's direct screens that only a small proportion of traders currently use. We considered that this is relevant in assessing the extent to which ICE's rivals rely on Trayport for asset classes and products where rivals are currently present, but also for asset classes and products where they could enter in the future.

[119] Powernext hearing summary, paragraph 24.
[120] EEX hearing summary, paragraph 24.

8.42 Lastly, we considered that the ability of venues to switch away from Trayport to an alternative back-end was limited. As set out in the 'Role of Trayport' section, Trayport is uniquely positioned to offer access to traders and, as such, possible alternative back-end solutions are weak. Furthermore, as explained in the 'Barriers to entry' section below and in Appendix D, attempts by stakeholders to establish an effective alternative to Trayport would entail significant time, costs and risks.

8.43 We considered the Parties' submission that it had been successfully able to transition ICE Endex away from ETS to its own matching engine, and without negatively affecting performance. We are of the view that the situation Powernext currently finds itself in is distinguishable from the situation that ICE Endex was in because: (i) ICE is not reliant on Trading Gateway for price distribution as a result of the limited number of ICE's products that are listed on Trayport, and (ii) ICE's front-end screen (WebICE) has significant penetration in several asset classes amongst traders. We considered that, even if EEX were to shift Powernext' back-end away from Trayport, it would still need to maintain connectivity with Trading Gateway in order to access a sufficiently high volume of traders to be an effective competitor.

8.44 Overall, we considered that rival trading venues licensing Trayport's software are dependent on Trayport to disseminate their prices and offering to traders. Our provisional view is that brokers and exchanges that currently use Trayport's back-end rely significantly on Trayport to win traders' business in competition with ICE. We also provisionally conclude that exchanges that currently have their own matching engine but are connected to Trading Gateway are also dependent on Trayport to be successful in certain asset classes and products where they are present and/or to successfully enter in new asset classes and products in the European Utility space.

Clearinghouses

8.45 A significant proportion of ICE's rivals' OTC cleared business flows through Trayport's Clearing Link. We noted that there are some alternatives to Trayport's Clearing Link currently available and used, but some third parties indicated that these are weaker alternatives compared to the Trayport solution.

8.46 Some third parties told us that the Trayport platform is very important to their business because of its product dissemination function to traders. We carefully considered the Parties' argument that product discovery may and, for some asset classes, does take place outside the Trayport system. We noted that some traders indicated that modification to Trayport's software would affect their choice of clearinghouse. We have also considered that some

traders indicated that a more automatic system of 'giving up' OTC executed trades to clearinghouses would be preferred over a manual system and that changes to the Trayport's software would be of concern, particularly, in the case of a clearinghouse entering into competition for products in asset classes in the European Utility space.

8.47 On balance, we considered that the evidence suggests that the Trayport platform is very important to ICE's rival clearinghouses in continuing to provide clearing services to traders and, in particular, in order to successfully challenge ICE in asset classes where they are not currently present. The degree of dependency is not as strong as for traders and venues, however, access to the Trayport platform and the network effects associated with this access, was a significant factor in making clearinghouse's offerings more attractive to traders.

Are there mechanisms that Trayport could use to adversely affect its rivals?

8.48 We also considered if and the extent to which Trayport could use various mechanisms to harm ICE's rivals. In examining Trayport's ability to harm ICE's rivals we assessed both evidence from third parties and the Parties' internal documents.

8.49 Overall, we considered that evidence from third parties indicated a number of strategies and specific mechanisms that Trayport could use post-Merger to disadvantage ICE's rival trading venues and clearinghouses in the competition for traders' business. We noted that most third parties' concerns focused on partial foreclosure mechanisms, including a failure to innovate and develop functionality, which the merged entity is most likely to use as part of a series of incremental changes, as opposed to total foreclosure (paragraphs 8.17 to 8.31).

8.50 We also noted that the Parties' internal documents identified over a period of time a range of mechanisms that Trayport could use to influence and/or harm trading venues and clearinghouses if it chose to, and that these references were part of a coherent narrative. For example, one document, discussing Trayport's position with respect to ICE, [✂]. [✂]:

- '[✂]
- [✂]
- [✂]
- [✂]

- [✂]
- [✂]
- [✂].'

8.51 In another internal document, Trayport notes that '[✂]'.

8.52 We have considered the Parties' argument in relation to this internal document. They raised four main points:

- [✂];
- [✂];
- [✂]; and
- [✂].

8.53 We noted that our financial analysis of certain brokers supports the Parties' view that Trayport accounts for a small proportion of their operating costs.[121] However, we also noted that in this internal document Trayport explicitly [✂]. Overall, our view is that this document provides some indication of brokers' responsiveness to Trayport's software prices.

8.54 We also considered the Parties' views that this internal document, and other of their internal documents, were old and positions had changed and/or they have been written by staff who were relatively junior and did not represent the views of senior management. However we interpret these documents as an overview of a number of strategies and mechanisms that Trayport has at its disposal to affect the competitive position of trading venues and clearinghouses in the European Utility space.

8.55 Overall, we considered that third parties indicated a number of strategies and specific mechanisms that Trayport could use post-Merger to disadvantage ICE's rival trading venues and clearinghouses and/or advantage ICE in the competition for traders' business. In particular, we noted that most third parties' concerns focused on partial foreclosure mechanisms which the merged entity is most likely to use as part of a series of incremental changes over time, as opposed to a total foreclosure (paragraphs 8.17 to 8.31). We also noted that some of these specific mechanisms at Trayport's disposal are

[121] Our analysis showed that if Trayport were to increase it fees by 20%, this would result in an increase in operating costs faced by brokers of between 0.2% and 3%.

also acknowledged in some of Trayport's internal documents (paragraphs 8.41 to 8.43).

8.56 On the basis of the above, we considered that, along with increases in the cost of Trayport's software (paragraphs 8.20 and 8.42), Trayport has various mechanisms available to it that would harm ICE's rivals and consequently that the merged entity could use to affect their competitiveness, including by:

(a) de-prioritising the development and improvement of their software (paragraphs 8.21 and 8.22) while continuing to improve ICE supporting technology;

(b) delaying the listing of rivals' new products on Trading Gateway, so as to assist ICE to gain first-mover advantage;

(c) using rivals' hard trading data to put them at a competitive disadvantage (paragraphs 8.23 and 8.26);

(d) restricting the functionalities of the software offered to ICE's rivals (paragraph 8.23);

(e) using 'soft' confidential information to gain a first-mover advantage in markets where rivals are launching new products (paragraphs 8.27 to 8.31); and

(f) reducing the general service level of the offering to venues and clearinghouses (paragraph 8.24).

8.57 We also considered that these softer, incremental methods of foreclosure may not be readily identifiable to market participants, and so would be less likely to prompt any form of retaliation or cause significant damage to Trayport's business, but could, nonetheless, have a substantial impact on the ability of ICE's rivals to compete over time.

Contractual restrictions

8.58 We assessed if, and the extent to which, contractual protections could be sufficient to preclude the ability of the merged entity to foreclose its rivals.

8.59 We reviewed Trayport's key venue contracts and found that:

(a) [✂];

(b) [✂];

(c) [✂];

(d) [✂];

(e) [✂]. [✂] rate is based on the number of brokers connected. CME has a [✂];

(f) [✂]; and

(g) [✂].

8.60 We carefully considered the Parties' submissions in relation to the contractual protections afforded to key customers. However, we noted the following:

(a) the support and service level obligations are generic and do not, for example, impose an obligation on Trayport to actively support the enhancement and development of services provided to venues. As explained above, there are number of strategies and specific mechanisms that Trayport could use to affect the competitive position of ICE's rivals. It is doubtful that such mechanisms or tactics would constitute breaches of Trayport's existing customer contracts, such that the contracts would offer little or no protection to customers. Even if such practices were deemed to constitute a contractual breach, small incremental changes over time may be difficult to detect and/or prove to the requisite legal standard for a contractual remedy. Moreover, it is not clear what FRAND terms would look like and whether third parties could enforce on this term as a result of information asymmetry. Further, it is unclear whether service levels could be adequately protected by FRAND given the case by case nature of customer requirements. On this basis, contractual remedies, if available, may be insufficient or not appropriate;

(b) although, typically, Trayport's customer contracts require mutual consent to any variation, in the absence of a credible alternative to Trayport, the lack of customer bargaining power has a significant impact on any such negotiations. Even if we were to be satisfied that the contracts currently provide sufficient protection (which we are not), we are concerned that Trayport would be able to impose a re-negotiation or variation of these;

(c) the contracts vary in length and remaining duration as noted above. Typically, on the expiry of a fixed term, either party may unilaterally terminate the agreement;

(d) the provision of software for the purposes of trading on the European utilities market is not a regulated activity. There is no regulatory entity which presides over Trayport's contractual terms or the performance of those terms, such that detecting eg any degradation in service quality would fall to the contractual counterparty. As discussed above, we consider that the nature of the strategies we are concerned about means that this would be extremely difficult to detect.

8.61 On the basis of this evidence, our provisional view is that contractual protection would not be sufficient to preclude the ability of the merged entity to foreclose its rivals.

Provisional conclusion on ability

8.62 In order to assess whether the merged firm would have the ability to foreclose rival trading venues (ie brokers and exchanges) and clearinghouses, we considered (i) whether Trayport has market power vis-à-vis ICE's rivals and whether they are dependent on the Trayport platform, (ii) whether there are mechanisms that Trayport could use to foreclose them and (iii) whether contractual protection would prevent any harm to competitors to arise.

8.63 In relation to the first question, we carefully considered the Parties' views that ICE's rivals do not depend on Trayport to compete in the European utilities markets (paragraphs 8.12 to 8.16). However we considered that volume data (paragraphs 7.117 to 7.128), responses to trader's questionnaires (paragraphs 7.133 and 7.134) and third parties' views (paragraphs 7.97 to 7.114) consistently indicated that all main venues and clearinghouses depend significantly on Trayport. In light of our provisional findings on the role that Trayport plays in facilitating competition between trading venues and between clearinghouses (see Section 7), we considered that trading venues and clearinghouses rely significantly on Trayport to provide their prices and services to traders, to launch new products and services in asset classes where they are currently present and in asset classes where they intend to establish a presence challenging the incumbent's position.

8.64 In relation to the second question, we considered that third parties indicated a number of strategies and specific mechanisms that Trayport could use post-Merger to incrementally disadvantage ICE's rival trading venues and clearinghouses and/or advantage ICE in the competition for traders' business. We also considered that some of these specific mechanisms at Trayport's disposal are also acknowledged in some of Trayport's internal documents (paragraphs 8.41 to 8.43).

8.65 We therefore considered that the merged entity would have a range of mechanisms that it could use to partially foreclose ICE's rivals: from increases in the cost of Trayport's software to rivals (paragraphs 8.20 and 8.42), de-prioritisation of the development and improvement of their software (paragraphs 8.21 and 8.22), delaying the listing of their new products on Trading Gateway, restricting the functionalities of the software offered to ICE's rivals (paragraph 8.23), using 'soft' confidential information to gain a first-mover advantage in markets where rivals are launching new products (paragraphs 8.27 to 8.31) to reducing the general service level of the service offered to venues and clearinghouses (paragraph 8.24).

8.66 We also considered that these softer, incremental methods of foreclosure may not be readily identifiable by market participants, and so are less likely to prompt any form of retaliation or cause significant damage to Trayport's business model, but could, nonetheless, given Trayport's importance, have a substantial impact on the ability of ICE's rivals to compete over time.

8.67 In relation to the third question, we carefully assessed the Parties' arguments that contracts would protect ICE's rivals from any harm. However, having reviewed Trayport's customer contracts, we considered that the support and service level obligations imposed on Trayport are generic and FRAND terms are not adequately specified to protect customers as a result of information asymmetry and differing customer requirements. We also note that each party may unilaterally terminate the agreement. As a result, we provisionally concluded that contractual protections were unlikely to prevent harm to ICE's rivals arising as a result of a partial foreclosure strategy.

8.68 On the basis of the above, our provisional view is that the merged entity would likely have the ability to partially foreclose ICE's rival trading venues (both exchanges and brokers) and clearinghouses.

Incentive to foreclose

Parties' views

8.69 The Parties submitted that GFI's prior ownership of Trayport provides compelling evidence that ICE will not use it strategically against its competitors.[122] Specifically, they stated that GFI is a major broker, and that its closest rivals all used Trayport's software, but despite this it did not attempt to use Trayport to undermine them. The Parties submitted that GFI would have had a greater ability and incentive to foreclose venues than ICE because it

[122] ICE/Trayport initial submission, paragraphs 4.1–4.5.

would be easier for it to divert OTC trading from other brokers, all of whom were dependent on the BTS.

8.70 In terms of the potential gains from foreclosure, the Parties submitted that Trayport's software cannot be used to divert trading activity, and hence the merged entity would not have an incentive to attempt to foreclose ICE's rivals.[123] Furthermore, they stated that it would be difficult for ICE to successfully divert trading and clearing volumes to its own exchanges and clearinghouse, as the importance of liquidity and open interest to traders means that they would not contemplate switching away from their preferred venues to ICE in response to any attempted partial foreclosure strategy.[124] They also said that ICE would not benefit from protecting its existing position, as it could be confident of retaining this anyway provided that it continues to provide a competitive offering.[125]

8.71 In terms of the specific volumes that ICE could potentially target, the Parties submitted that many trades executed by brokers are cleared by ICE. They told us that, as a result, these volumes do not represent potential gains to ICE, as its revenues are similar or comparable for OTC cleared trades than those executed on its exchanges. In relation to OTC uncleared trades, the Parties submitted that there was no evidence that these volumes are likely to switch on exchange in response to Trayport's actions. In support of this point, they noted that in *ICE/APX-Endex* the OFT found that cleared and uncleared products form separate product markets and that regulatory pressures may keep substantial volumes uncleared. The Parties submitted estimates of both the 'theoretical maximum' and the 'plausible potential' gains that they could make from foreclosure.[126]

8.72 The Parties also submitted that ICE had a limited incentive to use control over product and market development to forestall advances in electronic and hybrid OTC markets. This might at first appear to be in ICE's interests but the development of these markets was beneficial to ICE. The standardisation of products and development of electronic trading was an important interim step which enabled markets to develop and grow and move to exchanges naturally, without foreclosure.

8.73 In terms of the costs that ICE could suffer by foreclosing its rivals, the Parties submitted that the merged firm would not have an incentive to foreclose because it would face substantial costs from retaliation by other market

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[123] ICE/Trayport initial submission, Annex 3, slide 3.
[124] ICE/Trayport initial submission, paragraphs 5.7–5.10 and 6.3–6.4.
[125] ICE/Trayport initial submission, paragraph 6.7.
[126] ICE/Trayport initial submission, Annex 3, slide 2.

participants.[127] In particular, the Parties stated that traders would switch their activities from ICE to another exchange or to OTC trading. They also told us that this threat was real because of the concentration of liquidity amongst a small group of traders who could undertake co-ordinated action, and because these alternative exchanges, brokers and clearinghouses are close substitutes to the services provided by ICE. In relation to broker foreclosure specifically, the Parties also submitted that ICE is dependent on brokers to submit OTC executed trades to ICE's clearinghouse, which accounts for an important part of their business.

8.74 The Parties pointed to the example of OTC coal trading, where in their view ICE's failure to respond adequately to market participants' demands had resulted in much of OTC coal clearing switching to CME, costing ICE substantial revenues. They stated that such 'retaliation' on a wider scale would put at risk all of ICE's revenues from European gas and power trading, and ICE's substantial oil revenue and potential unrelated markets too as ICE is reliant on the same relationships with traders and brokers in other unrelated markets.

8.75 In addition to these costs from retaliation, the Parties also submitted that foreclosure would inevitably undermine the venue-neutral aggregation business model of Trayport, which is the reason why it is so widely used. They told us that this would create the environment for users to sponsor a replacement to Trayport and therefore put at risk Trayport's annual revenues.[128]

Third parties' views

8.76 As discussed in detail in the preceding sections, many third parties have raised concerns about the prospect of ICE controlling Trayport on the basis that it will use its control of the Trayport platform to benefit its own exchange and clearinghouse at the expense of its rivals. These comments typically referred not only to the hypothetical possibility that ICE could harm its rivals, but also that it would seek to do so in practice. We therefore interpret this evidence as relevant to the question of whether ICE would have an incentive to foreclose its rivals.

8.77 In terms of specific views on incentives, [✂] submitted that the merged firm would have an incentive to foreclose [✂]. It told us that the losses to the

[127] ICE/Trayport initial submission, paragraphs 11.1–12.11 and Annex 3..
[128] ICE/Trayport initial submission, paragraph 12.7 and Annex 3.

Parties from foreclosure would be minimal, in particular due to the absence of effective alternatives to Trayport.

8.78 In contrast to these limited costs, [an exchange] stated that the benefits to ICE of foreclosing [✂] would be substantial. It submitted that ICE could gain significant additional revenues if it was able to obtain [✂], and that ICE could also benefit from the reduction in competition by being able to increase its fees. [✂] also told us that ICE could gain by capturing a significant proportion of the revenues from new product development, for example by hampering [✂] ability to innovate and as a result beating it to market and thereby obtaining the initial liquidity.

Our assessment

8.79 We undertook a combined assessment of whether the merged firm would have an incentive to foreclose exchanges, brokers and clearinghouses. In doing so we recognised that there are differences between these various market participants, the way that the merged firm could potentially foreclose them and the costs and benefits to it of doing so. However, we considered that the merged firm's incentives to foreclose these various rivals are so interlinked and, in particular, are likely to reinforce one another, that it is necessary to consider them collectively.

8.80 We first considered the Parties' point that the experience of GFI's ownership of Trayport, which the Parties submit did not use Trayport strategically against its rivals, demonstrates that ICE would not have an incentive to foreclose its rivals. We did not undertake an analysis of GFI's ownership, and therefore did not reach a view on whether it used Trayport to harm its rivals or not. However, we consider that there are important differences between the two cases that mean we cannot draw conclusions from Trayport's previous ownership. In particular, as well as execution, ICE also undertakes the clearing of trades. As set out in Appendix B, detailing ICE's revenue breakdown, the greater portion of its European utilities revenues are made from the provision of clearing services and it does not just rely on execution fees; whereas GFI, as a broker, was reliant solely on execution fees under its business model. This means that ICE is likely to have substantially greater incentives to use Trayport to foreclose its rivals than GFI did. Moreover, ICE has a particularly strong incumbent position relative to other venues in a number of asset classes, and revenues from Trayport represent a significantly smaller proportion of its overall revenues than they did for Trayport's previous owner.

8.81 We therefore undertook a detailed assessment of the Parties' incentives to engage in foreclosure, primarily through a qualitative assessment, though we also undertook a quantitative assessment as a further cross-check.[129]

The benefits of foreclosure

8.82 We first noted that, pre-Merger, ICE and Trayport had conflicting incentives, and that the Merger would change these and bring them into alignment. Trayport's objective was to support competition between multiple competing venues, with liquidity fragmented between them, which meant that its aggregation software offered significant value to industry participants. Trayport's internal documents also indicated [✂].

8.83 In contrast, ICE's goal has been, and continues to be, to have as much trading as possible concentrated on its venues. This raises the prospect that under ICE's control Trayport's focus will change from supporting continued competition between multiple venues, to actively trying to move liquidity towards ICE's venues at the expense of rival exchanges and brokers, through the use of the various mechanisms discussed in our assessment of its ability to foreclose above.

8.84 We considered in more detail whether the merged firm would want to engage in the partial foreclosure of ICE's rivals using the various mechanisms outlined in the previous section on 'Ability'. In doing so, we took into account our findings in Section 7 above that ICE competes closely with other exchanges and clearinghouses and, to a substantial degree, with brokers – a point the Parties have themselves emphasised.[130] In light of these findings, we identified five potential benefits to ICE's execution and clearing activities of using Trayport to foreclose its rivals.

8.85 First, ICE would likely be able to further grow its position in products where it already has a substantial presence at the expense of its rivals. For example, this could include moving additional TTF trading volumes from the EEX group onto its own exchanges, and by gaining additional coal OTC clearing volumes from CME. [131] ICE already has liquidity and open interest in these products, it

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[129] Our focus on a qualitative assessment that did not attempt to make a firm prediction of the precise impact of foreclosure on the merged firms' profits is consistent with our practice in several previous cases, such as *Deutsche Börse AG/Euronext NV/London Stock Exchange* and *BBC Worldwide Ltd/Channel Four Television Corporation/ITV plc*.

[130] ICE/Trayport initial submission, Annex 3, slide 5.

[131] These gains would come primarily from switching volumes executed on other exchanges and volumes executed with brokers that are not cleared by ICE. We accepted the Parties' point that ICE would have less of an incentive to switch OTC volumes that it currently clears onto its exchanges, as this would not necessarily directly result in any additional revenue. However, we considered that ICE may still obtain some benefit from such switching because this would serve to increase the liquidity of its exchanges and therefore its ability to compete effectively.

is an existing head-to-head competitor to these rivals, and is therefore likely to be seen as a particularly effective alternative to them in the eyes of traders.

8.86 Second, foreclosing ICE's rivals would help to prevent them threatening to win its volumes in products where it already has a strong position, for example TTF, NBP and EUA. More generally, this also applies to oil, where ICE has a strong existing position and which, as discussed in paragraphs 7.169 to 7.172 above, Trayport has discussed expanding into oil in the future, a move which would have helped rival venues challenge ICE. We did not accept the Parties' argument that there is no gain here because ICE could be confident of holding onto these volumes anyway provided its offering remained competitive. ICE would still benefit by being able to keep these volumes while working less hard in terms of fee levels, quality of service and innovation, than it would if it was not foreclosing its rivals.

8.87 Third, where there are pre-existing industry trends, ICE would be able to use its control of Trayport to accelerate these and direct them in its favour. In particular, it would likely be able to increase the rate at which OTC bilateral trades switch to being cleared, with the aim that OTC trading more generally moves onto exchange and that traders adopt ICE's exchanges and clearinghouse as they do so. For example, there is currently a very large volume of TTF trading taking place on an OTC bilateral basis, which as the leading exchange for TTF volumes ICE would be well placed to capture if some of this switched to being cleared or being executed on exchange. Our view is that this is not inconsistent with the OFT's decision in *ICE/APX-Endex*, as cited by the Parties', because there can be a degree of long run competitive interaction between two segments that are not in the same relevant market.[132]

8.88 Fourth, foreclosure could help ICE to obtain volumes from its rivals in those existing products where it has little or no current position, for example German power trading. In relation to the Parties' argument that liquidity is sticky and would not move as a result of foreclosure, in Section 7 above we accepted that this is the case to some extent, but ultimately concluded that liquidity can shift, and that venues and clearinghouses do compete through potential head-to-head competition. Most obviously, this possibility is demonstrated by the Parties' own example of CME's successful entry into coal. Moreover, the potential magnitude of the gains to ICE if liquidity was to move to its exchanges could be substantial, implying that overall this would constitute a material benefit of foreclosure.

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[132] In our quantitative cross-check we reflect this by analysing a lower degree of switching between OTC uncleared and exchange trading than between other segments.

8.89 Fifth, ICE's control of Trayport would likely help it to gain control of new markets and segments, which is particularly important given that dynamic competition is important in this industry, and that there are important first-mover advantages. For example, this could relate to new types of assets and geographies as they migrate from voice to electronic trading, and new types of offering that emerge in light of regulatory developments.

8.90 Our provisional view is that these benefits of foreclosure are likely to be substantial. Moreover, some of these benefits, in particular expanding its presence in existing products and protecting itself from the challenge of rivals, are likely to emerge relatively quickly. Other benefits, such as those relating to new markets and segments, may take some time to emerge, but are likely to accumulate for many years into the future.

The costs of foreclosure

8.91 On the costs of foreclosure, we first considered the Parties' argument that they would suffer retaliation. Our provisional view is that these potential costs are speculative and are unlikely to emerge in practice. As set out above, the foreclosure mechanisms the merged firm is most likely to use are a series of incremental changes over time, such as to investment priorities, that would be difficult for industry participants to identify, and would therefore be unlikely to trigger specific retaliatory actions.

8.92 We also considered that there would be a cost to firms that sought to retaliate by switching away from ICE's services, their preferred execution venue and clearinghouse. Further, any scope for market participants to use this threat of switching away from ICE to extract concessions would likely have been fully reflected in pre-Merger conditions.

8.93 We next considered the costs the Parties could face in terms of lost revenues from Trayport's business activities as a result of a partial foreclosure strategy. While we found that they could face some costs in this regard, our provisional view is that the magnitude of these costs is likely to be small. We reached this view on the basis that partial foreclosure would take the form of incremental changes that would not fundamentally undermine the Trayport platform. We also took into account the fact that [✂] of Trayport's revenues comes from traders, who are particularly unlikely to stop using Trading Gateway in response to these incremental changes because of the lack of effective alternatives.

8.94 On the Parties' specific point that ICE is dependent on brokers to submit OTC trades to its clearinghouse, based on our assessment in Section 7, we found that while brokers are involved in the process of submitting trades to

clearinghouses, it is ultimately the trader that bears responsibility for the selection of which clearinghouse to use.

8.95 Moreover, we also placed weight on the fact that all of the brokers, and most exchanges, are highly dependent on Trayport, with no effective current alternatives to its services, and that the barriers to entry for an alternative system are very high (see the 'Barriers to entry' section below). Moreover, as set out in our discussion of Griffin's attempted entry and Project Trafalgar (see paragraphs 7.154 and 7.155), to the extent that brokers have historically considered an alternative to the Trayport platform, in several instances this appears to have been through cooperation with ICE to use its WebICE screen – an alternative that may not be open to them post-Merger.

8.96 Our provisional view is therefore that the merged firm would likely experience only limited costs as a result of a foreclosure strategy.

Quantitative analysis

8.97 As a cross-check we also undertook a quantitative assessment that considered a number of indicative scenarios for the potential gains and losses of foreclosure. This is presented in Appendix F in which we also set out the Parties' quantitative submissions on incentives.

8.98 Given the number of assumptions that were attached to each of the different indicative scenarios there was no single model on which we could place particular weight. However, for each of the scenarios that we looked at, the results of the analysis were consistent with those of our qualitative assessment; namely that the benefits of foreclosure are likely to be substantially greater than the costs, and therefore provide further support for our conclusions.

Conclusions on incentive to foreclose

8.99 In conclusion, on the basis of both our qualitative assessment and our quantitative cross-check, we find that the benefits of foreclosure are likely to be substantially greater than the costs, and therefore that the merged firm would likely have an incentive to foreclose its rival exchanges, brokers and clearinghouses.

Effect

8.100 We assessed whether foreclosure of rival trading venues and clearinghouses would result in harm to competition in the execution and clearing of trades in the European utility space. We have also considered whether there would be

any stimulus to rivalry in the execution or clearing of trades as a result of efficiencies arising from the merger.

8.101 As discussed in Section 2, liquidity is a very important characteristic of European utilities trading. Trading venues aggregate liquidity by bringing together buyers and sellers of various size that need to trade with each other. In turn, Trayport provides aggregated, multi-venue front-end access that enables traders to compare prices on trading venues in order to find the one with the greatest liquidity, creating the greatest opportunity to achieve the best possible deal or price for a certain asset class or product.

8.102 The main trading venues and clearinghouses active in the European utilities space, including ICE, currently use one or several of Trayport's software products. We found that Trayport plays an important role in facilitating competition between trading venues and between clearinghouses, as it is the primary gateway for venues to access traders and therefore liquidity, and vice versa. We found that there are currently limited alternative solutions to Trayport for traders, trading venues and clearinghouses that operate in the European utilities space, and this was as a result of the network effects associated with the Trayport platform, which made alternatives for each of Trayport's individual software products a weak option, and Trayport's Closed API.

8.103 This reliance on the part of traders, venues and clearinghouses on the Trayport platform from front-end price discovery, to back-end matching to STP clearing, enables Trayport to influence competition through a number of mechanisms which if implemented would be likely to affect competition in the short and long term. We found that such competition delivers a wide range of benefits to traders from price incentives, such as lower prices, fee holidays and trader incentive schemes (including market making agreements and rebates), to innovative trading solutions and new products that are quickly brought to the market. In the event of the merged entity implementing a partial foreclosure strategy, competition would be dampened and these benefits would be diminished.

8.104 Considering all of the evidence in the round, we provisionally consider that post-Merger ICE's ownership of Trayport could be used to disadvantage ICE's rivals and/or favour ICE with the effect that:

(a) There would likely be a loss of competition between ICE and other trading venues/clearinghouses to be the principal host of liquidity and/or clearing volumes. This would result in a loss of head-to-head and potential head-to-head competition. A partial foreclosure strategy would have the greatest impact on other exchanges, which are ICE's closest competitors,

and then on rival broker venues which are close competitors in some asset classes. We also considered that a partial foreclosure strategy would adversely affect ICE's rival clearinghouses but that the impact would be less significant because clearinghouses' reliance on Trayport's Clearing Link was less pronounced.

(b) The weakening of competition between ICE and its rivals was likely to directly harm traders by allowing fees for execution and clearing to increase and/or the service offered to traders to be worsened. The loss of competition between ICE and its rivals would also relate to their efforts to launch new products and find innovative trading solutions in order to be the first to move into markets with new offerings. We placed particular weight on the loss of this dynamic competition which is likely to harm traders by offering them a more limited range of trading opportunities and tools.

8.105 Overall, our provisional view is that any partial foreclosure strategy would likely have a substantial adverse effect on competition in the supply of trade execution services to energy traders and trade clearing services to energy traders in the EEA, including to UK based customers.

Horizontal theory of harm

8.106 As set out in our issues statement, we examined whether the Merger results or may be expected to result in a lessening of competition as a result of horizontal unilateral effects in the supply of energy trading front-end access services. Many of the issues highlighted in this theory of harm have been considered as part of our vertical assessment.

8.107 We considered evidence which indicated that the Parties were in competition to attract traders to their respective integrated platforms. As set out above, we consider that Trayport is not a conventional, passive software supplier that provides inputs to ICE's rivals but rather its software together forms the Trayport platform through which market participants interact and benefit from network effects. As such, Trayport's interests are aligned with those venues on its back-end system and which are in competition with ICE, and that in the past Trayport has sought to shape markets in favour of venues using its platform. We considered the harm resulting from a loss of Trayport's influence in shaping markets in its interest, and in line with Trayport hosted venues competing with ICE, as part of our vertical theories of harm.

8.108 On a related issue, we considered whether there was competition between ICE and Trayport to be a first mover in competition for new markets. This line of inquiry was also considered as part of our vertical theories of harm,

particularly as we attached weight to evidence we received indicating that market and technological developments were prompted by the needs of venues, especially brokers in non-electronic markets.

8.109 Outside of vertical assessment, we also considered whether there was competition between Joule/Trading Gateway and WebICE for front-end access services, and if so whether this rivalry would be lost as a result of the Merger.

8.110 There was some evidence that the Parties' front-end services constrained one another but a number of third parties indicated, in line with the Parties' submissions, that there is differentiation between their respective front-end screens, specifically: Trayport provides price aggregation across multiple venues whereas WebICE only provides access to ICE's exchanges. This differentiation was also supported by evidence received from traders which indicated that there was not significant switching between them. The Parties also submitted that third party views describing ICE and Trayport as competitors was a result of those third parties conflating brokers using Trayport's back-end with Trayport itself.

8.111 Evidence received during third party hearings and in responses to our trader questionnaires indicated that there was a degree of demand-side substitutability between the Parties' respective front-end access services, but confirmed that this was dependent on the extent of competition between ICE's exchanges and the other venues for which liquidity was accessible through Joule/Trading Gateway (or other Trayport dependent solutions).

8.112 Given the differentiation between the Parties' front-end access service offerings, we also considered the extent to which the competitive constraint between the Parties' front-end screens may be asymmetric. For example, Trayport's activities may more strongly constrain ICE's offering, which is currently offered free of charge as part of a market data membership package, whilst the constraint posed on Trayport by ICE in this context may be weaker. As a result of a potential asymmetric constraint, ICE may have the incentive to increase the price of or worsen Trayport's front-end access services offering in order to divert trading traffic to its front-end screen. Such a strategy might be pursued in order to shift liquidity away from brokers to on-exchange trading. We considered this possibility as part of our vertical theories of harm.

8.113 Finally, we note under the counterfactual that we did not consider it sufficiently likely that ICE and Trayport would have entered into the New Agreement absent the Merger, and that if it did the terms may have been materially different. However, we recognise that there was at least potential for ICE and

Trayport to collaborate absent the Merger and if they had the extent of any horizontal competition between their respective front-ends would be lessened.

Provisional conclusion

8.114 We found the evidence on competition between the Parties' front-end screens to be mixed. There was some evidence that the Parties constrained each other pre-Merger. However, there was not significant evidence that customers would have switched between ICE and Trayport to access front-end services. We also took into account the possibility that, absent the Merger, ICE would have changed its strategy and allowed more of its products to be displayed on Trayport. We provisionally concluded that this would have reduced any adverse effects on competition from the loss of rivalry for front-end services.

8.115 Overall, we provisionally found that there would likely be a reduction in competition but on its own this was not sufficient to represent a substantial effect.

9. Barriers to entry and expansion

9.1 Our Merger Assessment Guidelines state that in assessing whether market entry or expansion might prevent an SLC, we would consider whether such entry or expansion would be: *(a)* timely; *(b)* likely; and *(c)* sufficient. Our Guidelines also state that potential (or actual) competitors might encounter barriers which adversely affect the timeliness, likelihood and sufficiency of their ability to enter (or expand in) the market, and therefore barriers to entry are specific features of the market that give incumbent firms advantages over potential competitors.[133]

9.2 We considered whether entry and expansion by new venues would mitigate any adverse effects arising from the Merger, however, in light of our provisional conclusion that venues were dependent on the Trayport platform in order to successfully compete, we considered whether there were barriers to entry and/or expansion in the supply of software services provided by Trayport to facilitate to European utilities trading, specifically:

(a) supply of energy trading front-end access services to energy traders;

(b) supply of back-end technology to brokers and exchanges, respectively; and

[133] CC2, paragraphs 5.8.3–5.8.4.

(c) supply of access services to clearinghouses for OTC executed trades.

9.3 As discussed in Section 2 and the 'Role of Trayport' section, each piece of Trayport software forms part of the Trayport platform which serves multiple customers in European utilities trading and, as a result, benefits from network effects. These network effects mean that rival pieces of front-end, back-end and STP link software on a standalone basis are weak alternatives to the Trayport platform as a whole. Trayport also operates a Closed API policy which reinforces these network effects and the powerful incumbent position of the Trayport platform.

9.4 Many third parties referred to the significance of the Trayport platform and Trayport's Closed API as the key barriers to entry and expansion in these markets.

Closed API

9.5 Trayport told us from a software perspective that there was nothing unique about Trayport's core offering in terms of functionality, eg software with equivalent functionality was available from a wide range of other ISVs (eg Exxeta, Trading Technologies and SunGard, among many others) and also exchange groups which (unlike ICE) supplied their technology on a standalone 'ISV' basis (eg Nasdaq, LSE and EEX). As set out below, third parties generally supported this.

9.6 In relation to its Closed API, Trayport also submitted that there are no contractual restrictions preventing brokers (or exchanges) from using an alternative back-end. However, those broker venues[134] wishing to be available on Trayport's front-end aggregated screen for price distribution must use its BTS software.

9.7 We note that Trayport's Closed API policy creates an interdependence between its front and back-end software. As a result, Trayport customers and third party ISVs are unable to integrate their front-end, back-end or STP software into Trayport's Platform without its prior permission. Put more simply, this means that: (i) venues using Trayport's back-end are unable to connect to an alternative front-end screen to distribute their prices without Trayport's permission; and (ii) traders who wish to use an alternative front-end screen to

[134] In contrast to broker venues facilitating trading of European utilities, GV Portal allows exchanges using their own proprietary or ISV provided back-end to connect to Trading Gateway.

Joule/Gateway, but with access to venues using a Trayport back-end, must sit that front-end screen on top of the Trading Gateway and pay a double-cost.

9.8 The evidence we have gathered indicates that Trayport's Closed API creates particularly high barriers to entry in the supply of front-end and back-end software given the high penetration of its front-end screen amongst European utilities traders, and the ubiquitous use of Trayport's BTS by all the major brokers competing in the European utilities asset classes.

9.9 We note the Parties' submission that Trayport's software is licensed on a non-exclusive basis meaning that its customers are free to use an alternative or parallel system simultaneously. However, we provisionally found that the creation of a parallel system would be a weak alternative without the network effects associated with the Trayport platform. This means that in order for an ISV to enter and/or expand and supply an equivalent offering to the Trayport platform, there would need to be a coordinated shift in liquidity away from Trayport's front-end by traders, from its back-end by brokers and by clearinghouses from its Clearing Link, ie away from the Trayport platform as whole. If there was not a coordinated shift this would result in liquidity being split diminishing these network effects, and meaning that traders would achieve worse contract prices. Third parties told us that a coordinated shift would be very costly and difficult to achieve thereby resulting in high barriers to entry and expansion.

9.10 We have set out below a summary of the evidence we gathered on barriers to entry and expansion in the relevant markets where Trayport is active. This evidence can be read in detail in Appendix C.

Supply of energy trading front-end access services to traders

9.11 Trayport's Closed API policy was frequently cited by third parties as a high barrier to entry:

(a) Griffin told us that Trayport's Closed API strategy gave Trayport control of both the back-end and front-end, and that this meant users, such as Griffin, had no choice but to do business with Trayport.[135]

(b) Marex Spectron told us that given Trayport's closed API, the only way to connect to the OTC energy markets was either via a Trayport screen

[135] Griffin hearing summary, paragraph 22.

connecting to Trayport's Trading Gateway, or a third-party screen connecting to Trayport's Trading Gateway.[136]

(c) [✂] told us that Trayport was used by all the major brokers as a back-end system provider, offering a consolidated trading screen, as well as an integrated multi-clearinghouse STP solution to the market. It added that this 'consolidated offering' from one provider, as well as the bundling of services and lack of interoperability on other platforms was a significant barrier to brokers moving away from the Trayport offering, or parts of it.

(d) [✂] told us that unless Trayport 'opened freely the API to the ETS and BTS to other ISVs', there would be no alternative to Trading Gateway. It added that the 'entire market would be bound to Trayport' until Trayport opened the API, or brokers switched away from Trayport's back-end software.

(e) Exxeta told us that Trayport could only maintain its position as 'gatekeeper' to its markets by imposing restrictions for accessing these markets and hampering innovation of third-party products and services by only allowing a limited set of features via the 'Trayport infrastructure'.

9.12 Competing ISVs with front-end access software offerings submitted that entry into European utilities was Trayport dependent, as a result of needing access to those broker venues using Trayport's back-end to be effective. More specifically:

(a) Exxeta told us that there was 'currently no possibility for a full-fledged direct access'[137] to broker or exchange markets using the Trayport back-end systems, without going through Trading Gateway. It explained that this was due to the fact that Trayport did not allow the usage of a Read/Write API for direct access to BTS or ETS contractually.

(b) Similarly, [an ISV] told us that whilst other technology platforms such as [✂] could in principle provide a similar price discovery and aggregation service for OTC energy trading, this was currently prevented by the exclusive arrangements between Trayport and brokers, which meant that Trayport remained an unavoidable platform for such services.

9.13 We were told by third parties that a trader using an alternative third party ISV's front-end access service, which sits on top of Trayport's Trading Gateway for access to liquidity, would be required to pay not only for the third-

[136] Marex Spectron hearing summary, paragraphs 5 & 6.
[137] Exxeta defined 'full-fledged' direct access as access which allowed sending orders directly to the market without going through Trading Gateway.

party provider's fees but also the Trading Gateway licence fee. As a result of this, a trader would incur higher costs whilst not necessarily benefitting from any additional aggregation (since aggregation was indirectly provided via Trading Gateway). Moreover, Trayport could increase the cost of its Trading Gateway licence and thereby make a Trayport dependent offering more expense and less attractive. Given these factors, we did not consider that entry and/or expansion by a third party front-end sitting on top of the Trading Gateway would be an effective constraint on Trayport.

9.14 Many third parties told us that in order to become a viable and effective alternative to Trayport, a new entrant's front-end access screen would need to offer traders a similar level of aggregation to Trayport's. As such, any new rival would need to be successful in shifting liquidity to its front-end screen away from Trayport's front-end and back-end, and the Trayport platform as a whole. This would require a coordinated effort on behalf of traders and brokers to shift liquidity away, which if not carried out effectively could result in split/reduced liquidity and worse prices available as a result of a widened bid-offer spread.

9.15 No third parties considered that a large-scale migration or shift in liquidity away from Trayport was realistic. This evidence and further third party evidence on Trayport dependency for new entry and/or expansion is set out in in Appendix C.

Entry costs and timeframe

9.16 Trayport told us that Trayport's software was not unique and that there were no intellectual property barriers to developing software with equivalent functionality to any of Trayport's core products. It added that the software itself was 'readily available', and told us that based on Trayport's estimates, it would cost around £11 million to replicate Trayport's 'core' product offering or £13 million for Trayport's 'total' offering. ICE also told us that many of Trayport's actual and potential competitors already had 'sophisticated software capabilities' and therefore would only need to develop certain aspects of their offering in order to compete with Trayport. It therefore considered that they would be able to develop the necessary technology for significantly less than the estimated cost and would be able to do this within a relatively short timeframe. For example, it considered that Bloomberg could enter into competition with Trayport at limited cost (around £3 – 4.5 million for both front-end and back-end technology) within 12 months should it choose to do so.

9.17 Third party ISVs generally agreed that they could offer or develop software with similar functionality to Trayport's Joule/Trading Gateway, although some

third parties said development costs were high (see Appendix C). However, in considering whether market entry and/or expansion might pose a sufficient competitive constraint on Trayport, we considered not only the initial software development costs but also the costs to build-up the new entrant to a sufficient scale in order to become an effective competitor to Trayport. The difficulty in achieving this was highlighted by a number of third parties:

(a) [An exchange] told us that it was not Trayport's front-end system and functionality itself that was unique, but its level of distribution and market information, and that it would take a long time and require 'substantial investment' to create a 'new Treatport' and develop a fully functional competing system. It estimated that the time to build such an offering would take several years, be a major investment, and would involve multiple brokers; the building of trading systems and a multi-year effort..

(b) Similarly, CME told us that Trayport's competitive advantage did not stem from any particular technology or software component. It drew on its own experience when it told us that since 2011, it had spent an estimated $[✂] and five years trying to 'gain traction' with its energy futures trading platform CME Direct, ie $[✂] million on acquiring a software provider and $[✂] on further development costs.

(c) [An exchange] told us that whilst an alternative system with all the same features did not currently exist and would require a very significant investment and time to be developed, this move would require all brokers to coordinate a system switch on a joint basis, as otherwise no software supplier would build all these features for one single customer.

Provisional conclusion

9.18 We are provisionally of the view that an alternative front-end screen which was dependent on, and sat on top of, Trayport's Trading Gateway for access to venue liquidity would not be an effective constraint on Trayport's front-end access services supply.

9.19 For a standalone front-end access provider to offer traders a level of aggregation comparable to Trayport's, the evidence gathered indicated that this would require a significant proportion of brokers to migrate on to a new back-end together with traders switching at the front-end. This would require a significant collaboration and a market wide shift. It would also entail significant risks, including the risk that liquidity could be split between competing aggregating platforms resulting in worse trade pricing. We note the Parties' submission that that third parties with existing technology could enter at a

relatively modest cost and compete with Trayport. We also note that ICE paid $650 million for the Trayport business.

9.20 Based on our assessment above, it is our provisional conclusion that the barriers to entry and expansion in the supply of front-end access services to energy traders are substantial and market entry or expansion by an effective competitor to Trayport would not be timely, likely, and sufficient to mitigate the anticompetitive effects of the Merger set out above.

Supply of back-end technology to brokers and exchanges

9.21 As explained above, Trayport's Closed API policy creates an interdependence of its front-end and back-end software which provides a significant barrier to entry and expansion. In particular, due to Trayport's Closed API, third parties told us that Trading Gateway was the only front-end access that the BTS could connect to which prevented their switching to an alternative back-end. This evidence is set out in Appendix C.

9.22 Given the lack of interoperability between Trading Gateway and a third-party back-end system, we considered that a broker switching to an alternative back-end system would require that the broker would be operating outside Trading Gateway's aggregated pool of liquidity. In this regard:

(a) [A broker] told us that solely switching the back-end system without creating new front-end connectivity would currently result in losing all market share. It considered it highly unlikely that Trayport would ever willingly allow connectivity between a third-party broker system and the Trading Gateway as this would effectively break Trayport's 'stranglehold on the market by breaking the valuable network effect' they had created via control of connectivity (API control). It therefore could not see a viable way of switching its broker system.

(b) [An exchange] told us that given the integration of Trading Gateway and its back-end systems, a switch from the back-end implied a switch for the front-end, for which there was no viable alternative to Trayport at an affordable price within a reasonable time frame, except if Trayport were to agree to display the products listed on the new back-end in Joule/Trading Gateway, which is not automatic. It told us that whilst switching to alternative back-end suppliers would be possible in theory, by switching to alternative back-end suppliers, these venues would have no guarantee that their prices would remain visible/tradable through Trading Gateway, or this possibility might come at a much higher price from Trayport. [✂]

9.23 Relevant to this discussion are the issues we mentioned above in relation to a large-scale shift by trading venues (ie brokers and exchanges) away from Trayport's back-end systems to a new back-end system. As mentioned in our preliminary conclusions on barriers to front-end access, we did not consider a large-scale move by trading venues away from Trayport's back-end systems to be a realistic scenario.

Switching costs

9.24 Some parties told us that switching back-end systems was a significant project requiring sufficient planning, time and resource, and that one of the main work streams would be to establish connectivity of the new back-end system with its internal systems. For example, [A broker] told us that switching its back-end was not in itself overly difficult from a technical standpoint but it would be a significant project requiring planning, time and resource to achieve. It added that the main work from its perspective (and not including work that customers would need to do in order to connect to its new back-end system) would be establishing the connectivity of the new broker back-end to its other internal systems, eg back-office system and potential clearing links. It told us that whilst this would not be a small project, it would be willing to undertake this if there was the prospect of it being successful.

Entry costs and timeframe

9.25 Similar to the entry costs and timeframe for entry into front-end access, ISVs told us that they believed they already offered an alternative back-end system offering comparable functionality to Trayport's back-end system. However, as for front-end access, success of an alternative back-end system would be determined by a third party's ability to: (i) draw a critical mass of liquidity away from Trayport so as to migrate substantially the whole market to the alternative; and (ii) connect the alternative to an ISV which was widely used in the market and was able to aggregate the new market with those in the Trayport system via Trading Gateway, or connect the alternative directly to Trading Gateway. Griffin estimated that developing an alternative broker trading system (back-end software) would cost between £10 and £20 million and that it would take around one to two years to complete.

Provisional conclusion

9.26 We considered that Trayport's Closed API, which prevents non-Trayport back-end systems from connecting to Trading Gateway, would likely act as a significant barrier to new entry or expansion in the supply of back-end software.

9.27 We therefore provisionally concluded that barriers to entry and expansion in the supply of back-end systems supply are high, and that market entry of an effective competitor would not be likely, timely and sufficient in order to prevent or mitigate the anticompetitive effects of the Merger.

Supply of access services to clearinghouses for OTC executed trades

9.28 An alternative provider (or broker) already supplying or wishing to develop an STP link with the same functionality as Trayport's Clearing Link requires connectivity between the broker's back-end system and the clearinghouse. This API between the back-end and the clearinghouse allows trades executed on a broker venue to be routed straight through for clearing, and then confirmation of clearing can be sent back through to the broker and then trader as part of the Trayport platform.

9.29 Generally, third parties told us that Trayport's Closed API resulted in alternative STP link solutions not being integrated with BTS without Trayport's permission, which meant they were unable to offer traders and brokers the same level of functionality as Trayport's offering, eg a trader using Trayport's Clearing Link would receive back into its trade booking system the relevant clearing information (eg clearing status), and a broker would automatically receive in its BTS, the trade ID when it used Trayport's Clearing Link. For example, [an exchange] told us that so long as the brokers were using Trayport's back-end technology, all of the alternative providers of STP access to clearinghouses, eg EFETnet eXRP solution, were 'weak alternatives' to Trayport's own Clearing Link offering.

Entry cost and timeframe

9.30 The evidence we gathered indicated that there were alternative providers of STP links and that development costs were not prohibitive. For example, [an exchange] estimated of the costs of developing STP links, stating that the cost of building STP integration, including work and systems per broker would be around £0.2 million. [A broker] told us that building clearing links required developing connectivity between its back-office system and each clearinghouse API, and roughly estimated that each connection could take around three to four months to build from start-to-finish.

9.31 However, as for the supply of front-end and back-end software, we were told by third parties that the success of a rival STP link depended on having access not just to clearinghouses but to broker venues, all of which use Trayport's back-end (see Appendix C). In order to obtain access to venues using Trayport's back-end an ISV would need to have Trayport's permission,

or there would need to be a wholesale shift in liquidity away from Trayport which we considered to be unlikely.

Provisional conclusion

9.32 Evidence from third parties on the barriers to STP link supply generally focused on Trayport's Closed API, which prevented third-party providers from accessing certain trade data on Trayport's back-end system and offering similar functionality to Trayport's Clearing Link offering. As in the case of front-end and back-end barriers to entry and expansion, it is our provisional conclusion that where a competitor's effectiveness depends on the ongoing cooperation of the incumbent, ie Trayport, this would be likely to undermine a competitor's ability to exert a strong and independent competitive constraint.

9.33 Based on the evidence gathered, we provisionally conclude that entry and expansion into the supply of an alternative STP link with equivalent functionality to Trayport's Clearing Link will not be timely, likely and sufficient to mitigate the anticompetitive effects of the Merger.

10. Efficiencies

10.1 While mergers can harm competition, they can also give rise to efficiencies. Efficiencies arising from the merger may enhance rivalry, with the result that the merger does not give rise to an SLC. For example, a merger of two of the smaller firms in a market resulting in efficiency gains might allow the merged entity to compete more effectively with the larger firms.

10.2 To form a view that the claimed efficiencies will enhance rivalry so that the merger does not result in an SLC, the CMA must expect, that the following criteria will be met[138]:

(a) the efficiencies must be timely, likely and sufficient to prevent an SLC from arising (having regard to the effect on rivalry that would otherwise result from the merger); and

(b) the efficiencies must be merger specific, ie a direct consequence of the merger, judged relative to what would happen without it.

10.3 We have considered the Parties' submissions in relation to efficiencies. The Parties told us that Trayport will benefit from ICE's expertise, such in relation to financial services information security, and that this would benefit Trayport's customers. The Parties also told us that ICE will gain a better route to market

[138] CC2, paragraph 5.7.4.

for its growing data services offering. The Parties did not quantify the benefits of these claimed efficiencies nor set out whether these would enhance rivalry.

10.4 We do not consider that these claimed efficiencies would mitigate the anticompetitive effects of the Merger as a result of enhanced rivalry.

11. Provisional conclusions

11.1 As set out in paragraph 7.2, we considered the competitive effects of the Merger through vertical theories of harm and a horizontal theory of harm.

11.2 In considering our vertical theories of harm, we considered whether the merged entity would have the ability and incentive to harm ICE's rival venues and clearinghouses, and the potential effects on competition of a partial or total foreclosure strategy.

11.3 We provisionally concluded that ICE's rival venues and clearinghouses were heavily reliant on Trayport to compete effectively in European utilities trading. Trayport plays an important role in facilitating competition between trading venues and between clearinghouses, and the available alternatives are weak as a result of network effects and Trayport's Closed API. We considered separately the reliance on Trayport's platform of exchanges, brokers and clearinghouses.

11.4 Our provisional view is that brokers and exchanges that currently use Trayport's back-end rely significantly on Trayport to win traders' business in competition with ICE. We also provisionally concluded that exchanges that currently have their own matching engine but are connected to Trayport's aggregation screen via GV Portal are also dependent on Trayport to compete in certain asset classes and products where they are present and/or to enter successfully in new asset classes and products. We also provisionally found that clearinghouses are dependent on Trayport, albeit to a lesser extent than venues, to compete for the clearing business in certain asset classes and products where they are present and/or in order to enter successfully in new asset classes and products. Having reached this provisional conclusion, we therefore explored whether there existed any mechanisms through which Trayport could be used to lessen competition between ICE and its rivals in our assessment of the competitive effects of the Merger.

11.5 Our provisional view is that a total foreclosure strategy is less likely because of the risks to the underlying Trayport business model. However, we identified a number of mechanisms through which Trayport could weaken ICE's competitors and dampen competition as part of a partial foreclosure strategy. We consider this likely to involve a series of incremental changes over time,

such as increasing the cost of Trayport's software to ICE's rivals, de-prioritising the development and improvement of its software so as to disadvantage ICE's rivals, and delaying and hampering the ability of rivals to enter new markets by delaying the listing of new products on the Trayport platform. Our provisional view is that the contractual arrangements in place between Trayport and its venue and clearinghouse customers are unlikely to sufficiently protect ICE's rivals from all such strategies. We therefore concluded that the merged firm would possess the ability to partially foreclose ICE's rivals.

11.6 When considering the merged entity's incentives to carry out such a partial foreclosure strategy we noted that, pre-Merger, ICE and Trayport had conflicting incentives. Trayport's objective was to support competition between multiple competing venues and clearinghouses, with liquidity fragmented between them. This meant that its aggregation software offered significant value to traders. ICE's aim was to concentrate as much liquidity as possible on its own exchange and clearinghouse. Our provisional view is that the pre-Merger ownership of Trayport by a broker was not informative of ICE's incentives post-Merger. This is because ICE additionally offers clearing services, and as a large exchange has a different position in the market for execution services, including a particularly strong incumbent position relative to other venues in a number of asset classes. Moreover, revenues from Trayport represent a significantly smaller proportion of ICE's overall revenues than they did for Trayport's previous owner and so any costs of a partial foreclosure strategy are likely to be less significant to ICE by comparison.

11.7 Our provisional view is that the merged entity would likely have a strong incentive to grow further its position in asset classes and products where it already has a substantial presence at the expense of its rivals. Further, weakening the effectiveness of ICE's rivals would prevent those rivals from threatening to take ICE's volumes in asset classes and products where it currently has a strong position. Also, where there are pre-existing industry trends, ICE would likely be able to use its control of Trayport to accelerate these and direct them in its favour.

11.8 Taking into account our assessment of the importance of dynamic competition in these markets, we provisionally find that ICE's control of Trayport would likely help it to gain control of new markets and segments. We considered this is likely to be highly significant because we found evidence of important first-mover advantages. For example, we identified strong incentives for ICE to seek to disrupt rivals in competing for new types of asset classes and geographies, as they migrate from voice to electronic trading, and new types of offering that emerge in light of regulatory developments. Overall, we

provisionally found significant gains for the merged firm which would result from a weakening of rivals.

11.9 On the basis that foreclosure would take the form of incremental changes that would not fundamentally undermine the Trayport platform and would be hard to detect, we provisionally identified likely low costs to the merged entity from lost revenues. Also, we were not persuaded by the Parties' arguments that traders would retaliate in other ways as we found little evidence that the threat of switching away from ICE to extract concessions would not have been fully reflected in pre-Merger conditions. We therefore provisionally concluded that the merged firm would likely experience only limited costs as a result of a partial foreclosure strategy.

11.10 As a cross-check, we quantitatively analysed the likely gains and losses to the merged firm of a partial foreclosure strategy. Taking into account the degree of uncertainty in the amount and timing of any switches in liquidity we considered a number of scenarios. Our qualitative assessment of the likely incentives was supported by all of the scenarios we considered plausible.

11.11 We provisionally concluded that the effect of a partial foreclosure strategy would harm ICE's main rivals and, as a result, have an impact on their ability to compete effectively with ICE for the execution and clearing of trades. In practice, we considered the effects of a partial foreclosure strategy would likely have a direct impact on the products and services offered to traders.

11.12 We provisionally concluded that there would likely be a loss of competition between ICE and other trading venues/clearinghouses to be the principal host of liquidity and/or clearing volumes. A partial foreclosure strategy would have the greatest impact on other exchanges, which are ICE's closest competitors, and then on rival broker venues which are close competitors in some asset classes. We also considered that a partial foreclosure strategy would likely adversely affect ICE's rival clearinghouses but that the impact would be less significant because clearinghouses' reliance on Trayport's Clearing Link was less pronounced.

11.13 We provisionally found that this weakening of competition between ICE and its rivals was likely to directly harm traders by allowing fees for execution and clearing to increase and/or the service offered to traders to be worsened. The loss of competition between ICE and its rivals would also relate to their efforts to launch new products and find innovative trading solutions in order to be the first to move into markets with new offerings. We placed particular weight on the loss of this dynamic competition which is likely to harm traders by offering them a more limited range of trading opportunities and tools.

11.14 We also considered the potential effect on competition resulting from the loss of rivalry between the Parties for front-end access services. We found the evidence on this to be mixed. There was some evidence that the Parties constrained each other pre-Merger. However, there was not significant evidence that customers would have switched between ICE and Trayport for the supply of front-end access services in response to a price increase. We provisionally found that there would likely be a reduction in competition but on its own this was not sufficient to represent a substantial effect.

11.15 Based on an assessment in the round of all theories of harm, and taking into account the likely effects overall, we provisionally concluded that the Merger between ICE and Trayport may be expected to result in an SLC in the supply of trade execution services to energy traders and trade clearing services to energy traders in the EEA, including to UK based customers, as a result of the merged entity implementing a partial foreclosure strategy.